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# UNTAPPED OPPORTUNITIES IN GLOBAL VALUE CHAINS: THE CASE OF ADD COUNTRIES

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# Untapped Opportunities in Global Value Chains: The Case of Add Countries

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## Abstract

This paper offers a comprehensive framework for identifying and prioritizing opportunities for export diversification and Foreign Direct Investment (FDI) attraction in the Alliance for Democratic Development (ADD) countries. Utilizing quantitative methods grounded in product and country proximity, four distinct approaches pinpoint industries with untapped potential. The analysis underscores the im-portance of both upward and downward movements in complexity to enhance participation in global value chains, and highlights key obstacles hindering these countries from capitalizing on these opportunities. Findings suggest that while some opportunities are unique to specific ADD

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countries, others present potential for joint research efforts or collaborative strategies. The authors caution against vertical market interventions in ADD countries and advocate for flexible provision of public goods to sup-port emerging industries. Overall, this study offers valuable insights and actionable recommendations for informed decision-making and strategic planning to promote economic growth and development in Costa Rica, Panama, and the Dominican Republic.

# 1. Introduction

In this paper, we develop some quantitative methods and criteria for the identification of potential new opportunities for export diversification and foreign direct investment (FDI) attraction, and we apply them to a set of small nations that are seeking precisely this type of opportunity: the three founding members of the Alliance for Democratic Development (ADD). The methods, however, can be applied to any country of interest.

Our goal here is to quickly provide a practical tool that FDI attraction agencies may use to identify and prioritize potential FDI attraction opportunities. By the terms of reference of this project, we were posed to use "product space" data to look into the industries that are proximate to those the ADD countries already export successfully; while we have expanded that task with other methods for assessing proximity, it is still in the same spirit of tractability and short-run applicability.

By the same token, we do not attempt to contribute to the academic literature on trade, FDI and the workings of multinational corporations (MNCs). That literature is not only interesting, but also extremely promising down the years, with much especially in the last few years that will be pertinent to our task here. In addition to the emergence of the seminal models in New Trade Theory, we observe in that context models that specifically look into the known effects of the multinational operation of companies regarding the gains from trade, trade patterns, and the effects of trade policy.

[5] There are, more specifically, quantifiable, general equilibrium models that involve firm location decisions, as well as gravity models pertinent to the topic.[6] This includes firms' analysis of their plant locations, figuring out which plants export where, the effect of MNC plants in a location on gains from trade, productivity spillovers, or where to produce and where to do research.[7] The issue of site selection has also been addressed previously in the operations and research literature.[8] Our task, however, lies elsewhere.

The focus of the paper is on the identification and ranking of these potential new opportunities based on a clearly stated logic—paying attention to the kind of barriers, policy needs, and actions that could facilitate realization of those opportunities. Because the initial conditions, history, and national objectives of our three target nations are so different, so are the recommendations for each of them, although we find some commonalities and even room for cooperation.

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[5] See, most pertinently, Ramondo [18]; Ramondo and Rodríguez-Clare [19]; Ramondo, Rodríguez-Clare, and Tiltelnot [20]; or Head and Mayer [13]. See also Grossman and Hansberg [11] or Helpman, Melitz, and Yeaple [14].

[6] See Tintelnot [22] and Morales, Sheu, and Zahler [16].

[7] See Arkolakis, Eckert, and Shi [7]; Alfaro-Ureña [3]; Alvariez [4]; or Arkolakis et al. [8]. See also Allen et al. (2020); Antras, Fort, and Tiltelnot [6]; Burstein and Monge-Naranjo [9]; or Oberfield et al. [17]. A survey of previous work on similar topics is in Yeaple [25].

[8] See, for instance Hesse-Owen and Dasker [15] or Verter [24].

Countries may follow several avenues in their pursuit of greater volume and higher quality of export- oriented FDI.[9] For example, they may entice firms that have already invested in the country to expand their operations; bring in new products or lines of products; undertake more complex stages of the same processes; and/or expand the engineering, design, research and development (R&D) or service operations that complement their manufacturing plants. They may try to bring in new investors in those same industries where the country has established a successful track record. Or they may try to consolidate clusters and realize economies of aggregation by bringing key suppliers into the country, facilitating geographic vertical integration.

Countries may take what could be characterized as a more cautious, "horizontal" or industry-neutral approach, focusing exclusively on overall productivity, market access, and business climate, in the expectation that "if you build it, they will come." But they may also try something perhaps more ambitious: to identify industries in which they have a potential that is currently barely exploited (or not at all) and develop specific capabilities to attract companies in those industries.

In practice, the work of FDI agencies is never exclusively horizontal. Yes, they may work within their own jurisdiction and in coordination with governmental agencies and independent institutions to create general conditions to make the country an attractive investment destination. But some, or even a large part of their work, will necessarily be industry specific.

This opens issues about how FDI attraction agencies should set priorities and targets by industry—and if they could or should—given their country's FDI attraction record, the success of companies that have already invested in it, the public and private capabilities developed in the process, the availability of human resources with the required skills, and other initial conditions.

This relates to the old discussion regarding vertical versus horizontal productive development policies and to the discussion about market interventions versus public goods [1]. On the question of whether strictly horizontal policies are even possible, it has been argued long ago by Rodrik and Hausmann [21] that governments are "doomed to choose," in the sense that public policy in general, and productive development policies in particular, necessarily have differentiated impacts on different industries and regions of an economy: the highway will pass closer to the location of industry A or industry B; the education budget will be somehow distributed between training that is more useful in A or B; the FDI attraction agency will have to choose which fair to attend,

[9] Later in this paper, we refer to opportunities as "complexity enhancing" when the relevant product complexity index is higher than the country's economic complexity index, and "complexity reducing" if it is lower.

which expertise to develop in its staff, where to prospect, which company to visit, what policies to lobby about first, etc.

Vertical market interventions are, in our view, not a very good idea, given their institutional requirements and the region's track record when they have been used. At any rate, for all practical purposes, they are a fiscal impossibility for ADD countries at present. If, however, differentiated sectoral impacts are to a certain degree unavoidable and, moreover, FDI attraction agencies with (always) limited resources need to establish priorities in their efforts (even if the incentives for FDI attraction are not industry specific), then they need a method (or methods) for identifying the most promising new opportunities— that is, to objectively use information about the characteristics and current industrial composition of the country to guide policy choices that are unavoidably vertical. In this paper, we build on existing methods and propose new ones, in hopes that they might prove useful for FDI attraction agencies.

This question of defining priorities is particularly pertinent today, because the long-announced restructuring of the geography of global value chains (GVCs) is actually taking place [2]. This restructuring may be partly the result of technological change, which results in changes in the optimal location of different activities from an efficiency point of view. But three developments have accelerated what, until recently, was at best an incipient trend:

- The fragility and risks associated with very long GVCs, with a heavy concentration of manufacturing activities in a—from an Occidental point of view—very distant location, were exposed by the pandemic. While this alone created an economic incentive for shorter chains, or nearshoring, a first-mover disadvantage prevented large relocations based on this incentive alone: suppose company A decided to move some of its operations to a closer but slightly more expensive location, while company B did not. Come the next disruption of commercial flows, be it from a pandemic or any other reason, company A would be at an advantage. Meanwhile, company B would enjoy a cost advantage—large enough, perhaps, to dissuade company A from relocating any operations.
- Old-style industrial policy, with large federal and state subsidies for certain industries, has made a big comeback in the United States, and similar policies are likely to be implemented by other developed countries, fundamentally changing the cost-benefit analysis of location decisions for some industries.
- Geopolitics has also made quite a remarkable comeback, with an intensity not seen since the end of the Cold War. Explicit national security considerations are now part of economic policy decisions in developed countries, resulting, for example, in restriction on exports of certain goods and technologies to geopolitical rivals.

In this context, while economics by itself may provide incentives for *nearshoring*, albeit with a first-mover disadvantage,[10] geopolitics my provide incentives for *friendshoring*, working geographically in the same direction as nearshoring, but subject to geopolitical alignment, misalignment, or conflict considerations.

From this last perspective, the three original ADD members[11] might be in a particularly advantageous position in Latin America: all three have enjoyed far better than average export growth in the last few decades and have succeeded (both in terms of quantity and quality) in attracting FDI. All three are democracies, with a harmonious relationship with the nations that are most commonly the origin of FDI for them, preferential access to their main markets, and simple logistics connecting them to the United States. Therefore, these nations are—along with Mexico—arguably the most viable places to take advantage of the opportunities for nearshoring and friendshoring that we are witnessing. Hence, this is the right time for them to seek bigger, new, and more ambitious targets in FDI.

Note that in pursuing investment in new activities or industries, a country will need to answer two questions: what new activities or industries it *might* be able to attract, and what it would need to do in order to attract them. In this paper, we address mostly the first question (opportunity identification), although some policy considerations regarding the second question are reviewed in the final section (page 53). A more detailed discussion of FDI attraction policies and instruments is beyond the scope of this paper.

Our goal then is simply to attempt an answer to the following question: In which manufacturing industries—presently absent from their territory or underdeveloped—may the ADD nations find new opportunities for increased and improved participation in GCVs, given their current conditions and industrial configuration, and the potential reconfiguration of those chains?

It was originally proposed that in order to answer this question we would use Hausmann's Atlas of Economic Complexity (AEC) data to find industries and activities that are close to each country's current position in the product space, with the

[10] The first firm to move away from the least=cost location may have a potential gain in terms of value chain resilience, but the gain will not be realized until a trade disruption occurs. Meanwhile, the first mover will be at a cost disadvantage with respect to its competitors.

[11] Ecuador joined ADD later on, but its economy, export profile, and FDI attraction record are so different from those of the other ADD countries that it did not make sense to include it in our analysis, as the pertinent efforts there are, in our opinion, of a different nature.

understanding that they represent opportunities for economic diversification.[12] Upon these results, we would be able to tap on other expert opinion and identify policy options.

As the project advanced, it was clear that there were circumstances and opportunities that made it more valuable to expand the work in some respects and redirect it in others.

First, we realized that using distance data as published in the AEC, which is calculated at the four-digit aggregation level, yielded results grouped in categories that were too broad for our purposes. Therefore, we recomputed the distances using the same methodology, but applied data on trade in manufactured goods at the six-digit level, which is more appropriate for what we need to do. For similar reasons, we decided to restrict our analysis to manufacturing industries at the expense of services, because the service data available for a large enough set of countries are even more aggregated.[13]

Second, we developed three alternative methods in addition to the above to identify sectors or industries that might be natural next steps in FDI and exports for each of the ADD countries. One of these methods seeks similarity in resource endowments, while the others seek similarity in export profiles.

Each of these methods was applied twice, using two different time frames for comparison purposes. This multiplicity of methods and time frames means that for each ADD country, we generate a set of new target industries in seven different ways. Surprisingly, given how different the approaches are, some industries were identified as low-hanging fruits for the same country by four or more of these—and, in a handful of cases, by all seven.

Conditions and opportunities have changed quickly for these countries in recent times. For instance, while ADD as a concept is still very relevant—that is, the features and situations that make these three particular countries ideal targets to take advantage of GVC reorganization—it seems to have been superseded as a cooperation platform by the American Partnership for Economic Prosperity (APEP). This is good news because there is room to integrate into APEP measures about enhanced trade integration, as well as coordinated industrial policies with the United States (this is already happening, in fact), involving a larger set of countries, and entering areas in which ADD alone cannot act.

Furthermore, as the three original ADD members are also APEP members, this initiative does not change the validity of the motives that started the project in the first place. However—and this is the bad news—**commercial conflicts between ADD countries have prevented them from undertaking any strong joint action in terms of FDI**

[12] By construction of the AEC product space, if industries A and B are far closer to each other than A and C, a country that is able to produce A should much more easily start operating in B than in C, at least because A and B are located in the same place far more often.

[13] We knew from the outset to exclude the agricultural and mining sectors, for in them the key determinant of investment location is the availability of specific natural resources or conditions. But we expected data availability would not prove an insurmountable obstacle to consider services.

**attraction**, or any coordinated activity (negotiation or lobbying) within the APEP process at the government level. This has weakened their cooperation at the private level, which would have been valuable in taking advantage of untapped opportunities in GVC participation. Clearly, the question is becoming more and more what can these countries do individually (or within APEP) to attract FDI, and in what sectors or industries is there more potential for each of them separately? The question is less and less what these countries can do as a group toward this goal, which was one of the emphases we expected at the outset. Our redirection here reflects that.

Similarly, after approaching a handful of local experts and decision-makers, we concluded that it was better to focus our efforts on quantitative results rather than on expert, yet subjective, opinion.[14]

As a result, our focus is on identifying sectors and industries that, in some relevant sense, are close to a country's current capabilities, natural areas of expansion (or low-hanging fruits) of their FDI in the near future, using a variety of data and methodologies. We believe that our results can be helpful to policymakers, and in particular to the agencies in charge of promoting exports and FDI. Notably, we

produce lists of between 30 and 50 specific industries that seem promising for each country, in addition to an analysis encompassing those and hundreds more.

The rest of this paper is organized as follows:

- In the next section, we describe our methods.
- In the subsequent section, beginning on page 16, we describe some features the three ADD countries have in common, as well as several relevant differences in their starting conditions, capabilities, and policy objectives.
- In the fourth section, beginning on page 25, we present a summary of our main results and, for each country, present what we consider the most salient opportunities identified by our quantitative analysis: the low-hanging fruits.

[14] Some experts tasked with commercial intelligence—and thus concerned about diversification into new industries—seemed to be still early in a promising process of industry identification, although we look forward to what they produce in the near future, and perhaps to serve as an input toward that. Furthermore, despite all the talk about GVC reconfiguration, some agencies are facing resource constraints that limit the expansion of their portfolio of expertise and targeted FDI attraction policies. We also heard more opinions about what kind of industry would be desirable than about their feasibility. Some experts believe that increased flows of FDI in existing industries confirm there is still significant room to grow within them, reducing the priority of finding something new. Others keep their focus on the improvement of the general (or cross-industries) business climate, necessary to face the challenge of expanding existing operations in size or complexity. These are of course all very worthy considerations, but not along the lines on which we seek to contribute in this project.

- The final section, beginning on page 53, concludes with a discussion, in an exploratory fashion, of some obstacles that currently prevent countries from taking advantage of the opportunities we have identified, as well as policy alternatives that may help them overcome these obstacles.

The detailed results of the quantitative analysis are presented in a series of appendix tables.

# 2. Measuring Proximity and Filtering Results

## 2.1. Measuring Proximity

The key empirical question we try to answer in this report is quite simple: given current public and private capabilities and current export industries in each ADD country, what products are they not exporting (or are barely exporting) that they might be able to expand significantly?

We use two complementary approaches to answer this question: one seeks proximity between products, and the other proximity between countries. For a given ADD nation, if a product is close (in the first sense) to something it already exports, or if a product is exported significantly in a country that is close (in the second sense), then we consider that product a relevant candidate for consideration as a next step for the industrial expansion. We then develop some criteria to evaluate which candidates take priority over others, as they seem more viable or more relevant.

The challenge is of course to define and empirically estimate what "proximity" means. We approach the problem from four different angles. In the rest of this section, we describe the four distinct methodologies employed to that purpose, which we applied to the three ADD countries.

For the second, third, and four approaches (based on proximity between countries), we apply them to the data using two different time frames. The *concurrent* analysis seeks which countries are proximate today to a given ADD nation today; the *lagged* analysis seeks which countries were proximate *in the past* to that given ADD nation today. We believe that the concurrent analysis helps establish the feasibility of an industry in a location: if we are like them now, and they can do X, then we can do X. Nevertheless, as the emergence of a new activity is a gradual process, the picture may be completed by seeing what else has emerged in the intervening years in countries that are close: if we are like they were then, and over time they developed Z, we could over time develop Z. In all of the above, we use 2019 data for the present across the different databases we consider,[15] since the numbers for 2020 or 2021 would have been affected by the

[15] For industry data we use the six-digit database in the AEC; for other national characteristics, we rely as well on the Penn World Tables (10.0) and the World Bank's World Development Indicators. For some of the descriptions of the ADD nations discussed in the third section (page 13), we also rely on the Social Progress Index of the World Economic Forum and official national statistics.

COVID pandemic—which had very disparate effects across countries and especially across industries. We use 2007 data for "in the past"—a year that precedes the global financial crisis—for similar reasons.

### *2.1.1. Method 1: Vicinity in the "Hausmann Forest"*

In this first method, we follow Hausmann et al. [12]. There, the proximity between two industries is based on the probability of a country displaying revealed comparative advantage higher than 1 in one of them, given that it does in the other. Given the asymmetry of these conditional probabilities, which contrasts with the expected symmetry of proximities, Hausmann et al. [12] opt for a conservative approach by defining them as the minimum of both conditional probabilities. More specifically, proximity between a pair of industries *p* and *q* is defined as:

$$\varphi_{p,q} = \frac{\sum_c M_{c,p} M_{c,q}}{\max\left(k_{p,0}, k_{q,0}\right)}$$

where $M_{c,p} = 1$ if country *c* exports product *p* and $RCA_{c,p} > 1$ and 0 otherwise, while $k_{p,0}$ is the ubiquity of product *p*. In simple terms, $\varphi_{p,q}$ is the ratio between the number of countries that export both *p* and *q* and, the maximum between the countries that export *p* and countries that export *q*.

Measures of proximity can be found in the AEC database at a four-digit level. We think that industry groups at that level are too heterogeneous to be useful for the purposes of our analysis, so instead we generate our own distance indicators at a six-digit level, using the same database and the same methodology.

Afterwards, for each ADD nation, we use as a starting point the list of industries that represent at least 0.25% of total manufacturing exports,[16] and for each element of that list identify the 10 other industries that are most proximate to it.[17] We then keep track of the number of ways in which each identified industry emerges in the analysis (a given industry may be among the 10 most proximate to more than one of the main exports of the same country).

Tables A.1–A.3 describe the results. For the sake of tractability, we only report in these tables the 40 industries most proximate for each country (although a much larger

[16] This list happens to contain almost all the industries with the highest revealed comparative advantage, as is illustrated in Tables E.1–E.3.

[17] We expand this when there is a tie in proximity between industries.

number is used for some of the analyses presented in the findings section, beginning on page 25).

### *2.1.2. Method 2: Comparative Advantage by Factor Endowment*

In this method, we are applying the logic of the Hecksher-Ohlin (factor endowments) model of international trade. According to that model, a country will display comparative advantage (and thus export) those goods that are produced using relatively intensively (in a well-defined sense) those resources that are relatively abundant (idem) in that country. Hence, the resource endowments held in one place will determine the relative prices of those resources and then the range of activities that can be undertaken there competitively and exported.

We seek which *countries* have factor endowments that most closely resemble that of each of the ADD nations, and then ask which *products* are produced and exported from each of those countries that are not exported (at least in the same proportion) in the corresponding ADD nation.[18]

For each country with the available data and with a population of at least 500,000, we compile:

- Capital per worker $k_i = \frac{K_i}{L_i}$, extracted from the Penn World Tables (PWT 10.0), using variables *cn* for capital and *emp* for labor.
- Human capital per worker $h_i = \frac{H_i}{L_i}$, again from PWT 10.0, using variable *hc* for human capital.
- Income flow coming from natural resources, per worker $n_i = \frac{N_i}{L_i}$, where $N_i$ is obtained from total natural resources rents in the World Development Indicators (WDI) for 2019. This corresponds to the mineral, hydrocarbon, and forestry contribution to gross domestic product (GDP).
- Arable land per worker $m_i = \frac{M_i}{L_i}$, again using WDI as a source, and in particular using arable land (hectares per person) to capture $M_i$.[19]

[18] An alternative, perhaps closer to the spirit of the model, would have been to seek for industries with similar factor intensities rather than for countries with similar factor endowments. That is not what we do, partly because of the limited availability of factor intensity data, and also because it would vary widely by location—as it should—because of factor price differences and the absence of full diversification. Furthermore, there may be multiple ways to skin the same cat: under more peculiar production functional forms than Cobb-Douglas, and given significant barriers to trade and to the movement of resources, there may be widely different factor intensities that allow countries to compete in the same product.

[19] From the definitions in the WDI, total natural resources rents (% of GDP): Total natural resources rents are the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents. Arable land (hectares per person): Arable land (hectares per person) includes land defined by the Food and Agriculture Organization of the United Nations (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.

- GDP per worker $y_i = \frac{Y_i}{L_i}$, using variable *cgdpo* for $Y_1$, to capture indirectly the effects of total factor productivity.[20]

We deviate from the standard formulation where natural wealth is just ignored (that is, where $n_i$, $m_i$ are just taken to be part of total factor productivity [TFP]) because the effects of those natural resources are of course not homogeneous across industries (unlike TFP in the basic formulation of the model), so we would expect to observe very different industries prevail in places with very similar *k, h* but very different *n, m*. Clearly, extreme differences in the latter may lead to very different exporting industries, given the bias on the valuation of the currency and, potentially, Dutch disease.

This yields a 5 × 137 matrix:

$$M_e = \begin{pmatrix} \frac{K_1}{L_1} & \frac{H_1}{L_1} & \frac{N_1}{L_1} & \frac{M_1}{L_1} & \frac{Y_1}{L_1} \\ \frac{K_2}{L_2} & \frac{H_2}{L_2} & \frac{N_2}{L_2} & \frac{M_2}{L_2} & \frac{Y_2}{L_2} \\ \vdots & \vdots & \vdots & \vdots & \vdots \\ \frac{K_m}{L_m} & \frac{H_m}{L_m} & \frac{N_m}{L_m} & \frac{M_m}{L_m} & \frac{Y_m}{L_m} \end{pmatrix}$$

We can then perform principal component analysis on the scaled version of the $M_e$ matrix to synthesize the relevant information for each country *c* into its principal components $P^c = \{P_i^c\}$, where the number of such principal components is chosen as to account for at least 90% of the total information in $M_e$. We then compute the distance between any two countries *c*, *d* as the Euclidean distance between $P^c$ and $P^d$, or $D_{c,d} = \sum_{k=1}^{n} (P_k^c - P_k^d)^2$.

For each ADD nation *c*, we derive the 17 closest countries (according to $D_{c,d}$), and for each *d* we seek for the 10 industries *s* in which the export share in *d* exceeds the export share in *c*,[21] that is:

[20] We do not use the total factor productivity (TFP) indicator that appears in the PWT, because that one is constructed assuming a Cobb-Douglas production function and a closed economy, which implies that it is close to log -colinear to the other variables. Furthermore, as shown in Ventura (1997) and Ferreira and Trejos [10], even assuming the same functional forms at the industry level, the aggregate production function of a trading economy may have a different—and peculiar—shape, which implies that the standard closed economy TFP definition is not only wrong, but biased in a particular way reflecting trade policy.

[21] We picked 17 countries and 10 industries per country as this seemed to yield lists of the right size to keep our analysis comprehensive yet manageable. A similar criterion is applied in the next two methods to pick how many countries and industries to allow.

$$\frac{x_s{}^d}{\sum_{i=1}^{n} x_i{}^d} > \frac{x_s{}^c}{\sum_{i=1}^{n} x_i{}^c}$$

which would be the resulting candidate industries for *c.*

We perform this analysis both on the concurrent and the lagged time frames. The list of industries for each ADD country and time frame are in Tables B.1–B.6, and the list of the most proximate countries are in Tables B.7–B.9. We keep track of the number of paths by which we arrive at each industry in the results. We compare the two-time frames in Tables B.10–B.12.

### *2.1.3. Method 3: Revealed Capacities*

Here, we go from products to countries to products. We start with the main exports of a given country in ADD, then we say that another country is close to, when any of those products represent a highest share of their total exports, and then derive the other main export products for each of those countries.

Specifically, we define $s_j{}^d = \frac{x_j{}^d}{\sum_i x_i{}^d}$ as the share of product *j* in the total manufacturing exports of country *d*. Then, for a given ADD country *c*, we select its 10 main exports; for each of those, we identify the 10 countries *d* that display the highest $s^d$, truncating the list if there are less than 10 countries where $s_j{}^d > s_j{}^c$.

Finally, for each of those countries, we identify their own 10 main export products.[22] This leaves us with a long list of industries that are candidates for consideration—emerging through chains that involve products with different export shares—which could have been as many as 1,000, but in fact are far less, coming up many times.

Again, we apply this method for concurrent and lagged data, for each ADD nation, and present the top resulting industries in Tables C.1–C.6. For each industry, we report the number of countries and the number of ways (countries × products) through which each industry emerges in the results. The list of proximate countries are in Tables C.7–C.9. We compare the two-time frames in Tables C.10–C.12.

### *2.1.4. Method 4: Comparative Export Profile*

This method involves looking for patterns more broadly across manufacturing exports, and identifying for each of the ADD nations a set of countries that display a similar pattern, to then use that set to identify new export opportunities.

[22] A reader may question why we start with the biggest exports of c, rather than the sectors with the higher revealed comparative advantage coefficients in c. We tried both ways and found that for all three ADD nations, both approaches lead to pretty much the same results.

Let $(x_1^j, x_2^j, \ldots, x_n^j)$ represent the export vector of a country *j*, across all *n* industries at a six-digit level.

We construct a matrix *M*, whose *j*, *k*-th element is the proportion of country *k* exports that comes from industry *j*, or $s^k$ as defined above, so:

$$M = \begin{pmatrix} \frac{x_1^1}{\sum_{i=1}^n x_i^1} & \frac{x_2^1}{\sum_{i=1}^n x_i^1} & \cdots & \frac{x_n^1}{\sum_{i=1}^n x_i^1} \\ \frac{x_1^2}{\sum_{i=1}^n x_i^2} & \frac{x_2^2}{\sum_{i=1}^n x_i^2} & \cdots & \frac{x_n^2}{\sum_{i=1}^n x_i^2} \\ \vdots & \vdots & \ddots & \vdots \\ \frac{x_1^m}{\sum_{i=1}^n x_i^m} & \frac{x_2^m}{\sum_{i=1}^n x_i^m} & \cdots & \frac{x_n^m}{\sum_{i=1}^n x_i^m} \end{pmatrix}$$

Of course, each row of *M* adds up to 1, as each column represents the percentage of commodity $x_i$ exports of a country. To reduce the diMen'sion of the problem (the matrix has more than 3,000 columns and nearly 170 rows), principal component analysis is applied to *M*, extracting sufficient principal components as to account for at least 80% of the cross-country variability. We define the proximity of two countries as the Euclidean distance between their principal components.

Finally, we select the 17 closest countries to each ADD country. We find the industries in those other countries with the highest weight in total exports, provided they are not even weightier in the ADD nation of analysis. The list of countries associated with each analysis may deliver the same industry multiple times.

Again, the method is performed for lagged and concurrent data for each ADD nation. Tables D.1–D.12 display the lists of industries—each also characterized by the number of paths leading to it—the lists of proximate countries, and a comparison of both time frames.

### 2.2. Filtering the Results

After application of the four methods, with lagged and contemporaneous comparisons for three of them, we have a first list of potential opportunities for each country. Not all items on this first list are feasible, and the initial list needs to be filtered, because our methods do not distinguish some cases where:

- Proximity to raw materials is required for the feasibility of a potential new opportunity, and those raw materials, chemical industries, or other suppliers are not available in the country of interest. Using this criterion, many mineral processing activities found on the original list were discarded.

- Some industries may be incompatible with current policy or even banned by legal or administrative regulations. When we were aware of such incompatibility, we discarded the relevant industries.
- Country size was not considered in any of our measures of proximity, so opportunities that were associated with proximity as we measured it but also with economies of scale that no ADD country can realize were also discarded.
- Finally, we discarded opportunities that corresponded to industries already well established in the countries of interest, since our goal is to identify new opportunities for FDI attraction and export diversification. Our methods have nothing to say regarding the feasibility of expanding already established export industries.

Some readers might be reasonably skeptical about such ad hoc, "by hand" filtering, so the complete, unfiltered results are available from the authors upon request.

Tables 3, 8, and 14 display a summary of the filtered results for each of the three ADD nations. The headings also indicate the Economic Complexity Index (ECI) of the nation in question. The tables list all the industries or activities that came up as results in more than three of our seven methods.[23] For each industry, the tables contain the industry code and name, the number of methods, countries, or paths through which it came up, its Product Complexity Index (PCI), and its Revealed Comparative Advantage Index (RCA). We recalculated the ECI and PCI directly at the six-digit level, corresponding to our database for 2019. The method for this calculation is described in the Digital Appendix as well.

Of course, these lists are still too long, and further refinement needs to be applied so we can truly claim we are suggesting priorities. To pick and choose within the lists—and thus reach the priority industries presented in the findings section (page 25)—we rely on some numerical features. These include its PCI (as it relates to the country´s ECI), as industries with a high PCI are less ubiquitous, and presumably the productive environment has to be richer and more competitive in order for firms to want to establish there; and its RCA, that is, an indicator of the extent to which the industry has already grown locally as an exporter, relative to what we see in the rest of the world. We also look into the number of methods, and the number of paths within a given method, that put the industry on the list, as well as the "quality" of the link, as assessed by the importance of the related activity or country (for example, is the industry on the list because it is the closest activity to the largest current export, rather than the eighth closest activity to the tenth largest current export). We also consider "clustering" arguments: the case for an industry on our lists is stronger when similar products, or products using similar skills or similar inputs, are already major local exports. In some

[23] We applied the first method to concurrent data only, and the other three methods to both lagged and concurrent data, for a total of seven.

cases, "being in the same two-digit chapter" and "being in the same cluster" can be used almost interchangeably.

Besides quantitative issues, we considered other, more qualitative, arguments, as—for instance—whether a particular product seems more or less tradeable; whether MNCs or domestic companies are more typically representative in a given industry; whether existing production in that industry is sheltered by high tariffs or other forms of protection or advantage; or whether domestic companies in that industry seem to have existed for a long time, produce for the local market, and do not export; and other criteria suggested by our own experience in the field.

One can categorize potential new industries with upwards or complexity-enhancing movements, on the one hand, and downwards or complexity-reducing movements, depending on their PCI and how it compares to current "frontline" activities in the country, and on the ECI for the country as a whole. Since most countries are usually interested in expanding and upgrading their participation in GVCs, there might be a temptation to discard opportunities that represent a step back in terms of complexity. We will argue that this would be a mistake. Countries are internally heterogeneous, and the fact that workers/companies/regions are ready to engage in very sophisticated activities happens although there are others who are not. Places that may have achieved a high level of sophistication in their export sector may at the same time exhibit high levels of unemployment—particularly among younger adults with no tertiary education—and large, low-productivity informal sectors, as well as a large number of very small, low-productivity enterprises even in the formal sector. And an agglomeration of advanced industries in the most competitive urban regions may coexist with problems of a more basic nature elsewhere in the country. It thus could be the case that a country might be able to jump into higher-complexity activities and simultaneously need to grow in lower-complexity activities, as large segments of the population and an equally large proportion of the economic establishments in the country are not ready to enter the more complex activities.

# 3. The ADD Countries

There is a reason why the ADD exists—why the private sectors of these three countries understood there was an opportunity to work together, and generate support from their governments and global counterparts, toward capitalizing the current economic and political global environment in a manner that enhanced their capacity to attract more FDI, as well as increase the size, diversification, and sophistication of their exports. All three are democracies, arguably the deepest and most mature in their immediate region

(Central America and the larger nations in the Caribbean).[24] All three have a history of commitment to trade and market principles, and a good working relationship with the nations that are both the main markets and the main sources of FDI, notoriously the United States. Uniquely among their neighbors, all three have net inflows, rather than outflows, of immigration,[25] acting in a way as a buffer of population movements that otherwise would end up in the developed world. While the ADD nations are still developing countries and are faced with myriad problems, all three perform better on a number of key social indicators than the other main nations of the immediate region, as shown, for instance, by the World Economic Forum's Social Progress Index (Table 1).

The ADD make sense not only politically, but also economically. These are three of the five fastest- growing countries in Latin America,[26] their economies are comparatively open and have been successful in attracting FDI.[27] Panama, at $26,606, has the highest per capita GDP in Latin America,[28] with Costa Rica fourth ($19,778) and the Dominican Republic seventh ($16,768)—at least double that of the other Central American countries. In all three ADD countries, FDI has also been large and strategic— allowing to update critical infrastructure, or to enter new and far more complex industries—and has consistently been perceived as a tool toward economic and social development, and thus a national priority.

For the purposes of FDI attraction, therefore, the three ADD nations share some basic objectives. Currently, Western MNCs are trying to diversify the location of their

[24] Costa Rica is the strongest democracy in Latin America, according to the democracy ratings of the Economist Intelligence Unit, and second (behind Uruguay) in the Democracy Quality Index of the University of Wurzburg for 2022. In the immediate region, Costa Rica is the only country gaining the top qualification—full democracy or working democracy, respectively—while Panama and the Dominican Republic are second and third, respectively, in the immediate region, albeit behind some South American nations.

[25] Data about cross-country migration, even at a multilateral level, varies significantly across territories in methodology and precision; additionally, and obviously, legal migration is far better documented than the—in this region, perhaps larger—illegal counterpart. Nevertheless (according to data in Expansion), in 2020, Costa Rica had roughly 521,000 immigrants and only 150,000 emigrants, while Panama had 313,000 and 140,000. While the numbers for stocks are reversed in the Dominican Republic (604,000 and 1,608,000), other evidence indicates that net inflows are positive. More importantly, all three countries are large recipients of migrants from certain origins (Nicaragua, Venezuela, Haiti, and others) that would otherwise probably end up in the United States, making prosperity in the ADD a relevant objective for the U.S. government.

[26] According to World Bank PPP data, annual output growth has been faster in the Dominican Republic and Panama since 1960 (6% and 5.6%, respectively, up to the outset of COVID) than in the rest of Latin America, with Costa Rica in fifth place. In the three and a half decades since the end of the debt crisis, all three countries are among the five highest in per capita GDP growth, only behind Chile and Uruguay, and significantly ahead (up to 180 basis points difference) of the rest of the immediate region.

[27] Exports of goods and services, as a fraction of GDP, are ahead of the hemispheric average in all three countries, especially in Panama. In 2021, FDI (as measured in balance of payments) was 4.2%, 3.2% and 6.1%, respectively, well above global averages (1.9% for Organisation for Economic Co- operation and Development [OECD] countries and 2.1% for the world as a whole).

[28] Corrected for purchasing power parity, in 2022, according to the WDI.

operations and are prioritizing geographic proximity and political affinity in their site selection process, making it a good time to reinforce the efforts of their FDI attraction agencies. Much of the growth potential is in the expansion of operations already in place—more volume, more steps done locally, moving up the ladder to more sophisticated processes within the same plant—as well as attracting new activities from the same companies, or new companies from the same activities. All three countries have a good track record in post-establishment performance and reinvestment. But it is also time to prospect in what industries lie new opportunities to not only grow but also move up the complexity scale.

**Table 1. ADD Countries' Rank Position on the Social Progress Index**

| Country | SPI | | | HBN | | | FOW | | | OPP | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | G | L | R | G | L | R | G | L | R | G | L | R |
| Costa Rica | 37 | 2 | 1 | 43 | 1 | 1 | 33 | 1 | 1 | 34 | 3 | 1 |
| Dominican Republic | 77 | 13 | 4 | 100 | 13 | 3 | 69 | 6 | 2 | 69 | 10 | 3 |
| Panama | 49 | 5 | 2 | 64 | 6 | 4 | 50 | 11 | 3 | 55 | 5 | 2 |

Note: SPI = aggregate Social Progress Index; HBN = satisfaction of human basic needs component; FOW = foundations of welfare component; OPP = opportunity component. G = global ranking; L = position in Latin America; R = position in immediate region of Central America and the Caribbean. Considers only fully independent nations with at least half a million inhabitants.

Some of their main strengths and weaknesses are also common; in particular, all three face—albeit for different reasons—scarcity of well-trained labor (their human capital endowments are very similar, and just above the world average, but demand is higher in the ADD countries precisely due to the presence of highly sophisticated industries in manufacturing and services), are relatively poor in farmland (under 20% of the world average in arable hectares per worker), and still have a way to go in order to catch up in income or capital stocks with the developed world. Table 2 shows the values for all three countries in terms of their resource endowments, as were applied in method 2 (described on page 11).

The table also begins to illustrate their differences in conditions and challenges. For instance, Panama is surprisingly capital rich (including public infrastructure that is globally significant), and Costa Rica surprisingly capital poor. Mineral products are relevant for the Dominican Republic far more than for its two peers. Their differences are not limited to resources or current industries, but also extend to their goals regarding FDI attraction, which for valid reasons are not exactly the same. In other words, all three

countries share a common objective of finding new industries—for which they would be suitable sites of operation—up the complexity scale from their current industries. But beyond that, one must add in each country some twist regarding the industries that may be a priority. Hence, we need to look at each individually.

### 3.1. Costa Rica

Costa Rica has been very successful (among the best in the world) in the attraction of investment and expansion of exports in very sophisticated activities in manufacturing and services, whose growth, deepening, and levels of remuneration have played a very large part in the improvement of national economic conditions. The share of high-tech products among its exports has oscillated between 17% and 45% in the last two decades.[29] About 13% of the labor force is employed by foreign companies from the zona franca regime (not counting their domestic suppliers), which has gone through a double-digit annual growth rate for several years. Average remuneration is significantly higher, and working conditions better, than in local or non–zona franca companies. Medical equipment and devices of various kinds, as well as electronics and other advanced manufacturing, are the country's top exports, as shown in Table F.1. Much of this success has to do with a very good institutional base that supports FDI attraction and export promotion, and that oversees the operation of the zona franca regime. This has enabled Costa Rica to achieve, for instance, a level on the Economic Complexity Index that is comparatively high for its income level. As another way of making the same point, notice the contrast between the countries listed in Table B.7, which are the peers of Costa Rica in terms of resources, and in Table D.7, which are its peers in terms of exports. The former list, while prominently containing Mexico and China, is essentially a set of middle-income countries, many focused-on textiles and other low-skill manufactures. The latter list is, with some exceptions such as Mexico, India, and the Dominican Republic, essentially a set of developed Organisation for Economic Co-operation and Development (OECD) countries and European nations, with the United States in the second spot.

**Table 2. Factor Endowment Data for ADD Countries**

| Country | Capital stock per worker | Human capital indicator | Arable land per worker | Income flow from natural resources | GDP per worker |
|---|---|---|---|---|---|

[29] This high variability is explained by the manufacture of microchips, especially by Intel, which conducts a significant portion of its A&T operations in Costa Rica (the part of the process that takes silicon wafers of electric components and turns them into individual microchips). While the main exporter in the country (by gross value) for two decades, Intel closed its manufacturing operations—while keeping open its research and shared services—in 2014, only to reopen them in 2023. Hence, the analysis we described methodologically in the second section (see page 7) and present in the findings section (see page 20) is based on data where this kind of work in electronics is far less important as an economic activity than it is today.

| | | | | | |
|---|---|---|---|---|---|
| Costa Rica | 96,264 | 2.695 | 31,638 | 0.050 | 41,646 |
| Dominican Republic | 151,328 | 2.767 | 39,710 | 0.981 | 37,624 |
| Panama | 266,045 | 2.888 | 20,913 | 0.133 | 66,158 |
| World | 211,541 | 2.697 | 219,281 | 0.221 | 48,139 |

Note: World refers to the average across the sample of 137 countries with population over 50,000 and all the data needed available in the World Economic Indicators and the PWT 10.0).

Costa Rican manufacturing also includes a strong base of local companies in chemicals, medicines and (especially) consumer nondurables, which export significantly to the region, under the terms of the Central American Common Market. Service exports, while not in the scope of this paper but certainly worthy of mention, are about as large as exports in goods. Costa Rica is a significant tourism destination (like the other ADD countries), but adds at least as much employment and exports from information technology (IT) and corporate services. Finally, despite its very low endowment of arable land, it has historically been a significant exporter of high-value-added agriculture, especially in fruits, tubers, and other miscellaneous products.

However, Costa Rica faces two challenges that are critical for its FDI attraction efforts in the next few years. The first has to do with the availability of qualified labor. Despite a well-deserved national reputation that points at human capital as a strength,[30] so many years in which growth has concentrated in specific industries that require relatively sophisticated workers—electronics, medical equipment manufacturing, corporate services, IT—have brought about a scarcity of those workers. The portion of the labor force and of existing local suppliers that can engage in those activities is not the majority, of course, but still surprisingly large. In that sense, diversifying into other industries that, while equally challenging and complex, at least require labor trained in other fields, is essential.

This problem is compounded by the fact that the educational system is no longer up to the challenge, so the stock of qualified workers may look good, but the inflow of new ones into the labor market does not. As various deep analyses have shown,[31] there are

[30] Not only is there a high stock of trained people, but Costa Rican workers also display high levels of soft skills, which typically lead companies to end up performing far more complex processes there than originally planned.

[31] The United Nations Development Programme's State of the Nation Program does a very good job of following up on matters like these; and in the last few years, a number of very good studies—the State of Education Reports—have delved into the matter in detail. For a less detailed study, which is on the other hand geared specifically toward the talent needs necessary to succeed in FDI-led industries, see Trejos et al. [32].

many areas of potential improvement. For example, in the last few years, the dropout rate has escalated, as most students in nontechnical institutions, if in doubt that university is in their future, choose to leave schooling at the end of their ninth year rather than pursue their high school diploma. This does not happen in technical training high schools, which are far more appropriate for the labor market, but their share of the student pool remains too low. In general, the educational system acts in many ways as if moving away from science, technology, engineering, and math (STEM) was a goal. There are plenty of other ways the educational system needs fixing and, until that happens, there will be insufficient labor to satisfy the demand of the most advanced and sophisticated components of the economy—while too many potential workers with low skills remain unemployed, in informality, or frustrated out of the labor force altogether.

The second challenge compounds the educational problem. Costa Rica's population is very concentrated in a small valley, merely 13% of the territory by surface, that includes the Greater Metropolitan Area as well as some of the most productive farmland; it is the home of about two-thirds of the population and three quarters of output. The economic and social asymmetry between the Central Valley and the rest of the country is large, and a vast majority of FDI—as well as of the most sophisticated and largest domestic companies—is located in the former. The periphery of the country, with lower labor density and less appropriate business climate, as well as many less-educated workers in the Central Valley itself, cannot aspire at this point to jobs in the industries with highest complexity, such as IT, electronics, or medical equipment. On the other hand, and partly through the chronic over appreciation of the currency, among other phenomena, Costa Rica has shed over the years many companies and industries that are lower in the complexity scale, and precisely where the jobs and growth for that portion of the population with lower skills could be found. These industries did use to be in Costa Rica. When the first efforts to attract FDI in the late 1980s and early 1990s first succeeded, it was precisely apparel and plastic extrusion companies that led the way. But the country did not succeed in keeping lower-tech industries, and as they got crowded out of the best-trained workers and most productive regions, they did not go down the ladder within the country to other labor and territory, but rather left it altogether.[32] It is one labor market, one regulatory standard, and one currency, common across all sectors in the same economy; as the conditions reacted to success in frontline industries, they worsened for the rest, leading to high informality and increasing long-term unemployment for people with low skills or in remote places. There is now an awareness in the national discussion, government, and institutions in charge of promoting trade and FDI that, in addition to continued growth, diversification, and deepening in complex industries, the country needs to recover companies in more labor-intensive and less skill-demanding activities that would employ those left behind in this process. For the above reasons, in the next sections, we look not only at industries that represent a step up in

[32] Very few apparel companies remain; those that do mostly produce very quality-sensitive lines of clothing, like suits or brassieres. We spoke with the owner/CEO of one such operation, who saw the problem coming and moved his plant to a rural area. Most of his colleagues preferred to move abroad, especially to China.

the complexity scale, but also seek some that are a step down—or that used to be significant activities in Costa Rica and have ceased to be so.

### 3.2. Dominican Republic

The Dominican Republic has proven to be one of the most stable and fastest-growing countries in Latin America. It shares an island with Haiti—the hemisphere's poorest country—successfully absorbing a sizable immigration from there and managing a complex relationship. It has a fairly diversified economy, with a close link with the United States and, increasingly, with the nations of the Central American Common Market. Like Costa Rica and Panama, a significant portion of its output and currency inflows relates to tourism. On the other hand, 13% of its exports are minerals—mostly gold, nickel, and copper— while the portion coming from agricultural products is far lower than in the other ADD countries.[33]

Like Costa Rica, the Dominican Republic's initial inroads in manufacturing FDI and exports consisted of apparel and other labor-intensive, low-skill industries. This was later complemented by inroads in more complex industries, specifically in electric products and, especially, medical devices.[34] Unlike its peer, on the other hand, these have proven so far to be indeed complementary rather substitute activities, as the growth in more sophisticated industries has not been accompanied by a drastic contraction of the less complex base.[35] Indeed, 18% of total exports are apparel, footwear, and tobacco products from the zona franca. While of course the different industries compete for the same resources, **there seems still to be interest—and room to grow—in more FDI on both ends of the complexity ladder**.[36]

With about twice the population of Panama and Costa Rica (and unlike them), the Dominican Republic possesses exporting industries with significant increasing returns to

[33] According to the Central Bank´s balance of payments data for 2022, manufacturing by domestic companies—largely nondurables, raw materials, and chemicals—is roughly 22% of exports.

[34] In 2022, 18% of total exports, or 23% of manufacturing exports, was medical equipment and devices; another 14% was electrical products and jewelry.

[35] FDI and exports, like the population and economic activity in general, are less concentrated geographically than in Costa Rica or Panama—albeit that is not saying much—so the regional variety of business environments and resource availability is to some extent being exploited.

[36] One way to illustrate that the Dominican Republic has maintained—and should aim to maintain—this balance among a variety of industries of different levels of sophistication is to look at its peer countries in the analyses below. Consider for instance Table D.8, which displays the 17 countries most similar in terms of the composition of their manufacturing exports. Comoros, Indonesia, and Egypt are in the Dominican list, but so are the United States, Finland, and Germany. We believe—and the difficulties for Costa Rica in dealing with its "dual economy" seem to confirm our belief— that a heterogeneous country should aim for industries that imply heterogeneous peers.

scale. Therefore, in our analysis in the findings section (page 25), we do not filter out industries with sizable-scale economies, when our methods suggest them for the Dominican case, but we do delete—or lessen in priority—the same industries when they come up for the other two countries.

Another pertinent distinction regarding the Dominican Republic is the potential for growth in the production of textile materials for use in the apparel industry (their own and others in the region). Unlike Costa Rica and Panama, this activity is already present in the Dominican case, although quite possibly far short of its potential. The processes of making the materials to produce clothing, and the confection of the apparel pieces, are very different in terms of the capital needed per worker, the types of skills required, and the critical productive features necessary to succeed. Early in this century, shortly after the accession of China to the World Trade Organization, the region was having difficulties competing with China and other Asian nations that were able to sustain companies in both stages, because the United States was an efficient producer of cloth, but too expensive for most apparel confection, while Central America and some countries of the Caribbean were capable of making apparel competitively but not to supply their own materials. Dominican Republic-Central America free trade agreement's (CAFTA) chapter on apparel market access was designed around this challenge and the need for both U.S. textile and Central American apparel companies to confront this Asian competition. The rules of origin for apparel trade induce a majority of the materials coming from the member nations in order to benefit from the tariff reduction. And while this was originally conceived with U.S. cloth producers in mind, the industrial development that has occurred in the meantime—mainly in the Dominican Republic and Costa Rica, and especially in the former—enables them to participate as well. The market would not only be their own apparel operations, but also those in the rest of the immediate region, including the Northern Triangle and Haiti.

### 3.3. Panama

Panama is a very peculiar place. The richest country in Latin America according to purchasing power parity–adjusted per capita GDP, its population is also extremely concentrated on the corridor along the Canal, between the city of Colon and the capital of Panama City. The country is blessed with certain key infrastructure—prominently, the canal itself—and a number of large and sophisticated service industries, which generate significant revenue and employment. In Panama we find the corporate headquarters of the immediate region and beyond, its main banking district, and also the hub for its logistics and distribution, including repackaging plants (prominently in medicines).[37] And while the availability of world-class logistics and services locally should represent a

[37] The Zona Libre de Colon is one of the largest warehouse and multimodal distribution centers in the world. It offers logistical services, and also operates as a hub where much of the immediate region's retailers' source. Indeed, a number of products enter it—or similar operations elsewhere in Panama—and are not only distributed and commercialized wholesale from there, but also undergo repackaging or even some physical transformation.

significant operational advantage for any industrial plant, Panama has gotten to this point of its development with surprisingly little manufacturing. As of 2022, excluding re-exports, 77% of its exports of goods came from mining; almost all the rest were agricultural products and foodstuffs with various degrees of processing.[38]

The premise that has led to the inclusion of Panama in the ADD initiative and its successors, and that also brings us to studying its case in this project is that, while the country has not needed so far to harbor a significant manufacturing export base, the next steps in its economic development would benefit significantly from it.

This poses a dilemma. Should Panama aim—as suggested by the experience of other nations starting out without a manufacturing base—for entry-level manufacturing activities on the lower end of the sophistication scale, as an initial, immediate step? The answer requires understanding the desirability of labor-intensive, low-tech operations, and their feasibility in a country whose wages and other operation costs are affected upwards by high incomes and opportunity cost. Should it instead, exploiting its unique advantages in resources, infrastructure, connectivity, and business climate, attempt to leap-frog into industries of higher complexity? Answering the second question forces one to ponder if it is at all possible to do well in, say, electronics, having never done extrusion or apparel. Panama's peer list of nations with similar factor endowments (see Table B.9) are, in their majority, much farther along in the development of their manufacturing base.

A final consideration specific to Panama to make here relates to the data regarding the composition of its current manufacturing exports. Because of the logistical and commercial activities occurring in Colon and other facilities, a number of manufactured products are re-exported from Panama; these have not been made there, nor even assembled there, but rather had undergone much simpler transformations, and in some cases just repackaging. Given that other manufacturing exports are so low, those re-exports are a significant portion of the total.[39] This confronted us with the question of whether those products should be considered in our analysis or not. In the end, we opted for including them, partly for symmetry—to use the same database as in the other two ADD countries—and partly in response to our experience that often companies engage in the production of services from places in which they already operate in manufacturing, and the move in the opposite direction may also be feasible.

[38] In December 2023, and after a very large popular uprising, decisions were made that could lead the controversial mining operations—of copper and gold—to cease in the near future.

[39] Including, prominently, medicaments, the top export according to Table F.3.

# 4. Main Results

Applying the methods described in the methodology section (page 9) leads to a long list of industries, shown in detail in Tables A.1–D.12, that constitute potential industries in which each ADD nation may find opportunities to expand its FDI, exports, and involvement in GVCs. Those lists are, of course, in some sense too long to maneuver, and hence we need to apply our filtering criteria—and common sense— to narrow them down into something more usable. Even narrowing the analysis to the industries that come up through multiple methods/countries/products, we still need to filter these industries to a short, manageable, and compartmentalized.

In this section, we separately analyze the results for the three ADD nations, taking into account the differences in their conditions and objectives, as outlined in the previous section. We go through the different methods one by one and highlight what we consider are the worthiest recommendations. In so doing, we visit several aspects of these lists.

- Some recommended sectors are industries (at the six-digit level) that are parts of chapters (at a two-digit level) in which the country already produces significantly. While there is no guarantee that moving between two activities in the same group is easy—products can be very similar, and thus belong to the same group, even if the processes to make them, and thus the skills needed, are very different—yet one can probably expect that in many cases it is more feasible. A clustering logic may apply in many cases at some level.
- Some recommended sectors are already significant exporting industries, with very high RCA levels, confirming rather than adding to our analysis. We largely ignore these lines in what follows—the feasibility of what already exists hardly needs to be argued—although it is comforting that these lines often emerge.[40]
- In some methods, proximity varies across the list of industries, or across the list of countries that export those industries, and of course more proximate industries or countries should imply more relevant opportunities.
- As mentioned before, some industries emerge from several—in some cases all—the methods and time frames utilized. We believe that the number of methods (or countries, or paths) that lead to the same conclusion is a relevant indicator of trust on the viability of the industry in question. Nevertheless, in some isolated cases, we highlight industries

[40] How could these industries even emerge from the analysis? Consider for instance country C whose significant exports include two goods, A and B. Of course, a method that starts with the fact that A is exported does not lead to A being a recommended new industry. But perhaps the good B is a prominent export of another country D that is very close to C, and D also happens to export lots of A. Then, the method is starting with B and offering A as a—redundant—result.

that emerge from only one of the methods, if it does so in a way that appears revealing or interesting.

- The degree of complexity of the different industries recommended is of course very relevant, as some may help move up the ladder of sophistication, and some others to merely diversify exports on the same rung of the ladder. Even products that show lower complexity may be relevant in countries with significant quantities of human resources that cannot aspire to work in the most complex activities. These kinds of industries satisfy different national objectives, which are in turn differently important for each ADD nation.

We now proceed to study the results country by country. A number of ideas and definitions shall be posed in the first case (alphabetically, Costa Rica), so the analysis for the Dominican Republic and Panama will be presented far more smoothly once we get the language out of the way.

### 4.1. Costa Rica

Costa Rica already has a somewhat sophisticated and diversified, but patchy, industrial composition. As a starting point, notice that the majority of current exports—the main lines listed in Table F.1— are distributed among 16 groups or Harmonized System (HS) chapters; within those groups, they are often very concentrated within one or two industries.[41] Before studying the results from each method of identification more specifically, we look first at the top lines in Table 3, which have the characteristic that they keep coming up through a majority of methods in both time frames and in multiple ways.

By illustration, note industry 854211, Monolithic integrated circuits, digital, which tops the table.

This industry, on which Costa Rica already produces a little in 2019 (only 10% of the global average participation of that industry in total exports), comes up through all seven methods: it is proximate in the product space to several current top exports; it is an important current industry in several countries that have today or had 15 years ago similar factor endowments to Costa Rica's today; also in several countries that have or had some other key products in common with Costa Rica; finally, in several countries that have or had a similar overall export profile. The "several" in the previous sentence add up to 64; the proximate countries involved add up to 17. So, looking at this issue from so many different ways, this industry (and several others) keeps popping up. And,

[41] We use "chapter" here, in accordance with convention, to refer to sectors grouped at a two-digit HS level; "industry" is used to refer to the much narrower six-digit categories.

more notably, these methods do not know—they could not from 2019 data, when Intel was not operating its manufacturing plant in Costa Rica—that this industry is already important there.[42] In other words, and we find that this validates our methods very strongly, we asked them what industry should the country focus on for FDI and export promotion purposes, and the answer that came back repeatedly was an industry whose viability has been proven in practice, and eloquently, before and after the period of analysis, and for years was Costa Rica's most emblematic export.

**Table 3. Main Results for Costa Rica (ECI = 0.3591)**

| Industry code | Industry name | Methods | Countries | Paths | PCI-ECI | RCA |
|---|---|---|---|---|---|---|
| 854211 | Monolithic integrated circuits, digital | 7 | 17 | 64 | 0.8105 | 0.1068 |
| 847330 | Parts of data processing equipment | 7 | 12 | 36 | 0.7166 | 0.1538 |
| 610910 | T-shirts, of cotton, knit | 7 | 6 | 15 | −2.2690 | 0.0194 |
| 853620 | Automatic circuit breakers, <1kV | 7 | 1 | 7 | −0.1431 | 0.4686 |
| 300490 | Medicaments, doses, n.e.s. | 6 | 26 | 100 | 0.1194 | 0.4894 |
| 852520 | Transmit-receive apparatus for radio, TV | 6 | 21 | 49 | 0.2878 | 0.0165 |
| 854430 | Ignition sets for vehicles/aircraft/ship | 6 | 10 | 14 | −1.5001 | 0.1243 |
| 852810 | Color TV receivers/monitors/projectors | 6 | 7 | 16 | −0.4779 | 0.0511 |
| 880330 | Aircraft parts n.e.s. | 6 | 6 | 10 | 0.4129 | 0.0537 |
| 850440 | Static converters, n.e.s. | 6 | 4 | 5 | 0.6261 | 0.0958 |
| 847191 | Digital computer CPU, some storage/input/output | 6 | 3 | 13 | 1.0067 | 0.0176 |
| 870899 | Motor vehicle parts n.e.s. | 5 | 7 | 12 | 0.4401 | 0.3285 |
| 852990 | Parts for radio/TV transmit/receive equipment | 5 | 5 | 8 | 0.0156 | 0.0759 |
| 852390 | Unrecorded sound recording media | 5 | 3 | 6 | 1.1623 | 0.1316 |
| 401110 | Rubber tires, cars, new | 5 | 3 | 6 | 0.2069 | 3.4021 |
| 300439 | Hormones, not contraceptive, doses | 5 | 2 | 9 | 0.8592 | 0.1502 |
| 854140 | Photosensitive/PV/LED semiconductor device | 5 | 2 | 8 | 0.7109 | 0.049 |
| 851782 | Telegraphic apparatus, n.e.s. | 5 | 1 | 7 | −0.3012 | 0.0036 |
| 392690 | Plastic articles, n.e.s. | 5 | 1 | 1 | 0.2344 | 1.9143 |

[42] Intel's main output at its Costa Rica campus is concentrated on industries 854219 and 854211—that is, monolithic integrated sectors of both kinds.

| | | | | | | |
|---|---|---|---|---|---|---|
| 620342 | Men's trousers & shorts, cotton, not knit | 4 | 8 | 12 | −2.1048 | 0.0441 |
| 851790 | Parts of telephone line equipment | 4 | 5 | 7 | 0.7365 | 0.1031 |
| 841112 | Turbo-jet engine, >25 KN | 4 | 4 | 9 | 0.4322 | 0.0263 |
| 870829 | Parts of motor vehicle bodies | 4 | 4 | 6 | 0.6416 | 0.0115 |
| 382390 | Chemical products, n.e.s. | 4 | 4 | 4 | −0.6185 | 0.1571 |
| 520100 | Cotton, not carded/combed | 4 | 4 | 4 | −2.7954 | 0.0172 |
| 870840 | Transmissions for motor vehicles | 4 | 3 | 8 | 1.1853 | 0.0021 |
| 853710 | Electrical control & distribution boards, <1kV | 4 | 3 | 4 | 0.2343 | 0.197 |
| 640399 | Footwear, uppers of leather, n.e.s. | 4 | 3 | 4 | −1.2615 | 0.016 |
| 620462 | Women's trousers & shorts, cotton, not knit | 4 | 3 | 4 | −2.3084 | 0.0088 |
| 690790 | Unglazed ceramic tiles, >7cm wide | 4 | 3 | 3 | −0.9845 | 0.1309 |
| 611020 | Pullovers, cardigans, of cotton, knit | 4 | 3 | 3 | −2.2755 | 0.0035 |
| 300220 | Vaccines, human | 4 | 2 | 19 | 0.2638 | 0.0027 |
| 620520 | Men's shirts, cotton, not knit | 4 | 2 | 5 | −2.1342 | 0.0123 |
| 310420 | Potassium chloride, >10kg | 4 | 2 | 3 | −1.2663 | 0.0519 |
| 640391 | Boots, upper of leather, n.e.s. | 4 | 2 | 3 | −1.3437 | 0.0423 |
| 630260 | Toilet/kitchen linen, of terry | 4 | 2 | 3 | −1.8801 | 0.0925 |
| 901020 | Equipment for photographic laboratories n.e.s. | 4 | 1 | 12 | 1.4356 | 0.0223 |
| 521213 | Cotton fabric, <200g/m2, dye, n.e.s. | 4 | 1 | 1 | −1.5009 | 0 |
| 841191 | Turbo-jet, -propeller engine, parts | 3 | 5 | 7 | 0.5755 | 0.0005 |

| Industry code | Industry name | Methods | Countries | Paths | PCI-ECI | RCA |
|---|---|---|---|---|---|---|
| 310210 | Urea, >10kg | 3 | 4 | 4 | −1.2599 | 0.0581 |
| 950390 | Toys n.e.s. | 3 | 3 | 5 | −0.1422 | 0.0255 |
| 290511 | Methyl alcohol | 3 | 3 | 3 | −1.5774 | 0.0007 |
| 840734 | Engines, spark-ignition, >1000cc | 3 | 2 | 4 | 1.1248 | 0.0001 |
| 847193 | Computer data storage units | 3 | 2 | 4 | 0.5553 | 0.0155 |
| 330499 | Make-up, n.e.s. | 3 | 2 | 4 | −0.1892 | 0.1069 |
| 847199 | Automatic data processing machines | 3 | 2 | 3 | 0.7549 | 0.0276 |
| 940190 | Parts of seats | 3 | 2 | 2 | −0.5390 | 0.0422 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 283620 | Disodium carbonate | 3 | 2 | 2 | −0.9422 | 0 |
| 293379 | Lactams, n.e.s. | 3 | 1 | 11 | 1.5707 | 0.0004 |
| 330210 | Mixed odors, food & drink | 3 | 1 | 11 | −0.5681 | 2.6304 |
| 850230 | Electric generating sets, n.e.s. | 3 | 1 | 4 | 0.5618 | 0.0043 |
| 853400 | Electronic printed circuits | 3 | 1 | 4 | 0.0262 | 0.1235 |
| 300431 | Insulin, doses | 3 | 1 | 4 | 0.0199 | 0 |
| 280920 | Phosphoric acid | 3 | 1 | 2 | −0.8305 | 0.0166 |
| 611420 | Garments n.e.s., of cotton, knit | 3 | 1 | 2 | −2.1133 | 0.0754 |
| 611030 | Pullovers, cardigans, of manmade fibers, knit | 3 | 1 | 2 | −2.3283 | 0.0489 |
| 853224 | Electric capacitors, ceramic, multilayer | 3 | 1 | 1 | 1.0356 | 0.0099 |
| 854129 | Transistors, >1 watt | 3 | 1 | 1 | 0.9462 | 0.0107 |
| 300390 | Medicaments, formulated, n.e.s. | 3 | 1 | 1 | 0.2270 | 0.2462 |
| 610990 | T-shirts, of material n.e.s., knit | 3 | 1 | 1 | −2.2161 | 0.0611 |

Following this notion of giving priority to industries that result from looking at proximity to Costa Rica and its current exports through multiple methods and time frames, and following multiple countries and paths, we consider now the 35 industries at the top of Table 3—excluding those lines that already show a high RCA—and group them by chapter. We find that more than half of these are in 6 of the 16 chapters that concentrate current exports, as shown by Table 4. This is of course important, because of the phenomenon we called "clustering" before: if public and private capabilities share more similarities within each chapter than across chapters, authorities may be well advised to focus their efforts on those chapters with more new opportunities associated with them. And even if sharing a chapter with an existing industry does not imply higher feasibility, there may be other agglomeration advantages of producing similar goods—among other things, because it is always easier to convince a company to bring a new product to a location if it is already successfully producing something else there.

**Table 4. Count of New Opportunity Industries for Costa Rica**

| Type of Opportunity | Industries |
|---|---|
| New opportunities in current chapters | 19 |
| New opportunities in new chapters | 16 |
| Total of new opportunities | 35 |

Of those, most happen to be in Chapter 85, Electrical machinery and equipment, and a couple each for knit apparel, cotton, and pharmaceutical products (Table 5).

**Table 5. Number of Opportunities by Current Chapters for Costa Rica**

| Chapter Number | Chapter Name | Opportunities |
|---|---|---|
| 85 | Electrical machinery and equipment | 11 |
| 61 | Apparel, knit | 2 |
| 52 | Cotton | 2 |
| 30 | Pharmaceutical products | 2 |
| 90 | Optical, photographic | 1 |
| 89 | Ships | 1 |

What about the 16 industries that we labeled "new opportunities in new chapters"—that is, belonging to chapters that are currently not significantly exported from Costa Rica? Table 6 shows that these are far less concentrated, although apparel, parts of vehicles, and, most relevantly, Chapter 84, Boilers, machinery and appliances.

**Table 6. Number of Opportunities by New Chapters for Costa Rica**

| Chapter Number | Chapter Name | Opportunities |
|---|---|---|
| 62 | Apparel, not knit | 3 |
| 84 | Boilers, machinery and appliances | 3 |
| 87 | Vehicles | 3 |
| 64 | Footwear | 2 |
| 88 | Aircraft | 1 |
| 69 | Ceramic | 1 |
| 31 | Fertilizers | 1 |
| 38 | Misc. Chemicals | 1 |
| 63 | Other made up textile articles | 1 |

The chance to grow in new industries within Chapters 84 and 85 will keep coming up in the next few pages (a specific listing comes up later in this chapter). This type of product typically requires talent spread across several types, rather than concentrated in one particular skill, so the labor availability is less stringent than in other industries; the country also has nearly three decades of experience in coming up with creative ways to tackle the scarcity of skills in electronics, more than in other industries.

The following is a summary of the most salient opportunities identified so far in the analysis.

- As mentioned above, there may be significant opportunity in industries within Chapters 84 and 85. This includes the pursuit of other companies in the aforementioned Monolithic integrated circuits (854211 and 854219), although this is hardly something that needs reminding, given that this industry has been very important and emblematic for the country for decades, since Intel started making microchips there in the late 1990s. The company remained in the country doing R&D and support services, but stopped manufacturing operations between 2015 and 2022, including the year in which our data are based. We have observed a gradual and significant recovery of exports of monolithic integrated circuits after the pandemic. At some point in the past, the Costa Rican FDI attraction agencies gave priority to completing Intel's cluster—that is, competing companies, vertical integration backwards, suppliers and ancillary services—only to find out that the low transportation cost of microchips and microchip components imply that geographic proximity is not as critical as in other activities, and that vertical integration was unfeasible due to a very scarce supply of the essential kinds of labor. But this is perhaps not the only way to skin this cat, and rather than clustering around microchips, perhaps more attention should be given to looking elsewhere in these closely related groups, which contain different levels of complexity and the need for an assortment of labor qualifications that could be more easily available.
- Industries with intermediate levels of complexity, in some of which there is already a little bit of exports, and that are clearly feasible, requiring labor that is not of the scarcest types:
  - Automatic circuit breakers over 1kv (853620)
  - Transmit and receive apparatus for radio & TV (852520)
  - Parts for radio/TV transmit/receive equipment (852990)
  - Automatic data processing machines (847199)
  - Electrical control and distribution boards (850230)
  - Electronic printed circuits (853400)
- "Reaches," i.e. industries with higher complexity and demanding more qualified resources than the average in the country, but still, in our opinion, feasible and, more importantly, with some production and exports already taking place in Costa Rica:[43]
  - Parts of data processing equipment (847330)

[43] We are choosing to leave behind Spark ignition engines >1000cc, as well as Parts of motor vehicle bodies and Transmissions for motor vehicles, despite the fact that they also pop up prominently in Table E.1, as they seem a kind of heavy industry that is currently too far, especially given scale economies and the size of the country. However, general Aircraft parts (880330), Motor vehicle parts (870899) and Turbo-jet or propeller engine parts (841191) would seem to be of interest, and already are produced in small quantities in Costa Rica.

  - — Unrecorded sound recording media (852390)
  - — Static converters (850440)
  - — Digital computer CPU with some storage/input/output (847191)
  - — Photosensitive/PV/LED semiconductor devices (854140)
  - — Parts of telephone line equipment (851790)
  - — Computer data storage units (847193)
  - — Automatic data processing machines
  - — perhaps Electric capacitors, ceramic multilayer (853224), or Equipment for photographic laboratories (901020)
- Lower-tech industries, perhaps viable in areas of less development in the country, and which employ large amounts of unqualified labor:
  - — Color TV receivers and monitors (852810)
  - — Telegraphic apparatus (851782)
  - — certain automobile parts, including Ignition sets (854430)
- As mentioned on page 19, the Costa Rican FDI attraction policy is currently broadening its focus to include industries with these characteristics, aiming at redirecting manufacturing activity to regions of lower development.
  - — There are clearly opportunities in the pharmaceutical sector, prominently:
  - — Medicaments and doses (300490)
  - — Non-contraceptive hormones (300439)
  - — **Vaccines** (300220)
  - — perhaps Insulin doses (300431) or Not specified formulated medicaments (300390).

As mentioned before, although these activities by PCI alone would look like complexity enhancing, Costa Rica already has several domestic companies that manufacture and export pharmaceutical products, largely generics but also a few originals, so this could be a lateral movement. At first light, FDI to produce medicines does not seem that attractive. It is an activity with enormous capital-labor ratios and profit rates, so it is easy to reach high numbers of gross exports and GDP contributions, but—as capital and equity are foreign by definition in this case—small additions to employment or national income. But this is not the best way to look at this industry. First, because some of its lines (formulated medicaments, for instance) do have a larger domestic value added, while others (medical devices with pharmacological contents) have been explored in the past combine with the already well-established industry of medical equipment, the main export in the country. Second, because connected to this industry are other processes (logistics, packaging, etc.) that do create many jobs, and others (notably, R&D) that are

high tech but something Costa Rica has happened to do well in the past.[44] Pharma MNCs also have significant demand for shared services, of the kind that are also quite successful in the country already.

- A number of apparel industries show up very prominently in Table 3, including:
  - T-shirts, knit, cotton (610910)
  - Men's trousers, cotton, not knit (620342)
  - Women's trousers (620462)
  - Pullovers and cardigans of cotton (611020)
  - Men's shirts, cotton, not knit (620520)
  - Linen, of terry (630260)

As mentioned before, Costa Rica was, a few decades ago and before the rest of the immediate region, a significant exporter for many of these activities, which got crowded out from the highly productive portions of the geography and labor force by advanced manufacturing. Perhaps much more effort should have been applied in the past to shifting these factories elsewhere in the country rather than losing them altogether. These are the lowest-hanging fruits to create formal jobs for unqualified labor and manufacturing for regions outside the Central Valley. It is a double challenge. Mentally, because once the country produces pacemakers and CPUs, it is difficult to get excited over t-shirts; practically, because—under the current levels of real exchange rate, minimum wages and other regulatory restrictions (calibrated for, or at least influenced by, advanced manufacturing and sophisticated services)—competing in the ultimate industry for low-income countries will not be easy. However, time and again, apparel came up as a type of good that has high proximity to Costa Rica; that fact, combined with some policy, should prevail in the end.

Connected to apparel, Table 3 also contains one line of textile materials, **Cotton, not carded or combed** (520100), and several lines of footwear with uppers of leather, which may be relevant.

- Some chemical processes, on the low end of the complexity scale and materially feasible in Costa Rica, also come up as low-hanging fruits, including:
  - Potassium chloride (310420)
  - **Urea** (310210)
  - Methyl alcohol (290511)

[44] For several years, research in pharma, including testing, was performed successfully in Costa Rica, and there is an interesting talent pool for that purpose. At some point, last decade, regulations were introduced that drove out those activities. This policy, obviously detrimental, could be fixed.

— Disodium carbonate (283620)
— Not specified make-up (330499)
— Not specified chemical products (382390)

We now look for what else we can learn as we explore the Costa Rican results method by method.

Table A.1 displays the most proximate industries to Costa Rica's main manufacturing exports according to our estimation of the product space based on the AEC methods, at a six-digit level. Of course, some of the activities that come up are just processing agricultural products, and many would be repetitions from the previous analysis. We notice, however, the high proximity of several lines not mentioned already, which all happen to be in Chapter 85 (as many of the results before), and we consider worth mentioning:

- Parts of semiconductor devices (854190)
- Parts of integrated circuits (854290)
- Semiconductor devices, not light sensitive (854150)
- Lenses for camera or projector (900211)
- Parts and accessories for recorders (852290)

Table 7 ranks the key industries by their complexity PCI, as compared to the country's ECI. Notably, again, many of the most complex industries in the table are concentrated around Chapter 85.

While of course there is significant overlap between the results across all four methods, one interesting observation is that, with very few exceptions, this method proposes a far less complex list of products— more than half under Costa Rica's ECI. This makes sense when we look at the countries coming up from this method in Table B.7. Costa Rica's peers in this case do not include a single developed country. China and Mexico are on the list—relevant, since nearshoring could be trivialized as being about competing with the latter for firms that leave the former—as well as a few high-growth countries, like Vietnam and Botswana, and several "middle of the pack" places in Latin America. This list reminds us that perhaps one should take with caution the temptation of seeking mostly for industries that represent further jumps in PCI, as perhaps that potential has been largely exploited, and hence the scarcity of the key talent at a moment of low employment for the country as a whole. Interestingly, the Dominican Republic is on Costa Rica's list (and, of course, vice versa).

The products suggested by methods 3 and 4 are somewhat more sophisticated, as the corresponding lists of countries (Tables C.7 and D.7) are far more developed. Costa Rica has the resources of a middle- income country and a patchy version of the industrial composition of a high-income country. Second, perhaps it is noteworthy that there are

six opportunities (three of which are in Chapter 85) that were identified using both time frames, but there were more paths leading to them in the concurrent analysis.

**Table 7. Top 20 Potential Export Industries for Costa Rica with Highest Complexity Index (Method 1)**

| Chapter no. | Chapter name | HS code | HS name | PCI-ECI |
|---|---|---|---|---|
| 85 | Electrical machinery and equipment | 854121 | Transistors, <1 watt | 1,2568 |
| 85 | Electrical machinery and equipment | 854290 | Parts of electronic integrated circuits | 1,1585 |
| 85 | Electrical machinery and equipment | 853224 | Electric capacitors, ceramic, multilayer | 1,0356 |
| 85 | Electrical machinery and equipment | 854129 | Transistors, >1 watt | 0,9462 |
| 85 | Electrical machinery and equipment | 853222 | Electric capacitors, aluminium electrolytic | 0,9343 |
| 85 | Electrical machinery and equipment | 854150 | Semiconductor devices, not light sensitive | 0,9015 |
| 84 | Boilers, machinery and appliances | 841950 | Heat exchange units, non-domestic | 0,8455 |
| 85 | Electrical machinery and equipment | 853390 | Parts of electrical resistors, rheostats | 0,7977 |
| 90 | Optical, photographic | 903190 | Parts/access for measuring equipment | 0,7927 |
| 85 | Electrical machinery and equipment | 854190 | Parts of semiconductor devices | 0,7868 |
| 90 | Optical, photographic | 902990 | Parts/accessories of revolution counters | 0,7389 |
| 84 | Boilers, machinery and appliances | 847330 | Parts of data processing equipment | 0,7166 |
| 85 | Electrical machinery and equipment | 854140 | Photosensitive/PV/LED semiconductor device | 0,7109 |
| 85 | Electrical machinery and equipment | 853321 | Electrical resistors fixed, <20W | 0,6351 |
| 85 | Electrical machinery and equipment | 850440 | Static converters, n.e.s. | 0,6261 |
| 85 | Electrical machinery and equipment | 853890 | Parts of elect switches, protectors | 0,6195 |

| | | | | |
|---|---|---|---|---|
| 84 | Boilers, machinery and appliances | 843139 | Parts of lifting/handling machinery n.e.s. | 0,6192 |
| 85 | Electrical machinery and equipment | 853610 | Electrical fuses, <1kV | 0,6098 |
| 90 | Optical, photographic | 900211 | Lenses for camera or projector | 0,5803 |
| 85 | Electrical machinery and equipment | 851220 | Lighting/visual signalling equipment | 0,5778 |

### 4.2 Dominican Republic

The Dominican Republic's industrial composition is in a way less sophisticated, but also far less patchy. Perhaps the best illustration of this last point is the fact that there are 14 lines in Table F.2 with RCA levels significantly above 1, or, in other words, that many more industries proximate to what they have are also there already. In that sense, there is less that is new, and more that is just a confirmation of our methods, in each table. The largest current exports are concentrated in Chapter 90, Medical devices (see Table F.2. Also very prominent are several chapters that are lower in the complexity scale and relate to apparel: Chapter 62, Apparel, no knit; Chapter 63, Other made up textiles; and Chapter 64, Footwear. Chapter 71, Precious metals is also among the top exports.

Dominican current top exports are distributed among 15 chapters, and eight of those industries present new opportunities as well. We identified a total of 30 new opportunities, 18 of which are associated with current chapters, and 12 with new ones (see Table 9).

Following the same clustering logic, we look first at the new opportunities in existing chapters,[45] which are very concentrated (see Table 10), as before, in Chapter 85. The Dominican Republic and Costa Rica probably are mostly competitors—but also in some ways could complement or supply each other—in these industries.

The distribution of new opportunities not associated with current chapters is presented in Table 11. This distribution is concentrated in chapters that can be associated with advanced manufacturing skills: 8 out of 12 new opportunities are distributed among Chapter 84, Boilers, machinery and appliances; Chapter 87, Vehicles; and Chapter 69, Aircraft. Considering that opportunities associated with current chapters, presented in Table 10, are clustered around Chapter 85, Electric machinery, the concentration of new opportunities in chapters that include high PCI activities is quite remarkable. This initial

[45] We again first delete those industries where the RCA is already very high.

analysis confirms the intuition that the Dominican Republic has done a better job than others in maintaining the job-intensive industrial base, and therefore can focus its energy in moving up the scale. This is illustrated in Table 12, were we group the most promising industries by chapter and show in which of those we are looking at steps toward higher complexity.[46] A majority of these lines are indeed activities that require more sophisticated labor and processes than the current industries, and yet that our analyses suggest are well feasible.

To summarize the most important opportunities identified at this point:

- Arguably the biggest opportunities are, again, in equipment and machinery, largely—but not solely—concentrated in Chapters 84 and 85. For instance, two activities that are not complex and emerge across all methods and many paths are:
  - Ignition sets for vehicles
  - Electric conductors under 80V, with connectors (854441)
- Higher in sophistication, but still seemingly in the feasible range:
  - Color TV receivers/monitors/projectors (852810)
  - Transmit and receive apparatus for radio & TV (852520)
  - Motor vehicle parts (870899)
  - Aircraft parts (880330)
  - Parts of motor vehicle bodies (870829)
  - Automatic data processing machines (847199)
  - Electrical control and distribution boards under 1kV (853710)
  - Parts for radio/TV transmit/receive equipment (852990)
- Other similar industries are also presented as opportunities but should represent quite a reach in terms of complexity:
  - Monolithic integrated circuits, digital (854211)
  - Parts of data processing equipment (847330)
  - Digital computer CPU w. storage/input/output (847191)
  - Turbojet or propeller engine parts (841191)
  - Transmissions for motor vehicles (870840)
  - Unrecorded sound recording media (852390)
  - Photosensitive/PV/LED semiconductor devices (854140)
- While the Dominican apparel sector is large and varied, some lines within it are among our lowest-hanging fruits and are still underrepresented (RCA <1), including:
  - Men's and women's trousers, cotton (620342, 620462 and 61063)
  - Men's shirts, cotton, knit or not (610510 and 620520)

[46] The equivalent to this table is not shown in the case of Costa Rica as it seemed to add little to the analysis.

- Linen for toilet or kitchen, terry (630260)
- Women's briefs and panties, cotton (610821)

- As mentioned before, Cotton, not carded/combed (520100) and perhaps other cloth or apparel materials are particularly relevant for the Dominican Republic, not only to supply their own but also other apparel plants in the immediate region.
- The pharmaceutical sector, proportionally smaller in the Dominican Republic than in Costa Rica, also emerges strongly from our summary analysis, including prominently:
  - Medicaments doses (300490)
  - Non contraceptive hormones (300439)
  - Formulated medicaments (300390)
- Several miscellaneous industries (in that they belong to very different chapters) also are important results at this point in the analysis, including some chemical products of low complexity:
  - Phosphoric acid (280920)
  - Urea (310210)
  - Disodium carbonate (283620)
  - Potassium chloride (310420)
- Among other relevant lines of mid-complexity, large-scale manufactures in Table 8, we find of interest:
  - Rubber tires for cars (411110)
  - Unglazed ceramic tiles (690790)
  - Glass containers (701090)

As in the case of Costa Rica, we now look for other lessons for the Dominican Republic in the application of the individual methods. As before, we start with the list of products of highest proximity in the AEC

to the current exports (Table A.2). In this case, we do not learn much, as among the top 20 results, 19 are either in apparel or footwear. The only exception is in tobacco. All of these industries are complexity reducing. This suggest that the Dominican Republic has no easy choices, at least in the Hausmann proximity sense. The other, non-apparel activities mentioned above are feasible, according to various criteria, but represent longer leaps over product space. If the country aspires to increased complexity, it

will face harder challenges than Costa Rica, where half of the closest opportunities identified through the Hausmann method are complexity enhancing.

Ranking now among the results of Table A.2 by degree of complexity (going further down the list in terms of proximity), we obtain Table 13, partially confirming the same findings, but putting up at least five more products that would be going up the ladder:

- Keys and lock parts, metal (830160 and 830170)
- Metal fittings for buildings (830241)
- Electrical circuit protectors (853630)
- Antibiotics doses (300420)

**Table 8. Main Results for the Dominican Republic (ECI = −0.2429)**

| Industry Code | Industry Name | Methods | Countries | Paths | PCI-ECI | RCA |
|---|---|---|---|---|---|---|
| 620342 | Men's trousers & shorts, cotton, not knit | 7 | 11 | 28 | −1.7457 | 0.5632 |
| 854430 | Ignition sets for vehicles/aircraft/ship | 7 | 10 | 21 | −1.1410 | 0.0684 |
| 300490 | Medicaments, doses, n.e.s. | 6 | 28 | 69 | 0.4785 | 0.1696 |
| 852520 | Transmit-receive apparatus for radio, TV | 6 | 17 | 39 | 0.6469 | 0.0679 |
| 854211 | Monolithic integrated circuits, digital | 6 | 12 | 31 | 1.1696 | 0.002 |
| 847330 | Parts of data processing equipment | 6 | 9 | 20 | 1.0757 | 0.0044 |
| 620462 | Women's trousers & shorts, cotton, not knit | 6 | 7 | 17 | −1.9493 | 0.2244 |
| 870899 | Motor vehicle parts n.e.s. | 6 | 7 | 11 | 0.7992 | 0.2074 |
| 520100 | Cotton, not carded/combed | 6 | 7 | 9 | −2.4363 | 0 |
| 852810 | Color TV receivers/monitors/projectors | 6 | 6 | 20 | −0.1188 | 0.0169 |
| 880330 | Aircraft parts n.e.s. | 6 | 5 | 8 | 0.7720 | 0.0012 |
| 610510 | Men's shirts, cotton, knit | 6 | 3 | 7 | −1.8315 | 0.2618 |
| 611020 | Pullovers, cardigans, of cotton, knit | 5 | 8 | 21 | −1.9164 | 3.6443 |
| 611030 | Pullovers, cardigans, of manmade fibers, knit | 5 | 7 | 20 | −1.9692 | 1.8708 |
| 610990 | T-shirts, of material n.e.s., knit | 5 | 7 | 17 | −1.8570 | 3.2058 |
| 401110 | Rubber tires, cars, new | 5 | 7 | 8 | 0.5660 | 0.0102 |
| 620520 | Men's shirts, cotton, not knit | 5 | 5 | 10 | −1.7751 | 0.9954 |
| 870829 | Parts of motor vehicle bodies | 5 | 5 | 9 | 1.0007 | 0.0446 |
| 847191 | Digital computer CPU, some storage/input/output | 5 | 3 | 14 | 1.3658 | 0.0009 |
| 280920 | Phosphoric acid | 5 | 2 | 3 | −0.4714 | 0.0153 |
| 901839 | Medical needles, catheters | 5 | 1 | 10 | 0.1805 | 5.1652 |
| 901890 | Instruments for medical science, n.e.s. | 5 | 1 | 9 | 0.2490 | 19.2792 |
| 902130 | Artificial body parts, aids | 5 | 1 | 8 | 0.3247 | 0.1188 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 841191 | Turbo-jet, -propeller engine, parts | 4 | 5 | 9 | 0.9346 | 0.0008 |
| 310210 | Urea, >10kg | 4 | 4 | 4 | −0.9008 | 0.1757 |
| 870840 | Transmissions for motor vehicles | 4 | 3 | 6 | 1.5444 | 0.0024 |
| 640399 | Footwear, uppers of leather, n.e.s. | 4 | 3 | 6 | −0.9024 | 2.2519 |
| 852390 | Unrecorded sound recording media | 4 | 3 | 4 | 1.5214 | 0.0097 |
| 630260 | Toilet/kitchen linen, of terry | 4 | 2 | 5 | −1.5210 | 0.0238 |
| 300439 | Hormones, not contraceptive, doses | 4 | 2 | 4 | 1.2183 | 0.0248 |
| 847199 | Automatic data processing machines | 4 | 2 | 4 | 1.1140 | 0.2385 |
| 854140 | Photosensitive/PV/LED semiconductor device | 4 | 2 | 4 | 1.0700 | 0.2307 |
| 853710 | Electrical control & distribution boards, <1kV | 4 | 2 | 4 | 0.5934 | 0.0698 |
| 610821 | Women's briefs or panties, cotton, knit | 4 | 2 | 4 | −1.4185 | 0.0327 |
| 283620 | Disodium carbonate | 4 | 2 | 2 | −0.5831 | 0.0044 |
| 690790 | Unglazed ceramic tiles, >7cm wide | 4 | 2 | 2 | −0.6254 | 0.0333 |
| 851782 | Telegraphic apparatus, n.e.s. | 4 | 1 | 9 | 0.0579 | 0 |
| 610910 | T-shirts, of cotton, knit | 3 | 7 | 20 | −1.9099 | 17.7484 |
| 950390 | Toys n.e.s. | 3 | 3 | 6 | 0.2169 | 0.1046 |

| Industry Code | Industry Name | Methods | Countries | Paths | PCI-ECI | RCA |
|---|---|---|---|---|---|---|
| 852990 | Parts for radio/TV transmit/receive equipment | 3 | 3 | 3 | 0.3747 | 0.0162 |
| 701090 | Glass containers for packing goods | 3 | 3 | 3 | −0.4710 | 0.0121 |
| 330499 | Make-up, n.e.s. | 3 | 2 | 7 | 0.1699 | 0.0539 |
| 610462 | Women's trousers & shorts, of cotton, knit | 3 | 2 | 7 | −2.0954 | 0.0365 |
| 851790 | Parts of telephone line equipment | 3 | 2 | 5 | 1.0956 | 0.0197 |
| 940190 | Parts of seats | 3 | 2 | 3 | −0.1799 | 0.0041 |
| 310420 | Potassium chloride, >10kg | 3 | 2 | 3 | −0.9072 | 0.1061 |
| 901020 | Equipment for photographic laboratories n.e.s. | 3 | 1 | 7 | 1.7947 | 0.0003 |
| 610463 | Women's trousers & shorts, synthetic fibers, knit | 3 | 1 | 7 | −1.9116 | 1.0519 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 902190 | Orthopaedic appliances, n.e.s. | 3 | 1 | 6 | 0.6875 | 1.2415 |
| 610520 | Men's shirts, manmade fibers, knit | 3 | 1 | 6 | −2.2362 | 0.3535 |
| 854441 | Electric conductors <80V, with connectors | 3 | 1 | 5 | −0.2322 | 1.5881 |
| 640391 | Boots, upper of leather, n.e.s. | 3 | 1 | 5 | −0.9846 | 10.5421 |
| 640610 | Footwear uppers | 3 | 1 | 5 | −1.3223 | 10.7509 |
| 901819 | Electro-diagnostic apparatus | 3 | 1 | 4 | 0.8239 | 7.1941 |
| 620343 | Men's trousers & shorts, synthetic fiber, not knit | 3 | 1 | 4 | −1.6887 | 3.972 |
| 853890 | Parts of elect switches, protectors | 3 | 1 | 3 | 0.9786 | 0.77 |
| 640340 | Footwear, uppers of leather, metal toe-cap | 3 | 1 | 3 | −1.1083 | 11.9861 |
| 848180 | Taps, cocks, valves, appliances, n.e.s. | 3 | 1 | 2 | 1.3230 | 0.0653 |
| 390410 | Polyvinyl chloride | 3 | 1 | 2 | 0.7215 | 0.0043 |
| 300390 | Medicaments, formulated, n.e.s. | 3 | 1 | 2 | 0.5861 | 0.0278 |
| 401290 | Tires, interchangeable treads | 3 | 1 | 2 | 0.3285 | 0.0351 |
| 850211 | Generating sets, diesel, <75kVA | 3 | 1 | 2 | −0.7370 | 0.9827 |
| 611610 | Gloves impregnated with plastic/rubber, knit | 3 | 1 | 2 | −1.2721 | 0.132 |
| 621210 | Brassieres | 3 | 1 | 2 | −1.5063 | 8.1762 |
| 611490 | Garments n.e.s., of materials n.e.s., knit | 3 | 1 | 2 | −1.6279 | 0.0807 |
| 610822 | Women's briefs or panties, manmade fiber, knit | 3 | 1 | 2 | −1.6976 | 4.875 |
| 611420 | Garments n.e.s., of cotton, knit | 3 | 1 | 2 | −1.7542 | 0.1209 |
| 690220 | Refractory bricks, >50% alumina, silica | 3 | 1 | 1 | 0.1513 | 0.002 |
| 280700 | Sulfuric acid, oleum | 3 | 1 | 1 | 0.0804 | 0.0033 |

**Table 9. Count of New Opportunity Industries for Dominican Republic**

| Type of Opportunity | Industries |
|---|---|
| New opportunities in current chapters | 18 |
| New opportunities in new chapters | 12 |
| Total of new opportunities | 30 |

**Table 10. Number of Opportunities by Current Chapters for Dominican Republic**

| Chapter number | Chapter name | Opportunities |
|---|---|---|
| 85 | Electrical machinery and equipment | 8 |
| 62 | Apparel, not knit | 3 |
| 61 | Apparel, knit | 2 |
| 52 | Cotton | 1 |
| 31 | Fertilizers | 1 |
| 90 | Optical, photographic | 1 |
| 63 | Other made up textile articles | 1 |
| 30 | Pharmaceutical products | 1 |

**Table 11. Number of Opportunities by Not Current Chapters for Dominican Republic**

| Chapter Number | Chapter Name | Opportunities |
|---|---|---|
| 84 | Boilers, machinery and appliances | 4 |
| 87 | Vehicles | 3 |
| 28 | Inorganic chemicals | 2 |
| 88 | Aircraft | 1 |
| 69 | Ceramic | 1 |
| 40 | Rubber | 1 |

**Table 12. PCI-ECI for New Opportunities in Dominican Republic**

| Chapter Number | Chapter Name | HS Code | PCI-ECI |
|---|---|---|---|
| 28 | Inorganic chemicals | 280920 | −0.2285 |
| 28 | Inorganic chemicals | 283620 | −0.3402 |
| 30 | Pharmaceutical products | 300439 | 1.4612 |
| 31 | Fertilizers | 310210 | −0.6579 |
| 40 | Rubber | 401110 | 0.8089 |
| 52 | Cotton | 520100 | −2.1934 |
| 61 | Apparel, knit | 610510 | −1.5886 |
| 61 | Apparel, knit | 610821 | −1.1756 |
| 62 | Apparel, not knit | 620342 | −1.5028 |
| 62 | Apparel, not knit | 620462 | −1.7064 |
| 62 | Apparel, not knit | 620520 | −1.5322 |

| | | | |
|---|---|---|---|
| 63 | Other made up textile articles | 630260 | –1.2781 |
| 69 | Ceramic | 690790 | –0.3825 |
| 84 | Boilers, machinery and appliances | 847330 | 1.3186 |
| 84 | Boilers, machinery and appliances | 847191 | 1.6087 |
| 84 | Boilers, machinery and appliances | 841191 | 1.1775 |
| 84 | Boilers, machinery and appliances | 847199 | 1.3569 |
| 85 | Electrical machinery and equipment | 854430 | –0.8981 |
| 85 | Electrical machinery and equipment | 852520 | 0.8898 |
| 85 | Electrical machinery and equipment | 854211 | 1.4125 |
| 85 | Electrical machinery and equipment | 852810 | 0.1241 |
| 85 | Electrical machinery and equipment | 852390 | 1.7643 |
| 85 | Electrical machinery and equipment | 854140 | 1.3129 |
| 85 | Electrical machinery and equipment | 853710 | 0.8363 |
| 85 | Electrical machinery and equipment | 851782 | 0.3008 |
| 87 | Vehicles | 870899 | 1.0421 |
| 87 | Vehicles | 870829 | 1.2436 |
| 87 | Vehicles | 870840 | 1.7873 |
| 88 | Aircraft | 880330 | 1.0149 |
| 90 | Optical, photographic | 902130 | 0.5676 |

### 4.3 Panama

Panama's economy, as mentioned before, is far richer than its two traveling companions, and overall somewhat sophisticated; yet in terms of manufacturing, it is barely getting going. Prominent among its exports in the database (see Table F.3) are medicaments (340490), but in the complex and multistage process of putting pharmaceutical products in the market, Panama's contribution is fairly concentrated in only a few steps. It is possible that, as the database has gross exports, the heavy concentration in this line is biasing the results.

The top current exports—small as they are—are concentrated within 12 HS chapters. Consider now the top results from our methods, shown in Table 14. While the top 29 new opportunities identified are distributed among 7 current and 7 new chapters. With a similar logic to the previous two cases, the distribution of new opportunities across current and new chapters is presented in Table 15. Nineteen new opportunities are associated with current chapters, and the remaining 10 are associated with new chapters.

The number of opportunities associated with each current chapter is presented in Table 16, where readers will recognize a familiar pattern: the largest number of new opportunities is associated with Chapters 84 and 85. This is similar to what we observed for Costa Rica and the Dominican Republic. One should also highlight the relevance of apparel and footwear.

**Table 13. Top 20 Potential Export Industries for Dominican Republic with Highest Complexity Index (Method 1)**

| Chapter No. | Chapter Name | HS Code | HS Name | PCI-ECI |
|---|---|---|---|---|
| 83 | Miscellaneous articles of base metal | 830170 | Keys, metal | 1.3474 |
| 83 | Miscellaneous articles of base metal | 830160 | Lock parts, metal | 1.0225 |
| 83 | Miscellaneous articles of base metal | 830241 | Fittings for buildings, metal | 0.6992 |
| 85 | Electrical machinery and equipment | 853630 | Electrical circuit protectors, <1kV | 0.5000 |
| 30 | Pharmaceutical products | 300420 | Antibiotics, doses, n.e.s. | 0.2174 |
| 64 | Footwear | 640399 | Footwear, uppers of leather, n.e.s. | −0.6595 |
| 64 | Footwear | 640510 | Footwear, n.e.s., uppers leather | −0.7168 |
| 64 | Footwear | 640391 | Boots, upper of leather, n.e.s. | −0.7417 |
| 64 | Footwear | 640590 | Footwear, n.e.s. | −0.8011 |
| 62 | Apparel, not knit | 620211 | Women's overcoats, wool/hair, not knit | −0.8277 |
| 61 | Apparel, knit | 610811 | Women's slips or petticoats, manmade fiber, knit | −0.9633 |
| 62 | Apparel, not knit | 621290 | Corsets | −1.0325 |
| 64 | Footwear | 640610 | Footwear uppers | −1.0794 |
| 62 | Apparel, not knit | 620469 | Women's trousers & shorts, material n.e.s., not knit | −1.2073 |
| 61 | Apparel, knit | 610459 | Women's skirts, material n.e.s., knit | −1.2561 |
| 61 | Apparel, knit | 610120 | Men's overcoats, cotton, knit | −1.2896 |
| 62 | Apparel, not knit | 621220 | Girdles | −1.3058 |
| 61 | Apparel, knit | 610469 | Women's trousers & shorts, material | −1.3757 |

| | | | | |
|---|---|---|---|---|
| | | | n.e.s., knit | |
| 61 | Apparel, knit | 610130 | Men's overcoats, manmade fibers, knit | −1.4185 |

The story is a bit different with regard to opportunities associated with new chapters. Concentration is less marked: optical and photographic is associated with three new opportunities, fertilizers with two, and the remaining sectors with only one opportunity each, as can be seen in Table 17.

Finally, we turn our attention to the economic complexity contribution of Panama's top new opportunities, shown in Table 18. Here again a familiar pattern emerges: new opportunities associated with Chapters 84, 85, 87, and 90 tend to be complexity enhancing, while those associated with Chapters 29, 31, 52, and 61 tend to be complexity reducing. What this means for Panama is not trivial. Can Panama, as its resources, income, and sophistication would suggest, leapfrog these less sophisticated industries and aim straight for the many lines that represent moves forward? Or does it need to/want to/can develop its exporting manufacturing from the ground up, starting from the least complex activities and gradually moving toward more advanced manufacturing?

The list of low-hanging fruits for Panama, according to the results in Table 14, are as follows:

- Some activities that are already present in Panama's export list but have the characteristic that the depth of the participation in the whole value chain for those products is still shallow,[47] so we choose not to omit them as "redundant confirmations" but rather list them as targets to go deeper. These include pharmaceutical and miscellaneous products.
  - Medicaments (300490)
  - **Insulin** (300431)
  - Vaccines (300220)
  - Non-contraceptive hormones (300439)
  - Various items of **Footware** (640399, 640411 and 640610)
  - Rubber tires for cars (401110)
- Some products have such high complexity (say, above 1) that for a country with ECI = −0.14 and a small existing base of export manufacturing may be huge stretches, yet our methods indicate they could be feasible. Not surprisingly, the list starts with machinery and its parts, especially but not restricted to Chapters 84 and 85:
  - Monolithic integrated circuits (854211 and 854219)

[47] This is not revealed by our methods but is gathered from conversations with practitioners in the field.

  - — Parts of data processing equipment (847330)
  - — Equipment for photographic laboratories (901020)
  - — Automatic data processing machines (847199)
  - — Photosensitive/PV/LED semiconductor devices (854140)
  - — Parts of telephone line equipment (851790)
  - — Parts for radio/TV transmit/receive equipment (852990)
  - — Digital computer CPU with storage/input/output (847191)
  - — Computer data storage units (847193)
  - — Automatic circuit breakers (853620)
  - — Unrecorded sound recording media (852390)
  - — Parts of electronic integrated circuits (854290)
- A more accessible list, but still a step up for Panama, are an assortment of other products of intermediate complexity (say, ECI [0,1]) that look promising, although they overlap with the lists of their neighbors:
  - — Transmit/receive apparatus for radio/TV and their parts (852520, 852810 and 852990)
  - — Unspecified motor vehicle parts (870899)
  - — Aircraft parts (880330)
  - — **Toys** (950390)
  - — **Make-up** (330499)
  - — Parts for turbo-jet and propeller engines (851790)
  - — Instruments for medical science (901890)
  - — Medical needles and catheters (901839)
  - — Electronic diagnostic apparatus (901819)
  - — Parts of printing machinery (844390).
- Several chemical products, perhaps especially viable given the logistical strengths of Panama:
  - — Methyl alcohol (290511)
  - — Potassium chloride (310420)
  - — **Urea** (310210)
  - — **Lactams** (293379)
  - — Phosphoric acid (280920)
- A variety of industries not related to apparel, that seem to be easy stretches in terms of sophistication:
  - — Ignition sets (854430)
  - — Electric conductors (854449)
- The Panamanian authorities in charge of FDI need to make a decision about whether to pursue apparel, which creates loads of employment and

acts as an entry-level activity toward manufacturing, yet may not be feasible or desirable in a country that, after all, has the highest GDP per capita in Latin America. A few clothing and textile lines appear in Table 14.

What about the individual methods? As before, we show the list for method 1 ranked by proximity, and the results are sobering, as shown in Table A.3. Every single line in the top 20 is a step backwards in terms of complexity. The concentration in Chapters 61 and 62 is even stronger than in the case of the Dominican Republic: 18 out of 20 top results by proximity are in those chapters. In other words, while there is a discussion, just mentioned, about the feasibility and desirability of focusing on apparel, in terms of what is close in product space to what they are already doing, that is where the most feasible chances are.

If, on the other hand, we organize the results from method 1 by complexity distribution (as shown in Table 19), we can see that only one of the closest opportunities, halogenated derivatives of adrenal cortical hormones, makes it to the list. Moreover, and unlike the previous cases, the complexity-enhancing opportunities do not show particularly strong concentration in any one chapter, which may be an advantage. If, as we suggested before, countries might have an easier time pursuing opportunities within a single chapter than across several chapters—and particularly so if the chapter in question is already well established in the country. The results of method 1 suggest that Panama might have a particularly hard time upgrading its participation in GVCs or, equivalently, increasing its ECI. At least, this warrants the inclusion of several lines in the table on our list of industries to look into the following:

- Electric capacitors, ceramic, multilayer (853324)
- Sulfonamides (293500)
- Halogenated derivatives of adrenal cortical hormones (293722)
- Antibiotics (300410)
- Penicillins (300420)

The proximate countries for Panama in methods 2 and 4 are mostly developed nations, which explains what we find with them, as can be seen in Tables B.1–D.12.

What else do we learn? First, there is a high degree of overlap between the lagged and concurrent analyses (which results because the lists of proximate countries change far less between the two time frames). Also, the concurrent results in all three methods are biased toward complexity enhancement.

**Table 14. Main Results for Panama (ECI = −0.1420)**

| Industry Code | Industry Name | Methods | Countries | Paths | PCI-ECI | RCA |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| 852520 | Transmit-receive apparatus for radio, TV | 7 | 18 | 48 | 0.7889 | 0.4207 |
| 854211 | Monolithic integrated circuits, digital | 7 | 16 | 52 | 1.3116 | 0.004 |
| 847330 | Parts of data processing equipment | 7 | 12 | 37 | 1.2177 | 0.1444 |
| 870899 | Motor vehicle parts n.e.s. | 7 | 8 | 17 | 0.9412 | 0.3224 |
| 870829 | Parts of motor vehicle bodies | 7 | 6 | 11 | 1.1427 | 0.0152 |
| 300490 | Medicaments, doses, n.e.s. | 6 | 15 | 54 | 0.6205 | 1.9417 |
| 880330 | Aircraft parts n.e.s. | 6 | 6 | 9 | 0.9140 | 0.0115 |
| 950390 | Toys n.e.s. | 6 | 4 | 11 | 0.3589 | 0.3715 |
| 401110 | Rubber tires, cars, new | 6 | 3 | 8 | 0.7080 | 2.4954 |
| 290511 | Methyl alcohol | 5 | 8 | 9 | −1.0763 | 0 |
| 852810 | Color TV receivers/monitors/projectors | 5 | 6 | 13 | 0.0232 | 0.7017 |
| 520100 | Cotton, not carded/combed | 5 | 6 | 8 | −2.2943 | 0 |
| 640399 | Footwear, uppers of leather, n.e.s. | 5 | 5 | 9 | −0.7604 | 0.6555 |
| 330499 | Make-up, n.e.s. | 5 | 4 | 7 | 0.3119 | 0.6567 |
| 610910 | T-shirts, of cotton, knit | 5 | 4 | 7 | −1.7679 | 0.4313 |
| 310420 | Potassium chloride, >10kg | 5 | 4 | 6 | −0.7652 | 0.0022 |
| 847193 | Computer data storage units | 5 | 3 | 8 | 1.0564 | 0.6094 |
| 901020 | Equipment for photographic laboratories n.e.s. | 5 | 2 | 6 | 1.9367 | 0.0001 |
| 847199 | Automatic data processing machines | 5 | 2 | 5 | 1.2560 | 0.3658 |
| 640391 | Boots, upper of leather, n.e.s. | 5 | 2 | 4 | −0.8426 | 0.3506 |
| 854140 | Photosensitive/PV/LED semiconductor device | 5 | 1 | 5 | 1.2120 | 0.132 |
| 854430 | Ignition sets for vehicles/aircraft/ship | 4 | 8 | 10 | −0.9990 | 0.0088 |
| 310210 | Urea, >10kg | 4 | 7 | 7 | −0.7588 | 0 |
| 841191 | Turbo-jet, -propeller engine, parts | 4 | 5 | 8 | 1.0766 | 0.0016 |
| 851790 | Parts of telephone line equipment | 4 | 4 | 19 | 1.2376 | 0.8073 |
| 940360 | Furniture, wooden, n.e.s. | 4 | 4 | 5 | 0.3169 | 0.0809 |
| 852990 | Parts for radio/TV transmit/receive equipment | 4 | 3 | 12 | 0.5167 | 0.1143 |
| 611030 | Pullovers, cardigans, of manmade | 4 | 3 | 7 | −1.8272 | 0.1537 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | fibers, knit | | | | | |
| 901890 | Instruments for medical science, n.e.s. | 4 | 3 | 4 | 0.3910 | 0.1228 |

| Industry Code | Industry Name | Methods | Countries | Paths | PCI-ECI | RCA |
|---|---|---|---|---|---|---|
| 300220 | Vaccines, human | 4 | 2 | 14 | 0.7649 | 0.3535 |
| 910221 | Wrist-watch, base-metal case, automatic wound | 4 | 2 | 8 | −0.0079 | 0.079 |
| 847191 | Digital computer CPU, some storage/input/output | 4 | 2 | 7 | 1.5078 | 0.1121 |
| 640411 | Sports footwear, upper textile | 4 | 2 | 5 | −0.6444 | 4.5292 |
| 611020 | Pullovers, cardigans, of cotton, knit | 4 | 2 | 4 | −1.7744 | 1.1255 |
| 901839 | Medical needles, catheters | 4 | 2 | 3 | 0.3225 | 0.2179 |
| 854449 | Electric conductors, <80V, no connectors | 4 | 2 | 2 | −0.3753 | 0.3577 |
| 851782 | Telegraphic apparatus, n.e.s. | 4 | 1 | 4 | 0.1999 | 0.0524 |
| 640340 | Footwear, uppers of leather, metal toe-cap | 4 | 1 | 4 | −0.9663 | 0.2623 |
| 620342 | Men's trousers & shorts, cotton, not knit | 3 | 4 | 6 | −1.6037 | 0.8699 |
| 620462 | Women's trousers & shorts, cotton, not knit | 3 | 3 | 4 | −1.8073 | 1.4999 |
| 640610 | Footwear uppers | 3 | 2 | 4 | −1.1803 | 0.0003 |
| 610990 | T-shirts, of material n.e.s., knit | 3 | 2 | 4 | −1.7150 | 1.0774 |
| 300439 | Hormones, not contraceptive, doses | 3 | 2 | 3 | 1.3603 | 0.1384 |
| 620193 | Men's anoraks, manmade fibers, not knit | 3 | 2 | 3 | −1.0989 | 0.0366 |
| 300431 | Insulin, doses | 3 | 2 | 2 | 0.5210 | 1.625 |
| 853620 | Automatic circuit breakers, <1kV | 3 | 2 | 2 | 0.3580 | 0.0317 |
| 293379 | Lactams, n.e.s. | 3 | 1 | 7 | 2.0718 | 0.0073 |
| 640419 | Footwear, uppers of textile | 3 | 1 | 6 | −1.2787 | 1.2774 |
| 852390 | Unrecorded sound recording media | 3 | 1 | 3 | 1.6634 | 0.3935 |
| 854219 | Monolithic integrated circuits, non-digital | 3 | 1 | 3 | 0.6157 | 0.0002 |
| 280920 | Phosphoric acid | 3 | 1 | 3 | −0.3294 | 0.0083 |
| 611420 | Garments n.e.s., of cotton, knit | 3 | 1 | 3 | −1.6122 | 0.0888 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 854290 | Parts of electronic integrated circuits | 3 | 1 | 2 | 1.6596 | 0.1878 |
| 844390 | Parts of printing machinery | 3 | 1 | 2 | 1.0991 | 0.6567 |
| 901819 | Electro-diagnostic apparatus | 3 | 1 | 2 | 0.9659 | 0.1952 |

**Table 15. Count of New Opportunity Industries for Panama**

| Type of Opportunity | Industries |
|---|---|
| New opportunities in current chapters | 19 |
| New opportunities in new chapters | 10 |
| Total of new opportunities | 29 |

**Table 16. Number of Opportunities by Current Chapters for Panama**

| Chapter | Chapter name | Opportunities |
|---|---|---|
| 85 | Electrical machinery and equipment | 6 |
| 84 | Boilers, machinery and appliances | 4 |
| 61 | Apparel. knit | 3 |
| 64 | Footwear | 3 |
| 29 | Organic chemicals | 1 |
| 30 | Pharmaceutical products | 1 |
| 87 | Vehicles | 1 |

**Table 17. Number of Opportunities by Not Current Chapters for Panama**

| Chapter | Chapter Name | Opportunities |
|---|---|---|
| 90 | Optical, photographic | 3 |
| 31 | Fertilizers | 2 |
| 88 | Aircraft | 1 |
| 52 | Cotton | 1 |
| 91 | Clocks | 1 |
| 94 | Furniture | 1 |
| 95 | Toys | 1 |

**Table 18. PCI-ECI for New Opportunities in Panama**

| Chapter Number | Chapter Name | HS Code | PCI-ECI |
|---|---|---|---|
| 90 | Optical, photographic | 901020 | 1.9367 |
| 84 | Boilers, machinery and appliances | 847191 | 1.5078 |
| 85 | Electrical machinery and equipment | 854211 | 1.3116 |
| 84 | Boilers, machinery and appliances | 847199 | 1.2560 |
| 85 | Electrical machinery and equipment | 854140 | 1.2120 |
| 87 | Vehicles | 870829 | 1.1427 |
| 84 | Boilers, machinery and appliances | 841191 | 1.0766 |
| 84 | Boilers, machinery and appliances | 841112 | 0.9333 |
| 88 | Aircraft | 880330 | 0.9140 |
| 30 | Pharmaceutical products | 300220 | 0.7649 |
| 85 | Electrical machinery and equipment | 852990 | 0.5167 |
| 90 | Optical, photographic | 901890 | 0.3910 |
| 95 | Toys | 950390 | 0.3589 |
| 90 | Optical, photographic | 901839 | 0.3225 |
| 94 | Furniture | 940360 | 0.3169 |
| 85 | Electrical machinery and equipment | 851782 | 0.1999 |
| 91 | Clocks | 910221 | −0.0079 |
| 85 | Electrical machinery and equipment | 854449 | −0.3753 |
| 31 | Fertilisers | 310210 | −0.7588 |
| 64 | Footwear | 640399 | −0.7604 |
| 31 | Fertilisers | 310420 | −0.7652 |
| 64 | Footwear | 640391 | −0.8426 |
| 64 | Footwear | 640340 | −0.9663 |
| 85 | Electrical machinery and equipment | 854430 | −0.9990 |
| 29 | Organic chemicals | 290511 | −1.0763 |
| 61 | Apparel. knit | 610910 | −1.7679 |
| 61 | Apparel. knit | 611020 | −1.7744 |
| 61 | Apparel. knit | 611030 | −1.8272 |
| 52 | Cotton | 520100 | −2.2943 |

**Table 19. Top 20 Potential Export Industries for Panama with Highest Complexity Index (Method 1)**

| Chapter No. | Chapter Name | HS Code | HS Name | PCI-ECI |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 29 | Organic chemicals | 293379 | Lactams, n.e.s. | 2.0718 |
| 85 | Electrical machinery and equipment | 853224 | Electric capacitors, ceramic, multilayer | 1.5367 |
| 87 | Vehicles | 870390 | Automobiles n.e.s., gas turbine powered | 1.4558 |
| 87 | Vehicles | 870850 | Drive axles for motor vehicles | 1.4529 |
| 85 | Electrical machinery and equipment | 854190 | Parts of semiconductor devices | 1.2879 |
| 29 | Organic chemicals | 292149 | Aromatic monoamines, n.e.s. | 1.2694 |
| 29 | Organic chemicals | 293500 | Sulfonamides | 1.2112 |
| 29 | Organic chemicals | 293722 | Halogenated derivatives of adrenal cortical hormones | 1.1677 |
| 84 | Boilers, machinery and appliances | 840991 | Spark-ignition engine, parts n.e.s. | 1.1597 |
| 29 | Organic chemicals | 292249 | Amino-acids, salts, esters, n.e.s. | 1.0758 |
| 73 | Articles of iron or steel | 732690 | Articles of iron/steel, n.e.s. | 1.0406 |
| 84 | Boilers, machinery and appliances | 840999 | Diesel engine, parts | 0.9008 |
| 84 | Boilers, machinery and appliances | 841899 | Freezing equipment, parts | 0.8204 |
| 85 | Electrical machinery and equipment | 851890 | Parts of non-recording electronic equipment | 0.7237 |
| 40 | Rubber | 401699 | Vulcanized rubber articles, not hard, n.e.s. | 0.7190 |
| 30 | Pharmaceutical products | 300490 | Medicaments, doses, n.e.s. | 0.6205 |
| 85 | Electrical machinery and equipment | 852990 | Parts for radio/TV transmit/receive equipment | 0.5167 |
| 73 | Articles of iron or steel | 732510 | Cast articles, non-malleable cast iron | 0.5155 |
| 30 | Pharmaceutical products | 300420 | Antibiotics, doses, n.e.s. | 0.1165 |

# 5. Summary, Policy Considerations, and Conclusions

In this report, we have identified new potential opportunities for FDI attraction and export diversification for Costa Rica, the Dominican Republic, and Panama using four different methods, with both lagged and contemporaneous comparison points in three of them, leading to a set of seven sets of results identifying potential new opportunities.

In some cases, when a new opportunity seemed particularly relevant and we had at least some familiarity with the relevant industries, we went beyond identification, attempted a sort of taxonomy, and presented some considerations regarding the feasibility, desirability, and key obstacles the country would have to overcome in order to bridge the gap between opportunity and achievement.

Some opportunities were identified by several methods; five or more coincidences are not uncommon, and since the methods are quite different (in detail if not in spirit) such coincidences suggest that our top-ranked opportunities are robust, at least with respect to the selection of methods applied in this study. Our initial impression of robust results was reinforced when we realized that what was identified as Costa Rica's top-ranked opportunity using 2007 and 2019 data had already become a thriving export sector by 2023.

Now, what are we to make of the fact that some of the opportunities identified were complexity reducing? One perhaps overly optimistic interpretation would be the complexity-reducing opportunities in which the relevant country could but should not be a competitive exporter, as it has better and more profitable uses for its resources.

A second, and in our opinion more realistic, interpretation goes as follows. There is a part of the economy in each ADD country that is sophisticated and highly productive, and able to competitively export high PCI goods. However, there is also a large part of the economy—made up of the self-employed, the unemployed, and small to very small–scale establishments both in the formal and informal sectors—that is characterized by very low productivity, and which is unable to provider either workers or owners with a reasonable income and a dignified standard of living.

Expansion into activities that are complexity reducing in comparison with each country's ECI (which, it is well to recall, is evaluated using the composition of exports only) might indeed be complexity increasing and income enhancing for a large part of the economy and a considerable portion of the workforce. Be that as it may, some considerations regarding how to make the best use of our results seems in order.

Perhaps is best to start by indicating how our results should not be used. They do not provide conclusive evidence regarding the feasibility, let alone the desirability, of attracting FDI into any specific industry. They suggest a possibility, one that might be strong enough to persuade policymakers and other decision- makers to research the issue in more detail before launching a policy initiative or making a private decision regarding investment in the industry in question.

Second, our results are about potential feasibility; they say nothing about desirability or compatibility between the opportunity and relevant economic policies. A country may

decide to ban the development of certain activities on public health or environmental grounds, even when it could profitably invest in those activities. Our results do not speak to those concerns, but policymakers will have to take them into account.

How could our results be used, then, in our opinion?

- Decision-makers in the field—be it the agencies in charge of FDI attraction in these countries, their governments, policymakers behind the APEP negotiation or the design of coordinated industrial policies between these three countries and the United States, and even multinationals thinking about the region—can use the long lists of industries that appear in the findings section (page 25) as an initial assessment of what seems more feasible to attain.
- Our results and methods can provide guideposts and introduce an explicit logic regarding the unavoidable decision faced by all FDI attraction agencies regarding priorities and resource allocation. Risk cannot be completely eliminated, but better decisions—regarding, for example, which sector-specific expertise to acquire first and which contacts to seek first—can be improved by systematically examining available evidence using a transparent, well-defined logic, rather than relying on intuition or aspirations alone. Our results and methods are a step in that direction.
- Some questions about the desired objectives—rather than options—for FDI attraction and product space evolution in these countries popped up along our analysis, and of course had the focus of the work been on that issue, much more would have emerged. These questions need answering.
- The discussion about what *new* industries can come to these nations through FDI and contribute to employment, exports, output, and the modernization of the industrial base, while the priority here, is not the only matter regarding MNC operations. There is still room to grow in the industries that are not listed as opportunities in this document precisely because they are already present, and significant exporters from all three nations (and especially from Costa Rica and the Dominican Republic).
  - — Room to grow in size
  - — Room to integrate vertically, or to bring in suppliers and users to operate locally as well
  - — Room to move up the quality scale, or to bring in more complex stages of the production process
  - — Room for the same companies to bring down other products they make, or to perform locally services that complement their global manufactures, from IT and backoffices to R&D
- Some FDI attraction agencies are better than others in post-establishment support and the enticement of these types of growth within.

Some specific policies regarding the viability of FDI in certain sectors are enumerated in the previous sections. Many of the key obstacles these countries are facing to continue evolving in this topic relate to skills. Whether it is because trained labor in the relevant fields is few, or perhaps because they are many but have become scarce due to high demand, the fact of the matter is that these three countries seem to be able to create abundant, high-quality jobs for all people with the right skills, but many in the labor force simply do not have them. In particular, we need more people obtaining quality training (professional or vocational) in STEM and other marketable areas, in the use of English as a second language, in industrial abilities, and in the promotion of their soft skills.

And of course, there are other weaknesses. Consider, for instance, the features of the business environment that used to be measured by the World Economic Forum in its Global Competitiveness Reports.[48] The position of the three nations on which we focus here is middling: among 141 countries between Singapore and Chad, Costa Rica is ranked 62 (with a negative trend), Panama is 66, and the Dominican Republic 78 (with a positive trend)—respectively fifth, seventh, and ninth in Latin America, notably behind Mexico, which is a very direct competitor for the FDI we write about. The key weaknesses for each country, and therefore a focus on active policy needs, were catalogued as follows:

- For Costa Rica, in macroeconomic stability and the cost of doing business
- For the Dominican Republic, in skills, institutions, and the capacity for innovation
- For Panama, in digital transformation, skills, and the mechanics of the labor market

We conclude with a synoptic presentation of our main results in a table that compactly summarizes a lot of information—so much so that a little explaining is called for before digging into the table itself.

In Table 20, we confine our attention to each country's top 20 exports, and to its top 20 opportunities, ranked by the number of methods that lead to them. The table presents information at the chapter (two- digit) and product (six-digit) levels.

At the chapter level, a blue cell indicates that the country is already exporting products in that chapter— or more precisely, that there are products among its top 20 exports that are in that chapter. A yellow cell indicates that, while we have identified opportunities in that chapter, there are currently no exports in that chapter (again, among the country's top 20 exports).

In the rows corresponding to individual industries at the six-digit level, an empty cell indicates that no opportunities were found for the relevant country in that industry. A

[48] One sad casualty of the pandemic is that the last edition of this resource was in 2019.

red cell indicates that complexity- reducing opportunities were found (PCI below ECI), and a green cell indicates that complexity- enhancing opportunities were identified.

Now, let's take a look at the table and illustrate how our results can be used as starting points for further research and action by FDI attraction agencies.

- In several chapters, we find opportunities only for one ADD country. In those cases, each country is on its own, and there is no basis for cooperation or collective action among them. Such are the cases for Chapter 28, Inorganic chemicals; Chapter 29, Organic chemicals; Chapter 94, Furniture; and Chapter 95, Toys.
- There is one case where all countries have opportunities, but it belongs to a chapter that is not currently among the top exports of any of the countries: Chapter 88, Aircraft. Joint marketing intelligence and research efforts may make sense.
- Chapter 84, Boilers and machinery, offers complexity-enhancing opportunities for all three countries, but industries in this chapter are among the country's top 20 exports only in Panama. Does this translate into such an advantage for Panama that Costa Rica and the Dominican Republic should try their fortunes somewhere else?
- The largest number of complexity-enhancing opportunities for all countries are in Chapter 85, Electrical machinery and equipment—frequently in the same six-digit industries. Does this mean that in the chapter, ADD countries are competitors in a zero-sum game; or that, taken together, they could achieve economies of scale and agglomeration if they manage to make the movement of parts across plants in different countries almost frictionless?
- There is a large number of complexity-reducing opportunities for all countries. What to make of this? Since in all ADD countries there is a large number informal sector, and the structure of economic establishments is characterized by a very large number of very small, low-productivity firms, are not these complexity-reducing opportunities better than current resource allocation? And if so, why are resources not allocated to their better uses? FDI agencies may be able to do very little about this, but if the relevant agencies did their work, FDI agencies might be well advised to seek investment in these activities, rather than assume that the country has outgrown them.

Earlier in this document we made a brief reference to the distinction between vertical and horizontal productive development policies, and between market interventions and the supply of public goods. Just in passing, we indicated that vertical market interventions are not, in our opinion, either advisable or feasible. The time has come to briefly expand our discussion about these matters.

The CHIPs Act is the most notorious recent example of a vertical, market intervention–based productive development policy: specific sectors were chosen—on strategic and geopolitical grounds, not mainly on short-term economic efficiency grounds—and very large subsidies were made available to investors in the chosen sectors. One could argue that successful economic transitions in the twentieth century have a strong "picking winners" component, at least initially.

None of this would be a good reason to implement such policies in the ADD countries. To successfully implement a "picking winners" strategy requires a rather high degree of public sector in order to make sound choices; it also requires the financial capability to absorb the inevitable failures—because, as any venture capitalist soon realizes, no matter how sound the decision process may be, not all, and perhaps not even many investments will be successful. Finally, if market interventions are not to become a bottomless pit, the public sector has to be able to withdraw them if their goals have been achieved or if the policy has failed. Neither of these conditions are attained in ADD countries.

Governments, however, may be able to create conditions that allow potential winners to reveal themselves and to encourage the growth of already revealed, but incipient, winners. And if it does so, providing public and club goods that have some plasticity, the risks of misallocation of public resources are reduced. For example, if vocational training, tertiary education, and technical services in an already established industry can be allocated, with small adjustments, to work in a new, close-by industry, expansion of those public services may allow the new industry to flourish or be gainfully employed by established industries if the new industry does not grow as expected.

All of these are examples of cases when a government may try to build favorable conditions for investment in a broadly defined sector, without initially directing resources to specific industries within the sector, but, once specific industries start to show potential, resources are focused, specific requirements are evaluated, provision of public services and goods is adjusted to the requirements to the new, promising sectors. It might be useful to think of this as a strategy of "following the winners" or "supporting budding winners" using mostly soft policy interventions (provision of vertically tailored public goods) while "market interventions," such as fiscal incentives, are used only, or mostly, as horizontal policy interventions.

Finally, is there something these three countries can do together? Beyond being three friends facing largely the same issues, are they facing them as a team, or more as competitors? To what extent do their lists complement rather than overlap? We have mentioned a few cases (notably, electric and digital equipment and their parts, as well as medical devices) in which their targets seem to coincide, although their industrial development in those industries is at different stages. Does this mean that cooperation is impossible? On the other hand, there are other cases (for instance, in the question of producing the textile versus the apparel, or the parts versus the assembly) where their targets much more clearly fit with each other. Does this mean that cooperation is mandatory? Incidentally, the three countries can benefit from (or be hurt by) the

outcomes of both APEP—where they will all participate in negotiation—and U.S. industrial policy—which they can lobby and help shape.[49]

[49] The immediate region has a history of constructive cooperation when addressing this type of issue, whether in the creation of the Central American Common Market, the shaping of the old Caribbean Basin Initiative, or the negotiations of CAFTA with the United States, and of the Association Agreement with the European Union. That is a tool that we may want to take out of the box.

**Table 20. Cross-Country Comparison of New Opportunities**

| Code | Name | CRI | DOM | PAN |
|---|---|---|---|---|
| **28** | **Inorganic chemicals** | | | |
| 283620 | Disodium carbonate | | | |
| 280920 | Phosphoric acid | | | |
| **29** | **Organic chemicals** | | | |
| 290511 | Methyl alcohol | | | |
| | | | | |
| 300439 | Hormones, not contraceptive, doses | | | |
| 300220 | Vaccines, human | | | |
| **31** | **Fertilizers** | | | |
| 310420 | Potassium chloride, >10kg | | | |
| 310210 | Urea, >10kg | | | |
| | | | | |
| 382390 | Chemical products, n.e.s. | | | |
| | | | | |
| 401110 | Rubber tires, cars, new | | | |
| | | | | |
| 521213 | Cotton fabric, <200g/ m2, dye, n.e.s. | | | |
| 520100 | Cotton, not carded/ combed | | | |
| **61** | **Apparel, knit** | | | |
| 610510 | Men's shirts, cotton, knit | | | |
| 611020 | Pullovers, cardigans, of cotton, knit | | | |
| 610910 | T-shirts, of cotton, knit | | | |
| 610821 | Women's briefs or panties, cotton, knit | | | |

| Code | Name | CRI | DOM | PAN |
|---|---|---|---|---|
| **84** | **Boilers, machinery and appliances** | | | |
| 847199 | Automatic data processing machines | | | |
| 847191 | Digital computer CPU, some storage/input/output | | | |
| 847330 | Parts of data processing equipment | | | |
| 841112 | Turbo-jet engine, >25 KN | | | |
| 841191 | Turbo-jet, -propeller engine, parts | | | |
| **85** | **Electrical machinery and equipment** | | | |
| 853620 | Automatic circuit breakers, <1kV | | | |
| 852810 | Color TV receivers/ monitors/projectors | | | |
| 854449 | Electric conductors, <80V, no connectors | | | |
| 853710 | Electrical control & distribution boards, <1kV | | | |
| 854430 | Ignition sets for vehicles/ aircraft/ship | | | |
| 854211 | Monolithic integrated circuits, digital | | | |
| 852990 | Parts for radio/TV transmit/receive equipment | | | |
| 851790 | Parts of telephone line equipment | | | |
| 854140 | Photosensitive/PV/LED semiconductor device | | | |
| 850440 | Static converters, n.e.s. | | | |
| 851782 | Telegraphic apparatus, n.e.s. | | | |
| 852520 | Transmit-receive apparatus for radio, TV | | | |
| 852390 | Unrecorded sound recording media | | | |
| **87** | **Vehicles** | | | |
| 870899 | Motor vehicle parts n.e.s. | | | |
| 870829 | Parts of motor vehicle bodies | | | |

| Code | Name | CRI | DOM | PAN |
|---|---|---|---|---|
| 611030 | Pullovers. cardigans. of manmade fibers. knit | | | |
| **62** | **Apparel, not knit** | | | |
| 620520 | Men's shirts, cotton, not knit | | | |
| 620342 | Men's trousers & shorts, cotton, not knit | | | |
| 620462 | Women's trousers & shorts, cotton, not knit | | | |
| **63** | **Other made up textile articles** | | | |
| 630260 | Toilet/kitchen linen, of terry | | | |
| **64** | **Footwear** | | | |
| 640391 | Boots, upper of leather, n.e.s. | | | |
| 640399 | Footwear, uppers of leather, n.e.s. | | | |
| 640340 | Footwear, uppers of leather, metal toe-cap | | | |
| **69** | **Ceramic** | | | |
| 690790 | Unglazed ceramic tiles, >7cm wide | | | |

| Code | Name | CRI | DOM | PAN |
|---|---|---|---|---|
| 870840 | Transmissions for motor vehicles | | | |
| **88** | **Aircraft** | | | |
| 880330 | Aircraft parts n.e.s. | | | |
| **89** | **Ships** | | | |
| 890590 | Floating docks, special function vessels | | | |
| **90** | **Optical, photographic** | | | |
| 902130 | Artificial body parts, aids | | | |
| 901020 | Equipment for photographic laboratories n.e.s. | | | |
| 901890 | Instruments for medical science, n.e.s. | | | |
| 901839 | Medical needles, catheters | | | |
| **91** | **Clocks** | | | |
| 910221 | Wrist-watch, base-metal case, automatic wound | | | |
| **94** | **Furniture** | | | |
| 940360 | Furniture, wooden, n.e.s. | | | |
| **95** | **Toys** | | | |
| 950390 | Toys n.e.s. | | | |

Note: ■ Top exports in this chapter; ■ No top exports in this chapter; No opportunities in this industry; ■ Complexity reducing opportunities in this industry; ■ Complexity enhancing opportunities in this industry.

# APPENDIX

**Table A.1. Closest Industries to Current Export Industries in Costa Rica According to Hausmann Proximity (Costa Rica ECI = 0.3591)**

| Industry Code | Industry Name | Proximity | Paths | PCI | RCA |
|---|---|---|---|---|---|
| 854190 | Parts of semiconductor devices | 0.8462 | 2 | 1.1459 | 0.0679 |
| 151321 | Palm kernel & babassu oil, crude | 0.7619 | 2 | −2.5449 | 12.8369 |
| 020622 | Bovine livers, frozen | 0.75 | 1 | −0.659 | 0.1395 |
| 854121 | Transistors, <1 watt | 0.6923 | 2 | 1.6159 | 0.0653 |
| 854290 | Parts of electronic integrated circuits | 0.6923 | 2 | 1.5176 | 0.0804 |
| 900211 | Lenses for camera or projector | 0.6923 | 2 | 0.9394 | 0.0201 |
| 852290 | Parts/accessories of recorders | 0.6923 | 2 | 0.6216 | 0.0044 |
| 732690 | Articles of iron/steel, n.e.s. | 0.6774 | 3 | 0.8986 | 0.315 |
| 854150 | Semiconductor devices, not light sensitive | 0.6667 | 2 | 1.2606 | 5.8338 |
| 170490 | Sugar confectionery, not chewing gum | 0.6604 | 4 | −0.614 | 1.5185 |
| 853610 | Electrical fuses, <1kV | 0.6522 | 1 | 0.9689 | 1.0942 |
| 854129 | Transistors, >1 watt | 0.6429 | 1 | 1.3053 | 0.0107 |
| 852990 | Parts for radio/TV transmit/receive equipment | 0.6429 | 1 | 0.3747 | 0.0759 |
| 843139 | Parts of lifting/handling machinery n.e.s. | 0.6333 | 2 | 0.9783 | 0.0954 |
| 020629 | Bovine offal, frozen | 0.6316 | 2 | −1.006 | 3.3451 |
| 853630 | Electrical circuit protectors, <1kV | 0.6296 | 3 | 0.2571 | 3.1633 |
| 300420 | Antibiotics, doses, n.e.s. | 0.6286 | 1 | −0.0255 | 0.8996 |
| 020621 | Bovine tongue, frozen | 0.625 | 1 | −0.3815 | 0.3564 |
| 850440 | Static converters, n.e.s. | 0.619 | 2 | 0.9852 | 0.0958 |
| 401699 | Vulcanized rubber articles, not hard, n.e.s. | 0.6176 | 3 | 0.577 | 0.5699 |
| 853224 | Electric capacitors, ceramic, multilayer | 0.6154 | 1 | 1.3947 | 0.0099 |
| 847330 | Parts of data processing equipment | 0.6154 | 1 | 1.0757 | 0.1538 |
| 854140 | Photosensitive/PV/LED semiconductor device | 0.6154 | 1 | 1.07 | 0.049 |
| 854390 | Parts of electrical machines, n.e.s. | 0.6154 | 1 | 0.9359 | 0.6183 |
| 854219 | Monolithic integrated circuits, non-digital | 0.6154 | 1 | 0.4737 | 0.0739 |
| 481910 | Corrugated paper, boxes | 0.6111 | 3 | −0.7048 | 1.1812 |
| 853321 | Electrical resistors fixed, <20W | 0.6111 | 2 | 0.9942 | 1.568 |
| 150200 | Bovine, sheep fats | 0.6111 | 2 | −0.5089 | 0.6722 |

| | | | | | |
|---|---|---|---|---|---|
| 902990 | Parts/accessories of revolution counters | 0.6087 | 2 | 1.098 | 0.0323 |
| 851220 | Lighting/visual signalling equipment | 0.6087 | 2 | 0.9369 | 1.66 |
| 390390 | Styrene polymers, not SAN, ABS | 0.6087 | 2 | 0.857 | 0.0016 |
| 851230 | Sound signalling equipment | 0.6087 | 2 | 0.7555 | 0 |
| 853390 | Parts of electrical resistors, rheostats | 0.6087 | 1 | 1.1568 | 7.0363 |
| 160100 | Sausages | 0.6047 | 4 | −0.0426 | 2.4256 |
| 190530 | Sweet biscuits, waffles | 0.6038 | 6 | −0.6967 | 3.4495 |
| 190590 | Communion wafers, rice paper | 0.6038 | 5 | −0.2587 | 2.3332 |
| 853890 | Parts of elect switches, protectors | 0.6 | 4 | 0.9786 | 0.2917 |
| 170310 | Cane molasses | 0.6 | 3 | −2.343 | 0.0018 |
| 841950 | Heat exchange units, non-domestic | 0.6 | 2 | 1.2046 | 0.0191 |
| 020130 | Boneless beef | 0.6 | 2 | −0.5527 | 0.6528 |
| 853222 | Electric capacitors, aluminium electrolytic | 0.6 | 1 | 1.2934 | 0.0143 |
| 903190 | Parts/access for measuring equipment | 0.6 | 1 | 1.1518 | 1.6459 |

**Table A. 2. Closest Industries to Current Export Industries in Dominican Republic According to Hausmann Proximity (Dominican Republic ECI = −0.2429)**

| Industry Code | Industry Name | Proximity | Paths | PCI | RCA |
|---|---|---|---|---|---|
| 611430 | Garments n.e.s., of manmade fibers, knit | 0.8333 | 3 | −1.8621 | 3.6835 |
| 611020 | Pullovers, cardigans, of cotton, knit | 0.8333 | 2 | −1.9164 | 3.6443 |
| 611030 | Pullovers, cardigans, of manmade fibers, knit | 0.8333 | 3 | −1.9692 | 1.8708 |
| 610510 | Men's shirts, cotton, knit | 0.825 | 3 | −1.8315 | 0.2618 |
| 610463 | Women's trousers & shorts, synthetic fibers, knit | 0.8108 | 4 | −1.9116 | 1.0519 |
| 610130 | Men's overcoats, manmade fibers, knit | 0.8056 | 1 | −1.6614 | 1.8753 |
| 610342 | Men's trousers & shorts, cotton, knit | 0.8056 | 3 | −1.9016 | 0.1428 |
| 620530 | Men's shirts, manmade fibers, not knit | 0.8056 | 3 | −1.9863 | 6.0305 |
| 610462 | Women's trousers & shorts, of cotton, knit | 0.8056 | 2 | −2.0954 | 0.0365 |
| 610910 | T-shirts, of cotton, knit | 0.8 | 3 | −1.9099 | 17.7484 |
| 610822 | Women's briefs or panties, manmade fiber, knit | 0.7931 | 1 | −1.6976 | 4.875 |
| 620462 | Women's trousers & shorts, cotton, not knit | 0.7895 | 3 | −1.9493 | 0.2244 |
| 640399 | Footwear, uppers of leather, n.e.s. | 0.7778 | 2 | −0.9024 | 2.2519 |
| 640391 | Boots, upper of leather, n.e.s. | 0.7778 | 3 | −0.9846 | 10.5421 |
| 610343 | Men's trousers, shorts, synthetic fibers, knit | 0.7778 | 1 | −2.0001 | 0.8365 |
| 240130 | Tobacco refuse | 0.7714 | 2 | −1.925 | 14.6482 |

| | | | | | |
|---|---|---|---|---|---|
| 610120 | Men's overcoats, cotton, knit | 0.7692 | 2 | −1.5325 | 0.4792 |
| 620469 | Women's trousers & shorts, material n.e.s., not knit | 0.7609 | 1 | −1.4502 | 0.5396 |
| 620463 | Women's trousers & shorts, synth fibers, not knit | 0.7609 | 1 | −1.6938 | 0.865 |
| 620342 | Men's trousers & shorts, cotton, not knit | 0.7609 | 1 | −1.7457 | 0.5632 |
| 620349 | Men's trousers & shorts, material n.e.s., not knit | 0.7609 | 1 | −1.7462 | 1.1081 |
| 610990 | T-shirts, of material n.e.s., knit | 0.7609 | 1 | −1.857 | 3.2058 |
| 610620 | Women's blouses & shirts, manmade fiber, knit | 0.7391 | 2 | −1.7003 | 0.2891 |
| 610520 | Men's shirts, manmade fibers, knit | 0.7391 | 3 | −2.2362 | 0.3535 |
| 621220 | Girdles | 0.7333 | 1 | −1.5487 | 2.1495 |
| 610610 | Women's blouses & shirts, cotton, knit | 0.7317 | 2 | −1.7919 | 0.1819 |
| 610469 | Women's trousers & shorts, material n.e.s., knit | 0.7174 | 2 | −1.6186 | 0.7202 |
| 620343 | Men's trousers & shorts, synthetic fiber, not knit | 0.7174 | 1 | −1.6887 | 3.972 |
| 621290 | Corsets | 0.7143 | 1 | −1.2754 | 10.9202 |
| 640610 | Footwear uppers | 0.6667 | 3 | −1.3223 | 10.7509 |
| 640510 | Footwear, n.e.s., uppers leather | 0.6571 | 2 | −0.9597 | 105.321 |
| 830170 | Keys, metal | 0.65 | 1 | 1.1045 | 0 |
| 830241 | Fittings for buildings, metal | 0.65 | 1 | 0.4563 | 0.038 |
| 610811 | Women's slips or petticoats, manmade fiber, knit | 0.6452 | 1 | −1.2062 | 1.2865 |
| 830160 | Lock parts, metal | 0.64 | 1 | 0.7796 | 0.5096 |
| 620211 | Women's overcoats, wool/hair, not knit | 0.6364 | 2 | −1.0706 | 8.4682 |
| 610459 | Women's skirts, material n.e.s., knit | 0.6364 | 1 | −1.499 | 0.0963 |
| 853630 | Electrical circuit protectors, <1kV | 0.6296 | 4 | 0.2571 | 1.2928 |
| 300420 | Antibiotics, doses, n.e.s. | 0.6286 | 1 | −0.0255 | 0.1966 |
| 640590 | Footwear, n.e.s. | 0.6286 | 1 | −1.044 | 1.5003 |

**Table A.3. Closest Industries to Current Export Industries in Panama According to Hausmann Proximity (Panama ECI = −0.1420)**

| Industry Code | Industry Name | Proximity | Paths | PCI | RCA |
|---|---|---|---|---|---|
| 620342 | Men's trousers & shorts, cotton, not knit | 0.7907 | 2 | −1.7457 | 0.8699 |
| 611030 | Pullovers, cardigans, of manmade fibers, knit | 0.7895 | 1 | −1.9692 | 0.1537 |
| 620469 | Women's trousers & shorts, material n.e.s., not knit | 0.7778 | 1 | −1.4502 | 5.871 |
| 620590 | Men's shirts, material n.e.s., not knit | 0.7778 | 1 | −1.6373 | 18.0172 |
| 611020 | Pullovers, cardigans, of cotton, knit | 0.7632 | 1 | −1.9164 | 1.1255 |
| 610990 | T-shirts, of material n.e.s., knit | 0.7609 | 1 | −1.857 | 1.0774 |
| 293722 | Halogenated derivatives of adrenal cortical hormones | 0.75 | 1 | 1.0257 | 0.0025 |
| 610910 | T-shirts, of cotton, knit | 0.75 | 2 | −1.9099 | 0.4313 |
| 620463 | Women's trousers & shorts, synth fibers, not knit | 0.7442 | 2 | −1.6938 | 1.0521 |
| 610510 | Men's shirts, cotton, knit | 0.7436 | 2 | −1.8315 | 0.6408 |
| 610463 | Women's trousers & shorts, synthetic fibers, knit | 0.7368 | 1 | −1.9116 | 0.1713 |
| 611090 | Pullovers, cardigans, of material n.e.s., knit | 0.7333 | 1 | −1.7355 | 15.1094 |
| 610120 | Men's overcoats, cotton, knit | 0.7179 | 1 | −1.5325 | 2.6488 |
| 852990 | Parts for radio/TV transmit/receive equipment | 0.7143 | 1 | 0.3747 | 0.1143 |
| 610469 | Women's trousers & shorts, material n.e.s., knit | 0.7111 | 1 | −1.6186 | 1.0192 |
| 620520 | Men's shirts, cotton, not knit | 0.7111 | 1 | −1.7751 | 0.7231 |
| 610349 | Men's trousers & shorts, material n.e.s., knit | 0.7111 | 1 | −1.8578 | 5.3346 |
| 620630 | Women's blouses & shirts, cotton, not knit | 0.7105 | 1 | −1.758 | 1.257 |
| 611430 | Garments n.e.s., of manmade fibers, knit | 0.7105 | 1 | −1.8621 | 0.8642 |
| 610342 | Men's trousers & shorts, cotton, knit | 0.7105 | 1 | −1.9016 | 0.8857 |
| 610462 | Women's trousers & shorts, of cotton, knit | 0.7105 | 2 | −2.0954 | 1.3334 |
| 732690 | Articles of iron/steel, n.e.s. | 0.7097 | 2 | 0.8986 | 0.0958 |
| 840999 | Diesel engine, parts | 0.6875 | 2 | 0.7588 | 0.174 |
| 853224 | Electric capacitors, ceramic, multilayer | 0.6667 | 1 | 1.3947 | 0.0022 |
| 854190 | Parts of semiconductor devices | 0.6667 | 3 | 1.1459 | 0.0035 |
| 300410 | Penicillins and streptomycins, doses | 0.6667 | 2 | −0.1474 | 4.0976 |
| 870850 | Drive axles for motor vehicles | 0.6552 | 1 | 1.3109 | 0.0293 |
| 840991 | Spark-ignition engine, parts n.e.s. | 0.6552 | 1 | 1.0177 | 0.2042 |
| 401699 | Vulcanized rubber articles, not hard, n.e.s. | 0.6552 | 2 | 0.577 | 0.0823 |

| | | | | | |
|---|---|---|---|---|---|
| 732510 | Cast articles, non-malleable cast iron | 0.6452 | 2 | 0.3735 | 0.0042 |
| 851890 | Parts of non-recording electronic equipment | 0.6429 | 1 | 0.5817 | 0.2048 |
| 292149 | Aromatic monoamines, n.e.s. | 0.6364 | 3 | 1.1274 | 10.6033 |
| 640299 | Footwear, sole/upper of rubber/plastic, n.e.s. | 0.6316 | 2 | −1.7852 | 4.1207 |
| 640220 | Footwear, of rubber/plastic, plugs fix straps | 0.6316 | 1 | −2.0167 | 18.6087 |
| 300490 | Medicaments, doses, n.e.s. | 0.6286 | 1 | 0.4785 | 1.9417 |
| 300420 | Antibiotics, doses, n.e.s. | 0.6286 | 1 | −0.0255 | 2.844 |
| 293379 | Lactams, n.e.s. | 0.625 | 2 | 1.9298 | 0.0073 |
| 293500 | Sulfonamides | 0.625 | 1 | 1.0692 | 10.4603 |
| 292249 | Amino-acids, salts, esters, n.e.s. | 0.625 | 1 | 0.9338 | 28.2624 |
| 841899 | Freezing equipment, parts | 0.625 | 1 | 0.6784 | 0.8595 |

**Table B.1. Potential Export Industries for Costa Rica Suggested by Closest Countries in Resource Endowment in 2019 (Costa Rica ECI = 0.3591)**

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 852520 | Transmit-receive apparatus for radio, TV | 5 | 0.6469 | 0.0165 |
| 847330 | Parts of data processing equipment | 4 | 1.0757 | 0.1538 |
| 854430 | Ignition sets for vehicles/aircraft/ship | 4 | −1.141 | 0.1243 |
| 620342 | Men's trousers & shorts, cotton, not knit | 4 | −1.7457 | 0.0441 |
| 854211 | Monolithic integrated circuits, digital | 3 | 1.1696 | 0.1068 |
| 852990 | Parts for radio/TV transmit/receive equipment | 3 | 0.3747 | 0.0759 |
| 852810 | Color TV receivers/monitors/projectors | 3 | −0.1188 | 0.0511 |
| 610910 | T-shirts, of cotton, knit | 3 | −1.9099 | 0.0194 |
| 851790 | Parts of telephone line equipment | 2 | 1.0956 | 0.1031 |
| 850440 | Static converters, n.e.s. | 2 | 0.9852 | 0.0958 |
| 847193 | Computer data storage units | 2 | 0.9144 | 0.0155 |
| 640411 | Sports footwear, upper textile | 2 | −0.7864 | 0.001 |
| 310210 | Urea, >10kg | 2 | −0.9008 | 0.0581 |
| 640399 | Footwear, uppers of leather, n.e.s. | 2 | −0.9024 | 0.016 |
| 710391 | Rubies, sapphires & emeralds, worked, not set | 2 | −1.2983 | 0 |
| 610510 | Men's shirts, cotton, knit | 2 | −1.8315 | 0.0132 |
| 611020 | Pullovers, cardigans, of cotton, knit | 2 | −1.9164 | 0.0035 |
| 620462 | Women's trousers & shorts, cotton, not knit | 2 | −1.9493 | 0.0088 |
| 852390 | Unrecorded sound recording media | 1 | 1.5214 | 0.1316 |
| 853224 | Electric capacitors, ceramic, multilayer | 1 | 1.3947 | 0.0099 |
| 847191 | Digital computer CPU, some storage/input/output | 1 | 1.3658 | 0.0176 |
| 854129 | Transistors, >1 watt | 1 | 1.3053 | 0.0107 |
| 854140 | Photosensitive/PV/LED semiconductor device | 1 | 1.07 | 0.049 |
| 290810 | Halogen derivs of phenols | 1 | 0.8949 | 0 |
| 880330 | Aircraft parts n.e.s. | 1 | 0.772 | 0.0537 |
| 390410 | Polyvinyl chloride | 1 | 0.7215 | 0.0395 |
| 392690 | Plastic articles, n.e.s. | 1 | 0.5935 | 1.9143 |
| 300390 | Medicaments, formulated, n.e.s. | 1 | 0.5861 | 0.2462 |
| 401110 | Rubber tires, cars, new | 1 | 0.566 | 3.4021 |
| 300490 | Medicaments, doses, n.e.s. | 1 | 0.4785 | 0.4894 |
| 401290 | Tires, interchangeable treads | 1 | 0.3285 | 0.0253 |

| | | | | |
|---|---|---|---|---|
| 950390 | Toys n.e.s. | 1 | 0.2169 | 0.0255 |
| 853620 | Automatic circuit breakers, <1kV | 1 | 0.216 | 0.4686 |
| 690220 | Refractory bricks, >50% alumina, silica | 1 | 0.1513 | 0.0322 |
| 280700 | Sulfuric acid, oleum | 1 | 0.0804 | 0.0056 |
| 851782 | Telegraphic apparatus, n.e.s. | 1 | 0.0579 | 0.0036 |
| 320890 | Polymer paint, non-aqueous | 1 | 0.0399 | 0.9253 |

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 380820 | Fungicides | 1 | −0.0962 | 3.9046 |
| 300239 | Vaccines, veterinary | 1 | −0.1972 | 0.0113 |
| 382390 | Chemical products, n.e.s. | 1 | −0.2594 | 0.1571 |
| 902830 | Electricity supply, calibration meters | 1 | −0.3821 | 0.0289 |
| 871120 | Motorcycles, 50-250cc engine | 1 | −0.4021 | 0.0199 |
| 880230 | Fixed wing aircraft, 2,000-15,000 kg | 1 | −0.4466 | 0.0212 |
| 280920 | Phosphoric acid | 1 | −0.4714 | 0.0166 |
| 710691 | Silver in unwrought forms | 1 | −0.5057 | 0.0055 |
| 283620 | Disodium carbonate | 1 | −0.5831 | 0 |
| 854420 | Coaxial cable | 1 | −0.6149 | 4.8081 |
| 690790 | Unglazed ceramic tiles, >7cm wide | 1 | −0.6254 | 0.1309 |
| 310420 | Potassium chloride, >10kg | 1 | −0.9072 | 0.0519 |
| 680100 | Stone setts, curbstones | 1 | −0.9883 | 0.0541 |
| 521213 | Cotton fabric, <200g/m2, dye, n.e.s. | 1 | −1.1418 | 0 |
| 391723 | Polyvinyl chloride tube, rigid | 1 | −1.2076 | 19.0403 |
| 611610 | Gloves impregnated with plastic/rubber, knit | 1 | −1.2721 | 0.0242 |
| 610821 | Women's briefs or panties, cotton, knit | 1 | −1.4185 | 0.018 |
| 640419 | Footwear, uppers of textile | 1 | −1.4207 | 0.0041 |
| 621210 | Brassieres | 1 | −1.5063 | 0.8846 |
| 630260 | Toilet/kitchen linen, of terry | 1 | −1.521 | 0.0925 |
| 520524 | Cotton yarn >85%, sing comb 192-125 | 1 | −1.55 | 1.8972 |
| 520523 | Cotton yarn >85%, sing comb 232-192 | 1 | −1.5605 | 10.9901 |
| 610711 | Men's underpants or briefs, cotton, knit | 1 | −1.5865 | 0.0164 |
| 611490 | Garments n.e.s., of materials n.e.s., knit | 1 | −1.6279 | 0.1417 |
| 610822 | Women's briefs or panties, manmade fiber, knit | 1 | −1.6976 | 0.0065 |

| | | | | |
|---|---|---|---|---|
| 611420 | Garments n.e.s., of cotton, knit | 1 | −1.7542 | 0.0754 |
| 620520 | Men's shirts, cotton, not knit | 1 | −1.7751 | 0.0123 |
| 610990 | T-shirts, of material n.e.s., knit | 1 | −1.857 | 0.0611 |
| 611430 | Garments n.e.s., of manmade fibers, knit | 1 | −1.8621 | 0.0644 |
| 970600 | Antiques | 1 | −1.9321 | 0.0124 |
| 611030 | Pullovers, cardigans, of manmade fibers, knit | 1 | −1.9692 | 0.0489 |
| 530599 | Vegetable fiber, processed unspun | 1 | −2.0786 | 0.8641 |
| 520513 | Cotton yarn >85%, sing uncomb 232-192 | 1 | −2.089 | 0 |
| 520512 | Cotton yarn >85%, sing uncomb 714-232 | 1 | −2.0928 | 0 |
| 520100 | Cotton, not carded/combed | 1 | −2.4363 | 0.0172 |

**Table B.2. Potential Export Industries for Costa Rica Suggested by Closest Countries in Resource Endowment in 2007 (Costa Rica ECI = 0.3591)**

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 271000 | Oils petroleum, bituminous, distillates | 6 | −0.9628 | 0.0037 |
| 854430 | Ignition sets for vehicles/aircraft/ship | 3 | −1.141 | 0.1243 |
| 160414 | Tuna, preserved | 3 | −2.291 | 3.0756 |
| 854211 | Monolithic integrated circuits, digital | 2 | 1.1696 | 0.1068 |
| 847330 | Parts of data processing equipment | 2 | 1.0757 | 0.1538 |
| 060310 | Flowers for bouquets (fresh) | 2 | −1.7099 | 3.547 |
| 620342 | Men's trousers & shorts, cotton, not knit | 2 | −1.7457 | 0.0441 |
| 610910 | T-shirts, of cotton, knit | 2 | −1.9099 | 0.0194 |
| 271111 | Natural gas, liquefied | 2 | −2.2934 | 0 |
| 847191 | Digital computer CPU, some storage/input/output | 1 | 1.3658 | 0.0176 |
| 854129 | Transistors, >1 watt | 1 | 1.3053 | 0.0107 |
| 854140 | Photosensitive/PV/LED semiconductor device | 1 | 1.07 | 0.049 |
| 850440 | Static converters, n.e.s. | 1 | 0.9852 | 0.0958 |
| 390410 | Polyvinyl chloride | 1 | 0.7215 | 0.0395 |
| 852520 | Transmit-receive apparatus for radio, TV | 1 | 0.6469 | 0.0165 |
| 392690 | Plastic articles, n.e.s. | 1 | 0.5935 | 1.9143 |
| 300490 | Medicaments, doses, n.e.s. | 1 | 0.4785 | 0.4894 |
| 401290 | Tires, interchangeable treads | 1 | 0.3285 | 0.0253 |
| 853620 | Automatic circuit breakers, <1kV | 1 | 0.216 | 0.4686 |
| 851782 | Telegraphic apparatus, n.e.s. | 1 | 0.0579 | 0.0036 |
| 852810 | Color TV receivers/monitors/projectors | 1 | −0.1188 | 0.0511 |
| 280920 | Phosphoric acid | 1 | −0.4714 | 0.0166 |
| 283620 | Disodium carbonate | 1 | −0.5831 | 0 |
| 220300 | Beer, malt | 1 | −0.6161 | 0.2773 |
| 220110 | Mineral & aerated waters | 1 | −0.7436 | 0.1197 |
| 220421 | Grape wines, <2l pack | 1 | −0.7438 | 0.0002 |
| 310420 | Potassium chloride, >10kg | 1 | −0.9072 | 0.0519 |
| 640399 | Footwear, uppers of leather, n.e.s. | 1 | −0.9024 | 0.016 |
| 220190 | Ice, potable water | 1 | −0.9577 | 0.3143 |

| | | | | |
|---|---|---|---|---|
| 220820 | Spirits from distilling grape wine | 1 | −0.9832 | 0 |
| 640391 | Boots, upper of leather, n.e.s. | 1 | −0.9846 | 0.0423 |
| 240210 | Cigars | 1 | −0.9983 | 1.3652 |
| 240220 | Cigarettes | 1 | −0.9993 | 0.0011 |
| 640340 | Footwear, uppers of leather, metal toe-cap | 1 | −1.1083 | 0.0393 |
| 080610 | Grapes, fresh | 1 | −1.1527 | 0.0698 |
| 611610 | Gloves impregnated with plastic/rubber, knit | 1 | −1.2721 | 0.0242 |
| 220840 | Rum | 1 | −1.2847 | 3.4593 |

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 080920 | Cherries, fresh | 1 | −1.2999 | 0 |
| 640610 | Footwear uppers | 1 | −1.3223 | 0 |
| 252329 | Portland cement, not white | 1 | −1.3628 | 0.8655 |
| 610821 | Women's briefs or panties, cotton, knit | 1 | −1.4185 | 0.018 |
| 260700 | Lead ores | 1 | −1.4512 | 0 |
| 251010 | Calcium phosphate, unground | 1 | −1.4789 | 0 |
| 621210 | Brassieres | 1 | −1.5063 | 0.8846 |
| 030410 | Fish meat, not liver or roe | 1 | −1.5169 | 6.7233 |
| 170199 | Refined sugar, pure sucrose | 1 | −1.5756 | 0.652 |
| 090230 | Tea, black, in <3kg packages | 1 | −1.5883 | 0.0149 |
| 030341 | Albacore, frozen | 1 | −1.6646 | 0 |
| 200899 | Fruit, otherwise preserved | 1 | −1.679 | 24.7459 |
| 260111 | Iron ore, unagglomerated | 1 | −1.7388 | 0 |
| 611420 | Garments n.e.s., of cotton, knit | 1 | −1.7542 | 0.0754 |
| 620520 | Men's shirts, cotton, not knit | 1 | −1.7751 | 0.0123 |
| 230120 | Flour, meal of fish, for animal feed | 1 | −1.8955 | 1.1349 |
| 030420 | Fish fillets, frozen | 1 | −1.9438 | 0.3665 |
| 611030 | Pullovers, cardigans, of manmade fibers, knit | 1 | −1.9692 | 0.0489 |
| 170111 | Raw sugar, cane | 1 | −2.0917 | 6.9283 |
| 030613 | Shrimps, frozen | 1 | −2.1623 | 0.5354 |
| 151190 | Palm oil, simply refined | 1 | −2.3036 | 0.7091 |
| 090240 | Tea, black, in >3kg packages | 1 | −2.3562 | 0.0068 |
| 520100 | Cotton, not carded/combed | 1 | −2.4363 | 0.0172 |
| 090111 | Coffee, not roasted | 1 | −2.5829 | 17.704 |

**Table B.3. Potential Export Industries for Dominican Republic Suggested by Closest Countries in Resource Endowment in 2019 (Dominican Republic ECI = −0.2429)**

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 271000 | Oils petroleum, bituminous, distillates | 7 | −0.9628 | 0.0509 |
| 854430 | Ignition sets for vehicles/aircraft/ship | 3 | −1.141 | 0.0684 |
| 160414 | Tuna, preserved | 3 | −2.291 | 0.0026 |
| 854211 | Monolithic integrated circuits, digital | 2 | 1.1696 | 0.002 |
| 847330 | Parts of data processing equipment | 2 | 1.0757 | 0.0044 |
| 852810 | Color TV receivers/monitors/projectors | 2 | −0.1188 | 0.0169 |
| 260800 | Zinc ores | 2 | −1.2748 | 1.0405 |
| 060310 | Flowers for bouquets (fresh) | 2 | −1.7099 | 0.0668 |
| 260111 | Iron ore, unagglomerated | 2 | −1.7388 | 0 |
| 260300 | Copper ores | 2 | −1.9059 | 1.8729 |
| 271111 | Natural gas, liquefied | 2 | −2.2934 | 0.0679 |
| 090111 | Coffee, not roasted | 2 | −2.5829 | 0.3101 |
| 847191 | Digital computer CPU, some storage/input/output | 1 | 1.3658 | 0.0009 |
| 854129 | Transistors, >1 watt | 1 | 1.3053 | 0.0003 |
| 851790 | Parts of telephone line equipment | 1 | 1.0956 | 0.0197 |
| 850440 | Static converters, n.e.s. | 1 | 0.9852 | 0.0788 |
| 847193 | Computer data storage units | 1 | 0.9144 | 0.0046 |
| 390410 | Polyvinyl chloride | 1 | 0.7215 | 0.0043 |
| 852520 | Transmit-receive apparatus for radio, TV | 1 | 0.6469 | 0.0679 |
| 300490 | Medicaments, doses, n.e.s. | 1 | 0.4785 | 0.1696 |
| 401290 | Tires, interchangeable treads | 1 | 0.3285 | 0.0351 |
| 902130 | Artificial body parts, aids | 1 | 0.3247 | 0.1188 |
| 901890 | Instruments for medical science, n.e.s. | 1 | 0.249 | 19.2792 |
| 950390 | Toys n.e.s. | 1 | 0.2169 | 0.1046 |
| 901839 | Medical needles, catheters | 1 | 0.1805 | 5.1652 |
| 851782 | Telegraphic apparatus, n.e.s. | 1 | 0.0579 | 0 |
| 210690 | Food preparations n.e.s. | 1 | −0.1646 | 1.7191 |

| | | | | |
|---|---|---|---|---|
| 280920 | Phosphoric acid | 1 | −0.4714 | 0.0153 |
| 283620 | Disodium carbonate | 1 | −0.5831 | 0.0044 |
| 220300 | Beer, malt | 1 | −0.6161 | 2.0639 |
| 220110 | Mineral & aerated waters | 1 | −0.7436 | 0.0319 |
| 310210 | Urea, >10kg | 1 | −0.9008 | 0.1757 |
| 310420 | Potassium chloride, >10kg | 1 | −0.9072 | 0.1061 |
| 220190 | Ice, potable water | 1 | −0.9577 | 0.4635 |
| 220820 | Spirits from distilling grape wine | 1 | −0.9832 | 0.0129 |
| 240220 | Cigarettes | 1 | −0.9993 | 0.4126 |
| 080510 | Oranges | 1 | −1.1981 | 0.5741 |

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 611610 | Gloves impregnated with plastic/rubber, knit | 1 | −1.2721 | 0.132 |
| 220840 | Rum | 1 | −1.2847 | 75.236 |
| 260400 | Nickel ores | 1 | −1.3612 | 0.0232 |
| 252329 | Portland cement, not white | 1 | −1.3628 | 13.5515 |
| 610821 | Women's briefs or panties, cotton, knit | 1 | −1.4185 | 0.0327 |
| 260700 | Lead ores | 1 | −1.4512 | 0 |
| 621210 | Brassieres | 1 | −1.5063 | 8.1762 |
| 170199 | Refined sugar, pure sucrose | 1 | −1.5756 | 0.0352 |
| 090230 | Tea, black, in <3kg packages | 1 | −1.5883 | 0 |
| 200899 | Fruit, otherwise preserved | 1 | −1.679 | 3.5819 |
| 620342 | Men's trousers & shorts, cotton, not knit | 1 | −1.7457 | 0.5632 |
| 611420 | Garments n.e.s., of cotton, knit | 1 | −1.7542 | 0.1209 |
| 620520 | Men's shirts, cotton, not knit | 1 | −1.7751 | 0.9954 |
| 230120 | Flour, meal of fish, for animal feed | 1 | −1.8955 | 0 |
| 080430 | Pineapples | 1 | −1.9285 | 3.3233 |
| 611030 | Pullovers, cardigans, of manmade fibers, knit | 1 | −1.9692 | 1.8708 |
| 170111 | Raw sugar, cane | 1 | −2.0917 | 10.503 |
| 030613 | Shrimps, frozen | 1 | −2.1623 | 0.0206 |
| 090240 | Tea, black, in >3kg packages | 1 | −2.3562 | 0 |
| 520100 | Cotton, not carded/combed | 1 | −2.4363 | 0 |
| 260200 | Manganese ores | 1 | −2.5179 | 0 |

**Table B.4. Potential Export Industries for Dominican Republic Suggested by Closest Countries in Resource Endowment in 2007 (Dominican Republic ECI = −0.2429)**

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 271000 | Oils petroleum, bituminous, distillates | 7 | −0.9628 | 0.0509 |
| 260300 | Copper ores | 3 | −1.9059 | 1.8729 |
| 300490 | Medicaments, doses, n.e.s. | 2 | 0.4785 | 0.1696 |
| 854430 | Ignition sets for vehicles/aircraft/ship | 2 | −1.141 | 0.0684 |
| 260800 | Zinc ores | 2 | −1.2748 | 1.0405 |
| 260111 | Iron ore, unagglomerated | 2 | −1.7388 | 0 |
| 620342 | Men's trousers & shorts, cotton, not knit | 2 | −1.7457 | 0.5632 |
| 030613 | Shrimps, frozen | 2 | −2.1623 | 0.0206 |
| 160414 | Tuna, preserved | 2 | −2.291 | 0.0026 |
| 271111 | Natural gas, liquefied | 2 | −2.2934 | 0.0679 |
| 847191 | Digital computer CPU, some storage/input/output | 1 | 1.3658 | 0.0009 |
| 854211 | Monolithic integrated circuits, digital | 1 | 1.1696 | 0.002 |
| 847330 | Parts of data processing equipment | 1 | 1.0757 | 0.0044 |
| 854140 | Photosensitive/PV/LED semiconductor device | 1 | 1.07 | 0.2307 |
| 870899 | Motor vehicle parts n.e.s. | 1 | 0.7992 | 0.2074 |
| 852520 | Transmit-receive apparatus for radio, TV | 1 | 0.6469 | 0.0679 |
| 401110 | Rubber tires, cars, new | 1 | 0.566 | 0.0102 |
| 480252 | Paper, fine, woodfree, 40–150 g/m2, uncoated | 1 | 0.5614 | 0.0716 |
| 401290 | Tires, interchangeable treads | 1 | 0.3285 | 0.0351 |
| 902130 | Artificial body parts, aids | 1 | 0.3247 | 0.1188 |
| 901890 | Instruments for medical science, n.e.s. | 1 | 0.249 | 19.2792 |
| 901839 | Medical needles, catheters | 1 | 0.1805 | 5.1652 |
| 851782 | Telegraphic apparatus, n.e.s. | 1 | 0.0579 | 0 |
| 470329 | Chem wood pulp, sulphate, non-conifer, bleached | 1 | −0.0932 | 0 |
| 852810 | Color TV receivers/monitors/projectors | 1 | −0.1188 | 0.0169 |
| 210690 | Food preparations n.e.s. | 1 | −0.1646 | 1.7191 |
| 280920 | Phosphoric acid | 1 | −0.4714 | 0.0153 |
| 283620 | Disodium carbonate | 1 | −0.5831 | 0.0044 |

| | | | | |
|---|---|---|---|---|
| 220300 | Beer, malt | 1 | −0.6161 | 2.0639 |
| 220421 | Grape wines, <2l pack | 1 | −0.7438 | 0.3331 |
| 640399 | Footwear, uppers of leather, n.e.s. | 1 | −0.9024 | 2.2519 |
| 310420 | Potassium chloride, >10kg | 1 | −0.9072 | 0.1061 |
| 220820 | Spirits from distilling grape wine | 1 | −0.9832 | 0.0129 |
| 640391 | Boots, upper of leather, n.e.s. | 1 | −0.9846 | 10.5421 |
| 240220 | Cigarettes | 1 | −0.9993 | 0.4126 |
| 640340 | Footwear, uppers of leather, metal toe-cap | 1 | −1.1083 | 11.9861 |
| 080610 | Grapes, fresh | 1 | −1.1527 | 0.0022 |

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 290511 | Methyl alcohol | 1 | −1.2183 | 0.0074 |
| 611610 | Gloves impregnated with plastic/rubber, knit | 1 | −1.2721 | 0.132 |
| 220840 | Rum | 1 | −1.2847 | 75.236 |
| 080920 | Cherries, fresh | 1 | −1.2999 | 0.0008 |
| 640610 | Footwear uppers | 1 | −1.3223 | 10.7509 |
| 252329 | Portland cement, not white | 1 | −1.3628 | 13.5515 |
| 610821 | Women's briefs or panties, cotton, knit | 1 | −1.4185 | 0.0327 |
| 260700 | Lead ores | 1 | −1.4512 | 0 |
| 621210 | Brassieres | 1 | −1.5063 | 8.1762 |
| 030410 | Fish meat, not liver or roe | 1 | −1.5169 | 0.0102 |
| 170199 | Refined sugar, pure sucrose | 1 | −1.5756 | 0.0352 |
| 090230 | Tea, black, in <3kg packages | 1 | −1.5883 | 0 |
| 200899 | Fruit, otherwise preserved | 1 | −1.679 | 3.5819 |
| 060310 | Flowers for bouquets (fresh) | 1 | −1.7099 | 0.0668 |
| 611420 | Garments n.e.s., of cotton, knit | 1 | −1.7542 | 0.1209 |
| 620520 | Men's shirts, cotton, not knit | 1 | −1.7751 | 0.9954 |
| 160510 | Crab, preserved | 1 | −1.8525 | 0 |
| 230120 | Flour, meal of fish, for animal feed | 1 | −1.8955 | 0 |
| 080430 | Pineapples | 1 | −1.9285 | 3.3233 |
| 030420 | Fish fillets, frozen | 1 | −1.9438 | 0 |
| 611030 | Pullovers, cardigans, of manmade fibers, knit | 1 | −1.9692 | 1.8708 |
| 151190 | Palm oil, simply refined | 1 | −2.3036 | 0.1331 |
| 090240 | Tea, black, in >3kg packages | 1 | −2.3562 | 0 |

| | | | | |
|---|---|---|---|---|
| 520100 | Cotton, not carded/combed | 1 | −2.4363 | 0 |
| 090111 | Coffee, not roasted | 1 | −2.5829 | 0.3101 |

**Table B.5. Potential Export Industries for Panama Suggested by Closest Countries in Resource Endowment in 2019 (Panama ECI = −0.1420)**

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 271000 | Oils petroleum, bituminous, distillates | 3 | −0.9628 | 0.9594 |
| 030420 | Fish fillets, frozen | 3 | −1.9438 | 0.2196 |
| 854211 | Monolithic integrated circuits, digital | 2 | 1.1696 | 0.004 |
| 852810 | Color TV receivers/monitors/projectors | 2 | −0.1188 | 0.7017 |
| 220421 | Grape wines, <2l pack | 2 | −0.7438 | 0.0515 |
| 240220 | Cigarettes | 2 | −0.9993 | 2.4739 |
| 854430 | Ignition sets for vehicles/aircraft/ship | 2 | −1.141 | 0.0088 |
| 030410 | Fish meat, not liver or roe | 2 | −1.5169 | 0.2493 |
| 620342 | Men's trousers & shorts, cotton, not knit | 2 | −1.7457 | 0.8699 |
| 260300 | Copper ores | 2 | −1.9059 | 8.8485 |
| 610910 | T-shirts, of cotton, knit | 2 | −1.9099 | 0.4313 |
| 160414 | Tuna, preserved | 2 | −2.291 | 0.0758 |
| 847191 | Digital computer CPU, some storage/input/output | 1 | 1.3658 | 0.1121 |
| 847199 | Automatic data processing machines | 1 | 1.114 | 0.3658 |
| 847330 | Parts of data processing equipment | 1 | 1.0757 | 0.1444 |
| 854140 | Photosensitive/PV/LED semiconductor device | 1 | 1.07 | 0.132 |
| 870829 | Parts of motor vehicle bodies | 1 | 1.0007 | 0.0152 |
| 870899 | Motor vehicle parts n.e.s. | 1 | 0.7992 | 0.3224 |
| 852520 | Transmit-receive apparatus for radio, TV | 1 | 0.6469 | 0.4207 |
| 392690 | Plastic articles, n.e.s. | 1 | 0.5935 | 0.1805 |
| 401110 | Rubber tires, cars, new | 1 | 0.566 | 2.4954 |
| 480252 | Paper, fine, woodfree, 40–150 g/m2, uncoated | 1 | 0.5614 | 0.1365 |
| 440320 | Logs, coniferous | 1 | 0.514 | 0 |
| 300490 | Medicaments, doses, n.e.s. | 1 | 0.4785 | 1.9417 |
| 901890 | Instruments for medical science, n.e.s. | 1 | 0.249 | 0.1228 |
| 950390 | Toys n.e.s. | 1 | 0.2169 | 0.3715 |
| 853620 | Automatic circuit breakers, <1kV | 1 | 0.216 | 0.0317 |
| 851782 | Telegraphic apparatus, n.e.s. | 1 | 0.0579 | 0.0524 |
| 040500 | Butter, milk fats & oils | 1 | 0.0521 | 0.0065 |
| 280920 | Phosphoric acid | 1 | −0.4714 | 0.0083 |
| 283620 | Disodium carbonate | 1 | −0.5831 | 0.013 |

| | | | | |
|---|---|---|---|---|
| 271600 | Electrical energy | 1 | −0.6327 | 0.2588 |
| 020230 | Boneless beef, frozen | 1 | −0.7787 | 0.5771 |
| 040221 | Unsweetened milk powder, >1.5% fat | 1 | −0.8376 | 0.1663 |
| 640399 | Footwear, uppers of leather, n.e.s. | 1 | −0.9024 | 0.6555 |
| 310420 | Potassium chloride, >10kg | 1 | −0.9072 | 0.0022 |
| 220820 | Spirits from distilling grape wine | 1 | −0.9832 | 1.1582 |
| 640391 | Boots, upper of leather, n.e.s. | 1 | −0.9846 | 0.3506 |

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 240210 | Cigars | 1 | −0.9983 | 0.4531 |
| 640340 | Footwear, uppers of leather, metal toe-cap | 1 | −1.1083 | 0.2623 |
| 080610 | Grapes, fresh | 1 | −1.1527 | 0.0253 |
| 080920 | Cherries, fresh | 1 | −1.2999 | 0 |
| 640610 | Footwear uppers | 1 | −1.3223 | 0.0003 |
| 721420 | Bar/rod, iron/non-alloy steel, indent/twisted | 1 | −1.325 | 0.0025 |
| 020442 | Mutton, bone-in, frozen | 1 | −1.4214 | 0 |
| 251010 | Calcium phosphate, unground | 1 | −1.4789 | 0 |
| 170199 | Refined sugar, pure sucrose | 1 | −1.5756 | 0.002 |
| 081090 | Fruits, fresh n.e.s. | 1 | −1.6843 | 0 |
| 611420 | Garments n.e.s., of cotton, knit | 1 | −1.7542 | 0.0888 |
| 620520 | Men’s shirts, cotton, not knit | 1 | −1.7751 | 0.7231 |
| 271112 | Propane, liquefied | 1 | −1.8916 | 0 |
| 611030 | Pullovers, cardigans, of manmade fibers, knit | 1 | −1.9692 | 0.1537 |
| 030232 | Yellowfin tuna | 1 | −2.0242 | 25.3939 |
| 030342 | Yellowfin tuna, frozen | 1 | −2.1126 | 15.8768 |
| 030343 | Bonito, frozen | 1 | −2.1609 | 4.592 |
| 271111 | Natural gas, liquefied | 1 | −2.2934 | 0 |
| 151190 | Palm oil, simply refined | 1 | −2.3036 | 0.0344 |
| 260200 | Manganese ores | 1 | −2.5179 | 0 |

**Table B.6. Potential Export Industries for Panama Suggested by Closest Countries in Resource Endowment in 2007 (Panama ECI = −0.1420)**

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 271000 | Oils petroleum, bituminous, distillates | 9 | −0.9628 | 0.9594 |
| 852520 | Transmit-receive apparatus for radio, TV | 4 | 0.6469 | 0.4207 |
| 854211 | Monolithic integrated circuits, digital | 3 | 1.1696 | 0.004 |
| 847330 | Parts of data processing equipment | 3 | 1.0757 | 0.1444 |
| 870899 | Motor vehicle parts n.e.s. | 2 | 0.7992 | 0.3224 |
| 220421 | Grape wines, <2l pack | 2 | −0.7438 | 0.0515 |
| 271111 | Natural gas, liquefied | 2 | −2.2934 | 0 |
| 901020 | Equipment for photographic laboratories n.e.s. | 1 | 1.7947 | 0.0001 |
| 851790 | Parts of telephone line equipment | 1 | 1.0956 | 0.8073 |
| 854140 | Photosensitive/PV/LED semiconductor device | 1 | 1.07 | 0.132 |
| 841112 | Turbo-jet engine, >25 KN | 1 | 0.7913 | 0 |
| 880330 | Aircraft parts n.e.s. | 1 | 0.772 | 0.0115 |
| 910121 | Wrist-watch, precious metal, automatic wound | 1 | 0.7554 | 0.1582 |
| 392690 | Plastic articles, n.e.s. | 1 | 0.5935 | 0.1805 |
| 401110 | Rubber tires, cars, new | 1 | 0.566 | 2.4954 |
| 480252 | Paper, fine, woodfree, 40–150 g/m2, uncoated | 1 | 0.5614 | 0.1365 |
| 440320 | Logs, coniferous | 1 | 0.514 | 0 |
| 300490 | Medicaments, doses, n.e.s. | 1 | 0.4785 | 1.9417 |
| 852990 | Parts for radio/TV transmit/receive equipment | 1 | 0.3747 | 0.1143 |
| 970110 | Paintings/drawings/pastels, by hand | 1 | 0.2592 | 0.0421 |
| 901890 | Instruments for medical science, n.e.s. | 1 | 0.249 | 0.1228 |
| 853620 | Automatic circuit breakers, <1kV | 1 | 0.216 | 0.0317 |
| 330499 | Make-up, n.e.s. | 1 | 0.1699 | 0.6567 |
| 040500 | Butter, milk fats & oils | 1 | 0.0521 | 0.0065 |
| 040690 | Cheese not fresh or processed | 1 | 0.0178 | 0.0077 |
| 852810 | Color TV receivers/monitors/projectors | 1 | −0.1188 | 0.7017 |
| 271600 | Electrical energy | 1 | −0.6327 | 0.2588 |
| 20230 | Boneless beef, frozen | 1 | −0.7787 | 0.5771 |
| 281410 | Anhydrous ammonia | 1 | −0.8158 | 0.0005 |
| 040221 | Unsweetened milk powder, >1.5% fat | 1 | −0.8376 | 0.1663 |
| 310210 | Urea, >10kg | 1 | −0.9008 | 0 |
| 240210 | Cigars | 1 | −0.9983 | 0.4531 |
| 080610 | Grapes, fresh | 1 | −1.1527 | 0.0253 |
| 290511 | Methyl alcohol | 1 | −1.2183 | 0 |

| | | | | |
|---|---|---|---|---|
| 080920 | Cherries, fresh | 1 | −1.2999 | 0 |
| 020442 | Mutton, bone-in, frozen | 1 | −1.4214 | 0 |
| 030410 | Fish meat, not liver or roe | 1 | −1.5169 | 0.2493 |
| 081090 | Fruits, fresh n.e.s. | 1 | −1.6843 | 0 |
| 260300 | Copper ores | 1 | −1.9059 | 8.8485 |
| 610910 | T−shirts, of cotton, knit | 1 | −1.9099 | 0.4313 |
| 030420 | Fish fillets, frozen | 1 | −1.9438 | 0.2196 |
| 030269 | Whole fish, n.e.s. | 1 | −1.9593 | 4.1122 |
| 151190 | Palm oil, simply refined | 1 | −2.3036 | 0.0344 |
| 520100 | Cotton, not carded/combed | 1 | −2.4363 | 0 |

**Table B.7. Closest Countries to Costa Rica's 2019 Resource Endowment, for 2019 and 2007 (Costa Rica ECI = $0.3591$)**

| Country Code | Country Name | Distance | ECI |
|---|---|---|---|
| Concurrent 2019 List | | | |
| FJI | Fiji | 0.1466 | −0.6300 |
| ECU | Ecuador | 0.1548 | −0.8827 |
| LKA | Sri Lanka | 0.1603 | −0.6790 |
| DOM | Dominican Republic | 0.1974 | −0.2429 |
| CHN | China | 0.2172 | 1.0370 |
| MUS | Mauritius | 0.2753 | −0.4536 |
| TJK | Tajikistan | 0.298 | −0.6270 |
| JAM | Jamaica | 0.3331 | −0.4245 |
| PER | Peru | 0.3535 | −0.4412 |
| EGY | Egypt | 0.3634 | −0.1643 |
| JOR | Jordan | 0.3687 | −0.1241 |
| COL | Colombia | 0.3838 | 0.2091 |
| PHL | Philippines | 0.3873 | 0.5351 |
| VNM | Vietnam | 0.4827 | −0.1072 |
| BWA | Botswana | 0.5151 | −0.2606 |
| IDN | Indonesia | 0.5159 | −0.0155 |
| MEX | Mexico | 0.5492 | 1.1481 |
| Lagged 2007 List | | | |
| JOR | Jordan | 0.1318 | −0.1241 |
| MUS | Mauritius | 0.2414 | −0.4536 |
| DOM | Dominican Republic | 0.2705 | −0.2429 |
| BWA | Botswana | 0.2801 | −0.2606 |
| ECU | Ecuador | 0.4198 | −0.8827 |
| JAM | Jamaica | 0.4594 | −0.4245 |
| LKA | Sri Lanka | 0.4887 | −0.6790 |
| MYS | Malaysia | 0.5399 | 1.0920 |
| COL | Colombia | 0.6289 | 0.2091 |
| CHL | Chile | 0.6349 | 0.0577 |
| TJK | Tajikistan | 0.6428 | −0.6270 |
| ALB | Albania | 0.646 | −0.6992 |

| | | | |
|---|---|---|---|
| MEX | Mexico | 0.6596 | 1.1481 |
| ARM | Armenia | 0.6864 | −0.3205 |
| FJI | Fiji | 0.7006 | −0.6300 |
| PER | Peru | 0.7019 | −0.4412 |
| PHL | Philippines | 0.7535 | 0.5351 |

**Table B.8. Closest Countries to Dominican Republic's 2019 Resource Endowment, for 2019 and 2007 (Dominican Republic ECI = −0.2429)**

| Country Code | Country Name | Distance | ECI |
|---|---|---|---|
| Concurrent 2019 List | | | |
| LKA | Sri Lanka | 0.1752 | −0.6790 |
| MUS | Mauritius | 0.1843 | −0.4536 |
| CRI | Costa Rica | 0.1974 | 0.3591 |
| FJI | Fiji | 0.2009 | −0.6300 |
| TJK | Tajikistan | 0.2849 | −0.6270 |
| ECU | Ecuador | 0.2854 | −0.8827 |
| JOR | Jordan | 0.3057 | −0.1241 |
| CHN | China | 0.3121 | 1.0370 |
| BWA | Botswana | 0.3254 | −0.2606 |
| MEX | Mexico | 0.3642 | 1.1481 |
| PER | Peru | 0.3838 | −0.4412 |
| COL | Colombia | 0.4226 | 0.2091 |
| EGY | Egypt | 0.4492 | −0.1643 |
| ARM | Armenia | 0.477 | −0.3205 |
| JAM | Jamaica | 0.5096 | −0.4245 |
| PHL | Philippines | 0.5415 | 0.5351 |
| ZAF | South Africa | 0.583 | 0.3421 |
| Lagged 2007 List | | | |
| CRI | Costa Rica | 0.2705 | 0.3591 |
| JOR | Jordan | 0.3134 | −0.1241 |
| BWA | Botswana | 0.3294 | −0.2606 |
| MYS | Malaysia | 0.4886 | 1.0920 |
| MUS | Mauritius | 0.489 | −0.4536 |
| CHL | Chile | 0.5374 | 0.0577 |
| ALB | Albania | 0.5851 | −0.6992 |
| ECU | Ecuador | 0.6308 | −0.8827 |
| MEX | Mexico | 0.6388 | 1.1481 |
| LKA | Sri Lanka | 0.6692 | −0.6790 |
| TJK | Tajikistan | 0.6736 | −0.6270 |
| ARM | Armenia | 0.6936 | −0.3205 |

| | | | |
|---|---|---|---|
| JAM | Jamaica | 0.7064 | −0.4245 |
| PRT | Portugal | 0.7751 | 0.3593 |
| PER | Peru | 0.8203 | −0.4412 |
| HRV | Croatia | 0.8504 | 0.7557 |
| VEN | Venezuela | 0.8806 | −1.0123 |

**Table B.9. Closest Countries to Panama's 2019 Resource Endowment, for 2019 and 2007 (Panama ECI = −0.1420)**

| Country Code | Country Name | Distance | ECI |
|---|---|---|---|
| Concurrent 2019 List | | | |
| CHL | Chile | 0.2095 | 0.0577 |
| TUR | Turkey | 0.3893 | 0.4328 |
| MYS | Malaysia | 0.5108 | 1.0920 |
| NZL | New Zealand | 0.538 | 0.3963 |
| BWA | Botswana | 0.5421 | −0.2606 |
| MLT | Malta | 0.6085 | 0.6673 |
| PRT | Portugal | 0.6098 | 0.3593 |
| MDV | Maldives | 0.6297 | −2.0007 |
| ARM | Armenia | 0.6436 | −0.3205 |
| MEX | Mexico | 0.646 | 1.1481 |
| ALB | Albania | 0.7057 | −0.6992 |
| HRV | Croatia | 0.748 | 0.7557 |
| JOR | Jordan | 0.7642 | −0.1241 |
| MUS | Mauritius | 0.7703 | −0.4536 |
| ZAF | South Africa | 0.7973 | 0.3421 |
| DOM | Dominican Republic | 0.8454 | −0.2429 |
| POL | Poland | 0.8663 | 1.1230 |
| Lagged 2007 List | | | |
| NZL | New Zealand | 0.2074 | 0.3963 |
| CYP | Cyprus | 0.4255 | 0.5454 |
| SVN | Slovenia | 0.4489 | 1.5102 |
| HRV | Croatia | 0.493 | 0.7557 |
| PRT | Portugal | 0.4995 | 0.3593 |
| ISR | Israel | 0.5617 | 1.2494 |
| KOR | South Korea | 0.7066 | 1.9009 |
| GRC | Greece | 0.7237 | 0.1190 |
| SVK | Slovakia | 0.7937 | 1.3490 |
| ESP | Spain | 0.8286 | 0.7422 |
| GBR | United Kingdom | 0.8766 | 1.4366 |
| MAC | Macao | 0.883 | 0.2202 |

| | | | |
|---|---|---|---|
| CHL | Chile | 0.8915 | 0.0577 |
| TTO | Trinidad and Tobago | 0.915 | 0.3641 |
| MYS | Malaysia | 0.9461 | 1.0920 |
| DOM | Dominican Republic | 0.9839 | −0.2429 |
| NLD | Netherlands | 0.9997 | 1.2187 |

**Table B.10. Top 20 Potential Export Industries for Costa Rica Identified through Lagged and Concurrent Analysis: Method 2**

| Chap-ter | HS Code | HS Name 2019 | Paths 2019 | HS Name 2007 | Paths 2007 | PCI | RCA | PCI-ECI |
|---|---|---|---|---|---|---|---|---|
| 85 | 852390 | Unrecorded sound recording media | 1 | | | 1.5214 | 0.1316 | 1.1623 |
| 85 | 853224 | Electric capacitors, ceramic, multilayer | 1 | | | 1.3947 | 0.0099 | 1.0356 |
| 84 | 847191 | | | Digital computer CPU, some storage/input/ output | 1 | 1.3658 | 0.0176 | 1.0067 |
| 85 | 854129 | | | Transistors, >1 watt | 1 | 1.3053 | 0.0107 | 0.9462 |
| 85 | 854211 | Monolithic integrated circuits, digital | 3 | Monolithic integrated circuits, digital | 2 | 1.1696 | 0.1068 | 0.8105 |
| 85 | 851790 | Parts of telephone line equipment | 2 | | | 1.0956 | 0.1031 | 0.7365 |
| 84 | 847330 | Parts of data processing equipment | 4 | Parts of data processing equipment | 2 | 1.0757 | 0.1538 | 0.7166 |
| 85 | 854140 | | | Photosensitive/PV/LED semiconductor device | 1 | 1.07 | 0.049 | 0.7109 |
| 85 | 850440 | Static converters, n.e.s. | 2 | Static converters, n.e.s. | 1 | 0.9852 | 0.0958 | 0.6261 |
| 84 | 847193 | Computer data storage units | 2 | | | 0.9144 | 0.0155 | 0.5553 |
| 39 | 390410 | | | Polyvinyl chloride | 1 | 0.7215 | 0.0395 | 0.3624 |
| 85 | 852520 | Transmit-receive apparatus for radio, TV | 5 | Transmit-receive apparatus for radio, TV | 1 | 0.6469 | 0.0165 | 0.2878 |
| 39 | 392690 | | | Plastic articles, n.e.s. | 1 | 0.5935 | 1.9143 | 0.2344 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 30 | 300490 | | | Medicaments, doses, n.e.s. | 1 | 0.4785 | 0.4894 | 0.1194 |
| 85 | 852990 | Parts for radio/TV transmit/receive equipment | 3 | | | 0.3747 | 0.0759 | 0.0156 |
| 40 | 401290 | | | Tires, interchangeable treads | 1 | 0.3285 | 0.0253 | −0.0306 |
| 85 | 853620 | | | Automatic circuit breakers, <1kV | 1 | 0.216 | 0.4686 | −0.1431 |
| 85 | 851782 | | | Telegraphic apparatus, n.e.s. | 1 | 0.0579 | 0.0036 | −0.3012 |
| 85 | 852810 | Color TV receivers/ monitors/projectors | 3 | | | −0.1188 | 0.0511 | −0.4779 |
| 64 | 640411 | Sports footwear, upper textile | 2 | | | −0.7864 | 0.001 | −1.1455 |
| 31 | 310210 | Urea, >10kg | 2 | | | −0.9008 | 0.0581 | −1.2599 |
| 64 | 640399 | Footwear, uppers of leather, n.e.s. | 2 | | | −0.9024 | 0.016 | −1.2615 |

| Chap-ter | HS Code | HS Name 2019 | Paths 2019 | HS Name 2007 | Paths 2007 | PCI | RCA | PCI-ECI |
|---|---|---|---|---|---|---|---|---|
| 27 | 271000 | | | Oils petroleum, bituminous, distillates | 6 | −0.9628 | 0.0037 | −1.3219 |
| 85 | 854430 | Ignition sets for vehicles/aircraft/ship | 4 | Ignition sets for vehicles/ aircraft/ship | 3 | −1.141 | 0.1243 | −1.5001 |
| 71 | 710391 | Rubies, sapphires & emeralds, worked, not set | 2 | | | −1.2983 | 0 | −1.6574 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 60 | 60310 | | | Flowers for bouquets (fresh) | 2 | −1.7099 | 3.547 | −2.069 |
| 62 | 620342 | Men's trousers & shorts, cotton, not knit | 4 | Men's trousers & shorts, cotton, not knit | 2 | −1.7457 | 0.0441 | −2.1048 |
| 61 | 610510 | Men's shirts, cotton, knit | 2 | | | −1.8315 | 0.0132 | −2.1906 |
| 61 | 610910 | T-shirts, of cotton, knit | 3 | T-shirts, of cotton, knit | 2 | −1.9099 | 0.0194 | −2.269 |
| 61 | 611020 | Pullovers, cardigans, of cotton, knit | 2 | | | −1.9164 | 0.0035 | −2.2755 |
| 62 | 620462 | Women's trousers & shorts, cotton, not knit | 2 | | | −1.9493 | 0.0088 | −2.3084 |
| 16 | 160414 | | | Tuna, preserved | 3 | −2.291 | 3.0756 | −2.6501 |
| 27 | 271111 | | | Natural gas, liquefied | 2 | −2.2934 | 0 | −2.6525 |

**Table B.11. Top 20 Potential Export Industries for Dominican Republic Identified through Lagged and Concurrent Analysis: Method 2**

| Chap-ter | HS Code | HS Name 2019 | Paths 2019 | HS Name 2007 | Paths 2007 | PCI | RCA | PCI-ECI |
|---|---|---|---|---|---|---|---|---|
| 84 | 847191 | Digital computer CPU, some storage/input/ output | 1 | Digital computer CPU, some storage/input/output | 1 | 1.3658 | 0.0009 | 1.6087 |
| 85 | 854129 | Transistors, >1 watt | 1 | | | 1.3053 | 0.0003 | 1.5482 |
| 85 | 854211 | Monolithic integrated circuits, digital | 2 | Monolithic integrated circuits, digital | 1 | 1.1696 | 0.002 | 1.4125 |
| 85 | 851790 | Parts of telephone line equipment | 1 | | | 1.0956 | 0.0197 | 1.3385 |
| 84 | 847330 | Parts of data processing equipment | 2 | Parts of data processing equipment | 1 | 1.0757 | 0.0044 | 1.3186 |
| 85 | 854140 | | | Photosensitive/PV/LED semiconductor device | 1 | 1.07 | 0.2307 | 1.3129 |
| 85 | 850440 | Static converters, n.e.s. | 1 | | | 0.9852 | 0.0788 | 1.2281 |
| 84 | 847193 | Computer data storage units | 1 | | | 0.9144 | 0.0046 | 1.1573 |
| 87 | 870899 | | | Motor vehicle parts n.e.s. | 1 | 0.7992 | 0.2074 | 1.0421 |
| 39 | 390410 | Polyvinyl chloride | 1 | | | 0.7215 | 0.0043 | 0.9644 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 85 | 852520 | Transmit-receive apparatus for radio, TV | 1 | Transmit-receive apparatus for radio, TV | 1 | 0.6469 | 0.0679 | 0.8898 |
| 40 | 401110 | | | Rubber tires, cars, new | 1 | 0.566 | 0.0102 | 0.8089 |
| 48 | 480252 | | | Paper, fine, woodfree, 40–150 g/m2, uncoated | 1 | 0.5614 | 0.0716 | 0.8043 |
| 30 | 300490 | Medicaments, doses, n.e.s. | 1 | Medicaments, doses, n.e.s. | 2 | 0.4785 | 0.1696 | 0.7214 |
| 40 | 401290 | | | Tires, interchangeable treads | 1 | 0.3285 | 0.0351 | 0.5714 |
| 90 | 902130 | | | Artificial body parts, aids | 1 | 0.3247 | 0.1188 | 0.5676 |
| 85 | 852810 | Color TV receivers/monitors/ projectors | 2 | | | −0.1188 | 0.0169 | 0.1241 |
| 27 | 271000 | Oils petroleum, bituminous, distillates | 7 | Oils petroleum, bituminous, distillates | 7 | −0.9628 | 0.0509 | −0.7199 |
| 85 | 854430 | Ignition sets for vehicles/aircraft/ ship | 3 | Ignition sets for vehicles/ aircraft/ship | 2 | −1.1410 | 0.0684 | −0.8981 |
| 26 | 260800 | Zinc ores | 2 | Zinc ores | 2 | −1.2748 | 1.0405 | −1.0319 |

| Chap-ter | HS Code | HS Name 2019 | Paths 2019 | HS Name 2007 | Paths 2007 | PCI | RCA | PCI-ECI |
|---|---|---|---|---|---|---|---|---|
| 06 | 060310 | Flowers for bouquets (fresh) | 2 | | | −1.7099 | 0.0668 | −1.4670 |
| 26 | 260111 | Iron ore, unagglomerated | 2 | Iron ore, unagglomerated | 2 | −1.7388 | 0 | −1.4959 |
| 62 | 620342 | | | Men's trousers & shorts, cotton, not knit | 2 | −1.7457 | 0.5632 | −1.5028 |
| 26 | 260300 | Copper ores | 2 | Copper ores | 3 | −1.9059 | 1.8729 | −1.6630 |
| 03 | 030613 | | | Shrimps, frozen | 2 | −2.1623 | 0.0206 | −1.9194 |
| 16 | 160414 | Tuna, preserved | 3 | Tuna, preserved | 2 | −2.2910 | 0.0026 | −2.0481 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 27 | 271111 | Natural gas, liquefied | 2 | Natural gas, liquefied | 2 | −2.2934 | 0.0679 | −2.0505 |
| 09 | 090111 | Coffee, not roasted | 2 | | | −2.5829 | 0.3101 | −2.3400 |

**Table B.12. Top 20 Potential Export Industries for Panama Identified through Lagged and Concurrent Analysis: Method 2**

| Chap-ter | HS Code | HS Name 2019 | Paths 2019 | HS Name 2007 | Paths 2007 | PCI | RCA | PCI-ECI |
|---|---|---|---|---|---|---|---|---|
| 90 | 901020 | | | Equipment for photographic laboratories n.e.s. | 1 | 1.7947 | 0.0001 | 0.1421 |
| 84 | 847191 | Digital computer CPU, some storage/input/ output | 1 | | | 1.3658 | 0.1121 | 0.2541 |
| 85 | 854211 | Monolithic integrated circuits, digital | 2 | Monolithic integrated circuits, digital | 3 | 1.1696 | 0.004 | 0.1460 |
| 84 | 847199 | Automatic data processing machines | 1 | | | 1.1140 | 0.3658 | 0.5078 |
| 85 | 851790 | | | Parts of telephone line equipment | 1 | 1.0956 | 0.8073 | 0.9493 |
| 84 | 847330 | Parts of data processing equipment | 1 | Parts of data processing equipment | 3 | 1.0757 | 0.1444 | 0.2864 |
| 85 | 854140 | Photosensitive/PV/ LED semiconductor device | 1 | Photosensitive/PV/LED semiconductor device | 1 | 1.0700 | 0.132 | 0.2740 |
| 87 | 870829 | Parts of motor vehicle bodies | 1 | | | 1.0007 | 0.0152 | 0.1572 |
| 87 | 870899 | Motor vehicle parts n.e.s. | 1 | Motor vehicle parts n.e.s. | 2 | 0.7992 | 0.3224 | 0.4644 |
| 84 | 841112 | | | Turbo-jet engine, >25 KN | 1 | 0.7913 | 0 | 0.1420 |
| 88 | 880330 | | | Aircraft parts n.e.s. | 1 | 0.7720 | 0.0115 | 0.1535 |
| 91 | 910121 | | | Wrist-watch, precious | 1 | 0.7554 | 0.1582 | 0.3002 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | metal, automatic wound | | | | |
| 85 | 852520 | Transmit-receive apparatus for radio, TV | 1 | Transmit-receive apparatus for radio, TV | 4 | 0.6469 | 0.4207 | 0.5627 |
| 39 | 392690 | Plastic articles, n.e.s. | 1 | Plastic articles, n.e.s. | 1 | 0.5935 | 0.1805 | 0.3225 |
| 40 | 401110 | | | Rubber tires, cars, new | 1 | 0.5660 | 2.4954 | 2.6374 |
| 48 | 480252 | | | Paper, fine, woodfree, 40–150 g/m2, uncoated | 1 | 0.5614 | 0.1365 | 0.2785 |
| 44 | 440320 | | | Logs, coniferous | 1 | 0.5140 | 0 | 0.1420 |
| 30 | 300490 | | | Medicaments, doses, n.e.s. | 1 | 0.4785 | 1.9417 | 2.0837 |
| 85 | 852990 | | | Parts for radio/TV transmit/receive equipment | 1 | 0.3747 | 0.1143 | 0.2563 |
| 97 | 970110 | | | Paintings/drawings/ pastels, by hand | 1 | 0.2592 | 0.0421 | 0.1841 |
| 85 | 852810 | Color TV receivers/ monitors/projectors | 2 | | | −0.1188 | 0.7017 | 0.8437 |

| Chap-ter | HS Code | HS Name 2019 | Paths 2019 | HS Name 2007 | Paths 2007 | PCI | RCA | PCI-ECI |
|---|---|---|---|---|---|---|---|---|
| 22 | 220421 | using | 2 | Grape wines, <2l pack | 2 | −0.7438 | 0.0515 | 0.1935 |
| 27 | 271000 | Oils petroleum, bituminous, distillates | 3 | Oils petroleum, bituminous, distillates | 9 | −0.9628 | 0.9594 | 1.1014 |
| 24 | 240220 | Cigarettes | 2 | | | −0.9993 | 2.4739 | 2.6159 |
| 85 | 854430 | Ignition sets for vehicles/aircraft/ship | 2 | | | −1.1410 | 0.0088 | 0.1508 |
| 30 | 30410 | Fish meat, not liver or roe | 2 | | | −1.5169 | 0.2493 | 0.3913 |
| 62 | 620342 | Men's trousers & shorts, cotton, not knit | 2 | | | −1.7457 | 0.8699 | 1.0119 |
| 26 | 260300 | Copper ores | 2 | | | −1.9059 | 8.8485 | 8.9905 |
| 61 | 610910 | T-shirts, of cotton, knit | 2 | | | −1.9099 | 0.4313 | 0.5733 |
| 03 | 030420 | Fish fillets, frozen | 3 | | | −1.9438 | 0.2196 | 0.3616 |
| 16 | 160414 | Tuna, preserved | 2 | | | −2.2910 | 0.0758 | 0.2178 |
| 27 | 271111 | | | Natural gas, liquefied | 2 | −2.2934 | 0 | 0.1420 |

**Table C.1. Main Other Export Industries of Countries That in 2019 Were Principal Exporters of Costa Rica's Top Sectors (Costa Rica ECI = 0.3591)**

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 280920 | Phosphoric acid | 1 | −0.4714 | 0.0166 |
| 290511 | Methyl alcohol | 1 | −1.2183 | 0.0007 |
| 293379 | Lactams, n.e.s. | 1 | 1.9298 | 0.0004 |
| 300220 | Vaccines, human | 2 | 0.6229 | 0.0027 |
| 300431 | Insulin, doses | 1 | 0.3790 | 0.0000 |
| 300439 | Hormones, not contraceptive, doses | 2 | 1.2183 | 0.1502 |
| 300490 | Medicaments, doses, n.e.s. | 17 | 0.4785 | 0.4894 |
| 310210 | Urea, >10kg | 2 | −0.9008 | 0.0581 |
| 310420 | Potassium chloride, >10kg | 1 | −0.9072 | 0.0519 |
| 330210 | Mixed odors, food & drink | 1 | −0.2090 | 2.6304 |
| 340700 | Model, dental paste, wax | 1 | 1.1672 | 0.0472 |
| 390110 | Polyethylene, <0.94 spec gravity | 1 | 0.4631 | 0.0494 |
| 401110 | Rubber tires, cars, new | 2 | 0.5660 | 3.4021 |
| 540720 | Fabric of strip etc, synthetic textile material | 1 | −0.8352 | 0.2572 |
| 570110 | Carpets of wool/hair, knotted | 1 | −0.9571 | 0.0000 |
| 610910 | T-shirts, of cotton, knit | 3 | −1.9099 | 0.0194 |
| 611020 | Pullovers, cardigans, of cotton, knit | 1 | −1.9164 | 0.0035 |
| 611030 | Pullovers, cardigans, of manmade fibers, knit | 1 | −1.9692 | 0.0489 |
| 611420 | Garments n.e.s., of cotton, knit | 1 | −1.7542 | 0.0754 |
| 620193 | Men's anoraks, manmade fibers, not knit | 1 | −1.2409 | 0.0700 |
| 620293 | Women's anoraks, manmade fibers, not knit | 1 | −1.1494 | 0.0025 |
| 620322 | Men's ensembles, cotton, not knit | 1 | −2.2500 | 0.0024 |
| 620342 | Men's trousers & shorts, cotton, not knit | 4 | −1.7457 | 0.0441 |
| 620462 | Women's trousers & shorts, cotton, not knit | 1 | −1.9493 | 0.0088 |
| 620520 | Men's shirts, cotton, not knit | 1 | −1.7751 | 0.0123 |
| 630221 | Bed linen, of cotton, printed | 1 | −0.7389 | 0.0000 |
| 630231 | Bed linen, of cotton, n.e.s. | 1 | −1.3928 | 0.0069 |
| 630260 | Toilet/kitchen linen, of terry | 1 | −1.5210 | 0.0925 |
| 630900 | Worn clothing | 1 | −0.5220 | 0.0816 |

| | | | | |
|---|---|---|---|---|
| 640340 | Footwear, uppers of leather, metal toe-cap | 1 | −1.1083 | 0.0393 |
| 640391 | Boots, upper of leather, n.e.s. | 1 | −0.9846 | 0.0423 |
| 640399 | Footwear, uppers of leather, n.e.s. | 1 | −0.9024 | 0.0160 |
| 640610 | Footwear uppers | 1 | −1.3223 | 0.0000 |
| 840734 | Engines, spark-ignition, >1000cc | 1 | 1.4839 | 0.0001 |
| 841112 | Turbo-jet engine, >25 KN | 1 | 0.7913 | 0.0263 |
| 841480 | Air compressor, hoods | 1 | 1.1697 | 0.0134 |

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 847191 | Digital computer CPU, some storage/input/output | 3 | 1.3658 | 0.0176 |
| 847193 | Computer data storage units | 1 | 0.9144 | 0.0155 |
| 847330 | Parts of data processing equipment | 6 | 1.0757 | 0.1538 |
| 850230 | Electric generating sets, n.e.s. | 1 | 0.9209 | 0.0043 |
| 851782 | Telegraphic apparatus, n.e.s. | 1 | 0.0579 | 0.0036 |
| 851790 | Parts of telephone line equipment | 2 | 1.0956 | 0.1031 |
| 852390 | Unrecorded sound recording media | 1 | 1.5214 | 0.1316 |
| 852520 | Transmit-receive apparatus for radio, TV | 11 | 0.6469 | 0.0165 |
| 852810 | Color TV receivers/monitors/projectors | 3 | -0.1188 | 0.0511 |
| 852990 | Parts for radio/TV transmit/receive equipment | 1 | 0.3747 | 0.0759 |
| 853400 | Electronic printed circuits | 1 | 0.3853 | 0.1235 |
| 853620 | Automatic circuit breakers, <1kV | 1 | 0.2160 | 0.4686 |
| 853710 | Electrical control & distribution boards, <1kV | 1 | 0.5934 | 0.1970 |
| 854140 | Photosensitive/PV/LED semiconductor device | 1 | 1.0700 | 0.0490 |
| 854211 | Monolithic integrated circuits, digital | 10 | 1.1696 | 0.1068 |
| 854430 | Ignition sets for vehicles/aircraft/ship | 5 | -1.1410 | 0.1243 |
| 854441 | Electric conductors <80V, with connectors | 1 | -0.2322 | 1.8595 |
| 870321 | Automobiles, spark ignition, <1000cc | 3 | 0.6051 | 0.0018 |
| 870829 | Parts of motor vehicle bodies | 1 | 1.0007 | 0.0115 |
| 870840 | Transmissions for motor vehicles | 2 | 1.5444 | 0.0021 |
| 870899 | Motor vehicle parts n.e.s. | 3 | 0.7992 | 0.3285 |
| 871500 | Baby carriages | 1 | 0.4169 | 0.0702 |
| 880330 | Aircraft parts n.e.s. | 2 | 0.7720 | 0.0537 |
| 901020 | Equipment for photographic laboratories n.e.s. | 1 | 1.7947 | 0.0223 |
| 901380 | Optical devices, appliances and instruments, n.e.s. | 1 | 1.5022 | 0.0023 |
| 910221 | Wrist-watch, base-metal case, automatic wound | 1 | -0.1499 | 0.0248 |

| | | | | |
|---|---|---|---|---|
| 940180 | Seats n.e.s. | 1 | -0.0917 | 0.0950 |
| 940190 | Parts of seats | 1 | -0.1799 | 0.0422 |
| 950390 | Toys n.e.s. | 2 | 0.2169 | 0.0255 |

**Table C.2. Main Other Export Industries of Countries That in 2007 Were Principal Exporters of Costa Rica's Top Sectors (Costa Rica ECI = 0.3591)**

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 300490 | Medicaments, doses, n.e.s. | 18 | 0.4785 | 0.4894 |
| 854211 | Monolithic integrated circuits, digital | 11 | 1.1696 | 0.1068 |
| 852520 | Transmit-receive apparatus for radio, TV | 7 | 0.6469 | 0.0165 |
| 847330 | Parts of data processing equipment | 6 | 1.0757 | 0.1538 |
| 870321 | Automobiles, spark ignition, <1000cc | 4 | 0.6051 | 0.0018 |
| 847191 | Digital computer CPU, some storage/input/output | 3 | 1.3658 | 0.0176 |
| 841191 | Turbo-jet, -propeller engine, parts | 3 | 0.9346 | 0.0005 |
| 870899 | Motor vehicle parts n.e.s. | 3 | 0.7992 | 0.3285 |
| 854430 | Ignition sets for vehicles/aircraft/ship | 3 | −1.1410 | 0.1243 |
| 870840 | Transmissions for motor vehicles | 2 | 1.5444 | 0.0021 |
| 300439 | Hormones, not contraceptive, doses | 2 | 1.2183 | 0.1502 |
| 851790 | Parts of telephone line equipment | 2 | 1.0956 | 0.1031 |
| 870190 | Wheeled tractors n.e.s. | 2 | 1.0021 | 0.0405 |
| 870829 | Parts of motor vehicle bodies | 2 | 1.0007 | 0.0115 |
| 841112 | Turbo-jet engine, >25 KN | 2 | 0.7913 | 0.0263 |
| 880330 | Aircraft parts n.e.s. | 2 | 0.7720 | 0.0537 |
| 300220 | Vaccines, human | 2 | 0.6229 | 0.0027 |
| 401110 | Rubber tires, cars, new | 2 | 0.5660 | 3.4021 |
| 852990 | Parts for radio/TV transmit/receive equipment | 2 | 0.3747 | 0.0759 |
| 950390 | Toys n.e.s. | 2 | 0.2169 | 0.0255 |
| 330499 | Make-up, n.e.s. | 2 | 0.1699 | 0.1069 |
| 852810 | Color TV receivers/monitors/projectors | 2 | −0.1188 | 0.0511 |
| 890190 | Cargo vessels, not tanker or refrigerated | 2 | −1.2249 | 3.1087 |
| 620342 | Men's trousers & shorts, cotton, not knit | 2 | −1.7457 | 0.0441 |
| 610910 | T-shirts, of cotton, knit | 2 | −1.9099 | 0.0194 |
| 520100 | Cotton, not carded/combed | 2 | −2.4363 | 0.0172 |
| 293379 | Lactams, n.e.s. | 1 | 1.9298 | 0.0004 |
| 901020 | Equipment for photographic laboratories n.e.s. | 1 | 1.7947 | 0.0223 |
| 910811 | Watch movements, battery mechanical display | 1 | 1.6846 | 0.0000 |
| 852390 | Unrecorded sound recording media | 1 | 1.5214 | 0.1316 |

| | | | | |
|---|---|---|---|---|
| 901380 | Optical devices, appliances and instruments, n.e.s. | 1 | 1.5022 | 0.0023 |
| 903180 | Measuring equipment, n.e.s. | 1 | 1.1967 | 0.1007 |
| 847199 | Automatic data processing machines | 1 | 1.1140 | 0.0276 |
| 854140 | Photosensitive/PV/LED semiconductor device | 1 | 1.0700 | 0.0490 |
| 850440 | Static converters, n.e.s. | 1 | 0.9852 | 0.0958 |
| 850230 | Electric generating sets, n.e.s. | 1 | 0.9209 | 0.0043 |
| 847193 | Computer data storage units | 1 | 0.9144 | 0.0155 |

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 850780 | Electric accumulators, n.e.s. | 1 | 0.9004 | 0.0506 |
| 853710 | Electrical control & distribution boards, <1kV | 1 | 0.5934 | 0.1970 |
| 853400 | Electronic printed circuits | 1 | 0.3853 | 0.1235 |
| 300431 | Insulin, doses | 1 | 0.3790 | 0.0000 |
| 902300 | Instruments, models, for demonstration | 1 | 0.2879 | 0.8428 |
| 901890 | Instruments for medical science, n.e.s. | 1 | 0.2490 | 24.5707 |
| 853620 | Automatic circuit breakers, <1kV | 1 | 0.2160 | 0.4686 |
| 851782 | Telegraphic apparatus, n.e.s. | 1 | 0.0579 | 0.0036 |
| 910221 | Wrist-watch, base-metal case, automatic wound | 1 | -0.1499 | 0.0248 |
| 330210 | Mixed odors, food & drink | 1 | -0.2090 | 2.6304 |
| 630221 | Bed linen, of cotton, printed | 1 | -0.7389 | 0.0000 |
| 890200 | Fishing vessels & factory ships | 1 | -0.8619 | 0.0126 |
| 310420 | Potassium chloride, >10kg | 1 | -0.9072 | 0.0519 |
| 890590 | Floating docks, special function vessels | 1 | -0.9301 | 0.0192 |
| 870410 | Dump trucks, for off-highway use | 1 | -0.9678 | 0.0013 |
| 630231 | Bed linen, of cotton, n.e.s. | 1 | -1.3928 | 0.0069 |
| 630260 | Toilet/kitchen linen, of terry | 1 | -1.5210 | 0.0925 |
| 620520 | Men’s shirts, cotton, not knit | 1 | -1.7751 | 0.0123 |
| 970600 | Antiques | 1 | -1.9321 | 0.0124 |
| 620462 | Women’s trousers & shorts, cotton, not knit | 1 | -1.9493 | 0.0088 |
| 620322 | Men’s ensembles, cotton, not knit | 1 | -2.2500 | 0.0024 |
| 670419 | False beard, eyebrows, of synth textile | 1 | -2.3024 | 0.0000 |

**Table C.3. Main Other Export Industries of Countries That in 2019 Were Principal Exporters of Dominican Republic's Top Sectors (Dominican Republic ECI = −0.2429)**

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 300490 | Medicaments, doses, n.e.s. | 13 | 0.4785 | 0.1696 |
| 852520 | Transmit-receive apparatus for radio, TV | 7 | 0.6469 | 0.0679 |
| 611020 | Pullovers, cardigans, of cotton, knit | 7 | −1.9164 | 3.6443 |
| 854211 | Monolithic integrated circuits, digital | 6 | 1.1696 | 0.0020 |
| 620342 | Men's trousers & shorts, cotton, not knit | 6 | −1.7457 | 0.5632 |
| 610990 | T-shirts, of material n.e.s., knit | 6 | −1.8570 | 3.2058 |
| 611030 | Pullovers, cardigans, of manmade fibers, knit | 6 | −1.9692 | 1.8708 |
| 854430 | Ignition sets for vehicles/aircraft/ship | 5 | −1.1410 | 0.0684 |
| 610910 | T-shirts, of cotton, knit | 5 | −1.9099 | 17.7484 |
| 620462 | Women's trousers & shorts, cotton, not knit | 4 | −1.9493 | 0.2244 |
| 847330 | Parts of data processing equipment | 3 | 1.0757 | 0.0044 |
| 852810 | Color TV receivers/monitors/projectors | 3 | −0.1188 | 0.0169 |
| 620520 | Men's shirts, cotton, not knit | 3 | −1.7751 | 0.9954 |
| 520100 | Cotton, not carded/combed | 3 | −2.4363 | 0.0000 |
| 870840 | Transmissions for motor vehicles | 2 | 1.5444 | 0.0024 |
| 847191 | Digital computer CPU, some storage/input/output | 2 | 1.3658 | 0.0009 |
| 870829 | Parts of motor vehicle bodies | 2 | 1.0007 | 0.0446 |
| 293359 | Heterocyclic compounds, pyrimidine ring | 2 | 0.9082 | 0.0000 |
| 870899 | Motor vehicle parts n.e.s. | 2 | 0.7992 | 0.2074 |
| 950390 | Toys n.e.s. | 2 | 0.2169 | 0.1046 |
| 310210 | Urea, >10kg | 2 | −0.9008 | 0.1757 |
| 610462 | Women's trousers & shorts, of cotton, knit | 2 | −2.0954 | 0.0365 |
| 293379 | Lactams, n.e.s. | 1 | 1.9298 | 0.0000 |
| 901020 | Equipment for photographic laboratories n.e.s. | 1 | 1.7947 | 0.0003 |
| 300439 | Hormones, not contraceptive, doses | 1 | 1.2183 | 0.0248 |
| 841480 | Air compressor, hoods | 1 | 1.1697 | 0.0211 |
| 340700 | Model, dental paste, wax | 1 | 1.1672 | 0.0151 |
| 847199 | Automatic data processing machines | 1 | 1.1140 | 0.2385 |
| 851790 | Parts of telephone line equipment | 1 | 1.0956 | 0.0197 |
| 854140 | Photosensitive/PV/LED semiconductor device | 1 | 1.0700 | 0.2307 |

| | | | | |
|---|---|---|---|---|
| 841191 | Turbo-jet, -propeller engine, parts | 1 | 0.9346 | 0.0008 |
| 847193 | Computer data storage units | 1 | 0.9144 | 0.0046 |
| 880330 | Aircraft parts n.e.s. | 1 | 0.7720 | 0.0012 |
| 300220 | Vaccines, human | 1 | 0.6229 | 0.0010 |
| 853710 | Electrical control & distribution boards, <1kV | 1 | 0.5934 | 0.0698 |
| 401110 | Rubber tires, cars, new | 1 | 0.5660 | 0.0102 |
| 871500 | Baby carriages | 1 | 0.4169 | 0.0068 |

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 902130 | Artificial body parts, aids | 1 | 0.3247 | 0.1188 |
| 901890 | Instruments for medical science, n.e.s. | 1 | 0.2490 | 19.2792 |
| 901839 | Medical needles, catheters | 1 | 0.1805 | 5.1652 |
| 330499 | Make-up, n.e.s. | 1 | 0.1699 | 0.0539 |
| 851782 | Telegraphic apparatus, n.e.s. | 1 | 0.0579 | 0.0000 |
| 940180 | Seats n.e.s. | 1 | −0.0917 | 1.6246 |
| 910221 | Wrist-watch, base-metal case, automatic wound | 1 | −0.1499 | 0.0316 |
| 330210 | Mixed odors, food & drink | 1 | −0.2090 | 2.3471 |
| 854441 | Electric conductors <80V, with connectors | 1 | −0.2322 | 1.5881 |
| 630900 | Worn clothing | 1 | −0.5220 | 0.3394 |
| 630221 | Bed linen, of cotton, printed | 1 | −0.7389 | 0.0000 |
| 540720 | Fabric of strip etc, synthetic textile material | 1 | −0.8352 | 0.0035 |
| 640399 | Footwear, uppers of leather, n.e.s. | 1 | −0.9024 | 2.2519 |
| 570110 | Carpets of wool/hair, knotted | 1 | −0.9571 | 0.0000 |
| 640391 | Boots, upper of leather, n.e.s. | 1 | −0.9846 | 10.5421 |
| 640340 | Footwear, uppers of leather, metal toe-cap | 1 | −1.1083 | 11.9861 |
| 290511 | Methyl alcohol | 1 | −1.2183 | 0.0074 |
| 611593 | Hosiery n.e.s., synthetic fibers, knit | 1 | −1.2383 | 0.0220 |
| 640610 | Footwear uppers | 1 | −1.3223 | 10.7509 |
| 630231 | Bed linen, of cotton, n.e.s. | 1 | −1.3928 | 0.0243 |
| 630260 | Toilet/kitchen linen, of terry | 1 | −1.5210 | 0.0238 |
| 620343 | Men’s trousers & shorts, synthetic fiber, not knit | 1 | −1.6887 | 3.9720 |
| 610510 | Men’s shirts, cotton, knit | 1 | −1.8315 | 0.2618 |
| 610463 | Women’s trousers & shorts, synthetic fibers, knit | 1 | −1.9116 | 1.0519 |

| | | | | |
|---|---|---|---|---|
| 520300 | Cotton, carded/combed | 1 | −2.0971 | 0.0000 |
| 610520 | Men’s shirts, manmade fibers, knit | 1 | −2.2362 | 0.3535 |
| 620322 | Men’s ensembles, cotton, not knit | 1 | −2.2500 | 1.0820 |

**Table C. 4. Main Other Export Industries of Countries That in 2007 Were Principal Exporters of Dominican Republic's Top Sectors (Dominican Republic ECI = −0.2429)**

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 300490 | Medicaments, doses, n.e.s. | 17 | 0.4785 | 0.1696 |
| 852520 | Transmit-receive apparatus for radio, TV | 9 | 0.6469 | 0.0679 |
| 854211 | Monolithic integrated circuits, digital | 8 | 1.1696 | 0.0020 |
| 610910 | T-shirts, of cotton, knit | 7 | −1.9099 | 17.7484 |
| 611020 | Pullovers, cardigans, of cotton, knit | 7 | −1.9164 | 3.6443 |
| 611030 | Pullovers, cardigans, of manmade fibers, knit | 7 | −1.9692 | 1.8708 |
| 620342 | Men's trousers & shorts, cotton, not knit | 6 | −1.7457 | 0.5632 |
| 610990 | T-shirts, of material n.e.s., knit | 6 | −1.8570 | 3.2058 |
| 847330 | Parts of data processing equipment | 4 | 1.0757 | 0.0044 |
| 854430 | Ignition sets for vehicles/aircraft/ship | 4 | −1.1410 | 0.0684 |
| 620462 | Women's trousers & shorts, cotton, not knit | 4 | −1.9493 | 0.2244 |
| 847191 | Digital computer CPU, some storage/input/output | 3 | 1.3658 | 0.0009 |
| 841191 | Turbo-jet, -propeller engine, parts | 3 | 0.9346 | 0.0008 |
| 852810 | Color TV receivers/monitors/projectors | 3 | −0.1188 | 0.0169 |
| 520100 | Cotton, not carded/combed | 3 | −2.4363 | 0.0000 |
| 870840 | Transmissions for motor vehicles | 2 | 1.5444 | 0.0024 |
| 870190 | Wheeled tractors n.e.s. | 2 | 1.0021 | 0.0000 |
| 870829 | Parts of motor vehicle bodies | 2 | 1.0007 | 0.0446 |
| 293359 | Heterocyclic compounds, pyrimidine ring | 2 | 0.9082 | 0.0000 |
| 870899 | Motor vehicle parts n.e.s. | 2 | 0.7992 | 0.2074 |
| 880330 | Aircraft parts n.e.s. | 2 | 0.7720 | 0.0012 |
| 300220 | Vaccines, human | 2 | 0.6229 | 0.0010 |
| 330499 | Make-up, n.e.s. | 2 | 0.1699 | 0.0539 |
| 310420 | Potassium chloride, >10kg | 2 | −0.9072 | 0.1061 |
| 620520 | Men's shirts, cotton, not knit | 2 | −1.7751 | 0.9954 |
| 610462 | Women's trousers & shorts, of cotton, knit | 2 | −2.0954 | 0.0365 |
| 293379 | Lactams, n.e.s. | 1 | 1.9298 | 0.0000 |
| 901020 | Equipment for photographic laboratories n.e.s. | 1 | 1.7947 | 0.0003 |
| 910811 | Watch movements, battery mechanical display | 1 | 1.6846 | 0.0000 |

| | | | | |
|---|---|---|---|---|
| 852390 | Unrecorded sound recording media | 1 | 1.5214 | 0.0097 |
| 901380 | Optical devices, appliances and instruments, n.e.s. | 1 | 1.5022 | 0.0002 |
| 300439 | Hormones, not contraceptive, doses | 1 | 1.2183 | 0.0248 |
| 903180 | Measuring equipment, n.e.s. | 1 | 1.1967 | 0.0328 |
| 847199 | Automatic data processing machines | 1 | 1.1140 | 0.2385 |
| 851790 | Parts of telephone line equipment | 1 | 1.0956 | 0.0197 |
| 854140 | Photosensitive/PV/LED semiconductor device | 1 | 1.0700 | 0.2307 |
| 850230 | Electric generating sets, n.e.s. | 1 | 0.9209 | 0.0003 |

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 850780 | Electric accumulators, n.e.s. | 1 | 0.9004 | 0.0357 |
| 853710 | Electrical control & distribution boards, <1kV | 1 | 0.5934 | 0.0698 |
| 853400 | Electronic printed circuits | 1 | 0.3853 | 0.0018 |
| 300431 | Insulin, doses | 1 | 0.3790 | 0.0000 |
| 852990 | Parts for radio/TV transmit/receive equipment | 1 | 0.3747 | 0.0162 |
| 401290 | Tires, interchangeable treads | 1 | 0.3285 | 0.0351 |
| 902130 | Artificial body parts, aids | 1 | 0.3247 | 0.1188 |
| 902300 | Instruments, models, for demonstration | 1 | 0.2879 | 0.3825 |
| 901890 | Instruments for medical science, n.e.s. | 1 | 0.2490 | 19.2792 |
| 950390 | Toys n.e.s. | 1 | 0.2169 | 0.1046 |
| 853620 | Automatic circuit breakers, <1kV | 1 | 0.2160 | 99.1844 |
| 901839 | Medical needles, catheters | 1 | 0.1805 | 5.1652 |
| 851782 | Telegraphic apparatus, n.e.s. | 1 | 0.0579 | 0.0000 |
| 340220 | Washing prep, retail | 1 | −0.1226 | 0.3767 |
| 910221 | Wrist-watch, base-metal case, automatic wound | 1 | −0.1499 | 0.0316 |
| 330210 | Mixed odors, food & drink | 1 | −0.2090 | 2.3471 |
| 854441 | Electric conductors <80V, with connectors | 1 | −0.2322 | 1.5881 |
| 280920 | Phosphoric acid | 1 | −0.4714 | 0.0153 |
| 630221 | Bed linen, of cotton, printed | 1 | −0.7389 | 0.0000 |
| 540720 | Fabric of strip etc, synthetic textile material | 1 | −0.8352 | 0.0035 |
| 570110 | Carpets of wool/hair, knotted | 1 | −0.9571 | 0.0000 |
| 870410 | Dump trucks, for off-highway use | 1 | −0.9678 | 0.0000 |
| 611593 | Hosiery n.e.s., synthetic fibers, knit | 1 | −1.2383 | 0.0220 |
| 611610 | Gloves impregnated with plastic/rubber, knit | 1 | −1.2721 | 0.1320 |
| 611010 | Pullovers, cardigans, of wool/hair, knit | 1 | −1.3227 | 0.0070 |

| | | | | |
|---|---|---|---|---|
| 630231 | Bed linen, of cotton, n.e.s. | 1 | −1.3928 | 0.0243 |
| 610821 | Women's briefs or panties, cotton, knit | 1 | −1.4185 | 0.0327 |
| 621210 | Brassieres | 1 | −1.5063 | 8.1762 |
| 630260 | Toilet/kitchen linen, of terry | 1 | −1.5210 | 0.0238 |
| 620343 | Men's trousers & shorts, synthetic fiber, not knit | 1 | −1.6887 | 3.9720 |
| 611420 | Garments n.e.s., of cotton, knit | 1 | −1.7542 | 0.1209 |
| 610510 | Men's shirts, cotton, knit | 1 | −1.8315 | 0.2618 |
| 610463 | Women's trousers & shorts, synthetic fibers, knit | 1 | −1.9116 | 1.0519 |
| 970600 | Antiques | 1 | −1.9321 | 0.0005 |
| 520300 | Cotton, carded/combed | 1 | −2.0971 | 0.0000 |
| 610520 | Men's shirts, manmade fibers, knit | 1 | −2.2362 | 0.3535 |
| 620322 | Men's ensembles, cotton, not knit | 1 | −2.2500 | 1.0820 |
| 710310 | Precious, semi-precious stones, unworked | 1 | −2.2790 | 1.5818 |
| 670419 | False beard, eyebrows, of synth textile | 1 | −2.3024 | 3.8208 |

**Table C. 5. Main Other Export Industries of Countries That in 2019 Were Principal Exporters of Panama's Top Sectors (Panama ECI = −0.1420)**

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 852520 | Transmit-receive apparatus for radio, TV | 14 | 0.6469 | 0.4207 |
| 854211 | Monolithic integrated circuits, digital | 11 | 1.1696 | 0.0040 |
| 300490 | Medicaments, doses, n.e.s. | 9 | 0.4785 | 1.9417 |
| 847330 | Parts of data processing equipment | 8 | 1.0757 | 0.1444 |
| 851790 | Parts of telephone line equipment | 4 | 1.0956 | 0.8073 |
| 852810 | Color TV receivers/monitors/projectors | 4 | −0.1188 | 0.7017 |
| 854430 | Ignition sets for vehicles/aircraft/ship | 4 | −1.1410 | 0.0088 |
| 870899 | Motor vehicle parts n.e.s. | 3 | 0.7992 | 0.3224 |
| 640399 | Footwear, uppers of leather, n.e.s. | 3 | −0.9024 | 0.6555 |
| 611030 | Pullovers, cardigans, of manmade fibers, knit | 3 | −1.9692 | 0.1537 |
| 847191 | Digital computer CPU, some storage/input/output | 2 | 1.3658 | 0.1121 |
| 870829 | Parts of motor vehicle bodies | 2 | 1.0007 | 0.0152 |
| 841112 | Turbo-jet engine, >25 KN | 2 | 0.7913 | 0.0000 |
| 880330 | Aircraft parts n.e.s. | 2 | 0.7720 | 0.0115 |
| 300220 | Vaccines, human | 2 | 0.6229 | 0.3535 |
| 401110 | Rubber tires, cars, new | 2 | 0.5660 | 2.4954 |
| 852990 | Parts for radio/TV transmit/receive equipment | 2 | 0.3747 | 0.1143 |
| 950390 | Toys n.e.s. | 2 | 0.2169 | 0.3715 |
| 310210 | Urea, >10kg | 2 | −0.9008 | 0.0000 |
| 640610 | Footwear uppers | 2 | −1.3223 | 0.0003 |
| 620342 | Men's trousers & shorts, cotton, not knit | 2 | −1.7457 | 0.8699 |
| 610990 | T-shirts, of material n.e.s., knit | 2 | −1.8570 | 1.0774 |
| 620462 | Women's trousers & shorts, cotton, not knit | 2 | −1.9493 | 1.4999 |
| 293379 | Lactams, n.e.s. | 1 | 1.9298 | 0.0073 |
| 901020 | Equipment for photographic laboratories n.e.s. | 1 | 1.7947 | 0.0001 |
| 841480 | Air compressor, hoods | 1 | 1.1697 | 0.0403 |
| 340700 | Model, dental paste, wax | 1 | 1.1672 | 0.9434 |
| 847199 | Automatic data processing machines | 1 | 1.1140 | 0.3658 |
| 854140 | Photosensitive/PV/LED semiconductor device | 1 | 1.0700 | 0.1320 |
| 850440 | Static converters, n.e.s. | 1 | 0.9852 | 0.2726 |
| 841191 | Turbo-jet, -propeller engine, parts | 1 | 0.9346 | 0.0016 |

| | | | | |
|---|---|---|---|---|
| 847193 | Computer data storage units | 1 | 0.9144 | 0.6094 |
| 853710 | Electrical control & distribution boards, <1kV | 1 | 0.5934 | 0.0363 |
| 290531 | Ethanediol | 1 | 0.5826 | 0.0000 |
| 871500 | Baby carriages | 1 | 0.4169 | 1.0994 |
| 401290 | Tires, interchangeable treads | 1 | 0.3285 | 0.1580 |
| 902130 | Artificial body parts, aids | 1 | 0.3247 | 0.3440 |

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 901890 | Instruments for medical science, n.e.s. | 1 | 0.2490 | 0.1228 |
| 853620 | Automatic circuit breakers, <1kV | 1 | 0.2160 | 0.0317 |
| 901839 | Medical needles, catheters | 1 | 0.1805 | 0.2179 |
| 940360 | Furniture, wooden, n.e.s. | 1 | 0.1749 | 0.0809 |
| 330499 | Make-up, n.e.s. | 1 | 0.1699 | 0.6567 |
| 940161 | Upholstered seats with wooden frames | 1 | 0.1659 | 0.0068 |
| 851782 | Telegraphic apparatus, n.e.s. | 1 | 0.0579 | 0.0524 |
| 940180 | Seats n.e.s. | 1 | −0.0917 | 0.3155 |
| 940600 | Prefabricated buildings | 1 | −0.1161 | 0.0782 |
| 910221 | Wrist-watch, base-metal case, automatic wound | 1 | −0.1499 | 0.0790 |
| 330210 | Mixed odors, food & drink | 1 | −0.2090 | 0.2304 |
| 854441 | Electric conductors <80V, with connectors | 1 | −0.2322 | 0.0999 |
| 382390 | Chemical products, n.e.s. | 1 | −0.2594 | 0.1503 |
| 280920 | Phosphoric acid | 1 | −0.4714 | 0.0083 |
| 854449 | Electric conductors, <80V, no connectors | 1 | −0.5173 | 0.3577 |
| 630900 | Worn clothing | 1 | −0.5220 | 0.1130 |
| 640411 | Sports footwear, upper textile | 1 | −0.7864 | 4.5292 |
| 310420 | Potassium chloride, >10kg | 1 | −0.9072 | 0.0022 |
| 640391 | Boots, upper of leather, n.e.s. | 1 | −0.9846 | 0.3506 |
| 640340 | Footwear, uppers of leather, metal toe-cap | 1 | −1.1083 | 0.2623 |
| 620293 | Women's anoraks, manmade fibers, not knit | 1 | −1.1494 | 0.0627 |
| 290511 | Methyl alcohol | 1 | −1.2183 | 0.0000 |
| 620193 | Men's anoraks, manmade fibers, not knit | 1 | −1.2409 | 0.0366 |
| 611610 | Gloves impregnated with plastic/rubber, knit | 1 | −1.2721 | 0.1404 |
| 610821 | Women's briefs or panties, cotton, knit | 1 | −1.4185 | 0.5473 |

| | | | | |
|---|---|---|---|---|
| 640419 | Footwear, uppers of textile | 1 | −1.4207 | 1.2774 |
| 621210 | Brassieres | 1 | −1.5063 | 1.1358 |
| 611420 | Garments n.e.s., of cotton, knit | 1 | −1.7542 | 0.0888 |
| 610910 | T-shirts, of cotton, knit | 1 | −1.9099 | 0.4313 |
| 610463 | Women's trousers & shorts, synthetic fibers, knit | 1 | −1.9116 | 0.1713 |
| 611020 | Pullovers, cardigans, of cotton, knit | 1 | −1.9164 | 1.1255 |
| 610520 | Men's shirts, manmade fibers, knit | 1 | −2.2362 | 0.2144 |
| 520100 | Cotton, not carded/combed | 1 | −2.4363 | 0.0000 |

**Table C. 6. Main Other Export Industries of Countries That in 2007 Were Principal Exporters of Panama's Top Sectors (Panama ECI = −0.1420)**

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 300490 | Medicaments, doses, n.e.s. | 15 | 0.4785 | 1.9417 |
| 854211 | Monolithic integrated circuits, digital | 9 | 1.1696 | 0.0040 |
| 852520 | Transmit-receive apparatus for radio, TV | 8 | 0.6469 | 0.4207 |
| 847330 | Parts of data processing equipment | 5 | 1.0757 | 0.1444 |
| 852810 | Color TV receivers/monitors/projectors | 4 | −0.1188 | 0.7017 |
| 851790 | Parts of telephone line equipment | 3 | 1.0956 | 0.8073 |
| 841191 | Turbo-jet, -propeller engine, parts | 3 | 0.9346 | 0.0016 |
| 870899 | Motor vehicle parts n.e.s. | 3 | 0.7992 | 0.3224 |
| 852990 | Parts for radio/TV transmit/receive equipment | 3 | 0.3747 | 0.1143 |
| 854430 | Ignition sets for vehicles/aircraft/ship | 3 | −1.1410 | 0.0088 |
| 847191 | Digital computer CPU, some storage/input/output | 2 | 1.3658 | 0.1121 |
| 870190 | Wheeled tractors n.e.s. | 2 | 1.0021 | 0.0143 |
| 870829 | Parts of motor vehicle bodies | 2 | 1.0007 | 0.0152 |
| 841112 | Turbo-jet engine, >25 KN | 2 | 0.7913 | 0.0000 |
| 880330 | Aircraft parts n.e.s. | 2 | 0.7720 | 0.0115 |
| 300220 | Vaccines, human | 2 | 0.6229 | 0.3535 |
| 401110 | Rubber tires, cars, new | 2 | 0.5660 | 2.4954 |
| 950390 | Toys n.e.s. | 2 | 0.2169 | 0.3715 |
| 330499 | Make-up, n.e.s. | 2 | 0.1699 | 0.6567 |
| 640399 | Footwear, uppers of leather, n.e.s. | 2 | −0.9024 | 0.6555 |
| 310420 | Potassium chloride, >10kg | 2 | −0.9072 | 0.0022 |
| 611030 | Pullovers, cardigans, of manmade fibers, knit | 2 | −1.9692 | 0.1537 |
| 520100 | Cotton, not carded/combed | 2 | −2.4363 | 0.0000 |
| 293379 | Lactams, n.e.s. | 1 | 1.9298 | 0.0073 |
| 901020 | Equipment for photographic laboratories n.e.s. | 1 | 1.7947 | 0.0001 |
| 910811 | Watch movements, battery mechanical display | 1 | 1.6846 | 0.0046 |
| 300439 | Hormones, not contraceptive, doses | 1 | 1.2183 | 0.1384 |
| 903180 | Measuring equipment, n.e.s. | 1 | 1.1967 | 0.0347 |
| 847199 | Automatic data processing machines | 1 | 1.1140 | 0.3658 |

| | | | | |
|---|---|---|---|---|
| 854140 | Photosensitive/PV/LED semiconductor device | 1 | 1.0700 | 0.1320 |
| 847193 | Computer data storage units | 1 | 0.9144 | 0.6094 |
| 850780 | Electric accumulators, n.e.s. | 1 | 0.9004 | 0.1989 |
| 848590 | Machinery parts, non-electrical, n.e.s. | 1 | 0.8696 | 0.2497 |
| 890130 | Refrigerated vessels | 1 | 0.6269 | 37.8089 |
| 853710 | Electrical control & distribution boards, <1kV | 1 | 0.5934 | 0.0363 |
| 902130 | Artificial body parts, aids | 1 | 0.3247 | 0.3440 |
| 902300 | Instruments, models, for demonstration | 1 | 0.2879 | 0.0670 |

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 901890 | Instruments for medical science, n.e.s. | 1 | 0.2490 | 0.1228 |
| 901839 | Medical needles, catheters | 1 | 0.1805 | 0.2179 |
| 851782 | Telegraphic apparatus, n.e.s. | 1 | 0.0579 | 0.0524 |
| 340220 | Washing prep, retail | 1 | -0.1226 | 0.0426 |
| 910221 | Wrist-watch, base-metal case, automatic wound | 1 | -0.1499 | 0.0790 |
| 940190 | Parts of seats | 1 | -0.1799 | 0.0031 |
| 330210 | Mixed odors, food & drink | 1 | -0.2090 | 0.2304 |
| 890392 | Motorboats | 1 | -0.3787 | 0.3587 |
| 961700 | Vacuum flasks | 1 | -0.4243 | 0.3575 |
| 280920 | Phosphoric acid | 1 | -0.4714 | 0.0083 |
| 640411 | Sports footwear, upper textile | 1 | -0.7864 | 4.5292 |
| 870410 | Dump trucks, for off-highway use | 1 | -0.9678 | 0.2777 |
| 310230 | Ammonium nitrate, >10kg | 1 | -0.9824 | 0.0000 |
| 640391 | Boots, upper of leather, n.e.s. | 1 | -0.9846 | 0.3506 |
| 640340 | Footwear, uppers of leather, metal toe-cap | 1 | -1.1083 | 0.2623 |
| 970500 | Collections & collectors pieces | 1 | -1.1988 | 0.0100 |
| 640610 | Footwear uppers | 1 | -1.3223 | 0.0003 |
| 640419 | Footwear, uppers of textile | 1 | -1.4207 | 1.2774 |
| 330129 | Oils, n.e.s. | 1 | -1.4875 | 0.1225 |
| 611420 | Garments n.e.s., of cotton, knit | 1 | -1.7542 | 0.0888 |
| 610990 | T-shirts, of material n.e.s., knit | 1 | -1.8570 | 1.0774 |
| 610910 | T-shirts, of cotton, knit | 1 | -1.9099 | 0.4313 |
| 611020 | Pullovers, cardigans, of cotton, knit | 1 | -1.9164 | 1.1255 |
| 970600 | Antiques | 1 | -1.9321 | 0.0007 |
| 620462 | Women's trousers & shorts, cotton, not knit | 1 | -1.9493 | 1.4999 |

| | | | | |
|---|---|---|---|---|
| 670419 | False beard, eyebrows, of synth textile | 1 | -2.3024 | 0.2333 |
| 400129 | Natural rubber, n.e.s. | 1 | -2.6213 | 0.0000 |

**Table C.7. Exporting Countries of Any of Costa Rica's Top Manufacturing Exports, for 2019 and 2007 (Costa Rica ECI = 0.3591)**

| Country Code | Country Name | Industries | ECI |
|---|---|---|---|
| Concurrent 2019 List | | | |
| MEX | Mexico | 8 | 1.1481 |
| ESH | Western Sahara | 8 | 1.3905 |
| TWN | Taiwan | 8 | 1.8668 |
| IRL | Ireland | 7 | 1.2039 |
| SVK | Slovakia | 7 | 1.3490 |
| HUN | Hungary | 7 | 1.4130 |
| CZE | Czech Republic | 7 | 1.7240 |
| PAK | Pakistan | 6 | −0.5985 |
| JOR | Jordan | 6 | −0.1241 |
| ROU | Romania | 6 | 0.9451 |
| HKG | Hong Kong | 6 | 1.0334 |
| CHN | China | 6 | 1.0370 |
| NLD | Netherlands | 6 | 1.2187 |
| ISR | Israel | 6 | 1.2494 |
| SVN | Slovenia | 6 | 1.5102 |
| AUT | Austria | 6 | 1.6106 |
| DEU | Germany | 6 | 1.9564 |
| CHE | Switzerland | 6 | 2.0474 |
| JPN | Japan | 6 | 2.2620 |
| NIC | Nicaragua | 5 | −1.1868 |
| ALB | Albania | 5 | −0.6992 |
| TUN | Tunisia | 5 | −0.0201 |
| IRN | Iran | 5 | 0.0128 |
| PRT | Portugal | 5 | 0.3593 |
| THA | Thailand | 5 | 0.8947 |
| DNK | Denmark | 5 | 1.0702 |
| ITA | Italy | 5 | 1.1546 |
| BEL | Belgium | 5 | 1.4101 |
| GBR | United Kingdom | 5 | 1.4366 |
| SWE | Sweden | 5 | 1.6567 |

| | | | |
|---|---|---|---|
| SGP | Singapore | 5 | 1.8842 |
| MUS | Mauritius | 4 | −0.4536 |
| CAN | Canada | 4 | 1.0867 |
| MYS | Malaysia | 4 | 1.0920 |
| MMR | Myanmar | 3 | −1.1013 |
| DOM | Dominican Republic | 3 | −0.2429 |

| Country Code | Country Name | Industries | ECI |
|---|---|---|---|
| AUS | Australia | 3 | 0.0577 |
| ARG | Argentina | 3 | 0.1512 |
| IND | India | 3 | 0.4834 |
| SRB | Serbia | 3 | 0.7152 |
| USA | United States of America | 3 | 1.6362 |
| NPL | Nepal | 2 | −0.4896 |
| MDA | Moldova | 2 | −0.1924 |
| PAN | Panama | 2 | −0.1420 |
| QAT | Qatar | 2 | 0.1604 |
| CUB | Cuba | 1 | −0.6681 |
| IDN | Indonesia | 1 | −0.0155 |
| RUS | Russian Federation | 1 | 0.7816 |
| FIN | Finland | 1 | 1.5464 |
| Lagged 2007 List | | | |
| TWN | Taiwan | 9 | 1.8668 |
| MEX | Mexico | 8 | 1.1481 |
| IRL | Ireland | 7 | 1.2039 |
| CZE | Czech Republic | 7 | 1.7240 |
| PAK | Pakistan | 6 | −0.5985 |
| ARE | United Arab Emirates | 6 | 0.2803 |
| ROU | Romania | 6 | 0.9451 |
| CHN | China | 6 | 1.0370 |
| DNK | Denmark | 6 | 1.0702 |
| POL | Poland | 6 | 1.1230 |

| | | | |
|---|---|---|---|
| NLD | Netherlands | 6 | 1.2187 |
| ISR | Israel | 6 | 1.2494 |
| SVN | Slovenia | 6 | 1.5102 |
| AUT | Austria | 6 | 1.6106 |
| DEU | Germany | 6 | 1.9564 |
| CHE | Switzerland | 6 | 2.0474 |
| JPN | Japan | 6 | 2.2620 |
| UZB | Uzbekistan | 5 | −0.6123 |
| GUM | Guam | 5 | 0.3526 |
| PRT | Portugal | 5 | 0.3593 |
| PHL | Philippines | 5 | 0.5351 |
| ESP | Spain | 5 | 0.7422 |
| BLR | Belarus | 5 | 0.8747 |
| FRA | France | 5 | 1.3195 |
| BEL | Belgium | 5 | 1.4101 |
| GBR | United Kingdom | 5 | 1.4366 |

| Country Code | Country Name | Industries | ECI |
|---|---|---|---|
| SWE | Sweden | 5 | 1.6567 |
| SGP | Singapore | 5 | 1.8842 |
| KOR | South Korea | 5 | 1.9009 |
| MUS | Mauritius | 4 | −0.4536 |
| DOM | Dominican Republic | 4 | −0.2429 |
| HRV | Croatia | 4 | 0.7557 |
| STP | São Tomé and Príncipe | 4 | 1.0217 |
| MYS | Malaysia | 4 | 1.0920 |
| PRK | North Korea | 4 | 1.1581 |
| AUS | Australia | 3 | 0.0577 |
| CRI | Costa Rica | 3 | 0.3591 |
| BRB | Barbados | 3 | 0.4854 |
| CYP | Cyprus | 3 | 0.5454 |
| MLT | Malta | 3 | 0.6673 |
| SRB | Serbia | 3 | 0.7152 |
| USA | United States of America | 3 | 1.6362 |
| TON | Tonga | 2 | −1.3434 |

| | | | |
|---|---|---|---|
| SUR | Suriname | 2 | −1.1481 |
| AFG | Afghanistan | 2 | −1.0199 |
| BDI | Burundi | 2 | −0.8495 |
| ANS | Undeclared countries | 1 | −1.0743 |
| CUB | Cuba | 1 | −0.6681 |
| IDN | Indonesia | 1 | −0.0155 |
| ISL | Iceland | 1 | 0.2171 |
| FIN | Finland | 1 | 1.5464 |

**Table C.8. Exporting Countries of Any of Dominican Republic's Top Manufacturing Exports, for 2019 and 2007 (Dominican Republic ECI = −0.2429)**

| Country Code | Country Name | Industries | ECI |
|---|---|---|---|
| Concurrent 2019 List | | | |
| BGD | Bangladesh | 9 | −1.2951 |
| ESH | Western Sahara | 9 | 1.3905 |
| MEX | Mexico | 8 | 1.1481 |
| HTI | Haiti | 7 | −1.1798 |
| LSO | Lesotho | 7 | −0.9237 |
| IRL | Ireland | 7 | 1.2039 |
| HUN | Hungary | 7 | 1.4130 |
| CZE | Czech Republic | 7 | 1.7240 |
| HND | Honduras | 6 | −0.7047 |
| PAK | Pakistan | 6 | −0.5985 |
| ROU | Romania | 6 | 0.9451 |
| CHN | China | 6 | 1.0370 |
| POL | Poland | 6 | 1.1230 |
| NLD | Netherlands | 6 | 1.2187 |
| SVN | Slovenia | 6 | 1.5102 |
| AUT | Austria | 6 | 1.6106 |
| DEU | Germany | 6 | 1.9564 |
| CHE | Switzerland | 6 | 2.0474 |
| JPN | Japan | 6 | 2.2620 |
| KHM | Cambodia | 5 | −1.0383 |
| ALB | Albania | 5 | −0.6992 |
| SLV | El Salvador | 5 | −0.2363 |
| TUN | Tunisia | 5 | −0.0201 |
| IRN | Iran | 5 | 0.0128 |
| ISR | Israel | 5 | 1.2494 |
| ERI | Eritrea | 4 | −1.4056 |
| NIC | Nicaragua | 4 | −1.1868 |
| ARE | United Arab Emirates | 4 | 0.2803 |
| TUR | Turkey | 4 | 0.4328 |
| MYS | Malaysia | 4 | 1.0920 |
| ITA | Italy | 4 | 1.1546 |
| FRA | France | 4 | 1.3195 |

| | | | |
|---|---|---|---|
| GIN | Guinea | 3 | −1.8241 |
| BFA | Burkina Faso | 3 | −1.0650 |
| MLI | Mali | 3 | −0.8674 |
| GUY | Guyana | 3 | −0.5919 |
| MUS | Mauritius | 3 | −0.4536 |
| CRI | Costa Rica | 3 | 0.3591 |
| IND | India | 3 | 0.4834 |
| CAN | Canada | 3 | 1.0867 |

| Country Code | Country Name | Industries | ECI |
|---|---|---|---|
| USA | United States of America | 3 | 1.6362 |
| SUR | Suriname | 2 | −1.1481 |
| AFG | Afghanistan | 2 | −1.0199 |
| BDI | Burundi | 2 | −0.8495 |
| NER | Niger | 2 | −0.6415 |
| NPL | Nepal | 2 | −0.4896 |
| LBN | Lebanon | 2 | −0.1268 |
| ARG | Argentina | 2 | 0.1512 |
| QAT | Qatar | 2 | 0.1604 |
| BGR | Bulgaria | 2 | 0.5364 |
| SRB | Serbia | 2 | 0.7152 |
| FIN | Finland | 2 | 1.5464 |
| SOM | Somalia | 1 | −1.4230 |
| ETH | Ethiopia | 1 | −1.1617 |
| BOL | Bolivia | 1 | −0.7446 |
| CUB | Cuba | 1 | −0.6681 |
| GTM | Guatemala | 1 | −0.2747 |
| BHR | Bahrain | 1 | 0.2902 |
| RUS | Russian Federation | 1 | 0.7816 |
| Lagged 2007 List | | | |
| BGD | Bangladesh | 9 | −1.2951 |
| LSO | Lesotho | 8 | −0.9237 |
| MEX | Mexico | 8 | 1.1481 |
| TWN | Taiwan | 8 | 1.8668 |

| | | | |
|---|---|---|---|
| HTI | Haiti | 7 | −1.1798 |
| KHM | Cambodia | 7 | −1.0383 |
| IRL | Ireland | 7 | 1.2039 |
| HUN | Hungary | 7 | 1.4130 |
| CZE | Czech Republic | 7 | 1.7240 |
| HND | Honduras | 6 | −0.7047 |
| PAK | Pakistan | 6 | −0.5985 |
| JOR | Jordan | 6 | −0.1241 |
| ROU | Romania | 6 | 0.9451 |
| HKG | Hong Kong | 6 | 1.0334 |
| POL | Poland | 6 | 1.1230 |
| NLD | Netherlands | 6 | 1.2187 |
| SVN | Slovenia | 6 | 1.5102 |
| DEU | Germany | 6 | 1.9564 |
| CHE | Switzerland | 6 | 2.0474 |
| JPN | Japan | 6 | 2.2620 |
| NIC | Nicaragua | 5 | −1.1868 |
| UZB | Uzbekistan | 5 | −0.6123 |
| SLV | El Salvador | 5 | −0.2363 |

| Country Code | Country Name | Industries | ECI |
|---|---|---|---|
| TUN | Tunisia | 5 | −0.0201 |
| ARE | United Arab Emirates | 5 | 0.2803 |
| TUR | Turkey | 5 | 0.4328 |
| BLR | Belarus | 5 | 0.8747 |
| DNK | Denmark | 5 | 1.0702 |
| ISR | Israel | 5 | 1.2494 |
| LKA | Sri Lanka | 4 | −0.6790 |
| MUS | Mauritius | 4 | −0.4536 |
| GUM | Guam | 4 | 0.3526 |
| STP | São Tomé and Príncipe | 4 | 1.0217 |
| MYS | Malaysia | 4 | 1.0920 |
| ITA | Italy | 4 | 1.1546 |
| PRK | North Korea | 4 | 1.1581 |
| FRA | France | 4 | 1.3195 |
| BEL | Belgium | 4 | 1.4101 |

| | | | |
|---|---|---|---|
| MLI | Mali | 3 | −0.8674 |
| GUY | Guyana | 3 | −0.5919 |
| CRI | Costa Rica | 3 | 0.3591 |
| IND | India | 3 | 0.4834 |
| CYP | Cyprus | 3 | 0.5454 |
| MLT | Malta | 3 | 0.6673 |
| LVA | LaTVia | 3 | 0.8436 |
| USA | United States of America | 3 | 1.6362 |
| MDG | Madagascar | 2 | −1.3872 |
| TON | Tonga | 2 | −1.3434 |
| TZA | Tanzania | 2 | −1.1710 |
| SUR | Suriname | 2 | −1.1481 |
| AFG | Afghanistan | 2 | −1.0199 |
| BDI | Burundi | 2 | −0.8495 |
| MNG | Mongolia | 2 | −0.7642 |
| NPL | Nepal | 2 | −0.4896 |
| ARM | Armenia | 2 | −0.3205 |
| LBN | Lebanon | 2 | −0.1268 |
| BGR | Bulgaria | 2 | 0.5364 |
| FIN | Finland | 2 | 1.5464 |
| PNG | Papua New Guinea | 1 | −1.8496 |
| SOM | Somalia | 1 | −1.4230 |
| ANS | Undeclared countries | 1 | −1.0743 |
| BOL | Bolivia | 1 | −0.7446 |
| CUB | Cuba | 1 | −0.6681 |
| SYR | Syrian Arab Republic | 1 | −0.4591 |
| PER | Peru | 1 | −0.4412 |
| GTM | Guatemala | 1 | −0.2747 |

**Table C.9. Exporting Countries of Any of Panama's Top Manufacturing Exports, for 2019 and 2007 (Panama ECI = −0.1420)**

| Country Code | Country Name | Industries | ECI |
|---|---|---|---|
| Concurrent 2019 List | | | |
| VNM | Vietnam | 9 | −0.107 |
| LSO | Lesotho | 8 | −0.924 |
| MEX | Mexico | 8 | 1.1481 |
| ESH | Western Sahara | 8 | 1.3905 |
| KHM | Cambodia | 7 | −1.038 |
| IRL | Ireland | 7 | 1.2039 |
| SVK | Slovakia | 7 | 1.349 |
| LBR | Liberia | 6 | −0.578 |
| JOR | Jordan | 6 | −0.124 |
| ROU | Romania | 6 | 0.9451 |
| HKG | Hong Kong | 6 | 1.0334 |
| CHN | China | 6 | 1.037 |
| HUN | Hungary | 6 | 1.413 |
| CZE | Czech Republic | 6 | 1.724 |
| KOR | South Korea | 6 | 1.9009 |
| CHE | Switzerland | 6 | 2.0474 |
| JPN | Japan | 6 | 2.262 |
| ALB | Albania | 5 | −0.699 |
| UZB | Uzbekistan | 5 | −0.612 |
| TUN | Tunisia | 5 | −0.02 |
| IRN | Iran | 5 | 0.0128 |
| ARE | United Arab Emirates | 5 | 0.2803 |
| PHL | Philippines | 5 | 0.5351 |
| THA | Thailand | 5 | 0.8947 |
| SAU | Saudi Arabia | 5 | 0.9719 |
| POL | Poland | 5 | 1.123 |
| FRA | France | 5 | 1.3195 |
| SVN | Slovenia | 5 | 1.5102 |
| DEU | Germany | 5 | 1.9564 |
| LKA | Sri Lanka | 4 | −0.679 |
| PRT | Portugal | 4 | 0.3593 |
| BIH | Bosnia and Herzegovina | 4 | 0.5203 |

| | | | |
|---|---|---|---|
| CAN | Canada | 4 | 1.0867 |
| MYS | Malaysia | 4 | 1.092 |
| ITA | Italy | 4 | 1.1546 |
| NLD | Netherlands | 4 | 1.2187 |
| BEL | Belgium | 4 | 1.4101 |
| USA | United States of America | 4 | 1.6362 |
| SWE | Sweden | 4 | 1.6567 |
| MMR | Myanmar | 3 | −1.101 |
| ZWE | Zimbabwe | 3 | −0.845 |

| Country Code | Country Name | Industries | ECI |
|---|---|---|---|
| NAM | Namibia | 3 | −0.483 |
| ARG | Argentina | 3 | 0.1512 |
| CRI | Costa Rica | 3 | 0.3591 |
| IND | India | 3 | 0.4834 |
| CYP | Cyprus | 3 | 0.5454 |
| SRB | Serbia | 3 | 0.7152 |
| LTU | Lithuania | 3 | 0.8264 |
| EST | Estonia | 3 | 0.9658 |
| GBR | United Kingdom | 3 | 1.4366 |
| SGP | Singapore | 3 | 1.8842 |
| YEM | Yemen | 2 | −1.389 |
| GAB | Gabon | 2 | −1.119 |
| CIV | Côte d'Ivoire | 2 | −0.941 |
| COG | Congo | 2 | −0.743 |
| QAT | Qatar | 2 | 0.1604 |
| KWT | Kuwait | 2 | 0.3718 |
| LVA | LaTVia | 2 | 0.8436 |
| COD | Congo (Democratic Republic of the) | 1 | −1.429 |
| CMR | Cameroon | 1 | −1.33 |
| ANS | Undeclared countries | 1 | −1.074 |
| CUB | Cuba | 1 | −0.668 |
| IDN | Indonesia | 1 | −0.015 |
| RUS | Russian Federation | 1 | 0.7816 |

| Lagged 2007 List | | | |
|---|---|---|---|
| VNM | Vietnam | 9 | −0.1072 |
| MEX | Mexico | 8 | 1.1481 |
| KHM | Cambodia | 7 | −1.0383 |
| IRL | Ireland | 7 | 1.2039 |
| HUN | Hungary | 7 | 1.4130 |
| LBR | Liberia | 6 | −0.5777 |
| JOR | Jordan | 6 | −0.1241 |
| BHS | Bahamas | 6 | 0.5497 |
| ROU | Romania | 6 | 0.9451 |
| CHN | China | 6 | 1.0370 |
| FRA | France | 6 | 1.3195 |
| CZE | Czech Republic | 6 | 1.7240 |
| KOR | South Korea | 6 | 1.9009 |
| CHE | Switzerland | 6 | 2.0474 |
| JPN | Japan | 6 | 2.2620 |
| ALB | Albania | 5 | −0.6992 |
| UZB | Uzbekistan | 5 | −0.6123 |
| ARE | United Arab Emirates | 5 | 0.2803 |
| GUM | Guam | 5 | 0.3526 |
| TUR | Turkey | 5 | 0.4328 |
| BLR | Belarus | 5 | 0.8747 |

| Country Code | Country Name | Industries | ECI |
|---|---|---|---|
| POL | Poland | 5 | 1.1230 |
| PRK | North Korea | 5 | 1.1581 |
| NLD | Netherlands | 5 | 1.2187 |
| ISR | Israel | 5 | 1.2494 |
| SVN | Slovenia | 5 | 1.5102 |
| AUT | Austria | 5 | 1.6106 |
| DEU | Germany | 5 | 1.9564 |
| LAO | Laos | 4 | −0.8438 |
| VCT | Saint Vincent and the Grenadines | 4 | −0.6938 |
| COM | Comoros | 4 | −0.2774 |
| PRT | Portugal | 4 | 0.3593 |
| MLT | Malta | 4 | 0.6673 |

| | | | |
|---|---|---|---|
| ESP | Spain | 4 | 0.7422 |
| STP | São Tomé and Príncipe | 4 | 1.0217 |
| MYS | Malaysia | 4 | 1.0920 |
| ITA | Italy | 4 | 1.1546 |
| BEL | Belgium | 4 | 1.4101 |
| SWE | Sweden | 4 | 1.6567 |
| SGP | Singapore | 4 | 1.8842 |
| NAM | Namibia | 3 | −0.4832 |
| ARM | Armenia | 3 | −0.3205 |
| GEO | Georgia | 3 | −0.0585 |
| ARG | Argentina | 3 | 0.1512 |
| CRI | Costa Rica | 3 | 0.3591 |
| IND | India | 3 | 0.4834 |
| CYP | Cyprus | 3 | 0.5454 |
| SRB | Serbia | 3 | 0.7152 |
| HRV | Croatia | 3 | 0.7557 |
| GBR | United Kingdom | 3 | 1.4366 |
| TON | Tonga | 2 | −1.3434 |
| SUR | Suriname | 2 | −1.1481 |
| AFG | Afghanistan | 2 | −1.0199 |
| UGA | Uganda | 2 | −0.8289 |
| COG | Congo | 2 | −0.7426 |
| MDA | Moldova | 2 | −0.1924 |
| AUS | Australia | 2 | 0.0577 |
| FIN | Finland | 2 | 1.5464 |
| SOM | Somalia | 1 | −1.4230 |
| ANS | Undeclared countries | 1 | −1.0743 |
| AGO | Angola | 1 | −0.8989 |
| CUB | Cuba | 1 | −0.6681 |
| SYR | Syrian Arab Republic | 1 | −0.4591 |
| IDN | Indonesia | 1 | −0.0155 |
| COL | Colombia | 1 | 0.2091 |
| KWT | Kuwait | 1 | 0.3718 |

**Table C. 10. Top 20 Potential Export Industries for Costa Rica Identified through Lagged and Concurrent Analysis: Method 3**

| Chap-ter | HS Code | HS Name 2019 | Paths 2019 | HS Name 2007 | Paths 2007 | PCI | RCA | PCI-ECI |
|---|---|---|---|---|---|---|---|---|
| 29 | 293379 | Lactams, n.e.s. | 1 | | | 1.9298 | 0.0004 | 1.5707 |
| 87 | 870840 | Transmissions for motor vehicles | 2 | Transmissions for motor vehicles | 2 | 1.5444 | 0.0021 | 1.1853 |
| 84 | 847191 | Digital computer CPU, some storage/input/ output | 3 | Digital computer CPU, some storage/ input/output | 3 | 1.3658 | 0.0176 | 1.0067 |
| 30 | 300439 | Hormones, not contraceptive, doses | 2 | Hormones, not contraceptive, doses | 2 | 1.2183 | 0.1502 | 0.8592 |
| 85 | 854211 | Monolithic integrated circuits, digital | 10 | Monolithic integrated circuits, digital | 11 | 1.1696 | 0.1068 | 0.8105 |
| 85 | 851790 | Parts of telephone line equipment | 2 | Parts of telephone line equipment | 2 | 1.0956 | 0.1031 | 0.7365 |
| 84 | 847330 | Parts of data processing equipment | 6 | Parts of data processing equipment | 6 | 1.0757 | 0.1538 | 0.7166 |
| 87 | 870190 | | | Wheeled tractors n.e.s. | 2 | 1.0021 | 0.0405 | 0.6430 |
| 87 | 870829 | | | Parts of motor vehicle bodies | 2 | 1.0007 | 0.0115 | 0.6416 |
| 84 | 841191 | | | Turbo-jet, -propeller engine, parts | 3 | 0.9346 | 0.0005 | 0.5755 |
| 87 | 870899 | Motor vehicle parts n.e.s. | 3 | Motor vehicle parts n.e.s. | 3 | 0.7992 | 0.3285 | 0.4401 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 84 | 841112 | | | Turbo-jet engine, >25 KN | 2 | 0.7913 | 0.0263 | 0.4322 |
| 88 | 880330 | Aircraft parts n.e.s. | 2 | Aircraft parts n.e.s. | 2 | 0.7720 | 0.0537 | 0.4129 |
| 85 | 852520 | Transmit-receive apparatus for radio, TV | 11 | Transmit-receive apparatus for radio, TV | 7 | 0.6469 | 0.0165 | 0.2878 |
| 30 | 300220 | Vaccines, human | 2 | Vaccines, human | 2 | 0.6229 | 0.0027 | 0.2638 |
| 87 | 870321 | Automobiles, spark ignition, <1000cc | 3 | Automobiles, spark ignition, <1000cc | 4 | 0.6051 | 0.0018 | 0.2460 |
| 40 | 401110 | Rubber tires, cars, new | 2 | Rubber tires, cars, new | 2 | 0.5660 | 3.4021 | 0.2069 |
| 30 | 300490 | Medicaments, doses, n.e.s. | 17 | Medicaments, doses, n.e.s. | 18 | 0.4785 | 0.4894 | 0.1194 |
| 85 | 852990 | | | Parts for radio/TV transmit/receive equipment | 2 | 0.3747 | 0.0759 | 0.0156 |
| 95 | 950390 | Toys n.e.s. | 2 | Toys n.e.s. | 2 | 0.2169 | 0.0255 | −0.1422 |

| Chap-ter | HS Code | HS Name 2019 | Paths 2019 | HS Name 2007 | Paths 2007 | PCI | RCA | PCI-ECI |
|---|---|---|---|---|---|---|---|---|
| 85 | 852810 | Color TV receivers/monitors/ projectors | 3 | | | -0.1188 | 0.0511 | −0.4779 |
| 31 | 310210 | Urea, >10kg | 2 | | | -0.9008 | 0.0581 | −1.2599 |
| 85 | 854430 | Ignition sets for vehicles/aircraft/ship | 5 | Ignition sets for vehicles/aircraft/ship | 3 | -1.1410 | 0.1243 | −1.5001 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 62 | 620342 | Men's trousers & shorts, cotton, not knit | 4 | | | -1.7457 | 0.0441 | −2.1048 |
| 61 | 610910 | T-shirts, of cotton, knit | 3 | | | -1.9099 | 0.0194 | −2.2690 |

**Table C.11. Top 20 Potential Export Industries for Dominican Republic Identified through Lagged and Concurrent Analysis: Method 3**

| Chap-ter | HS Code | HS Name 2019 | Paths 2019 | HS Name 2007 | Paths 2007 | PCI | RCA | PCI-ECI |
|---|---|---|---|---|---|---|---|---|
| 87 | 870840 | Transmissions for motor vehicles | 2 | Transmissions for motor vehicles | 2 | 1.5444 | 0.0024 | 1.7873 |
| 84 | 847191 | Digital computer CPU, some storage/input/ output | 2 | Digital computer CPU, some storage/ input/output | 3 | 1.3658 | 0.0009 | 1.6087 |
| 85 | 854211 | Monolithic integrated circuits, digital | 6 | Monolithic integrated circuits, digital | 8 | 1.1696 | 0.0020 | 1.4125 |
| 84 | 847330 | Parts of data processing equipment | 3 | Parts of data processing equipment | 4 | 1.0757 | 0.0044 | 1.3186 |
| 87 | 870190 | | | Wheeled tractors n.e.s. | 2 | 1.0021 | 0.0000 | 1.2450 |
| 87 | 870829 | Parts of motor vehicle bodies | 2 | Parts of motor vehicle bodies | 2 | 1.0007 | 0.0446 | 1.2436 |
| 84 | 841191 | | | Turbo-jet, -propeller engine, parts | 3 | 0.9346 | 0.0008 | 1.1775 |
| 29 | 293359 | Heterocyclic compounds, pyrimidine ring | 2 | Heterocyclic compounds, pyrimidine ring | 2 | 0.9082 | 0.0000 | 1.1511 |
| 87 | 870899 | Motor vehicle parts n.e.s. | 2 | Motor vehicle parts n.e.s. | 2 | 0.7992 | 0.2074 | 1.0421 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 85 | 852520 | Transmit-receive apparatus for radio, TV | 7 | Transmit-receive apparatus for radio, TV | 9 | 0.6469 | 0.0679 | 0.8898 |
| 30 | 300490 | Medicaments, doses, n.e.s. | 13 | Medicaments, doses, n.e.s. | 17 | 0.4785 | 0.1696 | 0.7214 |
| 95 | 950390 | Toys n.e.s. | 2 | | 2 | 0.2169 | 0.1046 | 0.4598 |
| 85 | 852810 | Color TV receivers/ monitors/projectors | 3 | Color TV receivers/ monitors/projectors | 3 | −0.1188 | 0.0169 | 0.1241 |
| 85 | 854430 | Ignition sets for vehicles/aircraft/ship | 5 | Ignition sets for vehicles/aircraft/ship | 4 | −1.1410 | 0.0684 | −0.8981 |
| 62 | 620342 | Men's trousers & shorts, cotton, not knit | 6 | Men's trousers & shorts, cotton, not knit | 6 | −1.7457 | 0.5632 | −1.5028 |
| 62 | 620520 | Men's shirts, cotton, not knit | 3 | | 3 | −1.7751 | 0.9954 | −1.5322 |
| 61 | 610990 | T-shirts, of material n.e.s., knit | 6 | T-shirts, of material n.e.s., knit | 6 | −1.8570 | 3.2058 | −1.6141 |
| 61 | 610910 | T-shirts, of cotton, knit | 5 | T-shirts, of cotton, knit | 7 | −1.9099 | 17.7484 | −1.6670 |

| Chap-ter | HS Code | HS Name 2019 | Paths 2019 | HS Name 2007 | Paths 2007 | PCI | RCA | PCI-ECI |
|---|---|---|---|---|---|---|---|---|
| 61 | 611020 | Pullovers, cardigans, of cotton, knit | 7 | Pullovers, cardigans, of cotton, knit | 7 | -1.9164 | 3.6443 | −1.6735 |
| 62 | 620462 | Women's trousers & shorts, cotton, not knit | 4 | Women's trousers & shorts, cotton, not knit | 4 | -1.9493 | 0.2244 | −1.7064 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 61 | 611030 | Pullovers, cardigans, of manmade fibers, knit | 6 | Pullovers, cardigans, of manmade fibers, knit | 7 | -1.9692 | 1.8708 | −1.7263 |
| 52 | 520100 | Cotton, not carded/ combed | 3 | Cotton, not carded/ combed | 3 | -2.4363 | 0.0000 | −2.1934 |

**Table C.12. Top 20 Potential Export Industries for Panama Identified through Lagged and Concurrent Analysis: Method 3**

| Chap-ter | HS Code | HS Name 2019 | Paths 2019 | HS Name 2007 | Paths 2007 | PCI | RCA | PCI-ECI |
|---|---|---|---|---|---|---|---|---|
| 84 | 847191 | Digital computer CPU, some storage/input/ output | 2 | Digital computer CPU, some storage/input/ output | 2 | 1.3658 | 0.1121 | 1.5078 |
| 85 | 854211 | Monolithic integrated circuits, digital | 11 | Monolithic integrated circuits, digital | 9 | 1.1696 | 0.0040 | 1.3116 |
| 85 | 851790 | Parts of telephone line equipment | 4 | Parts of telephone line equipment | 3 | 1.0956 | 0.8073 | 1.2376 |
| 84 | 847330 | Parts of data processing equipment | 8 | Parts of data processing equipment | 5 | 1.0757 | 0.1444 | 1.2177 |
| 87 | 870190 | | | Wheeled tractors n.e.s. | 2 | 1.0021 | 0.0143 | 1.1441 |
| 87 | 870829 | Parts of motor vehicle bodies | 2 | Parts of motor vehicle bodies | 2 | 1.0007 | 0.0152 | 1.1427 |
| 84 | 841191 | | | Turbo-jet, -propeller engine, parts | 3 | 0.9346 | 0.0016 | 1.0766 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 87 | 870899 | Motor vehicle parts n.e.s. | 3 | Motor vehicle parts n.e.s. | 3 | 0.7992 | 0.3224 | 0.9412 |
| 84 | 841112 | Turbo-jet engine, >25 KN | 2 | Turbo-jet engine, >25 KN | 2 | 0.7913 | 0.0000 | 0.9333 |
| 88 | 880330 | Aircraft parts n.e.s. | 2 | Aircraft parts n.e.s. | 2 | 0.7720 | 0.0115 | 0.9140 |
| 85 | 852520 | Transmit-receive apparatus for radio, TV | 14 | Transmit-receive apparatus for radio, TV | 8 | 0.6469 | 0.4207 | 0.7889 |
| 30 | 300220 | Vaccines, human | 2 | Vaccines, human | 2 | 0.6229 | 0.3535 | 0.7649 |
| 40 | 401110 | Rubber tires, cars, new | 2 | Rubber tires, cars, new | 2 | 0.5660 | 2.4954 | 0.7080 |
| 30 | 300490 | Medicaments, doses, n.e.s. | 9 | Medicaments, doses, n.e.s. | 15 | 0.4785 | 1.9417 | 0.6205 |
| 85 | 852990 | Parts for radio/TV transmit/receive equipment | 2 | Parts for radio/TV transmit/receive equipment | 3 | 0.3747 | 0.1143 | 0.5167 |
| 95 | 950390 | Toys n.e.s. | 2 | Toys n.e.s. | 2 | 0.2169 | 0.3715 | 0.3589 |
| 33 | 330499 | | | Make-up, n.e.s. | 2 | 0.1699 | 0.6567 | 0.3119 |
| 85 | 852810 | Color TV receivers/ monitors/projectors | 4 | Color TV receivers/ monitors/projectors | 4 | −0.1188 | 0.7017 | 0.0232 |
| 31 | 310210 | Urea, >10kg | 2 | | | −0.9008 | 0.0000 | −0.7588 |
| 64 | 640399 | Footwear, uppers of leather, n.e.s. | 3 | Footwear, uppers of leather, n.e.s. | 2 | −0.9024 | 0.6555 | −0.7604 |
| 85 | 854430 | Ignition sets for vehicles/aircraft/ship | 4 | Ignition sets for vehicles/aircraft/ship | 4 | −1.1410 | 0.0088 | −0.9990 |
| 64 | 640610 | Footwear uppers | 2 | | | −1.3223 | 0.0003 | −1.1803 |
| 61 | 611030 | Pullovers, cardigans, of manmade fibers, knit | 3 | | | −1.9692 | 0.1537 | −1.8272 |

**Table D.1 Potential Export Industries for Costa Rica Suggested by Closest Countries in Exports in 2019 (Costa Rica ECI = 0.3591)**

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 300490 | Medicaments, doses, n.e.s. | 13 | 0.4785 | 0.4894 |
| 852520 | Transmit-receive apparatus for radio, TV | 6 | 0.6469 | 0.0165 |
| 854211 | Monolithic integrated circuits, digital | 5 | 1.1696 | 0.1068 |
| 870899 | Motor vehicle parts n.e.s. | 4 | 0.7992 | 0.3285 |
| 841112 | Turbo-jet engine, >25 KN | 4 | 0.7913 | 0.0263 |
| 847330 | Parts of data processing equipment | 3 | 1.0757 | 0.1538 |
| 870829 | Parts of motor vehicle bodies | 3 | 1.0007 | 0.0115 |
| 841191 | Turbo-jet, -propeller engine, parts | 3 | 0.9346 | 0.0005 |
| 852810 | Color TV receivers/monitors/projectors | 3 | −0.1188 | 0.0511 |
| 880330 | Aircraft parts n.e.s. | 2 | 0.772 | 0.0537 |
| 300220 | Vaccines, human | 2 | 0.6229 | 0.0027 |
| 940360 | Furniture, wooden, n.e.s. | 2 | 0.1749 | 0.1142 |
| 382390 | Chemical products, n.e.s. | 2 | −0.2594 | 0.1571 |
| 854430 | Ignition sets for vehicles/aircraft/ship | 2 | −1.141 | 0.1243 |
| 610910 | T-shirts, of cotton, knit | 2 | −1.9099 | 0.0194 |
| 293379 | Lactams, n.e.s. | 1 | 1.9298 | 0.0004 |
| 901020 | Equipment for photographic laboratories n.e.s. | 1 | 1.7947 | 0.0223 |
| 870840 | Transmissions for motor vehicles | 1 | 1.5444 | 0.0021 |
| 840734 | Engines, spark-ignition, >1000cc | 1 | 1.4839 | 0.0001 |
| 847191 | Digital computer CPU, some storage/input/output | 1 | 1.3658 | 0.0176 |
| 840820 | Diesel engine, motor vehicles | 1 | 1.3594 | 0.0044 |
| 848180 | Taps, cocks, valves, appliances, n.e.s. | 1 | 1.323 | 0.0838 |
| 300439 | Hormones, not contraceptive, doses | 1 | 1.2183 | 0.1502 |
| 293490 | Heterocyclic compounds, n.e.s. | 1 | 1.1167 | 0.0263 |
| 847199 | Automatic data processing machines | 1 | 1.114 | 0.0276 |
| 293500 | Sulfonamides | 1 | 1.0692 | 0.0028 |
| 870190 | Wheeled tractors n.e.s. | 1 | 1.0021 | 0.0405 |
| 850440 | Static converters, n.e.s. | 1 | 0.9852 | 0.0958 |

| | | | | |
|---|---|---|---|---|
| 853890 | Parts of elect switches, protectors | 1 | 0.9786 | 0.2917 |
| 392690 | Plastic articles, n.e.s. | 1 | 0.5935 | 1.9143 |
| 853710 | Electrical control & distribution boards, <1kV | 1 | 0.5934 | 0.197 |
| 970110 | Paintings/drawings/pastels, by hand | 1 | 0.2592 | 0.0417 |
| 853620 | Automatic circuit breakers, <1kV | 1 | 0.216 | 0.4686 |
| 300660 | Contraceptives, hormones | 1 | 0.1917 | 1.1251 |
| 330499 | Make-up, n.e.s. | 1 | 0.1699 | 0.1069 |
| 850423 | Liquid dielectric transformers >10,000KVA | 1 | 0.1421 | 0.0042 |
| 851782 | Telegraphic apparatus, n.e.s. | 1 | 0.0579 | 0.0036 |

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 940600 | Prefabricated buildings | 1 | −0.1161 | 0.0934 |
| 940190 | Parts of seats | 1 | −0.1799 | 0.0422 |
| 330210 | Mixed odors, food & drink | 1 | −0.209 | 2.6304 |
| 701090 | Glass containers for packing goods | 1 | −0.471 | 8.4828 |
| 283620 | Disodium carbonate | 1 | −0.5831 | 0 |
| 690790 | Unglazed ceramic tiles, >7cm wide | 1 | −0.6254 | 0.1309 |
| 890590 | Floating docks, special function vessels | 1 | −0.9301 | 0.0192 |
| 640391 | Boots, upper of leather, n.e.s. | 1 | −0.9846 | 0.0423 |
| 521213 | Cotton fabric, <200g/m2, dye, n.e.s. | 1 | −1.1418 | 0 |

**Table D.2. Potential Export Industries for Costa Rica Suggested by Closest Countries in Exports in 2007 (Costa Rica ECI = 0.3591)**

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 300490 | Medicaments, doses, n.e.s. | 11 | 0.4785 | 0.4894 |
| 854211 | Monolithic integrated circuits, digital | 4 | 1.1696 | 0.1068 |
| 847330 | Parts of data processing equipment | 4 | 1.0757 | 0.1538 |
| 852520 | Transmit-receive apparatus for radio, TV | 4 | 0.6469 | 0.0165 |
| 841191 | Turbo-jet, -propeller engine, parts | 3 | 0.9346 | 0.0005 |
| 841112 | Turbo-jet engine, >25 KN | 3 | 0.7913 | 0.0263 |
| 880330 | Aircraft parts n.e.s. | 3 | 0.772 | 0.0537 |
| 300439 | Hormones, not contraceptive, doses | 2 | 1.2183 | 0.1502 |
| 940600 | Prefabricated buildings | 2 | −0.1161 | 0.0934 |
| 382390 | Chemical products, n.e.s. | 2 | −0.2594 | 0.1571 |
| 690790 | Unglazed ceramic tiles, >7cm wide | 2 | −0.6254 | 0.1309 |
| 890590 | Floating docks, special function vessels | 2 | −0.9301 | 0.0192 |
| 890190 | Cargo vessels, not tanker or refrigerated | 2 | −1.2249 | 3.1087 |
| 901020 | Equipment for photographic laboratories n.e.s. | 1 | 1.7947 | 0.0223 |
| 870840 | Transmissions for motor vehicles | 1 | 1.5444 | 0.0021 |
| 840734 | Engines, spark-ignition, >1000cc | 1 | 1.4839 | 0.0001 |
| 840820 | Diesel engine, motor vehicles | 1 | 1.3594 | 0.0044 |
| 848180 | Taps, cocks, valves, appliances, n.e.s. | 1 | 1.323 | 0.0838 |
| 851790 | Parts of telephone line equipment | 1 | 1.0956 | 0.1031 |
| 350790 | Enzymes, n.e.s. | 1 | 1.0609 | 0.2949 |
| 851150 | Generators & alternators | 1 | 1.0562 | 0.0108 |
| 870829 | Parts of motor vehicle bodies | 1 | 1.0007 | 0.0115 |
| 850440 | Static converters, n.e.s. | 1 | 0.9852 | 0.0958 |
| 850230 | Electric generating sets, n.e.s. | 1 | 0.9209 | 0.0043 |
| 870899 | Motor vehicle parts n.e.s. | 1 | 0.7992 | 0.3285 |
| 853120 | Indicator panels, with electronic displays | 1 | 0.6401 | 0.0266 |
| 300220 | Vaccines, human | 1 | 0.6229 | 0.0027 |
| 853710 | Electrical control & distribution boards, <1kV | 1 | 0.5934 | 0.197 |
| 401110 | Rubber tires, cars, new | 1 | 0.566 | 3.4021 |

| | | | | |
|---|---|---|---|---|
| 841290 | Hydraulic/pneumatic power engine, parts | 1 | 0.4393 | 0.1469 |
| 300431 | Insulin, doses | 1 | 0.379 | 0 |
| 853340 | Variable resistors, rheostats & potentiometers | 1 | 0.372 | 11.6694 |
| 850220 | Generating sets, spark ignition engines | 1 | 0.325 | 0.0116 |
| 970110 | Paintings/drawings/pastels, by hand | 1 | 0.2592 | 0.0417 |
| 853620 | Automatic circuit breakers, <1kV | 1 | 0.216 | 0.4686 |
| 940360 | Furniture, wooden, n.e.s. | 1 | 0.1749 | 0.1142 |
| 330499 | Make-up, n.e.s. | 1 | 0.1699 | 0.1069 |

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 293791 | Insulin | 1 | 0.164 | 0 |
| 300420 | Antibiotics, doses, n.e.s. | 1 | −0.0255 | 0.8996 |
| 852810 | Color TV receivers/monitors/projectors | 1 | −0.1188 | 0.0511 |
| 940490 | Articles of bedding n.e.s. | 1 | −0.314 | 0.0859 |
| 871120 | Motorcycles, 50-250cc engine | 1 | −0.4021 | 0.0199 |
| 961700 | Vacuum flasks | 1 | −0.4243 | 0.0031 |
| 890600 | Warships, lifeboats | 1 | −0.4669 | 0 |
| 640411 | Sports footwear, upper textile | 1 | −0.7864 | 0.001 |
| 392490 | Plastic household articles, n.e.s. | 1 | −0.8052 | 0.2653 |
| 640399 | Footwear, uppers of leather, n.e.s. | 1 | −0.9024 | 0.016 |
| 521213 | Cotton fabric, <200g/m2, dye, n.e.s. | 1 | −1.1418 | 0 |
| 290511 | Methyl alcohol | 1 | −1.2183 | 0.0007 |
| 330129 | Oils, n.e.s. | 1 | −1.4875 | 0.3272 |
| 890800 | Scrapping vessels | 1 | −1.7744 | 0.162 |
| 610910 | T-shirts, of cotton, knit | 1 | −1.9099 | 0.0194 |
| 520100 | Cotton, not carded/combed | 1 | −2.4363 | 0.0172 |

**Table D.3. Potential Export Industries for Dominican Republic Suggested by Closest Countries in Exports in 2019 (Dominican Republic ECI = −0.2429)**

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 300490 | Medicaments, doses, n.e.s. | 9 | 0.4785 | 0.1696 |
| 852520 | Transmit-receive apparatus for radio, TV | 4 | 0.6469 | 0.0679 |
| 854211 | Monolithic integrated circuits, digital | 3 | 1.1696 | 0.002 |
| 847330 | Parts of data processing equipment | 3 | 1.0757 | 0.0044 |
| 870899 | Motor vehicle parts n.e.s. | 3 | 0.7992 | 0.2074 |
| 382390 | Chemical products, n.e.s. | 3 | −0.2594 | 0.4222 |
| 870829 | Parts of motor vehicle bodies | 2 | 1.0007 | 0.0446 |
| 852810 | Color TV receivers/monitors/projectors | 2 | −0.1188 | 0.0169 |
| 854430 | Ignition sets for vehicles/aircraft/ship | 2 | −1.141 | 0.0684 |
| 520100 | Cotton, not carded/combed | 2 | −2.4363 | 0 |
| 901020 | Equipment for photographic laboratories n.e.s. | 1 | 1.7947 | 0.0003 |
| 870840 | Transmissions for motor vehicles | 1 | 1.5444 | 0.0024 |
| 840820 | Diesel engine, motor vehicles | 1 | 1.3594 | 0.0145 |
| 848180 | Taps, cocks, valves, appliances, n.e.s. | 1 | 1.323 | 0.0653 |
| 300439 | Hormones, not contraceptive, doses | 1 | 1.2183 | 0.0248 |
| 847199 | Automatic data processing machines | 1 | 1.114 | 0.2385 |
| 851150 | Generators & alternators | 1 | 1.0562 | 0.0073 |
| 870190 | Wheeled tractors n.e.s. | 1 | 1.0021 | 0 |
| 850440 | Static converters, n.e.s. | 1 | 0.9852 | 0.0788 |
| 853890 | Parts of elect switches, protectors | 1 | 0.9786 | 0.77 |
| 841191 | Turbo-jet, -propeller engine, parts | 1 | 0.9346 | 0.0008 |
| 880330 | Aircraft parts n.e.s. | 1 | 0.772 | 0.0012 |
| 853120 | Indicator panels, with electronic displays | 1 | 0.6401 | 0.3978 |
| 870210 | Diesel powered buses | 1 | 0.5994 | 0.0024 |
| 853710 | Electrical control & distribution boards, <1kV | 1 | 0.5934 | 0.0698 |
| 401110 | Rubber tires, cars, new | 1 | 0.566 | 0.0102 |
| 852990 | Parts for radio/TV transmit/receive equipment | 1 | 0.3747 | 0.0162 |
| 850220 | Generating sets, spark ignition engines | 1 | 0.325 | 0.0061 |
| 300660 | Contraceptives, hormones | 1 | 0.1917 | 0 |

| | | | | |
|---|---|---|---|---|
| 940360 | Furniture, wooden, n.e.s. | 1 | 0.1749 | 0.283 |
| 690220 | Refractory bricks, >50% alumina, silica | 1 | 0.1513 | 0.002 |
| 870590 | Special purpose motor vehicles n.e.s. | 1 | −0.1478 | 0.022 |
| 940190 | Parts of seats | 1 | −0.1799 | 0.0041 |
| 871120 | Motorcycles, 50-250cc engine | 1 | −0.4021 | 0.004 |
| 961700 | Vacuum flasks | 1 | −0.4243 | 0.0163 |
| 890600 | Warships, lifeboats | 1 | −0.4669 | 0 |
| 701090 | Glass containers for packing goods | 1 | −0.471 | 0.0121 |

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 280920 | Phosphoric acid | 1 | −0.4714 | 0.0153 |
| 283620 | Disodium carbonate | 1 | −0.5831 | 0.0044 |
| 854420 | Coaxial cable | 1 | −0.6149 | 0.0597 |
| 690790 | Unglazed ceramic tiles, >7cm wide | 1 | −0.6254 | 0.0333 |
| 850211 | Generating sets, diesel, <75kVA | 1 | −0.737 | 0.9827 |
| 640411 | Sports footwear, upper textile | 1 | −0.7864 | 0.937 |
| 310210 | Urea, >10kg | 1 | −0.9008 | 0.1757 |
| 640399 | Footwear, uppers of leather, n.e.s. | 1 | −0.9024 | 2.2519 |
| 310310 | Superphosphates, >10kg | 1 | −0.9664 | 1.0083 |
| 570242 | Carpets, manmade yarn, woven pile, madeup | 1 | −1.0522 | 0 |
| 710210 | Diamonds, unsorted | 1 | −1.5438 | 0.3614 |
| 620342 | Men’s trousers & shorts, cotton, not knit | 1 | −1.7457 | 0.5632 |
| 890800 | Scrapping vessels | 1 | −1.7744 | 0 |
| 400122 | Technically specified natural rubber | 1 | −2.6521 | 0 |

**Table D.4. Potential Export Industries for Dominican Republic Suggested by Closest Countries in Exports in 2007 (Dominican Republic ECI = −0.2429)**

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 300490 | Medicaments, doses, n.e.s. | 9 | 0.4785 | 0.1696 |
| 852520 | Transmit-receive apparatus for radio, TV | 3 | 0.6469 | 0.0679 |
| 382390 | Chemical products, n.e.s. | 3 | −0.2594 | 0.4222 |
| 847330 | Parts of data processing equipment | 2 | 1.0757 | 0.0044 |
| 870829 | Parts of motor vehicle bodies | 2 | 1.0007 | 0.0446 |
| 841191 | Turbo-jet, -propeller engine, parts | 2 | 0.9346 | 0.0008 |
| 870899 | Motor vehicle parts n.e.s. | 2 | 0.7992 | 0.2074 |
| 880330 | Aircraft parts n.e.s. | 2 | 0.772 | 0.0012 |
| 853710 | Electrical control & distribution boards, <1kV | 2 | 0.5934 | 0.0698 |
| 701090 | Glass containers for packing goods | 2 | −0.471 | 0.0121 |
| 690790 | Unglazed ceramic tiles, >7cm wide | 2 | −0.6254 | 0.0333 |
| 854430 | Ignition sets for vehicles/aircraft/ship | 2 | −1.141 | 0.0684 |
| 870840 | Transmissions for motor vehicles | 1 | 1.5444 | 0.0024 |
| 840820 | Diesel engine, motor vehicles | 1 | 1.3594 | 0.0145 |
| 848180 | Taps, cocks, valves, appliances, n.e.s. | 1 | 1.323 | 0.0653 |
| 300439 | Hormones, not contraceptive, doses | 1 | 1.2183 | 0.0248 |
| 854211 | Monolithic integrated circuits, digital | 1 | 1.1696 | 0.002 |
| 842952 | Shovels & excavators, revolving superstructure | 1 | 1.1304 | 0.0013 |
| 851150 | Generators & alternators | 1 | 1.0562 | 0.0073 |
| 853890 | Parts of elect switches, protectors | 1 | 0.9786 | 0.77 |
| 870423 | Diesel powered trucks, >20 tonnes | 1 | 0.8357 | 0 |
| 293628 | Vitamin E | 1 | 0.7667 | 0 |
| 390410 | Polyvinyl chloride | 1 | 0.7215 | 0.0043 |
| 851140 | Starter motors | 1 | 0.6602 | 0.0473 |
| 853120 | Indicator panels, with electronic displays | 1 | 0.6401 | 0.3978 |
| 870210 | Diesel powered buses | 1 | 0.5994 | 0.0024 |
| 401110 | Rubber tires, cars, new | 1 | 0.566 | 0.0102 |
| 850220 | Generating sets, spark ignition engines | 1 | 0.325 | 0.0061 |
| 970110 | Paintings/drawings/pastels, by hand | 1 | 0.2592 | 0.0211 |

| | | | | |
|---|---|---|---|---|
| 940360 | Furniture, wooden, n.e.s. | 1 | 0.1749 | 0.283 |
| 280700 | Sulfuric acid, oleum | 1 | 0.0804 | 0.0033 |
| 847490 | Parts for mineral sort, screen machines | 1 | −0.0638 | 0.1113 |
| 380820 | Fungicides | 1 | −0.0962 | 0.1956 |
| 940600 | Prefabricated buildings | 1 | −0.1161 | 0.004 |
| 852810 | Color TV receivers/monitors/projectors | 1 | −0.1188 | 0.0169 |
| 940190 | Parts of seats | 1 | −0.1799 | 0.0041 |
| 860900 | Cargo containers, for carriage | 1 | −0.3567 | 0.0465 |

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 961700 | Vacuum flasks | 1 | −0.4243 | 0.0163 |
| 280920 | Phosphoric acid | 1 | −0.4714 | 0.0153 |
| 283620 | Disodium carbonate | 1 | −0.5831 | 0.0044 |
| 282751 | Bromides of sodium, potassium | 1 | −0.61 | 0 |
| 841121 | Turbo-propeller engine, <1100 kW | 1 | −0.711 | 0 |
| 871631 | Tanker trailers and semi-trailers | 1 | −0.7143 | 0 |
| 850211 | Generating sets, diesel, <75kVA | 1 | −0.737 | 0.9827 |
| 843143 | Parts of boring/sinking machinery | 1 | −0.773 | 0.0144 |
| 847439 | Mixing, kneading machines for minerals | 1 | −0.8187 | 0.0288 |
| 340111 | Soaps for toilet, solid | 1 | −0.9223 | 1.7675 |
| 310310 | Superphosphates, >10kg | 1 | −0.9664 | 1.0083 |
| 870410 | Dump trucks, for off-highway use | 1 | −0.9678 | 0 |
| 570242 | Carpets, manmade yarn, woven pile, madeup | 1 | −1.0522 | 0 |
| 611010 | Pullovers, cardigans, of wool/hair, knit | 1 | −1.3227 | 0.007 |
| 842959 | Earth moving/road making equip, self-propelled | 1 | −1.3341 | 0.0788 |
| 620342 | Men's trousers & shorts, cotton, not knit | 1 | −1.7457 | 0.5632 |
| 890800 | Scrapping vessels | 1 | −1.7744 | 0 |
| 620520 | Men's shirts, cotton, not knit | 1 | −1.7751 | 0.9954 |
| 610510 | Men's shirts, cotton, knit | 1 | −1.8315 | 0.2618 |
| 620462 | Women's trousers & shorts, cotton, not knit | 1 | −1.9493 | 0.2244 |
| 611120 | Babies garments, of cotton, knit | 1 | −2.1347 | 0.0058 |
| 520100 | Cotton, not carded/combed | 1 | −2.4363 | 0 |

**Table D.5. Potential Export Industries for Panama Suggested by Closest Countries in Exports in 2019 (Panama ECI = −0.1420)**

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 852520 | Transmit-receive apparatus for radio, TV | 4 | 0.6469 | 0.4207 |
| 520100 | Cotton, not carded/combed | 4 | −2.4363 | 0 |
| 854211 | Monolithic integrated circuits, digital | 3 | 1.1696 | 0.004 |
| 847330 | Parts of data processing equipment | 3 | 1.0757 | 0.1444 |
| 310210 | Urea, >10kg | 3 | −0.9008 | 0 |
| 290511 | Methyl alcohol | 3 | −1.2183 | 0 |
| 901020 | Equipment for photographic laboratories n.e.s. | 2 | 1.7947 | 0.0001 |
| 847193 | Computer data storage units | 2 | 0.9144 | 0.6094 |
| 841112 | Turbo-jet engine, >25 KN | 2 | 0.7913 | 0 |
| 300431 | Insulin, doses | 2 | 0.379 | 1.625 |
| 940360 | Furniture, wooden, n.e.s. | 2 | 0.1749 | 0.0809 |
| 871000 | Tanks, armored fighting vehicles | 2 | −0.1489 | 0.2475 |
| 382390 | Chemical products, n.e.s. | 2 | −0.2594 | 0.1503 |
| 391190 | Polysulfides, -sulfones, n.e.s. | 1 | 1.4205 | 0.0175 |
| 382200 | Diagnostic reagents, n.e.s. | 1 | 1.3443 | 0.0474 |
| 300439 | Hormones, not contraceptive, doses | 1 | 1.2183 | 0.1384 |
| 851790 | Parts of telephone line equipment | 1 | 1.0956 | 0.8073 |
| 350790 | Enzymes, n.e.s. | 1 | 1.0609 | 0.071 |
| 870829 | Parts of motor vehicle bodies | 1 | 1.0007 | 0.0152 |
| 840690 | Steam turbines, parts | 1 | 0.9937 | 0.0005 |
| 850230 | Electric generating sets, n.e.s. | 1 | 0.9209 | 0.0301 |
| 290250 | Styrene | 1 | 0.8353 | 0.0108 |
| 870899 | Motor vehicle parts n.e.s. | 1 | 0.7992 | 0.3224 |
| 880330 | Aircraft parts n.e.s. | 1 | 0.772 | 0.0115 |
| 843149 | Parts of cranes, work-trucks, constr machine | 1 | 0.6438 | 0.1968 |
| 290531 | Ethanediol | 1 | 0.5826 | 0 |
| 841290 | Hydraulic/pneumatic power engine, parts | 1 | 0.4393 | 0.3867 |
| 940390 | Furniture parts | 1 | 0.3738 | 0.0188 |
| 950390 | Toys n.e.s. | 1 | 0.2169 | 0.3715 |
| 330499 | Make-up, n.e.s. | 1 | 0.1699 | 0.6567 |

| | | | | |
|---|---|---|---|---|
| 940161 | Upholstered seats with wooden frames | 1 | 0.1659 | 0.0068 |
| 854460 | Electric conductors, >1,000V | 1 | 0.1539 | 0.4988 |
| 690220 | Refractory bricks, >50% alumina, silica | 1 | 0.1513 | 0.0062 |
| 850423 | Liquid dielectric transformers >10,000KVA | 1 | 0.1421 | 0.0171 |
| 854449 | Electric conductors, <80V, no connectors | 1 | −0.5173 | 0.3577 |
| 283699 | Carbonates of metals, n.e.s. | 1 | −0.5591 | 0 |
| 640391 | Boots, upper of leather, n.e.s. | 1 | −0.9846 | 0.3506 |
| 854430 | Ignition sets for vehicles/aircraft/ship | 1 | −1.141 | 0.0088 |
| 621010 | Garments, of textile felts & nonwoven fabric | 1 | −1.1794 | 0.2065 |

**Table D.6. Potential Export Industries for Panama Suggested by Closest Countries in Exports in 2007 (Panama ECI = −0.1420)**

| Industry Code | Industry Name | Paths | PCI | RCA |
|---|---|---|---|---|
| 852520 | Transmit-receive apparatus for radio, TV | 5 | 0.6469 | 0.4207 |
| 300490 | Medicaments, doses, n.e.s. | 5 | 0.4785 | 1.9417 |
| 854211 | Monolithic integrated circuits, digital | 4 | 1.1696 | 0.004 |
| 847330 | Parts of data processing equipment | 4 | 1.0757 | 0.1444 |
| 841191 | Turbo-jet, -propeller engine, parts | 3 | 0.9346 | 0.0016 |
| 841112 | Turbo-jet engine, >25 KN | 3 | 0.7913 | 0 |
| 880330 | Aircraft parts n.e.s. | 3 | 0.772 | 0.0115 |
| 840820 | Diesel engine, motor vehicles | 2 | 1.3594 | 0.004 |
| 870829 | Parts of motor vehicle bodies | 2 | 1.0007 | 0.0152 |
| 847193 | Computer data storage units | 2 | 0.9144 | 0.6094 |
| 330499 | Make-up, n.e.s. | 2 | 0.1699 | 0.6567 |
| 382390 | Chemical products, n.e.s. | 2 | −0.2594 | 0.1503 |
| 520100 | Cotton, not carded/combed | 2 | −2.4363 | 0 |
| 901020 | Equipment for photographic laboratories n.e.s. | 1 | 1.7947 | 0.0001 |
| 848180 | Taps, cocks, valves, appliances, n.e.s. | 1 | 1.323 | 0.0851 |
| 300439 | Hormones, not contraceptive, doses | 1 | 1.2183 | 0.1384 |
| 851150 | Generators & alternators | 1 | 1.0562 | 0.3346 |
| 293390 | Heterocyclic compounds, N-hetero-atoms | 1 | 0.9943 | 0.0031 |
| 870899 | Motor vehicle parts n.e.s. | 1 | 0.7992 | 0.3224 |
| 910121 | Wrist-watch, precious metal, automatic wound | 1 | 0.7554 | 0.1582 |
| 853120 | Indicator panels, with electronic displays | 1 | 0.6401 | 0.0429 |
| 300220 | Vaccines, human | 1 | 0.6229 | 0.3535 |
| 401110 | Rubber tires, cars, new | 1 | 0.566 | 2.4954 |
| 300431 | Insulin, doses | 1 | 0.379 | 1.625 |
| 850220 | Generating sets, spark ignition engines | 1 | 0.325 | 0.1873 |
| 970110 | Paintings/drawings/pastels, by hand | 1 | 0.2592 | 0.0421 |
| 950390 | Toys n.e.s. | 1 | 0.2169 | 0.3715 |
| 940360 | Furniture, wooden, n.e.s. | 1 | 0.1749 | 0.0809 |
| 854460 | Electric conductors, >1,000V | 1 | 0.1539 | 0.4988 |
| 940600 | Prefabricated buildings | 1 | −0.1161 | 0.0782 |

| | | | | |
|---|---|---|---|---|
| 852810 | Color TV receivers/monitors/projectors | 1 | −0.1188 | 0.7017 |
| 910221 | Wrist-watch, base-metal case, automatic wound | 1 | −0.1499 | 0.079 |
| 871120 | Motorcycles, 50-250cc engine | 1 | −0.4021 | 0.4729 |
| 961700 | Vacuum flasks | 1 | −0.4243 | 0.3575 |
| 690790 | Unglazed ceramic tiles, >7cm wide | 1 | −0.6254 | 0.0243 |
| 640411 | Sports footwear, upper textile | 1 | −0.7864 | 4.5292 |
| 640399 | Footwear, uppers of leather, n.e.s. | 1 | −0.9024 | 0.6555 |
| 310420 | Potassium chloride, >10kg | 1 | −0.9072 | 0.0022 |
| 330129 | Oils, n.e.s. | 1 | −1.4875 | 0.1225 |

**Table D.7. Closest Countries to Costa Rica's Exports in 2019 and 2007 (Costa Rica ECI = 0.3591)**

| Country Code | Country Name | Distance | ECI |
|---|---|---|---|
| Concurrent 2019 List | | | |
| DOM | Dominican Republic | 0.1131 | −0.2429 |
| USA | United States of America | 0.1258 | 1.6362 |
| NLD | Netherlands | 0.126 | 1.2187 |
| IRL | Ireland | 0.1283 | 1.2039 |
| BEL | Belgium | 0.1298 | 1.4101 |
| BGR | Bulgaria | 0.1303 | 0.5364 |
| DEU | Germany | 0.1304 | 1.9564 |
| AUT | Austria | 0.1306 | 1.6106 |
| ITA | Italy | 0.1311 | 1.1546 |
| MEX | Mexico | 0.1311 | 1.1481 |
| FIN | Finland | 0.1316 | 1.5464 |
| GBR | United Kingdom | 0.1321 | 1.4366 |
| POL | Poland | 0.1323 | 1.1230 |
| IND | India | 0.1329 | 0.4834 |
| FRA | France | 0.1329 | 1.3195 |
| HRV | Croatia | 0.1331 | 0.7557 |
| LVA | LaTVia | 0.1331 | 0.8436 |
| Lagged 2007 List | | | |
| DOM | Dominican Republic | 0.1119 | −0.2429 |
| CYP | Cyprus | 0.1237 | 0.5454 |
| USA | United States of America | 0.1252 | 1.6362 |
| NLD | Netherlands | 0.1276 | 1.2187 |
| AUS | Australia | 0.1278 | 0.0577 |
| GBR | United Kingdom | 0.1282 | 1.4366 |
| DEU | Germany | 0.129 | 1.9564 |
| ITA | Italy | 0.1294 | 1.1546 |
| AUT | Austria | 0.1294 | 1.6106 |
| FRA | France | 0.1296 | 1.3195 |

| | | | |
|---|---|---|---|
| IDN | Indonesia | 0.1298 | −0.0155 |
| LVA | LaTVia | 0.1302 | 0.8436 |
| BEL | Belgium | 0.1307 | 1.4101 |
| COM | Comoros | 0.1308 | −0.2774 |
| DNK | Denmark | 0.131 | 1.0702 |
| GHA | Ghana | 0.1312 | −1.0676 |
| EST | Estonia | 0.1312 | 0.9658 |

**Table D.8. Closest Countries to Dominican Republic's Exports in 2019 (Dominican Republic ECI = −0.2429)**

| Country Code | Country Name | Distance | ECI |
|---|---|---|---|
| Concurrent 2019 List | | | |
| COM | Comoros | 0.0720 | −0.2774 |
| USA | United States of America | 0.0725 | 1.6362 |
| LBN | Lebanon | 0.0731 | −0.1268 |
| NLD | Netherlands | 0.0733 | 1.2187 |
| BGR | Bulgaria | 0.0736 | 0.5364 |
| ITA | Italy | 0.0737 | 1.1546 |
| IDN | Indonesia | 0.0742 | −0.0155 |
| AUT | Austria | 0.0756 | 1.6106 |
| JAM | Jamaica | 0.0760 | −0.4245 |
| IND | India | 0.0760 | 0.4834 |
| AUS | Australia | 0.0765 | 0.0577 |
| FIN | Finland | 0.0765 | 1.5464 |
| EGY | Egypt | 0.0765 | −0.1643 |
| DEU | Germany | 0.0766 | 1.9564 |
| CAF | Central African Republic | 0.0767 | −0.1742 |
| TUR | Turkey | 0.0770 | 0.4328 |
| POL | Poland | 0.0771 | 1.1230 |
| Lagged 2007 List | | | |
| MNG | Mongolia | 0.0773 | −0.7642 |
| DJI | Djibouti | 0.0774 | −1.2132 |
| BDI | Burundi | 0.0776 | −0.8495 |
| LBN | Lebanon | 0.0786 | −0.1268 |
| ETH | Ethiopia | 0.0796 | −1.1617 |
| AUS | Australia | 0.0801 | 0.0577 |
| USA | United States of America | 0.0808 | 1.6362 |
| ITA | Italy | 0.0813 | 1.1546 |
| TUR | Turkey | 0.0823 | 0.4328 |
| COL | Colombia | 0.0825 | 0.2091 |

| | | | |
|---|---|---|---|
| PER | Peru | 0.0828 | −0.4412 |
| COM | Comoros | 0.0832 | −0.2774 |
| ROU | Romania | 0.0832 | 0.9451 |
| GBR | United Kingdom | 0.0834 | 1.4366 |
| LVA | LaTVia | 0.0836 | 0.8436 |
| AUT | Austria | 0.0836 | 1.6106 |
| BGR | Bulgaria | 0.0837 | 0.5364 |

**Table D.9. Closest Countries to Panama's Exports in 2019 (Panama ECI = −0.1420)**

| Country Code | Country Name | Distance | ECI |
|---|---|---|---|
| Concurrent 2019 List | | | |
| OMN | Oman | 0.0327 | 0.0087 |
| ARE | United Arab Emirates | 0.0351 | 0.2803 |
| NAM | Namibia | 0.0362 | −0.4832 |
| GRC | Greece | 0.0372 | 0.1190 |
| HKG | Hong Kong | 0.0373 | 1.0334 |
| LTU | Lithuania | 0.0400 | 0.8264 |
| AUS | Australia | 0.0403 | 0.0577 |
| NLD | Netherlands | 0.0426 | 1.2187 |
| ZWE | Zimbabwe | 0.0440 | −0.8451 |
| JAM | Jamaica | 0.0441 | −0.4245 |
| COD | Congo (Democratic Republic of the) | 0.0443 | −1.4293 |
| DNK | Denmark | 0.0445 | 1.0702 |
| HRV | Croatia | 0.0452 | 0.7557 |
| AZE | Azerbaijan | 0.0482 | −0.6812 |
| SGP | Singapore | 0.0486 | 1.8842 |
| BHR | Bahrain | 0.0488 | 0.2902 |
| KWT | Kuwait | 0.0489 | 0.3718 |
| Lagged 2007 List | | | |
| BEL | Belgium | 0.0496 | 1.4101 |
| GBR | United Kingdom | 0.0510 | 1.4366 |
| FRA | France | 0.0513 | 1.3195 |
| ITA | Italy | 0.0523 | 1.1546 |
| AUS | Australia | 0.0527 | 0.0577 |
| NLD | Netherlands | 0.0527 | 1.2187 |
| LVA | LaTVia | 0.0528 | 0.8436 |
| DEU | Germany | 0.0530 | 1.9564 |
| USA | United States of America | 0.0537 | 1.6362 |
| ARE | United Arab Emirates | 0.0556 | 0.2803 |

| | | | |
|---|---|---|---|
| IDN | Indonesia | 0.0558 | −0.0155 |
| CHE | Switzerland | 0.0562 | 2.0474 |
| SWE | Sweden | 0.0564 | 1.6567 |
| COM | Comoros | 0.0564 | −0.2774 |
| AUT | Austria | 0.0564 | 1.6106 |
| GRC | Greece | 0.0568 | 0.1190 |
| CAN | Canada | 0.0573 | 1.0867 |

**Table D.10. Top 20 Potential Export Industries for Costa Rica Identified through Lagged and Concurrent Analysis: Method 4**

| Chap-ter | HS Code | HS Name 2019 | Paths 2019 | HS Name 2007 | Paths 2007 | PCI | RCA | PCI-ECI |
|---|---|---|---|---|---|---|---|---|
| 29 | 293379 | Lactams, n.e.s. | 1 | | | 1.9298 | 0.0004 | 1.5707 |
| 90 | 901020 | Equipment for photographic laboratories n.e.s. | 1 | Equipment for photographic laboratories n.e.s. | 1 | 1.7947 | 0.0223 | 1.4356 |
| 87 | 870840 | Transmissions for motor vehicles | 1 | Transmissions for motor vehicles | 1 | 1.5444 | 0.0021 | 1.1853 |
| 84 | 840734 | Engines, spark-ignition, >1000cc | 1 | Engines, spark-ignition, >1000cc | 1 | 1.4839 | 0.0001 | 1.1248 |
| 84 | 847191 | Digital computer CPU, some storage/input/ output | 1 | | | 1.3658 | 0.0176 | 1.0067 |
| 84 | 840820 | | | Diesel engine, motor vehicles | 1 | 1.3594 | 0.0044 | 1.0003 |
| 84 | 848180 | | | Taps, cocks, valves, appliances, n.e.s. | 1 | 1.323 | 0.0838 | 0.9639 |
| 30 | 300439 | | | Hormones, not contraceptive, doses | 2 | 1.2183 | 0.1502 | 0.8592 |
| 85 | 854211 | Monolithic integrated circuits, digital | 5 | Monolithic integrated circuits, digital | 4 | 1.1696 | 0.1068 | 0.8105 |
| 85 | 851790 | | | Parts of telephone line equipment | 1 | 1.0956 | 0.1031 | 0.7365 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 84 | 847330 | Parts of data processing equipment | 3 | Parts of data processing equipment | 4 | 1.0757 | 0.1538 | 0.7166 |
| 35 | 350790 | | | Enzymes, n.e.s. | 1 | 1.0609 | 0.2949 | 0.7018 |
| 87 | 870829 | Parts of motor vehicle bodies | 3 | | | 1.0007 | 0.0115 | 0.6416 |
| 84 | 841191 | Turbo-jet, -propeller engine, parts | 3 | Turbo-jet, -propeller engine, parts | 3 | 0.9346 | 0.0005 | 0.5755 |
| 87 | 870899 | Motor vehicle parts n.e.s. | | | 4 | 0.7992 | 0.3285 | 0.4401 |
| 84 | 841112 | Turbo-jet engine, >25 KN | 4 | Turbo-jet engine, >25 KN | 3 | 0.7913 | 0.0263 | 0.4322 |
| 88 | 880330 | Aircraft parts n.e.s. | 2 | Aircraft parts n.e.s. | 3 | 0.772 | 0.0537 | 0.4129 |
| 85 | 852520 | Transmit-receive apparatus for radio, TV | 6 | Transmit-receive apparatus for radio, TV | 4 | 0.6469 | 0.0165 | 0.2878 |
| 30 | 300220 | Vaccines, human | 2 | | | 0.6229 | 0.0027 | 0.2638 |

| Chap-ter | HS Code | HS Name 2019 | Paths 2019 | HS Name 2007 | Paths 2007 | PCI | RCA | PCI-ECI |
|---|---|---|---|---|---|---|---|---|
| 30 | 300490 | Medicaments, doses, n.e.s. | 13 | Medicaments, doses, n.e.s. | 11 | 0.4785 | 0.4894 | 0.1194 |
| 94 | 940360 | Furniture, wooden, n.e.s. | 2 | | | 0.1749 | 0.1142 | −0.1842 |
| 94 | 940600 | | | Prefabricated buildings | 2 | −0.1161 | 0.0934 | −0.4752 |
| 85 | 852810 | Color TV receivers/ monitors/ projectors | 3 | | | −0.1188 | 0.0511 | −0.4779 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 38 | 382390 | Chemical products, n.e.s. | 2 | Chemical products, n.e.s. | 2 | −0.2594 | 0.1571 | −0.6185 |
| 69 | 690790 | | | Unglazed ceramic tiles, >7cm wide | 2 | −0.6254 | 0.1309 | −0.9845 |
| 89 | 890590 | | | Floating docks, special function vessels | 2 | −0.9301 | 0.0192 | −1.2892 |
| 85 | 854430 | Ignition sets for vehicles/aircraft/ ship | 2 | | | −1.141 | 0.1243 | −1.5001 |
| 89 | 890190 | | | Cargo vessels, not tanker or refrigerated | 2 | −1.2249 | 3.1087 | −1.584 |
| 61 | 610910 | T-shirts, of cotton, knit | 2 | | | −1.9099 | 0.0194 | −2.269 |

**Table D.11. Top 20 Potential Export Industries for Dominican Republic Identified through Lagged and Concurrent Analysis: Method 4**

| Chap-ter | HS Code | HS Name 2019 | Paths 2019 | HS Name 2007 | Paths 2007 | PCI | RCA | PCI-ECI |
|---|---|---|---|---|---|---|---|---|
| 90 | 901020 | Equipment for photographic laboratories n.e.s. | 1 | | | 1.7947 | 0.0003 | 2.0376 |
| 87 | 870840 | Transmissions for motor vehicles | 1 | Transmissions for motor vehicles | 1 | 1.5444 | 0.0024 | 1.7873 |
| 84 | 840820 | Diesel engine, motor vehicles | 1 | Diesel engine, motor vehicles | 1 | 1.3594 | 0.0145 | 1.6023 |
| 84 | 848180 | Taps, cocks, valves, appliances, n.e.s. | 1 | Taps, cocks, valves, appliances, n.e.s. | 1 | 1.323 | 0.0653 | 1.5659 |
| 30 | 300439 | Hormones, not contraceptive, doses | 1 | Hormones, not contraceptive, doses | 1 | 1.2183 | 0.0248 | 1.4612 |
| 85 | 854211 | Monolithic integrated circuits, digital | 3 | Monolithic integrated circuits, digital | 1 | 1.1696 | 0.002 | 1.4125 |
| 84 | 842952 | | | Shovels & excavators, revolving superstructure | 1 | 1.1304 | 0.0013 | 1.3733 |
| 84 | 847199 | Automatic data processing machines | 1 | | | 1.114 | 0.2385 | 1.3569 |
| 84 | 847330 | Parts of data processing equipment | 3 | Parts of data processing equipment | 2 | 1.0757 | 0.0044 | 1.3186 |
| 85 | 851150 | Generators & alternators | 1 | Generators & alternators | 1 | 1.0562 | 0.0073 | 1.2991 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 87 | 870190 | Wheeled tractors n.e.s. | 1 | | 1 | 1.0021 | 0 | 1.245 |
| 87 | 870829 | Parts of motor vehicle bodies | 2 | Parts of motor vehicle bodies | 2 | 1.0007 | 0.0446 | 1.2436 |
| 85 | 850440 | Static converters, n.e.s. | 1 | | 1 | 0.9852 | 0.0788 | 1.2281 |
| 85 | 853890 | Parts of elect switches, protectors | 1 | Parts of elect switches, protectors | 1 | 0.9786 | 0.77 | 1.2215 |
| 84 | 841191 | | | Turbo-jet, -propeller engine, parts | 2 | 0.9346 | 0.0008 | 1.1775 |
| 87 | 870899 | Motor vehicle parts n.e.s. | 3 | Motor vehicle parts n.e.s. | 2 | 0.7992 | 0.2074 | 1.0421 |
| 88 | 880330 | | | Aircraft parts n.e.s. | 2 | 0.772 | 0.0012 | 1.0149 |
| 85 | 852520 | Transmit-receive apparatus for radio, TV | 4 | Transmit-receive apparatus for radio, TV | 3 | 0.6469 | 0.0679 | 0.8898 |

| Chap-ter | HS Code | HS Name 2019 | Paths 2019 | HS Name 2007 | Paths 2007 | PCI | RCA | PCI-ECI |
|---|---|---|---|---|---|---|---|---|
| 85 | 853710 | | | Electrical control & distribution boards, <1kV | 2 | 0.5934 | 0.0698 | 0.8363 |
| 30 | 300490 | Medicaments, doses, n.e.s. | 9 | Medicaments, doses, n.e.s. | 9 | 0.4785 | 0.1696 | 0.7214 |
| 85 | 852810 | Color TV receivers/ monitors/project | 2 | | 2 | −0.1188 | 0.0169 | 0.1241 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | ors | | | | | | |
| 38 | 382390 | Chemical products, n.e.s. | 3 | Chemical products, n.e.s. | 3 | −0.2594 | 0.4222 | −0.0165 |
| 70 | 701090 | | | Glass containers for packing goods | 2 | −0.471 | 0.0121 | −0.2281 |
| 69 | 690790 | | | Unglazed ceramic tiles, >7cm wide | 2 | −0.6254 | 0.0333 | −0.3825 |
| 85 | 854430 | Ignition sets for vehicles/aircraft/ ship | 2 | Ignition sets for vehicles/aircraft/ ship | 2 | −1.141 | 0.0684 | −0.8981 |
| 52 | 520100 | Cotton, not carded/ combed | 2 | | 2 | −2.4363 | 0 | −2.1934 |

**Table D.12. Top 20 Potential Export Industries for Panama Identified through Lagged and Concurrent Analysis: Method 4**

| Chap-ter | HS Code | HS Name 2019 | Paths 2019 | HS Name 2007 | Paths 2007 | PCI | RCA | PCI-ECI |
|---|---|---|---|---|---|---|---|---|
| 90 | 901020 | Equipment for photographic laboratories n.e.s. | 2 | Equipment for photographic laboratories n.e.s. | 2 | 1.7947 | 0.0001 | 1.9367 |
| 39 | 391190 | Polysulfides, -sulfones, n.e.s. | 1 | | | 1.4205 | 0.0175 | 1.5625 |
| 84 | 840820 | | | Diesel engine, motor vehicles | 3 | 1.3594 | 0.0115 | 1.5014 |
| 38 | 382200 | Diagnostic reagents, n.e.s. | 1 | | | 1.3443 | 0.0474 | 1.4863 |
| 84 | 848180 | | | Taps, cocks, valves, appliances, n.e.s. | 1 | 1.3230 | 0.0001 | 1.4650 |
| 30 | 300439 | Hormones, not contraceptive, doses | 1 | Hormones, not contraceptive, doses | 1 | 1.2183 | 0.1384 | 1.3603 |
| 85 | 854211 | Monolithic integrated circuits, digital | 3 | Monolithic integrated circuits, digital | 5 | 1.1696 | 1.9417 | 1.3116 |
| 85 | 851790 | Parts of telephone line equipment | 1 | | | 1.0956 | 0.8073 | 1.2376 |
| 84 | 847330 | Parts of data processing equipment | 3 | Parts of data processing equipment | 4 | 1.0757 | 0.004 | 1.2177 |
| 35 | 350790 | Enzymes, n.e.s. | 1 | | | 1.0609 | 0.071 | 1.2029 |
| 85 | 851150 | | | Generators & alternators | 1 | 1.0562 | 0.1384 | 1.1982 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 87 | 870829 | Parts of motor vehicle bodies | 1 | Parts of motor vehicle bodies | 2 | 1.0007 | 0.004 | 1.1427 |
| 29 | 293390 | | | Heterocyclic compounds, N-hetero-atoms | 1 | 0.9943 | 0.3346 | 1.1363 |
| 84 | 840690 | Steam turbines, parts | 1 | | | 0.9937 | 0.0005 | 1.1357 |
| 84 | 841191 | | | Turbo-jet, -propeller engine, parts | 4 | 0.9346 | 0.1444 | 1.0766 |
| 84 | 847193 | Computer data storage units | 2 | Computer data storage units | 2 | 0.9144 | 0.6094 | 1.0564 |
| 87 | 870899 | | | Motor vehicle parts n.e.s. | 1 | 0.7992 | 0.0031 | 0.9412 |
| 84 | 841112 | Turbo-jet engine, >25 KN | 2 | Turbo-jet engine, >25 KN | 3 | 0.7913 | 0.0016 | 0.9333 |
| 88 | 880330 | | | Aircraft parts n.e.s. | 3 | 0.7720 | 0 | 0.9140 |
| 91 | 910121 | | | Wrist-watch, precious metal, automatic wound | 1 | 0.7554 | 0.3224 | 0.8974 |
| 85 | 852520 | Transmit-receive apparatus for radio, TV | 4 | Transmit-receive apparatus for radio, TV | 1 | 0.6469 | 0.4207 | 0.7889 |

| Chap-ter | HS Code | HS Name 2019 | Paths 2019 | HS Name 2007 | Paths 2007 | PCI | RCA | PCI-ECI |
|---|---|---|---|---|---|---|---|---|
| 30 | 300490 | | | Medicaments, doses, n.e.s. | 5 | 0.4785 | 1.9417 | 0.6205 |
| 30 | 300431 | Insulin, doses | 2 | | | 0.3790 | 1.625 | 0.5210 |
| 94 | 940360 | Furniture, wooden, n.e.s. | 2 | | | 0.1749 | 0.0809 | 0.3169 |
| 33 | 330499 | | | Make-up, n.e.s. | 2 | 0.1699 | 0.6094 | 0.3119 |
| 87 | 871000 | Tanks, armored fighting vehicles | 2 | | | −0.1489 | 0.2475 | −0.0069 |
| 38 | 382390 | Chemical products, | 2 | Chemical products, n.e.s. | 2 | −0.2594 | 0.1503 | −0.1174 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | n.e.s. | | | | | | |
| 31 | 310210 | Urea, >10kg | 3 | | | −0.9008 | 0 | −0.7588 |
| 29 | 290511 | Methyl alcohol | 3 | | 3 | −1.2183 | 0 | −1.0763 |
| 52 | 520100 | Cotton, not carded/ combed | 4 | Cotton, not carded/ combed | 2 | −2.4363 | 0 | −2.2943 |

**Table E.1. Industries with Highest Participation in Exports, or Highest Revealed Comparative Advantage, in Costa Rica for 2019 (Costa Rica ECI = 0.3591)**

| Industry Code | Industry Name | Exports (%) | RCA | PCI |
|---|---|---|---|---|
| 901839 | Medical needles, catheters | 6.8272% | 57.5396 | 0.1805 |
| 901890 | Instruments for medical science, n.e.s. | 5.3865% | 24.5707 | 0.2490 |
| 902130 | Artificial body parts, aids | 2.1730% | 45.7145 | 0.3247 |
| 999999 | Commodities not specified, according to kind | 1.0659% | 0.5567 | −0.1616 |
| 902190 | Orthopaedic appliances, n.e.s. | 0.8758% | 16.4100 | 0.6875 |
| 901819 | Electro-diagnostic apparatus | 0.7623% | 8.7990 | 0.8239 |
| 300490 | Medicaments, doses, n.e.s. | 0.5377% | 0.4894 | 0.4785 |
| 401110 | Rubber tires, cars, new | 0.5368% | 3.4021 | 0.5660 |
| 900130 | Contact lenses | 0.5053% | 18.9825 | 0.9670 |
| 854160 | Mounted piezo-electric crystals | 0.4918% | 19.5179 | 0.8756 |
| 392690 | Plastic articles, n.e.s. | 0.4843% | 1.9143 | 0.5935 |
| 300290 | Blood | 0.4620% | 0.7750 | 1.0955 |
| 853669 | Electrical plugs & sockets | 0.4245% | 5.8801 | 0.9467 |
| 902119 | Orthopaedic/fracture appliances | 0.3855% | 9.3514 | 0.5789 |
| 854449 | Electric conductors, <80V, no connectors | 0.3814% | 3.7253 | −0.5173 |
| 701090 | Glass containers for packing goods | 0.3405% | 8.4828 | −0.4710 |
| 890190 | Cargo vessels, not tanker or refrigerated | 0.3398% | 3.1087 | −1.2249 |
| 854211 | Monolithic integrated circuits, digital | 0.2756% | 0.1068 | 1.1696 |
| 901910 | Massage & psychological-test apparatus | 0.2753% | 12.3666 | 0.1763 |
| 401120 | Rubber tires, buses, new | 0.2418% | 2.6973 | 0.4101 |
| 401693 | Vulcanized rubber seals | 0.2259% | 5.0180 | 0.7558 |
| 392112 | Plastic sheet, cellular of vinyl chloride | 0.2212% | 27.8594 | 0.6552 |
| 853690 | Electrical switch, protector for <1kV n.e.s. | 0.2168% | 1.5975 | 0.9193 |
| 854441 | Electric conductors <80V, with connectors | 0.2111% | 1.8595 | −0.2322 |
| 330210 | Mixed odors, food & drink | 0.1637% | 2.6304 | −0.2090 |
| 854800 | Electrical parts of machinery, n.e.s. | 0.1579% | 7.7131 | 0.6728 |
| 853340 | Variable resistors, rheostats & potentiometers | 0.1419% | 11.6694 | 0.3720 |
| 611599 | Hosiery n.e.s., materials n.e.s., knit | 0.1189% | 31.1713 | −0.5499 |
| 391723 | Polyvinyl chloride tube, rigid | 0.1010% | 19.0403 | −1.2076 |
| 360200 | Prepared explosives | 0.0848% | 23.9491 | −0.9863 |
| 950669 | Balls n.e.s. | 0.0751% | 38.8073 | −0.7002 |
| 681120 | Sheet/tile of asbestos cement, non-corrugated | 0.0650% | 17.3105 | 0.5817 |
| 520523 | Cotton yarn >85%, sing comb 232-192 | 0.0647% | 10.9901 | −1.5605 |

| | | | | |
|---|---|---|---|---|
| 853329 | Electrical resistors, fixed, >20W | 0.0561% | 14.6346 | 0.7933 |
| 281121 | Carbon dioxide | 0.0464% | 25.1618 | −0.7512 |
| 900791 | Parts and accessories for cinematographic cameras | 0.0390% | 29.4847 | 0.1013 |
| 520623 | Cotton yarn <85%, sing comb 232-192 | 0.0380% | 37.2997 | −1.0911 |
| 330112 | Oils, orange | 0.0344% | 18.1363 | −0.7309 |
| 401695 | Vulcanized rubber articles, inflatable | 0.0309% | 14.6696 | 0.0526 |
| 340540 | Scouring pastes, powders | 0.0203% | 10.5358 | −0.2927 |
| 560741 | Binder twine, polyethylene | 0.0171% | 15.2357 | −0.3823 |
| 701720 | Low expansion lab, hygienic glasswear | 0.0137% | 11.4448 | 1.5964 |
| 520622 | Cotton yarn <85%, sing comb 714-232 | 0.0061% | 10.7614 | −0.8764 |

**Table E.2. Industries with Highest Participation in Exports, or Highest Revealed Compartive Advantage, in Dominican Republic for 2019 (Dominican Republic ECI = −0.2429)**

| Industry Code | Industry Name | Exports (%) | RCA | PCI |
|---|---|---|---|---|
| 710812 | Gold in unwrought forms | 7.4381% | 8.5880 | −2.6701 |
| 901890 | Instruments for medical science, n.e.s. | 4.2265% | 19.2792 | 0.2490 |
| 853620 | Automatic circuit breakers, <1kV | 2.9909% | 99.1844 | 0.2160 |
| 610910 | T-shirts, of cotton, knit | 2.0399% | 17.7484 | −1.9099 |
| 392690 | Plastic articles, n.e.s. | 1.5144% | 5.9868 | 0.5935 |
| 711319 | Jewelry of precious metal | 1.1565% | 3.1946 | −0.4109 |
| 521213 | Cotton fabric, <200g/m2, dye, n.e.s. | 0.7432% | 783.7346 | −1.1418 |
| 901819 | Electro-diagnostic apparatus | 0.6232% | 7.1941 | 0.8239 |
| 901839 | Medical needles, catheters | 0.6129% | 5.1652 | 0.1805 |
| 640391 | Boots, upper of leather, n.e.s. | 0.5402% | 10.5421 | −0.9846 |
| 300610 | Surgical goods | 0.5229% | 28.0200 | 0.7128 |
| 630790 | Made up articles, textile | 0.4493% | 9.1786 | −1.2471 |
| 850212 | Generating sets, diesel, 75-375 kVA | 0.4244% | 69.0833 | −0.7556 |
| 853650 | Electrical switches for <1kV, n.e.s. | 0.3921% | 5.2598 | 0.2383 |
| 310520 | Nitrogen-phosphorus-potassium fertilizers, >10kg | 0.3692% | 14.7220 | −0.7706 |
| 611020 | Pullovers, cardigans, of cotton, knit | 0.3415% | 3.6443 | −1.9164 |
| 640510 | Footwear, n.e.s., uppers leather | 0.3201% | 105.3209 | −0.9597 |
| 621210 | Brassieres | 0.3121% | 8.1762 | −1.5063 |
| 392410 | Plastic kitchen ware | 0.2661% | 6.1543 | −0.7328 |
| 300510 | Medical dressings, with adhesive | 0.2600% | 16.9901 | 0.6018 |
| 960329 | Hair & other toilet brushes | 0.2488% | 60.5793 | −0.1662 |
| 901910 | Massage & psychological-test apparatus | 0.2478% | 11.1332 | 0.1763 |
| 640399 | Footwear, uppers of leather, n.e.s. | 0.2374% | 2.2519 | −0.9024 |
| 711210 | Waste/scrap of gold | 0.2042% | 4.9022 | −0.5184 |
| 960390 | Brushes, n.e.s. | 0.2026% | 16.3064 | −0.6043 |
| 851710 | Telephone sets | 0.1953% | 31.8202 | −0.2203 |
| 854519 | Carbon/graphite electrodes, non-furnace | 0.1898% | 31.9019 | −0.3251 |
| 300490 | Medicaments, doses, n.e.s. | 0.1863% | 0.1696 | 0.4785 |
| 854441 | Electric conductors <80V, with connectors | 0.1803% | 1.5881 | −0.2322 |
| 611030 | Pullovers, cardigans, of manmade fibers, knit | 0.1787% | 1.8708 | −1.9692 |

| | | | | |
|---|---|---|---|---|
| 901920 | Therapeutic respiration apparatus | 0.1783% | 5.9071 | 0.8744 |
| 610990 | T-shirts, of material n.e.s., knit | 0.1693% | 3.2058 | −1.8570 |
| 710813 | Gold, semi-manufactured forms | 0.1649% | 0.4176 | −2.2447 |
| 330210 | Mixed odors, food & drink | 0.1461% | 2.3471 | −0.2090 |
| 901820 | Ultraviolet or infrared ray apparatus | 0.1461% | 77.8240 | 0.6962 |
| 293212 | Furfuraldehyde | 0.1026% | 345.2670 | 0.3299 |
| 853510 | Electrical fuses, for >1kV | 0.0690% | 37.5659 | 0.1959 |

| Industry Code | Industry Name | Exports (%) | RCA | PCI |
|---|---|---|---|---|
| 631010 | Rags, textile material, sorted | 0.0666% | 50.2710 | -1.5366 |
| 310560 | Fertilizers, phosphorus and potassium, <10kg | 0.0611% | 37.3981 | 0.4532 |
| 631090 | Rags, textile material, not sorted | 0.0410% | 41.0718 | -0.8833 |
| 520819 | Woven n.e.s., >85% <200g/m2, unbleached | 0.0393% | 20.5523 | -1.1189 |
| 610210 | Women's overcoats, wool/hair, knit | 0.0388% | 39.0211 | -1.1623 |
| 853230 | Electric capacitors, variable | 0.0328% | 28.1383 | 0.7699 |
| 620191 | Men's anoraks, wool/hair, not knit | 0.0247% | 26.2691 | -0.8533 |
| 521049 | Woven n.e.s.,<85%, fiber, <200g yarn dyed | 0.0144% | 20.1274 | -0.8455 |
| 630590 | Sacks & bags, packing, of materials n.e.s. | 0.0143% | 22.2579 | -1.7203 |
| 580640 | Warp fabric, with adhesive | 0.0134% | 46.3301 | 0.2633 |
| 521059 | Woven n.e.s., <85%, fiber, <200g/m2 print | 0.0085% | 30.4459 | -0.8870 |

**Table E.3. Industries with Highest Participation in Exports, or Highest Revealed Comparative Advantage, in Panama for 2019 (Panama ECI = −0.1420)**

| Industry Code | Industry name | Exports (%) | RCA | PCI |
|---|---|---|---|---|
| 292249 | Amino-acids, salts, esters, n.e.s. | 0.7631% | 28.2624 | 0.9338 |
| 293500 | Sulfonamides | 0.4180% | 10.4603 | 1.0692 |
| 294190 | Antibiotics | 0.3204% | 10.1404 | 0.8383 |
| 300420 | Antibiotics, doses, n.e.s. | 0.1674% | 2.8440 | −0.0255 |
| 300490 | Medicaments, doses, n.e.s. | 2.1334% | 1.9417 | 0.4785 |
| 330300 | Perfumes | 0.2727% | 3.6673 | −0.4960 |
| 330499 | Make-up, n.e.s. | 0.1146% | 0.6567 | 0.1699 |
| 401110 | Rubber tires, cars, new | 0.3938% | 2.4954 | 0.5660 |

| | | | | |
|---|---|---|---|---|
| 540710 | Hi-ten filament, nylon, polyamide, polyester | 0.2321% | 37.3920 | −0.3343 |
| 610719 | Men's underpants or briefs, material n.e.s., knit | 0.0356% | 40.4872 | −1.4158 |
| 610721 | Men's pajamas, cotton, knit | 0.0732% | 23.7681 | −1.7651 |
| 610829 | Women's briefs or panties, material n.e.s., knit | 0.0647% | 55.7490 | −1.3837 |
| 611249 | Women's swimwear, of material n.e.s., knit | 0.0096% | 26.8645 | −1.4885 |
| 620119 | Men's overcoats, material n.e.s., not knit | 0.0241% | 20.0879 | −1.3848 |
| 620199 | Men's anoraks, material n.e.s., not knit | 0.0258% | 22.8697 | −1.2266 |
| 620349 | Men's trousers & shorts, material n.e.s., not knit | 0.1496% | 24.7740 | −1.7462 |
| 620412 | Women's suits, cotton, not knit | 0.0117% | 22.7227 | −1.4990 |
| 620422 | Women's ensembles, cotton, not knit | 0.0201% | 20.4234 | −1.7115 |
| 620462 | Women's trousers & shorts, cotton, not knit | 0.1147% | 1.4999 | −1.9493 |
| 620722 | Men's pajamas, manmade fiber, not knit | 0.0081% | 31.5875 | −1.7252 |
| 630229 | Bed linen, of material n.e.s., printed, not knit | 0.0087% | 22.7781 | −1.1404 |
| 630399 | Curtains, material n.e.s., woven | 0.0411% | 30.9426 | −0.7881 |
| 640220 | Footwear, of rubber/plastic, plugs fix straps | 0.1512% | 18.6087 | −2.0167 |
| 640299 | Footwear, sole/upper of rubber/plastic, n.e.s. | 0.3766% | 4.1207 | −1.7852 |
| 640319 | Sports footwear, uppers of leather | 0.2347% | 23.6107 | −0.7794 |
| 640411 | Sports footwear, upper textile | 0.2719% | 4.5292 | −0.7864 |
| 640419 | Footwear, uppers of textile | 0.1204% | 1.2774 | −1.4207 |
| 710812 | Gold in unwrought forms | 0.3409% | 0.3936 | −2.6701 |
| 841510 | Air conditioners, window | 0.1476% | 2.4345 | −0.5475 |
| 844390 | Parts of printing machinery | 0.1163% | 0.6567 | 0.9571 |
| 847193 | Computer data storage units | 0.3229% | 0.6094 | 0.9144 |
| 847330 | Parts of data processing equipment | 0.1306% | 0.1444 | 1.0757 |
| 850620 | Primary cells/batteries, vol>300cc | 0.0018% | 52.0750 | −0.2056 |
| 851790 | Parts of telephone line equipment | 0.3479% | 0.8073 | 1.0956 |
| 852520 | Transmit-receive apparatus for radio, TV | 0.6654% | 0.4207 | 0.6469 |
| 852810 | Color TV receivers/monitors/projectors | 0.2069% | 0.7017 | −0.1188 |
| 870323 | Automobiles, spark ignition, 1500-3000cc | 0.2604% | 0.2485 | 1.3933 |
| 870899 | Motor vehicle parts n.e.s. | 0.1195% | 0.3224 | 0.7992 |
| 890120 | Tankers | 0.4059% | 4.4616 | −0.5015 |
| 890130 | Refrigerated vessels | 0.0611% | 37.8089 | 0.6269 |
| 890190 | Cargo vessels, not tanker or refrigerated | 0.5956% | 5.4488 | −1.2249 |
| 890400 | Tugs and pusher craft | 0.1395% | 10.3741 | −1.0381 |

| | | | | |
|---|---|---|---|---|
| 890590 | Floating docks, special function vessels | 0.2043% | 4.9261 | −0.9301 |
| 920190 | Harps, keyboard stringed instrument | 0.0068% | 34.4868 | −0.5592 |

# APPENDIX F

The concept of economic complexity, introduced by Hausmann et al. (2013), serves as a quantitative metric assessing the sophistication and exclusivity of a country's productive activities. Two key measures, the Product Complexity Index (PCI) and the Economic Complexity Index (ECI), are formulated to quantify the level of sophistication in a nation's economy, considering the requisite skills, capabilities, and knowledge to produce exported goods.

Higher values of the Product Complexity Index (PCI) imply the production of more complex goods, characterized by the need for advanced technologies, specialized skills, and intricate know-how.

Additionally, the Economic Complexity Index (ECI) of a country is positively associated with the PCI of the products it exports. While these indices are publicly available on the Atlas of Economic Complexity website, our analysis involves a finer 6-digit level of product disaggregation, demanding a recalculation of the indices based on the methodology outlined in Hausmann et al. (2013), and summarized in the following lines.

We define the matrix $M_{cp}$, where each row corresponds to a country and each column to a product.

The *i,j*- th element is 1 if country $c_i$ exports product $p_j$ with a Revealed Comparative Advantage greater than 1, and 0 otherwise. Subsequently, the diversity of a country and the ubiquity of a product are calculated as the sums of rows and columns, respectively:

$$Diversity = \ k_{c,0} = \sum_{p} M_{cp}$$

$$Ubiquity = \ k_{p,0} = \sum_{c} M_{cp}$$

Given the need to account not only for the number of products exported by a country but also the ubiquity of those products, we compute an average ubiquity per country. Similarly, an average diversity is computed for each product, considering the diversity of countries exporting that product. This leads to recursive series, expressed by Equations (1) and (2).

(1) $$k_{c,N} = \frac{1}{k_{c,0}} \sum_p M_{cp} \times k_{p,N-1}$$

(2) $$k_{p,N} = \frac{1}{k_{p,0}} \sum_c M_{cp} \times k_{c,N-1}$$

If (2) is replaced into (1) the following equation is obtained:

where

$$k_{c,N} = \sum_{\tilde{c}} \widetilde{M}_{c\tilde{c}} k_{\tilde{c},N-2}$$

$$\widetilde{M}_{c\tilde{c}} = \sum_p \frac{M_{cp} M_{\tilde{c}p}}{k_{c,0} k_{p,0}}$$

The Economic Complexity Index (ECI) is defined by standardizing the eigenvector associated with the second largest eigenvalue of the matrix. Similarly, the Product Complexity Index (PCI) is defined by the eigenvector associated with the second largest eigenvalue of the matrix. These indices, being standardized, convey complexities above average with positive values and below average with values less than 0. Importantly, while these indices may differ from those available on the Atlas of Economic Complexity due to differences in product disaggregation and country samples, they serve the purpose of measuring complexity levels between countries and products effectively.

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## About the project

The Georgetown Americas Institute's Latin America in the Global Economy (LAGE) program is a multiyear initiative to advance research and promote dialogue within the academy and with governments, the private sector, and civil society around the most critical economic challenges facing the region. A critical focus will be the emerging position of Latin America and the Caribbean (LAC) in a new global economic trade architecture characterized by deep structural changes.

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