

DEPARTMENT OF ECONOMIC
DEVELOPMENT
AND COMMERCE



PERFORMANCE EVALUATION OF ECONOMIC INCENTIVES: DATA ASSESSMENT AND RETURN ON INVESTMENT (ROI) ANALYSIS

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I. Economic Incentives

Incentives are one of the cornerstones of modern economic policymaking. In response to the world's constant reformulations of these policies, this report provides a framework for a renewed and data-driven incentive policy for Puerto Rico. To understand the Island's performance in terms of its economic incentives one must focus on a systematic evaluation of the current potpourri of incentive programs under Act No. 60-2019, as amended, known as the "Puerto Rico Incentives Code" (Act 60). Moreover, previous incentive acts must also be considered to develop a comprehensive assessment of their effectiveness and recommend a path forward.

To develop such an assessment a robust data infrastructure of program beneficiaries was designed and developed. This in turn allowed the Department of Economic Development and Commerce (DEDC) to support the ongoing management of economic incentives. By using evidence-based methodologies (with limited estimations), key programmatic policies are recommended to improve the measurement and execution of said incentives. This tool can be explained in three core actions:

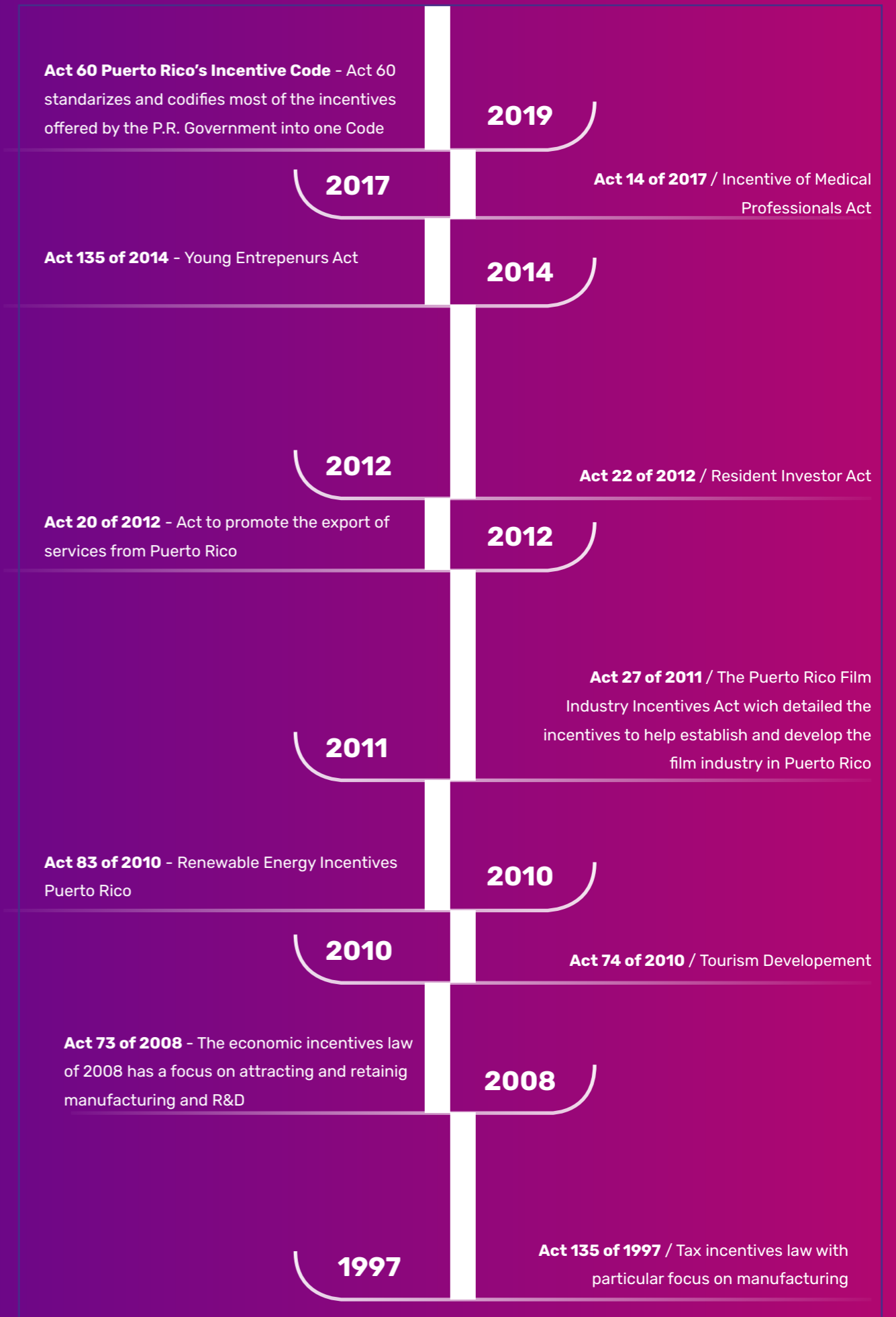
1. Gather all data necessary to estimate the Return-on-Investment analysis (ROI), while updating the ROI formula itself.
2. Develop case studies and illustrate results, projections, and benchmarks.
3. Make data and/or policy recommendations to improve the current incentives programs impact.

Puerto Rico's incentives policies have a complex history. Several sectors and activities have been incentivized since the 1950's. Most of the tax decrees currently active were granted in the last 25 years via various legislations that have been enacted since 1997, as shown in Figure 1. In spite of this, grantees have transitioned to the newest versions of each applicable incentive, in accordance with Act 60. Moreover, these "legacy decrees"¹ could transition to more updated incentives, such as those in Act 60, during the next decade.

To measure the full impact of Act 60, an intricate assessment of previous incentives programs is required. As decrees under previous laws are still most of the active decrees, the impact of Act 60 remains relatively small due to the minor number of active grantees. Thus, to assess the real performance of economic incentives on the Island, one must consider the full spectrum of active decrees and their respective legislation.

¹ Legacy decrees are here onward referenced as long-standing contracts between regulating governmental entities and productive firms from which these last gain tax and non-tax-based benefits.

Figure 1 – Puerto Rico's Economic Incentives since 1997



I. 1. Data Gathering

Before any analysis or estimation of economic impacts, an extensive six-month data gathering process was conducted. This yielded the data necessary to accurately estimate the costs and benefits (C/B) of Act 60 programs and their ROIs.

Several databases were included in the analysis. Some of these were readily available in digital format and others were manually input. All the data compiled was for the most recent period available: 2020. Some datasets were available for 2021 and 2022.

The main data source was tax return data for all incentivized individuals and corporate entities from the Puerto Rico Department of Treasury (PRDT).

A detailed analysis was carried out from said tax returns and schedules to assess the performance of incentive programs. As noted along the report, the use of administrative data was instrumental to develop a real economic assessment of incentives and their effects in the economy. Such condition dwarfs the use of traditional econometric analyses which tend to rely on aggregate data from the economy.

Table 1 – Datasets and Key Forms & Schedules in Tax Returns

Number	Dataset	Years	Source
1	Corporate Tax Returns	2019-2020	P.R. Department of the Treasury
2	Individual Tax Returns	2019-2021	P.R. Department of the Treasury
3	Special (Incentivized) Corporate Tax Returns	2018	P.R. Department of the Treasury
4	CRIM Personal Proerty Tax Returns	2020-2022	CRIM
5	Employment data by Entity	2017-2022	Department of Labor and Human Resources
6	Annual Reports	2018-2022	DEDC
7	Cash Grants	2018-2022	DEDC
8	Agriculture Incentives	2017-2021	P.R. Department of Agriculture
9	Tourism Tax Credits	2017-2022	P.R. tourism Company
10	2012 Input-Output Matrix	2012	P.R. Planning Board

Source: PR Department of the Treasury, DEDC, ABEXUS Analytics

Tax Forms & Schedules for Corporations and Individuals	
Form	Schedules
480.2	S, B
480.3(I)	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
480.3(II)C	
480.3(II)DT	
480.3(II)LE	
480.2(A)	A, AA, B, BB, L, N, P, V,
480.3(II)DI	W, X, Y, Z
480.3(II)EV	
480.3(II)	
480.2(EC)	
482	AA, A2, B, CO, D, F1, IE, K, L, M, N, R, X

Source: PR Department of the Treasury, DEDC, ABEXUS Analytics

I. 2. Data Processing

The main source of information for all estimates was corporate and individual tax returns. This data was collected directly from the PRDT, however corporate tax returns for incentivized companies were only available from the PRDT until year 2018. This dataset was then updated to 2021 using tax returns for 2019, 2020, and 2021 submitted alongside annual reports at the Department of Economic Development and Commerce (DEDC). This involved a manual data entry process of over 700 corporate tax returns and over 1,000 individual tax returns. Cash grants by the DEDC, Puerto Rico Department of Agriculture (PRDA), the Puerto Rico Tourism Company (PRTC), as well as tax credits were all included afterwards in the analysis.

The above provided a comprehensive view of incentivized individuals, particularly those under Act No. 22-2012, as amended, also known as the "Individual Investor Act (Act 22), Act No. 14-2017, as amended, also known as the "Act to Promote the Retention and Return of Medical Professionals (Act 14), and Agriculture (Bona fide farmers). The data also enabled the review of exempted companies under the following acts or incentives programs: Act No. 73-2008, as amended, known as the "Economic Incentives for the Development of Puerto Rico" (Act 73), Act No. 135-1997, as amended, known as the Tax Incentives Act of 1998 (Act 135), Act No. 8-1987, as amended, known as the Tax Incentives Act of 1987 (Act 8), and Chapter 6 of Subtitle B of Act 60. It also allowed for the review of companies with decrees under Act No. 20-2012, as amended, known as "Act to Promote the Export of Services" (Act 20), Bona fide Farmers under a corporate structure, Tourism, Private Equity Funds, and Creative Industries.

Mapping and aggregating all these data sources rendered a full picture of the economic activity, fiscal revenues, and salaried employment enacted from the incentives. Additional information for specific programs such as: creative industries, tourism, and agriculture, was added further on.

This process led to the creation of two incentives databases, one for corporations and a second one for

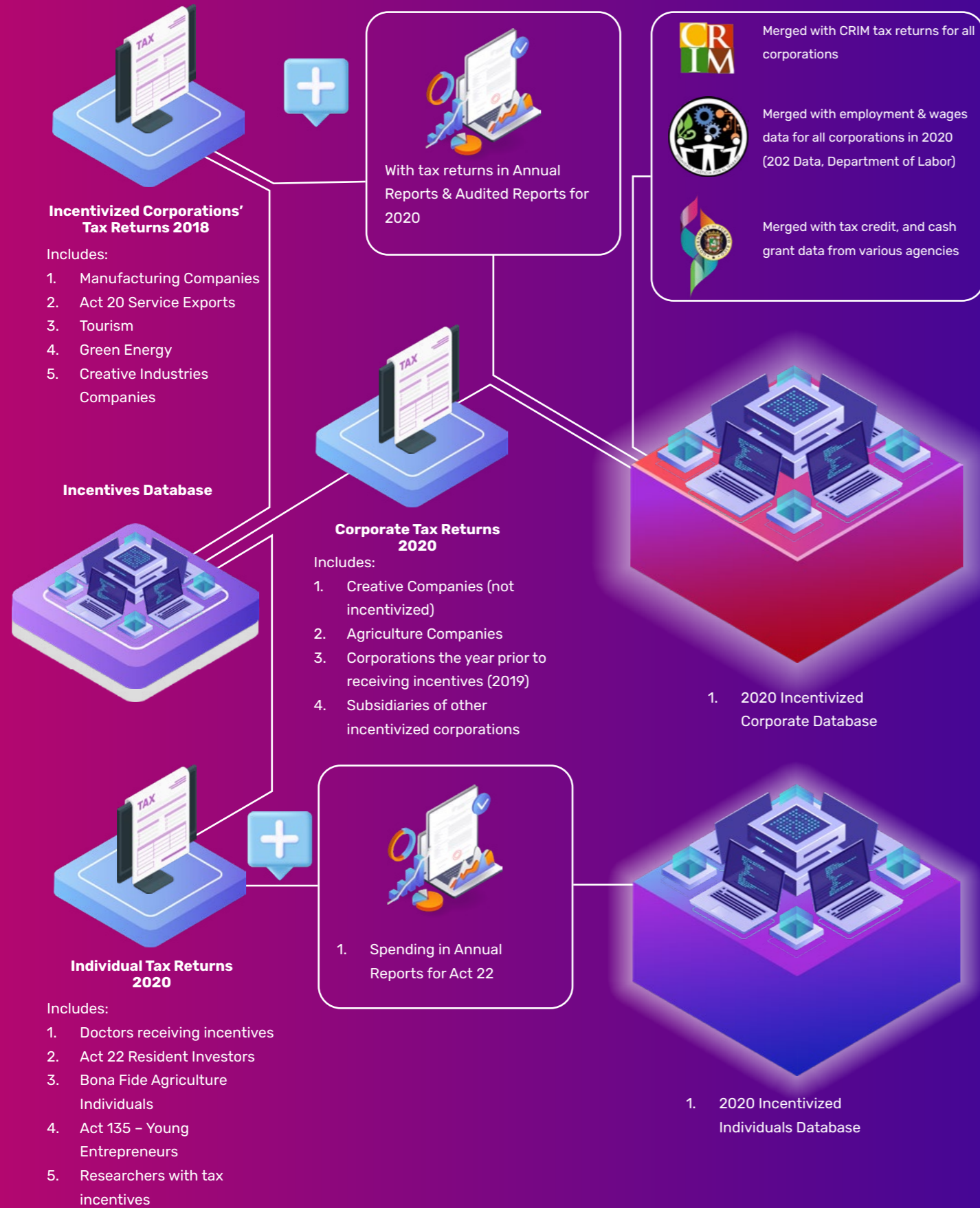
incentivized individuals. Figure 2 summarizes these two databases along with all the compiling, data entry, validating, processing, and analyzing of the datasets used for the development of this report.

The final dataset included in the database was the input-output multipliers, available for 2012. The multipliers for each company were determined by their self-reported North American Industry Classification System (NAICS) 5-digit classification from their tax returns. If the specific NAICS code was not available at a 5-digit level, the closest 4, 3, or 2-digit code was then applied. This is a pioneering effort as it means no general industry multiplier was used². Furthermore, by using this granular approach, the accuracy is augmented as incentive programs cannot be equated with a particular industry or sector.

The main reason for using each specific multiplier, apart from providing greater accuracy, resides in the vast differences in the products and services offered by incentivized companies. As an example, companies that provide software development, or ancillary services to manufacturing businesses with decrees, can themselves qualify for manufacturing decrees (under Act 73). Therefore, applying the manufacturing multiplier on all incentivized entities results in inaccurate estimations, as the multiplier is dramatically different for services than to production of goods.

2 The revised literature on Puerto Rico's economic incentives typically uses general multipliers, which provides results which are less accurate.

Figure 2 – Data Process Flow for 2020 Estimates



I. 3. Data Analysis

The data analysis was conducted in two phases. Firstly, it involved evaluating each company individually by grouping them according to the incentive they received. This approach facilitated the analysis of the cost-benefit ratio of each incentive and the development of a ROI. Secondly, the analysis was performed on an aggregate level, encompassing all companies to ascertain the overall size and cost of the incentivized economy.

This second step was added to the methodology after noticing that several companies and individuals had multiple incentives. This convolutes the analysis and means that overall costs can be higher. When the incentives are analyzed together, substantially so.

As an example, if a company is the recipient of Research & Development tax credit and a decree under Act 73 (Manufacturing) and Act 20 (Export) the impact on state tax revenues, particularly at a municipal level, is quite different if they are analyzed independently or together.

I.3.1. Challenges

Tax Decrees

Originally this report was aimed at analyzing Act 60 incentivized individuals and companies. Nevertheless, considering that most individuals and companies were recipients of tax decrees under previous incentives acts, with remaining exempted periods as of 2020, the scope of the report had to be modified. Due to the latter, collected datasets corresponding to tax decrees under Act 60 is lower in comparison to datasets related to previous incentives acts.

Parent-Subsidiary Corporate Groups

Another challenge in analyzing the data was the existence of exempted corporation's subsidiaries. On multiple occasions an exempted corporation receives tax benefits that do not apply to its subsidiary, directly. The latter complicated the economic analysis performed, since, for instance, an exempted corporation's subsidiary may have created a significant number of jobs, that may not be considered part of the benefits attributable to the incentive granted.

In other instances, the subsidiaries did have tax decrees themselves or were a co-grantee under the parent company's decree. This resulted in a challenge

when applying economic multipliers to estimate "benefits" in the form of tax revenue generated by indirect economic activity.

Applying multipliers directly to the parent company can inadvertently attribute the subsidiary's economic activity to the parent. If the above condition was not accounted for, normal tax revenue could be inaccurately estimated for the subsidiary's indirect economic activities, leading to an overestimation of benefits and an underestimation of costs.

NAICS Variation

A surprising challenge during the data compilation period was the variation of NAICS codes for entities. An incentivized entity could have one NAICS code in the Municipal Revenue Collection Center (CRIM for its spanish acronym) database, another in the Puerto Rico Department of Labor (PRDL) database, and yet another in their tax returns. In some cases, the differences in industry were substantial. Therefore, to ensure consistency in the use of each economic multiplier, the most recently reported NAICS code for each entity was used.

II. Data Analysis Findings

II.1. General Findings

As mentioned above, a significant finding from the analysis was the scarcity of decrees issued under Act 60. In 2020, for instance, the bulk of decrees for manufacturing, export services, and resident investors were predominantly granted under prior acts, mainly, Act 73, Act 135, Act 8, Act 20, and Act 22. It is expected that a substantial period, spanning several years, will be required before an adequate volume of tax decrees under Act 60 is issued. This timeline is crucial for facilitating a thorough and accurate evaluation of the act's benefits and costs.

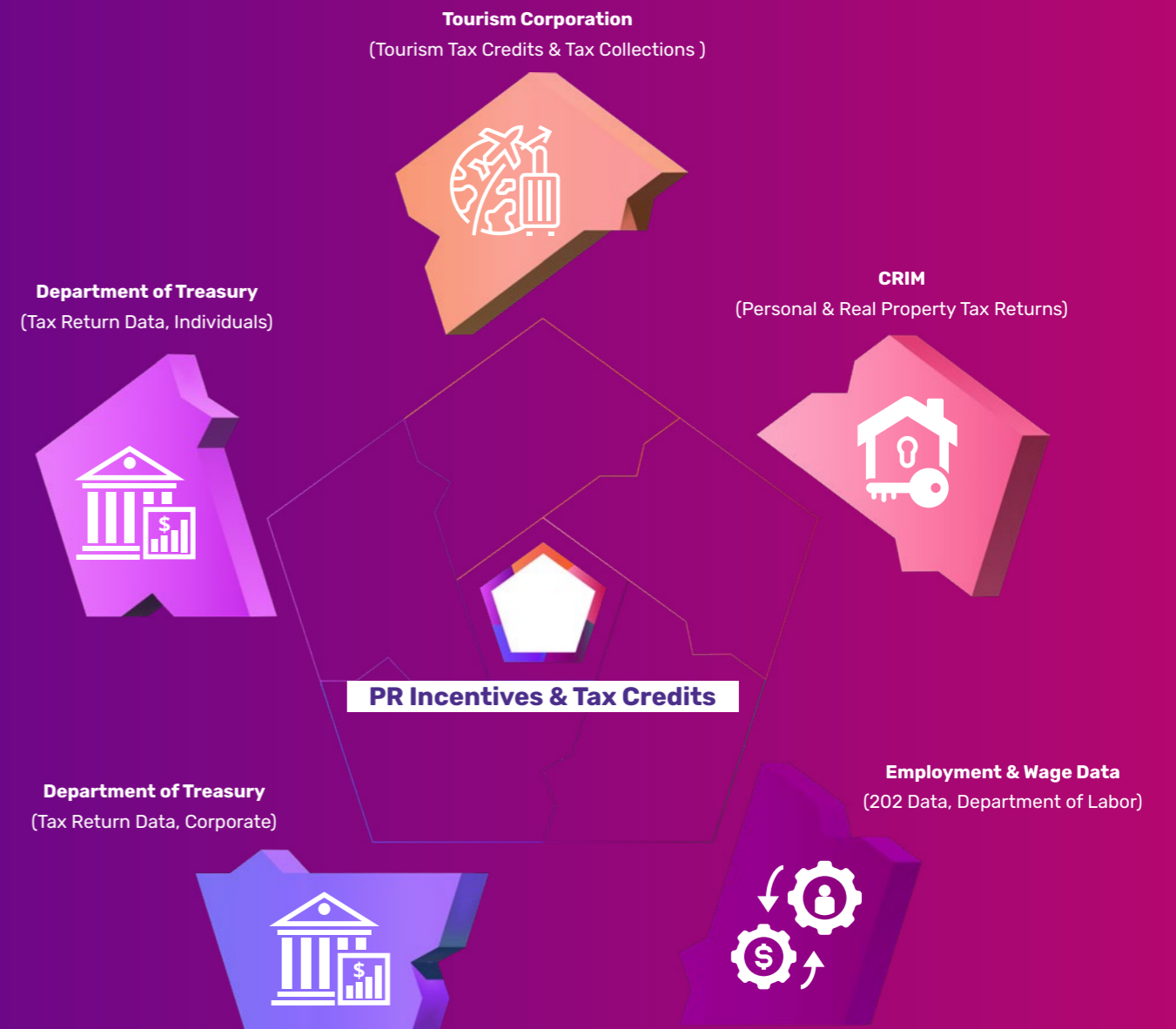
Another preliminary observation is the differences in the information submitted by grantees in the annual reports. To make the monitoring process more accurate and improve its usability, DEDC has started an internal process to standardize the information collection process in all its formats, especially on its annual reports. For instance, a common issue associated with municipal taxes, gross sales tax (municipal licenses), and property taxes (both real and personal), these were mistakenly swapped between the exempt amount and the actual amount paid. These are "data-entry errors", that required extensive data cleansing efforts. To curtail the above hurdle, during the development of the project, DEDC reached several Memorandum of Understanding (MOUs) with other state instrumentalities, to improve data collection mechanisms across entities.

Furthering on in this matter, differences were also found in the numeric formats in which the entries were done. Monetary values sometimes were entered in thousands, and others in millions of dollars. Other inputs were keyed in percentage or decimal formats (e.g., 5% vs. 0.05). Situations like these required extensive periods of time comparing and validating from diverse sources, like annual reports and tax returns. This complicates the data processing workflow and shed light into the accuracy of previous reports if such data conditions were not addressed.

Furthermore, the reliance on self-reported data by the DEDC, despite being comprehensive in terms of financial, tax, spending, and employment information, increases the risks of inaccuracies due to data entry errors. This can also lead to omissions by the parties providing the information.

The absence of a centralized database encompassing all incentives offered by the Government of Puerto Rico creates an ongoing challenge for DEDC to consistently measure incentives' performance. Currently, the DEDC, the PRDT, and the CRIM, each maintain separate lists of individuals and entities holding a tax decree and/or tax incentive. For a complete overview of incentives, it is necessary to merge at least five distinct databases, as illustrated in Figure 3. However, this amalgamation still omits specific input from two critical sectors: Agriculture and Creative Industries.

Figure 3 – Puerto Rico Incentives Data Sources



II.2 Agriculture Data

Agriculture-related programs presented considerable inconsistency, primarily due to the lack of detailed information on the number of beneficiaries, duration of exemption use, and other received benefits or incentives. Available data sources are limited to the Puerto Rico Department of Agriculture (PRDA), which only provides aggregate information on cash grants and incentives, and the PRDT, which collects individual or entity-reported agricultural income via tax returns.

This gap in data granularity poses a substantial challenge for the development of an automated reporting system. For precise estimations, detailed inputs from the Department of Agriculture are essential, particularly regarding the identification of bona fide status holders and the initial dates that were granted.



Source: Freepik stock photo

II.3. Creative Industries Data

With regards to Creative Industries, films are by far the largest recipients of incentives of the industry. Under Creative Industries incentives, projects such as commercials, TV series, pilots, documentaries, movies, video games, and other events are eligible.

A key limitation for this sector was data availability. Although applications for tax credits in this industry are done in a digital format, it does not mean that inputs are readily available. Most of them are manually transcribed from PDF into an Excel spreadsheet document. This meant that only general information regarding each project was available. This information is limited to total cost, tax credits, employment, and scheduled filming days.

In order to receive the disbursement of the tax credits for projects, a Certified Public Accountant (CPA) must perform an audit of eligible costs and the information must be relayed to the corresponding entities. Still, when provided, it is also only available in PDF format. This leads to the need to digitize the corresponding documentation. Doing so would allow for a more in-depth and accurate real-time analysis. The audited report has a detailed account of expenses and can better represent the actual impact of the industry.

Further, tax returns and employment data have inconsistencies from that of the PRDL. When the inputs from this office were examined, to analyze the economic impact of the industry, the results differed greatly from those submitted in the application (this is the data used in other studies to assess the economic impact of the industry).

For this reason, tax return data and audited reports (manual data entry process) were used in the analysis.

This enabled a full review of each entity, and what expenses and/or services were charged. Only decrees granted under Act 60 were analyzed, since the benefits under said act were modified, considerably, in comparison to the previous film incentive act: Act No. 27-2011, as amended, known as the "Act of Economic Incentive for the Film Industry of Puerto Rico" (Act 27).

In order to mitigate these downfalls in the current data structure, recommendations were developed on all applications and CPA's audited reports be made readily available in a comprehensive database. Digitizing and conveying all these inputs in a more synthesized manner can improve the economic impact analysis. Alongside such improvement, several expenses should be analyzed in greater detail when considering the approval of a project. For instance, the cost of financing, or the interest rate that will be charged for the development of the project. Several grantees reported financing costs that peaked at 15%, however, such expenses have limited effects in the economic activity.

Some film-related activities are also exempt from room tax. Despite this fact, in cases where the amount spent in lodging was presented in the audited report, the room tax was estimated and applied as a cost. Based on such condition, the projects in the database which lack an audited expense report (given their development phase), the average daily rate for Puerto Rico, was used to determine the room tax that the Government did not collect. The length of stay was available in all application forms as part of the breakdown of the projected expenditures.

II.4. Manufacturing Data

Data for manufacturing incentives was acquired from several sources. Mainly, it was gathered from the PRDT tax returns and the DEDC annual reports. The annual reports provided access to the most recent tax returns (2019, 2020, 2021, 2022), financial statements, and supplementary findings regarding exports. These findings were then combined with the PRDL to corroborate NAICS classification, employment, wages, and number of establishments.

Another source of input was the CRIM, which provided a geographical element to determine the economic impact and benefits per region. This allowed consideration for municipal licenses taxes paid (divided by the various municipalities), property tax, and gross sales by municipality. Data from the CRIM also shed light on another issue that is commonly overlooked, that is, the layering of multiple incentives. This practice occurs when decree holders have tax decrees from different incentive programs and aggregates the tax benefits of each program. For instance, a corporation with a tax decree under Act 20 (Export Services) alongside with

an Act 73 (Manufacturing) tax decree. In summary, this allows entities with multiple tax decrees to apply their incentives to gross sales tax, property taxes, and other municipal taxes in a cumulative fashion. Although holding multiple decrees does not impact the Government's revenues, it does impact municipal revenues – a subject that will be reviewed further in subsequent sections.

To illustrate the above, let's say corporation A holds an Act 20 and an Act 73 tax decrees. In terms of property taxes, Act 73 provides a 90% exemption on property tax, while Act 20 provides a 90% exemption (100% on the first five-years) on property tax. Under said scenario and considering the manner in which multiple tax decrees are applied, one corporation may reduce its property tax burden from \$100,000 for a non-incentivized corporation to \$1,000 for an incentivized corporation. Please refer to Figure 4, below.

Another finding that stands out in this matter is the wide variety of companies that offer services not normally associated with manufacturing incentives. Under previous regimes such as Act 8, Act 73 and Act 135, complementary services to manufacturing were allowed to apply for manufacturing incentives. Such incentives can be extended to individuals, with several of them holding manufacturing tax decrees for leasing land and/or facilities to corporations with manufacturing tax decrees.

The quality of the data gathered, as well as the amount, allowed the analysis to be divided between domestic and foreign corporations (those with headquarters outside Puerto Rico). This means that the cost-benefit ratio of each of these types of entities could be analyzed to determine how their economic impact and fiscal costs differ.

II.5. Export Services Data

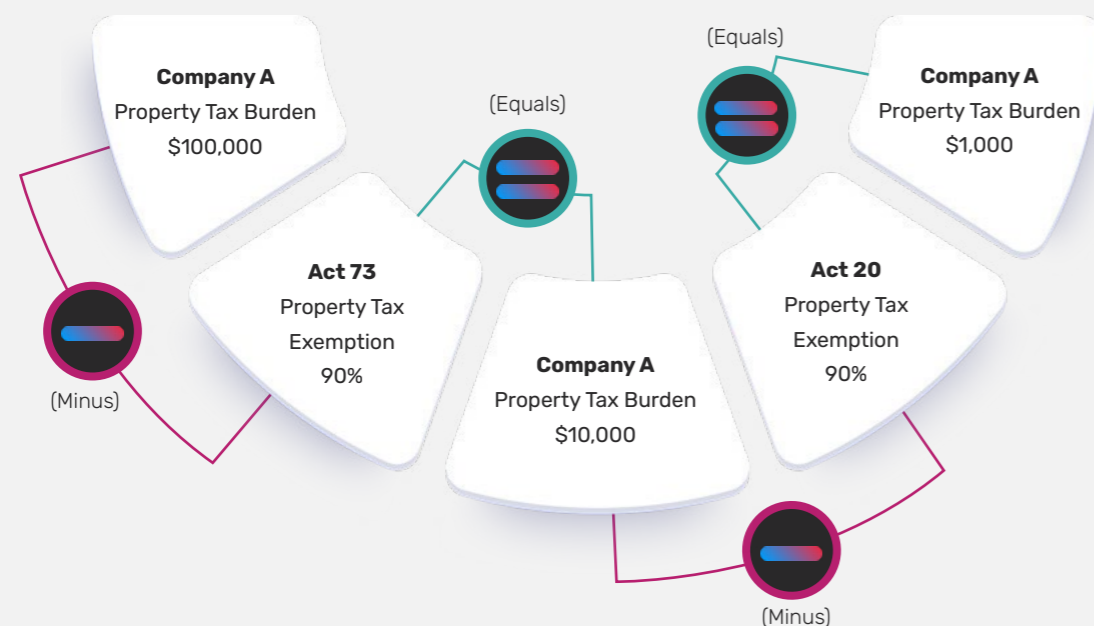
Export services data is mainly comprised of entities that hold Act 20 tax decrees (fewer Act 60 tax decrees were available in the dataset). Export services data utilized the same sources of information as the previous manufacturing incentives (even the same tax forms, although with differing schedules). These sources were: PRDT tax returns, DEDC annual reports, CRIM tax returns and PRDL data.

Act 20 data tended to be more readily available, particularly in the annual reports, although on several occasions data entry differences by the grantee that submitted the annual reports did create disparities with tax return data. The gaps could be summed up as a mix up in data entry (entering data in the wrong fields or in the wrong format). These mix ups were corrected in the data entry and validation phase of the project.

The availability of data among the DEDC, CRIM and the PRDT meant that Act 20 decree holders could be more easily observed in all the datasets. This enabled data analysts to quickly identify that Act 20 decree holders had a higher tendency to hold multiple tax decrees. That is, these entities would also be more likely to receive another tax incentive like manufacturing tax decrees, R&D credits, and/or film incentives.

At the same time, Act 20 shareholders or members also have a higher probability of holding an Act 22 tax decree or even medical professionals incentives which will be further explained on the report. That is, this incentive could be viewed as complementary to other incentives offered by the Government of Puerto Rico.

Figure 4 – Multiple Tax Decree Impact on Municipal Revenues





II.6. Resident Investors Data

The Act 22 decree holder data was readily available, and some of its most recent input was from both the PRDT and the DDEC annual reports. The tax returns provide a clear account of the income taxes paid by the Act 22 decree holders. The tax returns also provide a more accurate account of the dividends and interests they earn. This was particularly helpful when reviewing the capital gains reported by the grantees.

The annual reports provided complementary data such as the amount spent in Puerto Rico, used to estimate Sales and Use Tax (SUT), other taxes, property value, and business status.



II.7. Qualified Physician Data

Qualified Physician, currently, are not required to submit DEDC annual reports on their activities. Thus, the data available was mainly based on their tax returns. The application also contains little information regarding the physician's labor status (employee, operated business, among others).

The lack of basic information does not allow in-depth analysis of the impact of this incentive. This means that determining the economic effectiveness of the incentive in retaining medical professionals is unknown.



II.8. Private Equity Fund Data

Data for investment funds was acquired from tax returns, as well as a survey of the funds that remain active. Most of the data related to the funds is associated to taxes, and very little is linked with investments made by the fund.

The survey was conducted between August and the first week of September of 2023 and sent to all active funds and recently shuttered funds. Of the 80 funds notified of the survey, 46 responded. A key finding is that almost half of the funds are invested in real estate ventures.



III. Cost and Benefit Estimates

III. Cost and Benefit Estimates

III.1. Initial Estimates

Estimates for the 2020-2022 period were generated using micro-simulation models, designed to assess changes in the tax obligations of both corporations and individuals. This approach yields more precise estimates compared to prior studies by employing real data to simulate potential modifications in the tax code, including the impact of increased tax rates.

In evaluating the benefits derived from each incentive program, the tax revenue generated by each entity is analyzed on a per-program basis, encompassing both municipal and state taxes from corporations and individuals alike. This analysis includes a wide range of taxes such as income tax, gross sales tax, property tax, and taxes on business-to-business transactions, among others. Additionally, the tax revenues also incorporate income tax from workers and Sales and Use Tax (SUT) attributable to direct, indirect, and induced employment.

For the estimation of forgone tax revenue presented in the subsequent sections, we utilized the net income as reported in the tax returns. This figure represents income after deducting all reported expenses, including those specific to the incentivized industry, if applicable. Similarly, for individuals benefiting from incentives, the net income considered was after the deduction of relevant expenses, such as dependents, interest, and other allowable deductions.

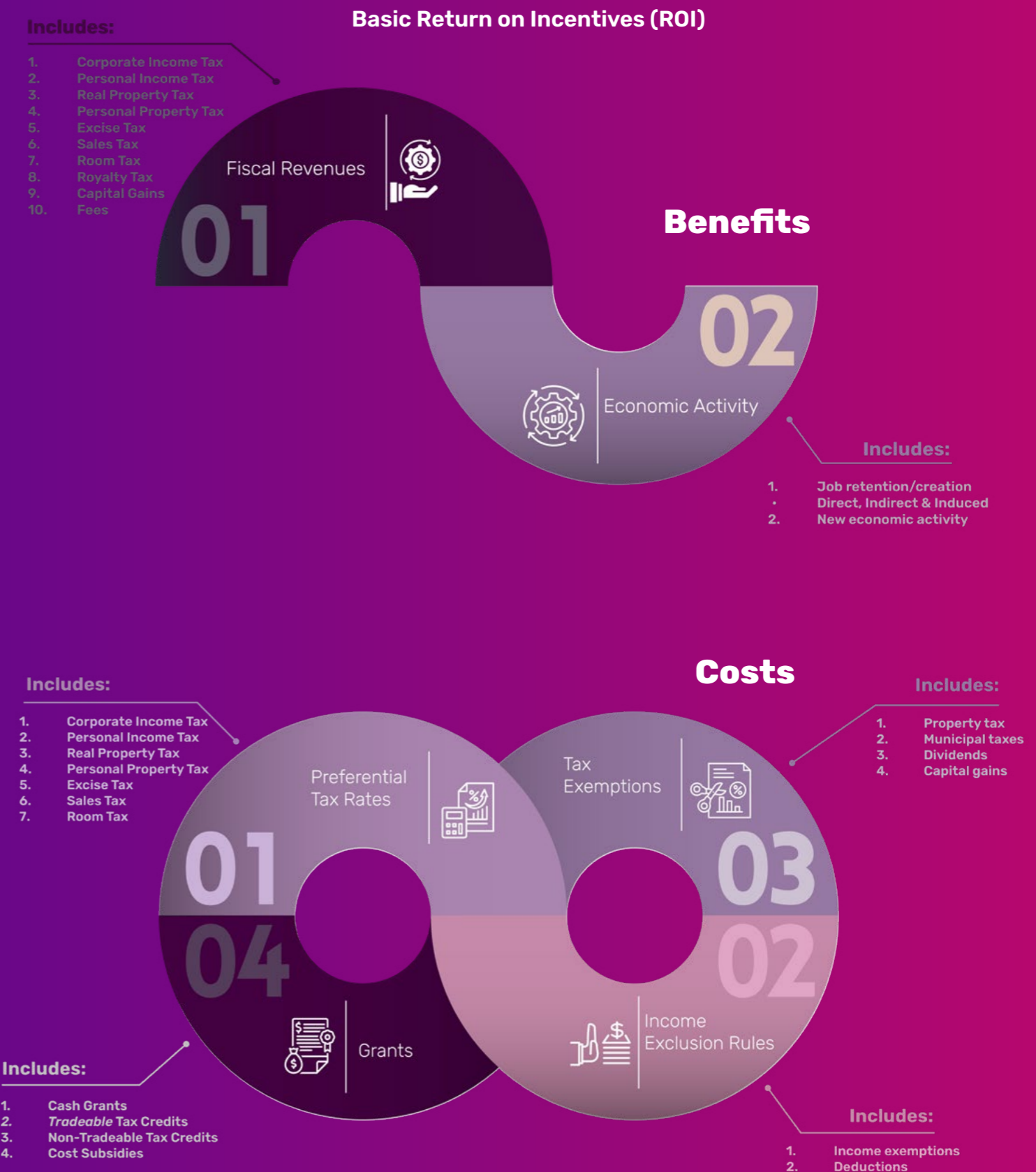
In terms of what constitutes costs to the Government of Puerto Rico, all preferential tax rates, tax exemptions, tax credits, and cash grants were included as costs. The cost for each program associated with preferential income tax rates was measured based on the highest possible rate that could be imposed while minimizing negative effects (loss of employment and economic activity). The rate used for each incentive was estimated based on a churn analysis presented later in this report. This means that costs for each program were estimated using a different approach than the one employed by PRDT's Tax Expenditure Report (TER), as such, costs differ from the TER³. It should be noted that when the assumptions used in the TER were applied to our model, the estimates were within a +/- 5% difference of the TER estimates for 2020.

The objective of the new methodology was to improve and complement the TER, since said approach:

- Incorporates economic impact and tax income analysis, including churn analysis.
- Includes an economic growth framework.
- Sets a path to a more granular action plan.
- Data from various sources allows for a more complete picture of incentives (DEDC annual reports, CRIM, BLS).

³ Puerto Rico Tax Expenditure Report for Tax Year 2024 (June 2023)

Figure 5 - Components of Return of Investment (ROI)



*Excludes other tangible and intangible costs and benefits, as well as potential opportunity costs



III.2. Indirect and Induced Activity

When estimating economic benefits for each incentives program the estimate was created on a per company basis. Meaning, the multipliers used were those most closely associated with the NAICS the company self-reported in its income tax return. As highlighted before, this differs from previous estimates where an industry wide multiplier was often used.



III.3. Direct, Indirect & Induced Workers Income Tax

For the calculation of income tax from all direct jobs created by incentivized companies, the actual wages as reported in the tax returns and to the PRDL were used. The effective tax rate applicable to their income level was then applied to these wages. This effective rate was determined for the base year for each income bracket, segmented in increments of \$1,000, based on data from the PRDT.

For all indirect and induced employment generated by the incentivized activity, the average salary for Puerto Rico in each year was used, the average wage was \$29,570. The same effective income tax rate was then applied to all indirect and induced workers (roughly 2.6% for this income level).



III.4. SUT Estimates

Sales and Use Taxes (SUT) were estimated based on the net income of direct, indirect and induced workers. This income was net of income taxes and payroll taxes (Social Security, Medicare, and Unemployment).

Of the remaining disposable income, careful review of the SUT revenue by the PRDT and Personal Consumption data provided by the Planning Board found that just under half of the disposable income was related to consumption subject to the SUT. This review verified all personal consumption and classified it by the SUT rate applicable to each category (1%, 7%, 11.5%). Based on this analysis, around 48.6% of the disposable income, with a capture rate of 77%, was assumed to be subject to the sales and use tax.



IV. ROI by Program

IV. ROI by Program

Several scenarios were estimated to compare costs and benefits. This section presents scenarios estimated utilizing the churn analysis for both domestic and foreign corporations. The churn analysis for domestic corporations was carried out for each of the incentives analyzed in this report. Under the churn analysis the optimal tax rate under each incentive program was estimated based on the entities (corporations or pass-through entities) that received the incentives. In essence, the following questions were posed: At what specific tax rates would these companies either not be locally competitive and/or close? At what rate would these entities move to a different jurisdiction? The churn rate assumptions varied between domestic and foreign entities.

The highest possible tax rate before hindering economic activity was selected as the target rate for that incentive. That is, how much more could have the Government hypothetically taxed before a negative effect could have been felt in the economy that outweighed the tax revenue. In this way the methodology is not measuring only tax revenue, but the amount of companies that would close operations and more critically, the jobs that would have been lost.

IV.1. Churn Rates

IV.1.1. Foreign Entities

In order to develop an analysis on the potential opportunity costs, corporations that had headquarters located outside Puerto Rico at the time of the analysis were classified as foreign corporations. The local costs of these corporations were benchmarked with other jurisdictions that compete with Puerto Rico in these industries, i.e. Singapore and Ireland.

The tax burden was compared to the estimated tax that would be paid in these jurisdictions. In the case of Puerto Rico's tax burden, the following were taken into account: corporate income tax, royalty payments, and excise tax under Act No. 154-2010 (Act 154). Electricity costs, and tax credits received for R&D activities were also considered for the comparison of the above-

mentioned jurisdictions. Specifically, how much these foreign corporations located in Puerto Rico would have received in tax credits and pay in electricity in other jurisdictions.

The overall costs for each company in each jurisdiction were compared for every tax rate increase estimated in Puerto Rico. If the overall tax burden (reduced by applicable tax credits), plus the cost of electricity was higher in Puerto Rico compared to the other jurisdictions, the company was assumed to close operations in Puerto Rico. In Figure 6 the corporate income tax revenue is compared with the estimated effective tax rate of foreign corporations.

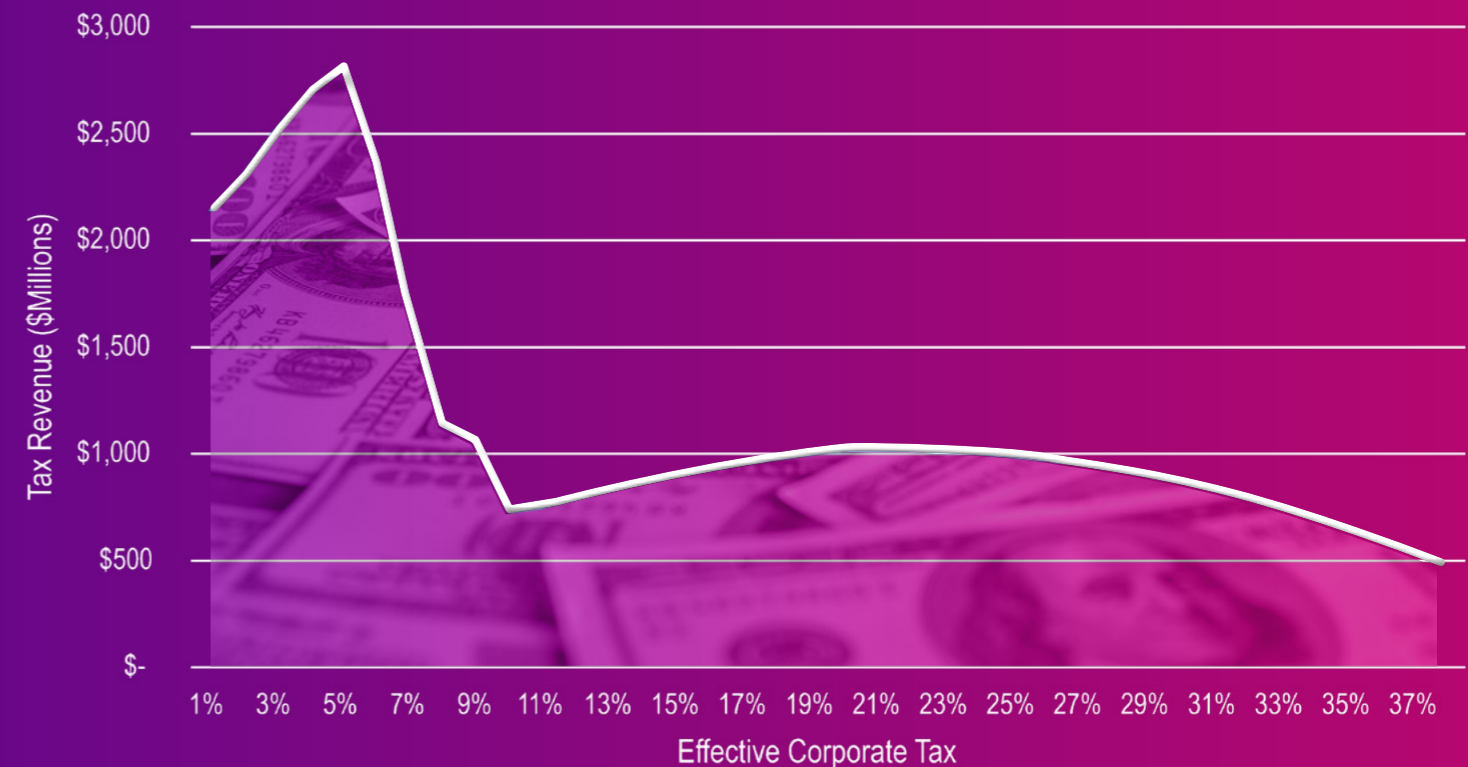
As observed, when the effective tax rate reaches 5% the overall costs of electricity and other incentives could reflect that a vast majority of corporations would find it significantly cheaper to operate in other jurisdictions.

Several foreign corporations would remain on the Island, but these tend to be smaller corporations that

would operate mostly without much regard to the incentives offered. As such, the current tax rate used to determine the cost was 4% (the effective tax rate of foreign corporations stands at 0.7%⁴ which will be looked at later in the report). Some corporations would still leave or close under this hypothetical new effective tax rate (5%). Thus, revenues and costs were adjusted downward for the "loss" of the companies.

⁴ The effective tax rate does not consider revenues under Act 154-2010. If such revenues were considered, the effective rate would surpass 10%.

Figure 6 – Corporate Income Tax Revenue of Foreign Corporations



Source: ABEXUS Analytics, Department of Treasury, DEEC, CRIM, Department of Labor

IV.1.2. Domestic Entities

For domestic entities the churn rate is estimated using the Net Profit Margin (NPM). This is income net of all expenses and taxes divided by gross income. This was estimated for all corporations receiving incentives, as well as for all corporations not receiving corporate incentives.

For entities not benefiting from corporate incentives, their financial data were aggregated, and their profit distribution was estimated based on the 3- and 4-digit North American Industry Classification System (NAICS) codes. Specifically, the average net profit margin for each industry within Puerto Rico was calculated at either the 3- or 4-digit NAICS level, the choice of which depended on the number of companies classified under each NAICS code.

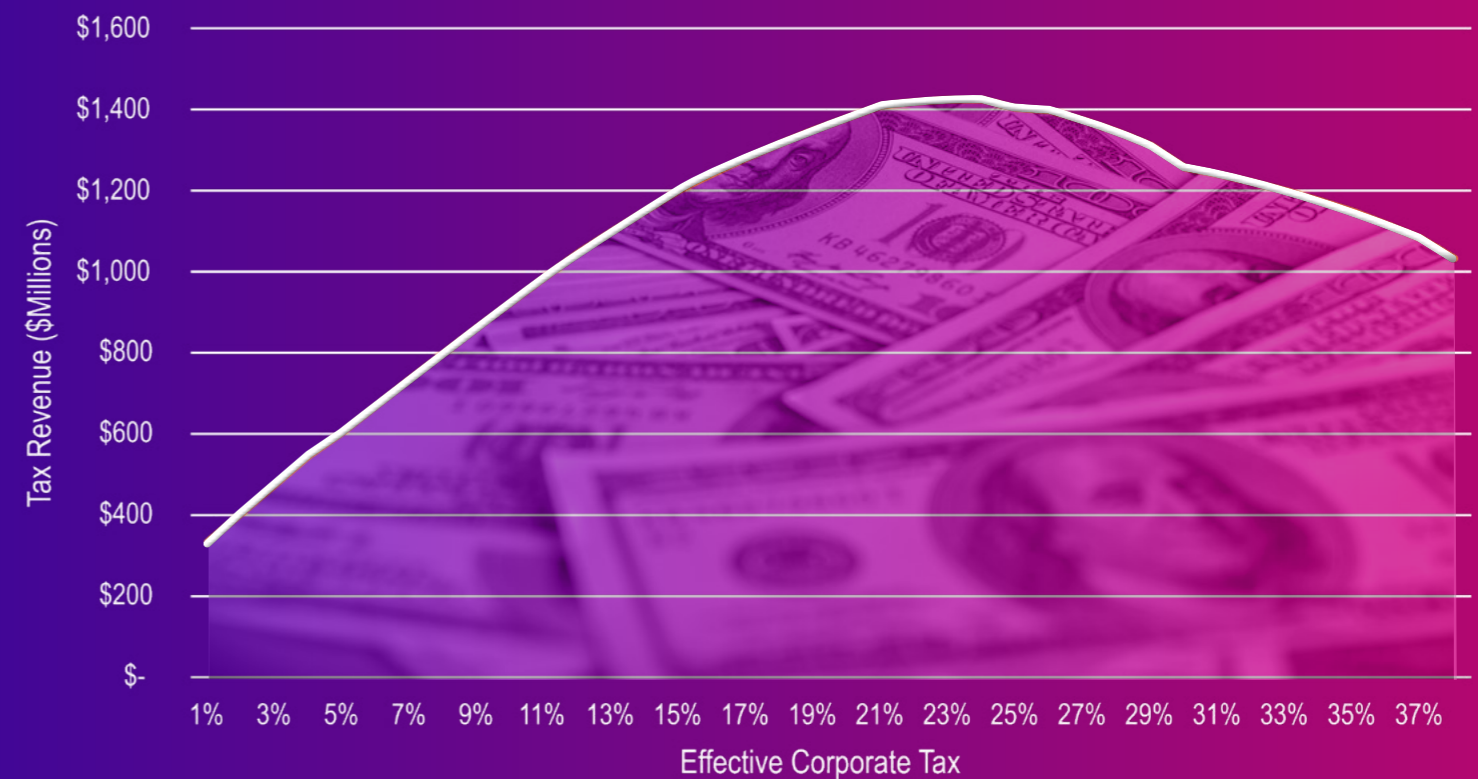
Corporate income taxes for incentivized entities were recalculated at increased rates to assess the impact of a higher tax burden. Subsequently, the new net profit margins (NPM) for these corporations were estimated under the revised rates. These updated NPMs were then compared against the median and 20th percentile values within their respective industry distributions, based on the North American Industry Classification System (NAICS). For this comparison,

4-digit NAICS codes were preferred; however, where insufficient data existed, the 3-digit NAICS values from non-incentivized corporations were utilized.

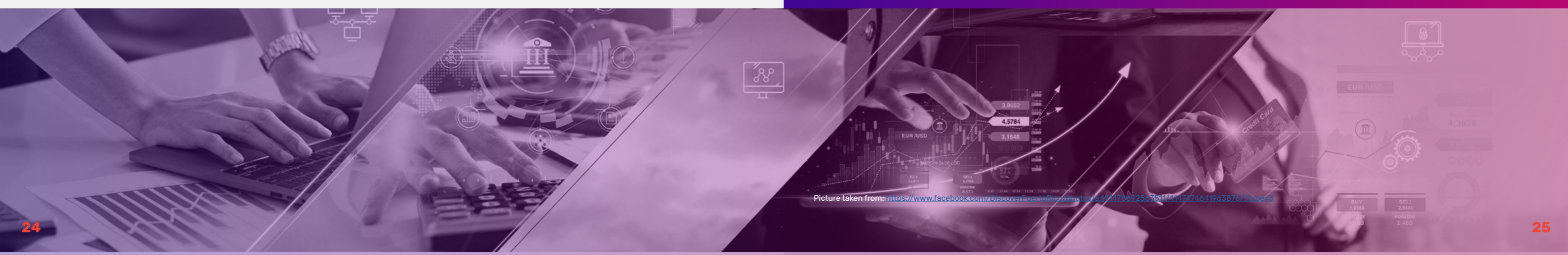
If the new NPM was below the median of the NPM for the specific industry (in two of the last three years), the corporation was assumed to have a 50% chance of shutting down. If the NPM was below the 20th percentile for two years or more, the corporation was assumed to have a 100% probability of closing. The lower the new NPM the higher the probability the corporation would close operations given that it would be one of the worst performers in the industry.

In Figure 7, we compare the corporate tax revenue of domestically incentivized corporations against their effective tax rates. The analysis indicates that while corporate income tax revenue could continue to rise with effective rates up to 20%-22%, the adverse effects begin to surpass the benefits of higher rates at an effective tax rate range of 6%-9% for manufacturing corporations. At these rates, some corporations might opt to relocate or cease operations, leading to an adjustment in projected revenues and costs to account for the 'loss' of these companies.

Figure 7 – Corporate Income Tax Revenue of Domestic Manufacturing Corporations



Source: ABEXUS Analytics, Department of Treasury, DEDC, CRIM, Department of Labor



IV.2. Manufacturing Incentives

IV.2.1. Foreign Entities

Foreign entities are strongly associated with chemical manufacturing, and what the US Census Bureau classifies as miscellaneous manufacturing. In simpler terms, chemical manufacturing is mostly related to pharmaceuticals, while miscellaneous manufacturing is mostly associated with medical devices. This categorization will also be relevant when the corporation's employment numbers are taken into account (view Figure 8).

Figure 8 – Foreign Corporation's Employment Distribution by NAICS



Foreign Manufacturing Incentive ROI

The following is a general breakdown of the tax decree holders that were classified as foreign corporations. Figure 9 contains some Key Performance Indicators, a breakdown of the incentives received and the eligibility requirements under the incentive laws, Act 60, Act 135,

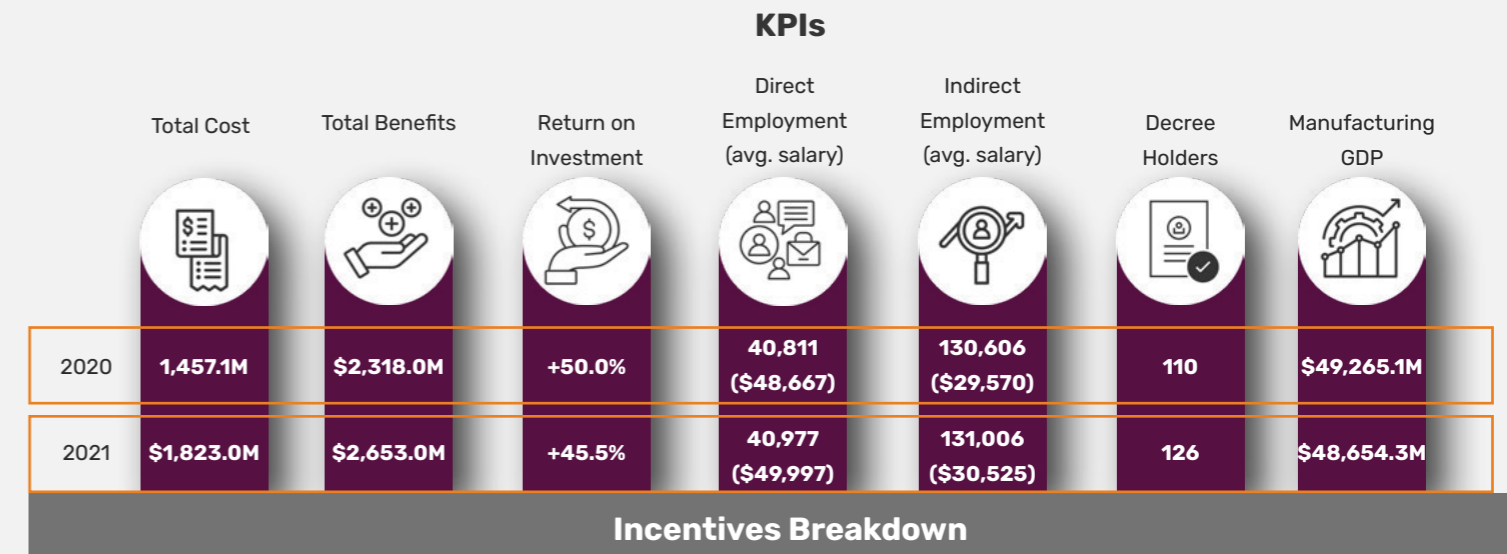
Act 8, and Act 73. Overall, 110 entities were classified as foreign with over 40,811 direct employees in 2020. A more detailed breakdown of the costs is presented in Figure 10.

In 2020, foreign corporations benefiting from manufacturing incentives contributed over \$2.3 billion in fiscal revenues, with more than half of this amount stemming from Act 154. When focusing solely on the Corporate Income Tax, the average effective tax rate stands at only 0.7%. This rate would be higher if revenues from Act 154 were factored in (this would have rendered close to a 10% effective tax rate). However, many of the larger corporations benefit from legacy incentives under Act 135 and Act 73, which offer preferential rates of 0%, 1%, and 2%.

This is a key sector of the Puerto Rican economy and one of the main drivers of fiscal revenues. Several changes are expected in the coming years

as the Global Minimum tax (GMT) is implemented in several jurisdictions across the globe. As such, this analysis should be reviewed periodically. Churn rates are included in the cost portion of the analysis (as the effective tax rate increases, the number of companies with operations in the Island decreases), the selected tax rate is 4% as proposed in Act 60 and near the 5% maximum estimated in the churn analysis. The churn analysis shows, that if rates were to be increased substantially, the cost to operate in Puerto Rico would be too high and operating in a jurisdiction such as Singapore or Ireland, would be more beneficial.

Figure 9 – Key Metrics of Manufacturing Incentives – Foreign Entities



- Preferential income tax rate of 4% (could vary between 0%-10% depending on decree holder);
- 100% exemption on dividends income (0% dividend tax);
- 60% exemption on municipal license tax, including "patente" (gross sales tax);
- 90% exemption on property taxes;
- 15-year tax decree to guarantee benefits with a possible extension of an additional 10-year period.

Eligibility

- Business dedicated to the manufacture of products, scientific research and development, recycling, maintenance and repair of aircraft and other activities.

Note: Financial results for 2021, latest available data

Figure 10 – Detailed Breakdown of Reported Tax Returns – Manufacturing Foreign Entities

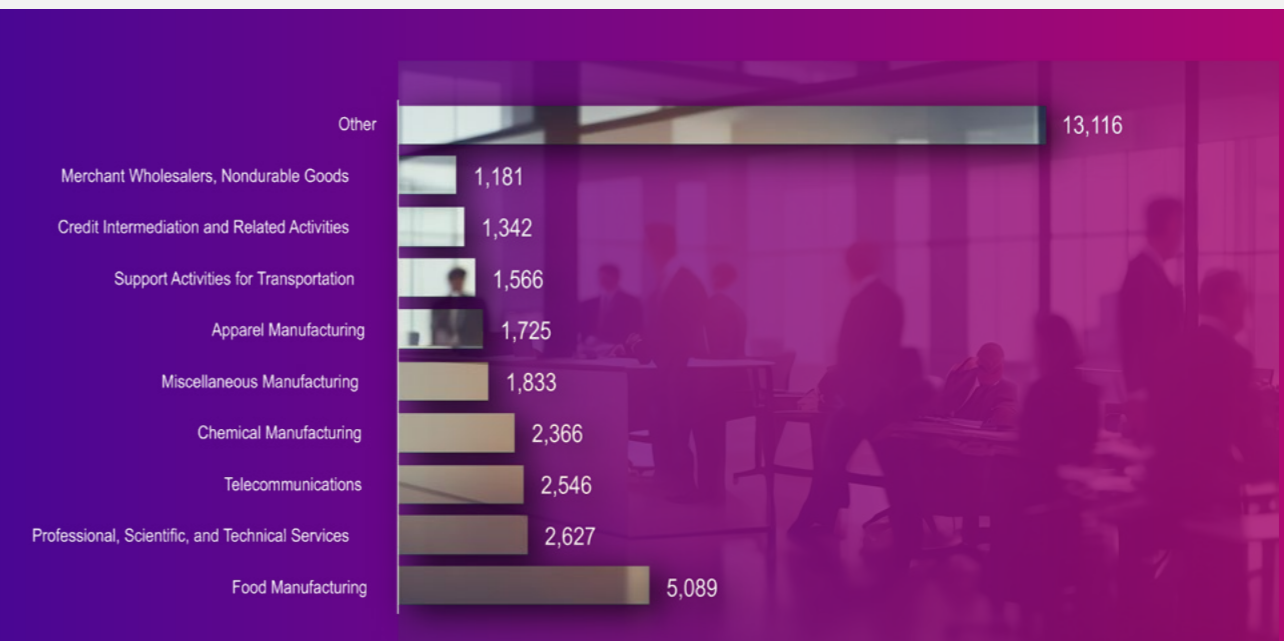
	2020	2021
BENEFITS		
Corporate Income Tax (0.7%)	\$88,398,165	\$452,130,458
Municipal Excise Tax	\$79,190,819	\$122,451,283
Royalty Tax	\$210,478,496	\$192,999,422
Property Tax	\$33,643,641	\$32,664,509
Act 154	\$1,416,724,735	\$1,343,993,266
Personal Income Tax	\$258,025,800	\$255,007,847
Sales Tax (IVU)	\$231,506,082	\$253,788,079
Total	\$2,317,967,738	\$2,653,034,865
COSTS		
Corporate Income Tax (4%)	-\$1,060,748,842	-\$1,281,183,071
Municipal Excise Tax	-\$112,965,703	-\$174,493,078
Property Tax	-\$287,955,926	-\$279,281,556
Tax Credits	-\$83,754,766	-\$88,070,206
Total	-\$1,545,425,237	-\$1,823,027,911

IV.2.2. Domestic Entities

Some 668 entities were classified as domestic corporations for the purpose of this analysis for the year 2020; In 2021, there were 742. Over 33,000 jobs are directly associated with domestic companies receiving manufacturing incentives (view Figure 11). Food Manufacturing is the largest sector in terms of employment for domestic manufacturing corporations. Unlike foreign corporations, pharmaceuticals and medical devices only represent 5.5% of their overall employment.

Other sectors, mostly outside manufacturing, account for 25% of the domestic employment generated within this category. A more detailed breakdown of the industries awarded manufacturing incentives is shown in Figure 12.

Figure 11 – Domestic Corporations Employment Distribution by NAICS



Source: DEDC, Department of Labor, CRIM, Department of Treasury

Figure 12 – Domestic Corporations Employment by NAICS – Breakdown



Source: DDEC, Department of Labor, CRIM, Department of Treasury

Domestic Manufacturing Incentive ROI

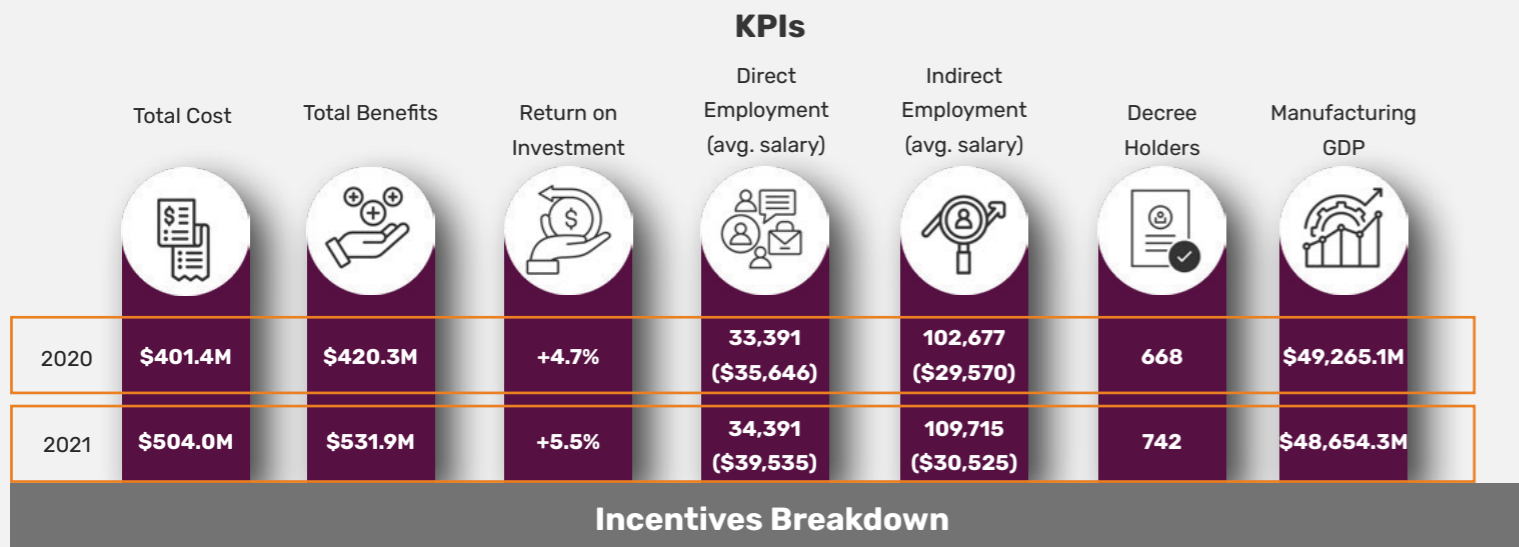
The following is a general breakdown of the decree holders that were classified as domestic corporations. Figure 13 contains some Key Performance Indicators, a breakdown of the incentives received and the eligibility requirements under the incentive laws, Act 60, Act 135, Act 8, and Act 73. Overall, 668 entities were classified as foreign with over 33,391 direct employees in 2020. A more detailed breakdown of the costs is presented in Figure 14.

In general, this segment has a lower return than foreign manufacturing and is closer to a neutral fiscal impact. Churn rates are included in the cost portion

of the analysis (as the effective tax rate increases, the number of firms with operations on the Island decreases).

The lower return on domestic corporations when compared to foreign entities is largely due to: 1) a higher potential cost associated with a 6% corporate income tax rate and 2) the nature of high value added activities of foreign operations, such as pharmaceutical activities. Additionally, local (domestic) corporations are not subject to Act 154-2010, which means a lower overall tax burden.

Figure 13 – Key Metrics of Manufacturing Incentives – Domestic Entities



- Preferential income tax rate of 4% (could vary between 0%-10% depending on decree holder);
- 100% exemption on dividends income (0% dividend tax);
- 60% exemption on municipal license tax, including patent (gross sales tax);
- 90% exemption on property taxes;
- 15-year tax decree to guarantee benefits with a possible extension of an additional 10-year period.

Eligibility

- Business dedicated to the manufacture of products, scientific research and development, recycling, maintenance and repair of aircraft and other activities.

Note: Financial results for 2021, latest available data

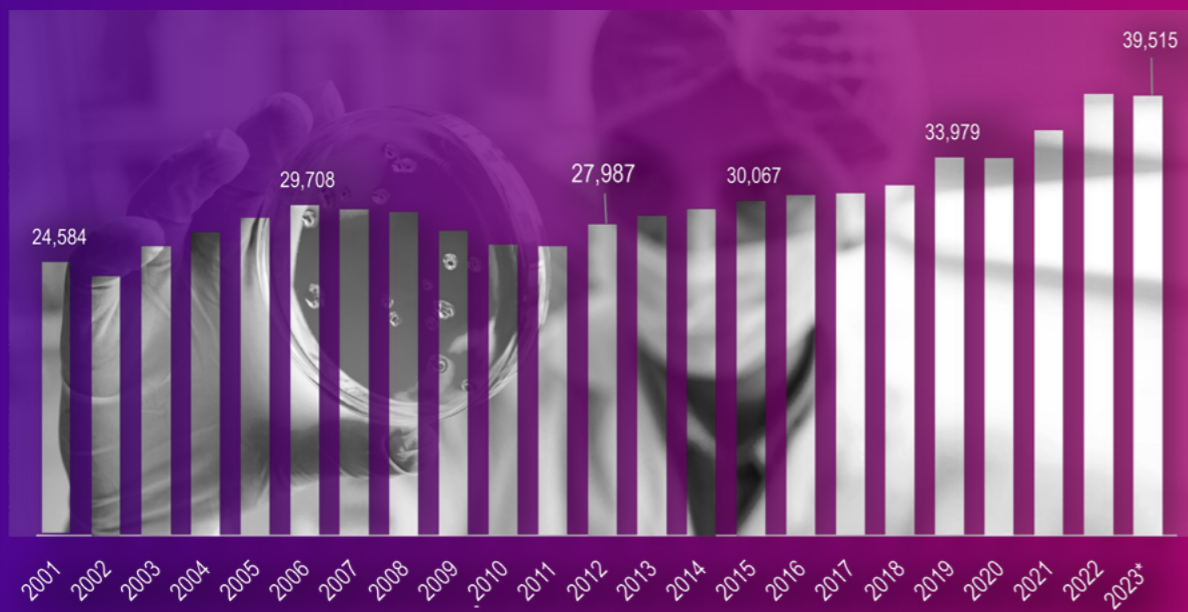
Figure 14 – Detailed Breakdown of Reported Tax Returns – Manufacturing Domestic Entities

	2020	2021
BENEFITS		
Corporate Income Tax (2.1%)	\$131,614,815	\$146,694,824
Municipal Excise Tax	\$9,515,317	\$46,869,470
Royalty Tax	\$3,157,704	\$2,939,077
Property Tax	\$14,112,051	\$18,434,855
Personal Income Tax	\$129,572,827	\$161,776,786
Sales Tax (IVU)	\$132,357,729	\$155,187,359
Total	\$420,330,443	\$531,902,371
COSTS		
Corporate Income Tax (6%)	-\$234,408,084	-\$258,655,398
Municipal Excise Tax	-\$13,832,452	-\$67,492,037
Property Tax	-\$136,764,936	-\$160,936,281
Tax Credits	-\$16,359,208	-\$16,880,202
Total	-\$401,364,681	-\$503,963,918

IV.3. Export Services Incentives

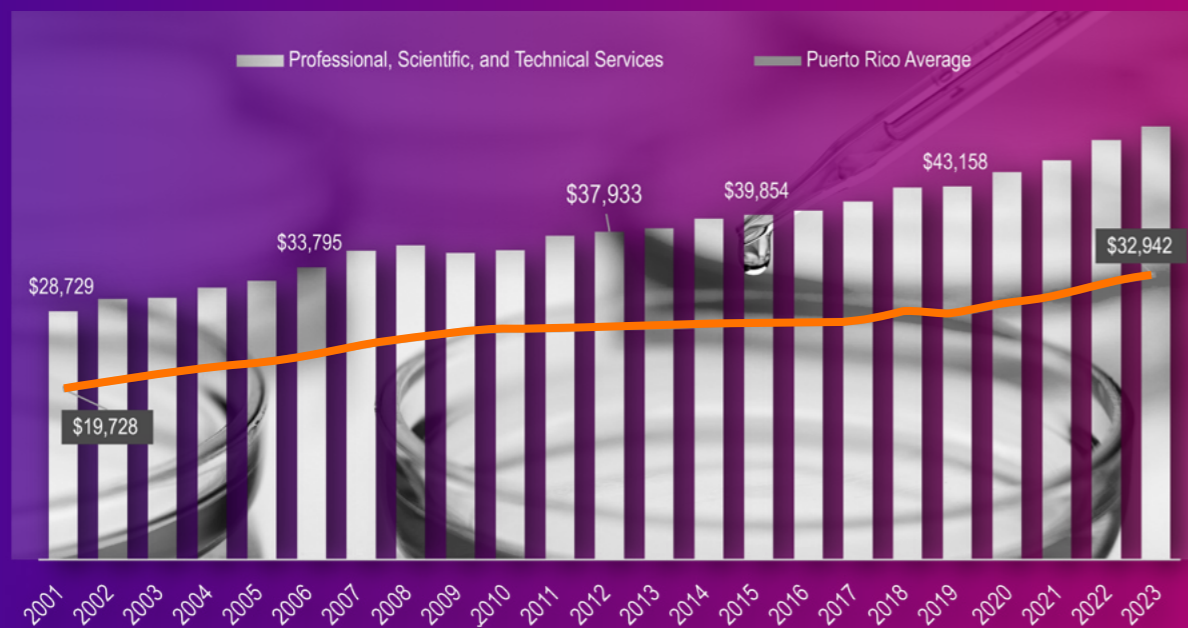
Act 20, which provides incentives for corporations that export services, has coincided with a shift in the Puerto Rico job market that is aligned with jobs associated with services (view Figure 15) rather than simply manufacturing. These jobs tend to have higher wages when compared to the Puerto Rico average wage as reported in the Quarterly Census of Employment and Wages (QCEW), view Figure 16.

Figure 15 – Employment in Professional, Scientific, and Technical Services



Source: QCEW (Private Employment *Average for January – July 2023)

Figure 16 – Average annual Pay for Professional, Scientific, and Technical Services



Source: QCEW (Private Employment *Average for January - July 2023)

Since Act 20 was enacted, employment in professional, scientific, and technical services has increased by over 40%. Moreover, the average annual pay increased by almost 28% since 2012. Although these increases are not exclusively related to Act 20, the program has had a positive impact on the growth of this sector. The impact of this incentive is viewed even beyond the Professional services sector, since many corporations

that hold a manufacturing tax decree also hold an Act 20 tax decree for their export of services.

This is one of the most “versatile” decrees. In this case versatile refers to the program’s ability to be combined with other incentives, such as manufacturing, individual investors (Act 22) and even creative industries incentives.

IV.3.1. Export Services Incentive ROI

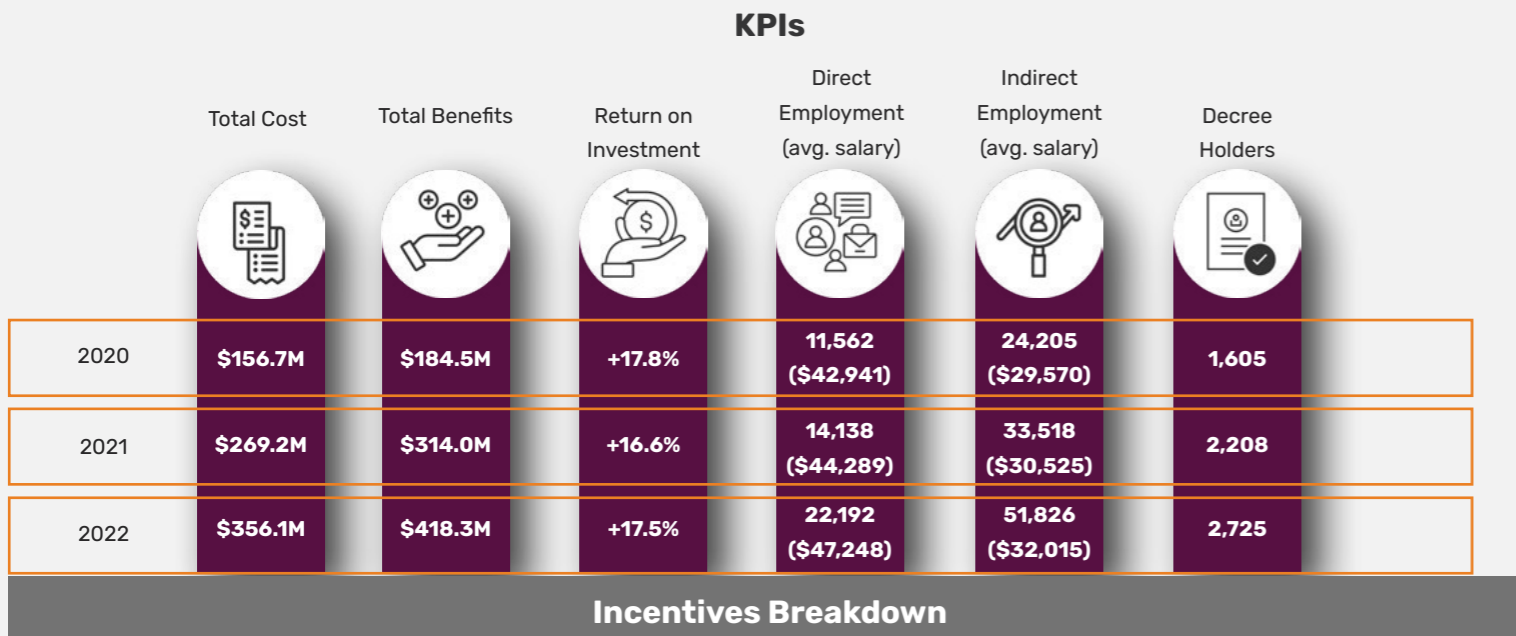
In 2020 over 1,600 entities reported holding an Act 20 tax decree and direct employment associated with this activity was over 11,562. By 2022, the employment reflected and exponential increase to 22,192 jobs (view Figure 17). Only the direct employment associated with this activity was accounted for in this analysis. Such condition limits the potential “double counting”, particularly in those corporations that hold multiple tax decrees. Also, because activities not associated with export services, which are not incentivized, were assumed to take place even in the absence of Act 20.

Overall, corporations that hold an Act 20 tax decree have noticeably higher net profit margin when compared to corporations in the same industry with no decree. A churn analysis demonstrated that most companies would remain highly competitive with only a marginal decrease in their net profit margin up to an 8% corporate income tax rate.

With this higher rate, the churn is relatively low (around 5%) while nearly doubling the revenue. At 8% effective tax rate the ROI is 16%-17% depending on the selected year for the analysis. The same churn rate methodology used for domestic corporations was applied to estimate the cost. It should be noted, that since several corporations receive manufacturing incentives as well, any changes in those incentives would also impact export services decree holders (at least for the larger foreign decree holders).

The following is a general breakdown of the export services decree holders that reported tax returns in 2020. Figure 17 contains some Key Performance Indicators, a breakdown of the incentives received and the eligibility requirements under incentive laws, Act 60 and Act 20. A more detailed breakdown of the costs is illustrated in Figure 18.

Figure 17 – Key Metrics of Export Services Incentives



- Preferential income tax rate of 4%
- 100% exemption on dividends income (0% dividend tax);
- 60% exemption on municipal license tax, including excise tax (gross sales tax);
- 90% exemption on property taxes;
- 20-year tax decree to guarantee benefits with a possible extension of an additional 10-year period.

Eligibility

- Export of Services or goods from Puerto Rico to Foreign Markets

Note: Financial results for 2022, latest available data

Figure 18 – Detailed Breakdown of Reported Tax Returns – Export Services

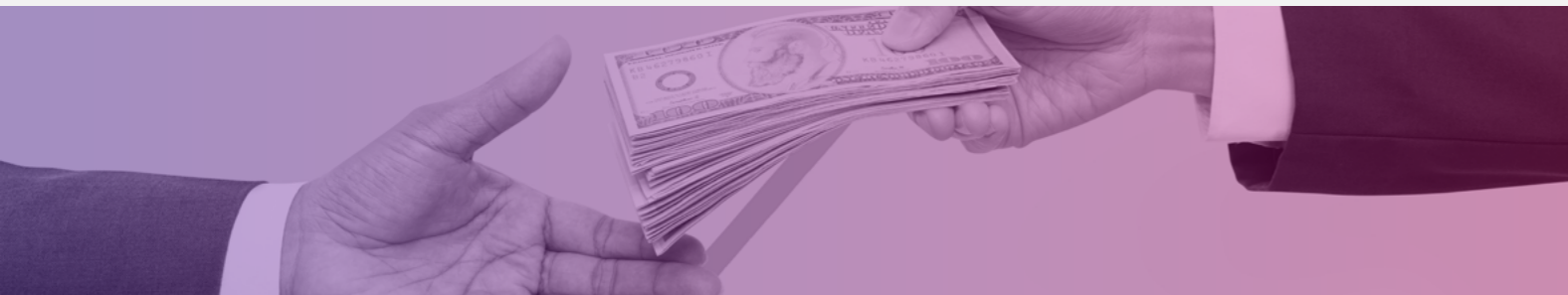
	2020	2021	2022
BENEFITS			
Corporate Income Tax	\$87,095,026	\$169,126,920	\$179,000,559
Municipal Excise Tax	\$8,112,995	\$9,173,982	\$14,803,355
Property Tax	\$3,236,841	\$3,855,825	\$6,349,509
Personal Income Tax	\$47,209,643	\$75,714,045	\$126,308,535
Sales Tax (IVU)	\$38,834,168	\$56,100,957	\$91,856,350
Total	\$184,488,673	\$313,971,728	\$418,318,496
COSTS			
Corporate Income Tax (8%)	-\$106,829,636	-\$209,838,186	-\$259,103,309
Municipal Excise Tax	-\$19,202,919	-\$22,132,231	-\$35,713,547
Property Tax	-\$30,645,552	-\$37,208,708	-\$61,272,766
Total	-\$156,678,107	-\$269,179,124	-\$356,089,622

IV.4. Resident Investors Incentive

This incentive is commonly referred to as the former Act 22. Given that this is an incentive granted at an individual level, the previously discussed churn rate could not be applied. The main sources of information for this analysis were tax returns (for all financial data) and annual reports submitted to the DEDC (as supplemental data).

The cost of this incentive was assumed to be another preferential rate that could have been applied while remaining competitive at an international level. Since all U.S. citizens are subject to income taxes on all income (including capital gains, dividends, and interest) regardless of their residence (except territories like in Puerto Rico), it was assumed that any rate lower than the federal rate for these income sources would continue to be attractive.

Additionally, Act 22 grantees are subject to tax on capital gains at 5% for gains accumulated prior to moving to Puerto Rico and recognized at least 10 years after becoming a bona fide resident of the Island. For this reason, a 4% target rate for capital gains, dividends and interest was chosen, as taxes that could have been collected by the Government of Puerto Rico, and as such are the hypothetical main cost of this incentive.



IV.4.1. General Investor Profile

During the year 2020, there were a total of 1,557 Act 22 decree holders. However, only 78.4% used their tax incentives, (view Figure 20). For the purposes of this report, using the incentive, means the exempted individual reported income on their income tax returns, specifically in the tax-exempt categories of Act 22: capital gains, dividends, or interest. The data shows that roughly half of Act 22 grantees have established a business in Puerto Rico, and 40% of these businesses are export service companies with Act 20 tax decrees.

Several amendments to Act 22 have been passed since its enactment in 2012, including the addition of a donation requirement and a residential property acquisition⁵. The average donation in 2020 was \$10,869 for the 629 grantees that made the donations. Keep in mind that not all grantees had the donations requirement in their decrees, given the time in which the amendment came into effect. The following table provides the top 10 recipients of Act 22 grantee donations for 2022.

⁵ The residential property acquisition was eliminated via an amendment to Act 22-2012 in year 2016.

Table 1 – Donations in 2022 by Act 22/60 Decree Holders



Non-Profit Organization	Distribution of Donations in 2022
Boys & Girls Club	8.8%
The Act 20/22 Foundation	6.4%
Adoptando en PR	2.8%
Tasis Dorado Educational Foundation	2.8%
Gaudium	2.3%
The Rain And Rose Charitable Fund LLC	2.1%
Partnership For Modern PR	2.2%
Calvary Chapel of Puerto Rico	1.8%
Young Life Foundation	1.7%
Others	69.2%

Source: DEDC Act 22/Act 60 Annual Reports for 2022

The resident investors program has no specific requirement of job creation, however, the program is highly intertwined with Act 20's programmatic objectives. That is, individuals that relocate to Puerto Rico could also establish a business in the Island and export services to other jurisdictions. Thus, the exact number of jobs generated by each grantee is difficult to account for, as this requires establishing the specific Act 22 grantees who are also Act 20 beneficiaries.

To assess the above condition a comparison of Act 22 and Act 20 annual reports was developed. This analysis provided a proxy of the local companies in which Act 22 grantees are also shareholders. Once those entities

were identified, the direct employment they sustain was extracted from the PRDL statistics (i.e. 202 report). After determining the direct employment, the indirect and induced employment was also estimated.

The data presented below takes into account the cases in which a corporation has multiple Act 22 shareholders; the employment of the company was only counted once in the table. Yearly results are presented in Table 2. The increase in employment observed in 2022 is in large part due to the increase in tax decrees conferred in 2020 and 2021, as well as the larger amount of annual reports.

Table 2 – Employment Related to Act 22/60 Decree Holders by Year



Act 22 Related Employment*	2020	2021	2022**
Direct Employment	5,439	5,142	8,266
Indirect and Induced Employment	11,386	12,190	19,304
Total Employment	16,825	17,331	27,570

*Employment in companies owned by Act 22 / Act 60 decree holders (not of multiple holders)

**Large increase in tax decrees and annual reports

In terms of real estate, Act 22 grantees mostly own property, instead of leasing one (view Figure 19). In total these individuals reported spending \$267.8 million in Puerto Rico in a single year and a reported income of almost \$3 billion.

Figure 19 – Tenure of Resident Investors in 2020



Source: DEDC Annual Reports for 2020



Tenure & Property Value

% Own	37%
Property Value	\$ 3,245,826,402
Average Property Value	\$ 5,661,982
% Rent	29.9%
Total Rent Paid	\$ 22,003,608
Average Monthly Rent	\$3,935
% Unknown Tenure	33.1%

Source: DEDC Annual Reports for 2020

Figure 20 – General Statistics of Resident Investors in 2020



Act 22 Decree Holders in 2020-2022

	2020	2021	2022**
Decrees	1,557	2,313	2,660
How many days spent in Puerto Rico	341	283	274
Businesses established in Puerto Rico	755	803	1,015
Act 20 decree holders	628	642	793
Other decrees	18	27	41
Individual that reported at least 1 donation	624	704	765
Donations	\$6,782,269	\$10,083,128	\$10,736,010
Average donation	\$10,869	\$14,323	\$14,034

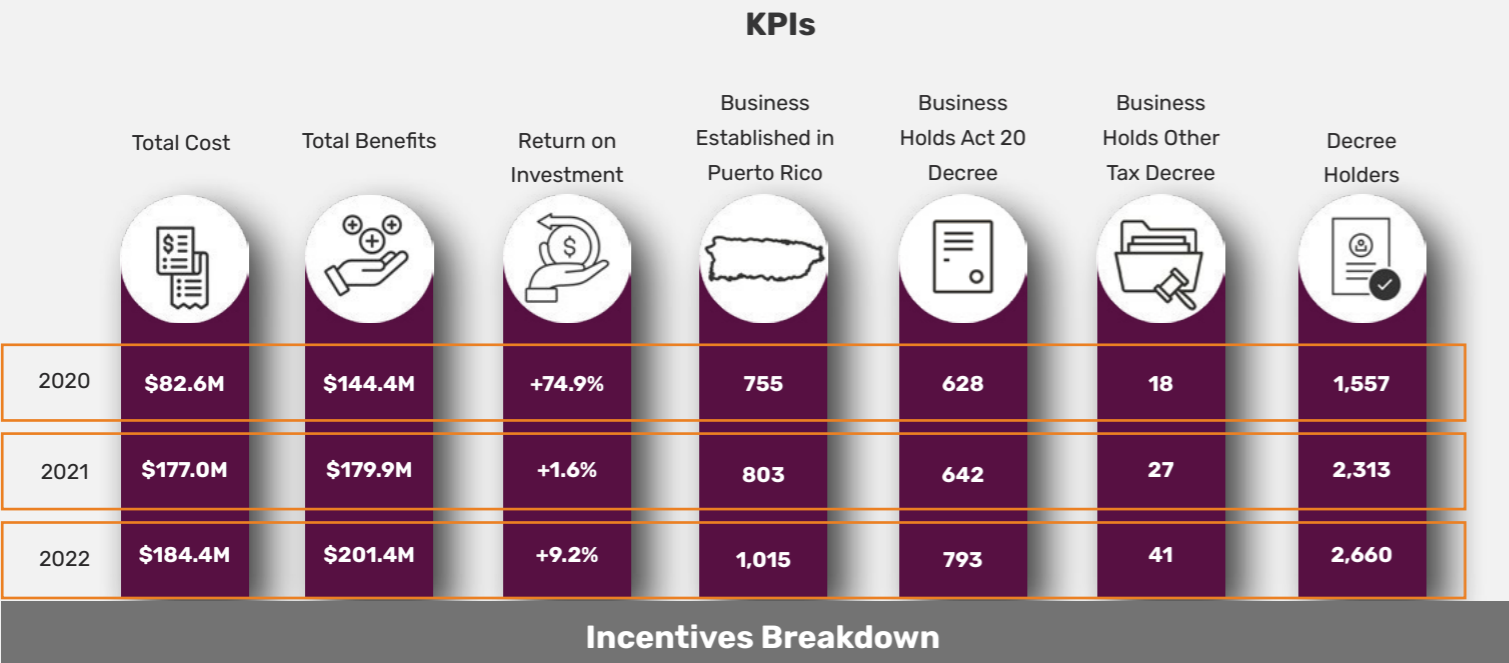
IV.4.2. Resident Investor Incentive ROI

In Figure 21 the key metrics of the resident investors program are presented. For 2020, 90% of the benefits generated by Act 22 grantees are associated with income tax paid in Puerto Rico. Resident investors are subject to regular income tax as any other resident. The effective income tax rate in 2020 was 15.8% and varied depending on the year in which it was estimated. The income taxes received by the PRTD increased from \$130M in 2020 to \$144M in 2022. Moreover, consumption taxes doubled over the same period (\$24.5M). As shown in Figure 22, the program's ROI was reduced between 2020 and 2022 given the abrupt increase in capital gains accrued by grantees during those years.

As can be observed in Figure 22, the incentive maintains a positive ROI even with a 4% potential tax on dividends, interest, and capital gains. This is all due to the significant amount of income taxes paid by Act 22 tax decree holders. SUT was estimated based on the reported amount of money spent in Puerto Rico by the residents in their annual report.

For all those that did not submit their annual report, but did submit tax returns in Puerto Rico, the average spending of all other resident investors in 2020 was applied (\$172,875). The reason for the large drop in fiscal revenues between 2020-2022 is caused by just a few decree holders that in 2020 reported income wages, that are taxed at ordinary rate. In 2021 and 2022 no such wages were reported.

Figure 21 – Key Metrics of Resident Investor Incentives



- 100% exemption on dividends income (0% dividend tax);
- 100% exemption on interest income (0% interest tax);
- 100% exemption on capital gains accrued after moving to Puerto Rico (0% capital gains tax);
- All capital gains accrued prior to moving to Puerto Rico will be taxed at 10% (if realized in the first 10 years after moving to Puerto Rico) and 5% if realized after the 10-year period.

Eligibility

- Note: Not resident in Puerto Rico between 2006–2012

Figure 22 – Detailed Breakdown of Reported Tax Returns – Resident Investors

	2020	2021	2022
BENEFITS			
Income Tax (15.8%)	\$130,233,788	\$136,076,729	\$143,949,088
Capital Gains (pre)	\$2,318,223	\$23,202,674	\$32,894,480
Consumption Sales Tax	\$11,856,082	\$20,634,120	\$24,563,765
Donations	\$6,782,269	\$10,083,128	\$10,736,010
Total	\$144,408,093	\$179,913,522	\$201,407,332
COSTS			
Interest (4% target rate)	-\$3,573,817	-\$10,703,575	-\$11,228,486
Dividends (4% target rate)	-\$20,782,928	-\$25,588,031	-\$28,799,639
Capital Gains (4% target rate)	-\$58,231,847	-\$140,724,826	-\$144,405,496
Total	-\$82,588,592	-\$177,016,432	-\$184,433,621

IV.5. Creative Industries Incentives

Unlike other analyses in this report, which looked at the incentives and evaluated them mostly on their performance in 2020 (and others in 2021 and 2022), for creative industries, all projects since 2020 were combined and analyzed. Most projects evaluated under this chapter, and which were granted tax decrees and tax credits are related to film projects.

Furthermore, only projects approved on and after 2020 were selected, given that the incentive for creative industries changed significantly with the enactment of Act 60 in 2019, in comparison to Act 27, enacted in 2011. A history of the projects and the tax credits associated can be observed in Figure 23 and Figure 24. From the data gathered between 2020 and 2022, \$120.4 million in tax credits were available, of which \$102.1 million had been awarded by March 2022.

Over the past 10 years the Government of Puerto Rico has invested over \$560 million in tax credits for the film industry and other creative industries, of which over \$424 million have been confirmed as used and audited.

Figure 23 - Creative Industries' Projects

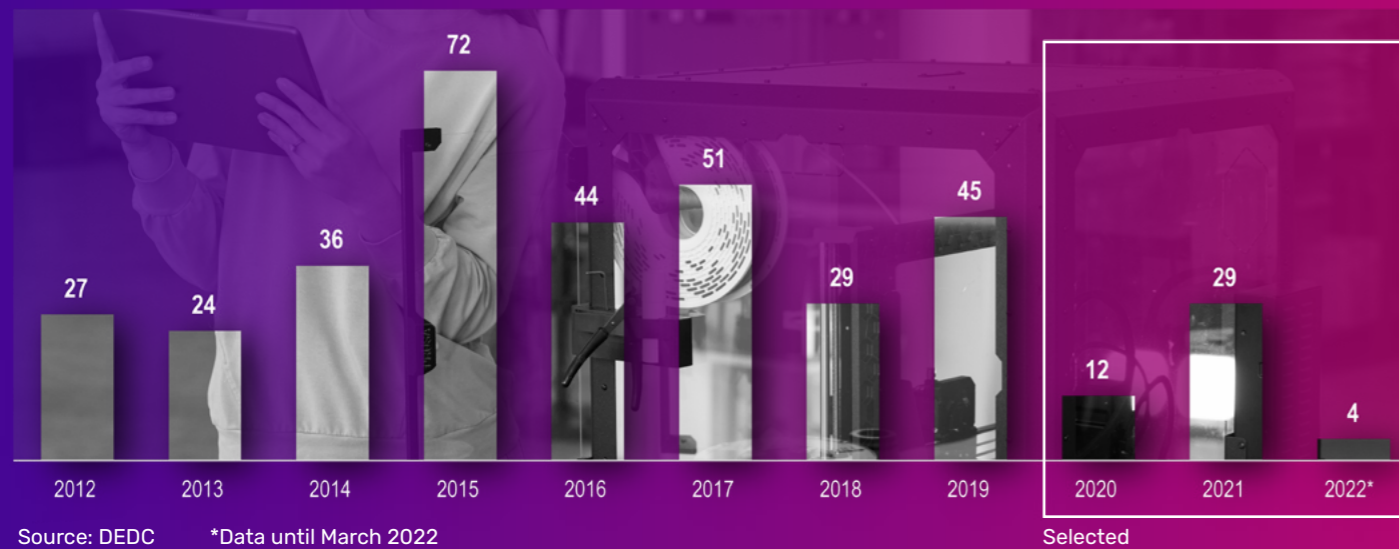
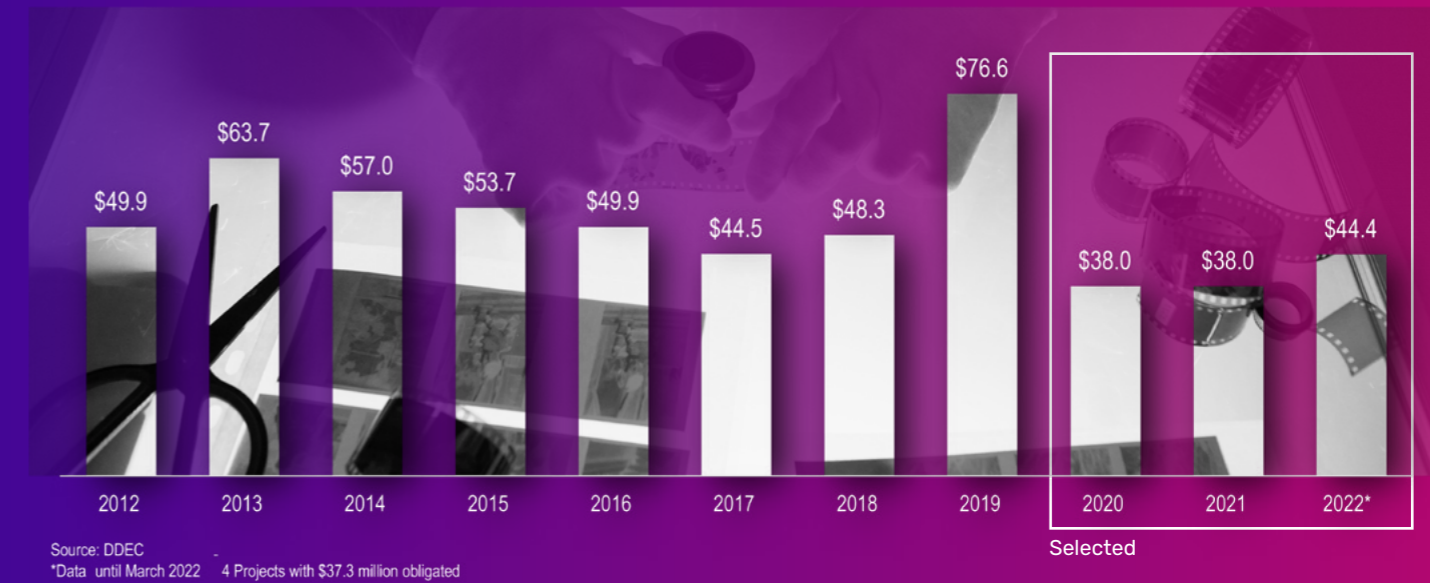


Figure 24 - Tax Credits Available for the Creative Industry



All of these 45 projects were under Act 60 and included video game development, TV series, commercials, movies, and documentaries. The average employment per project was 122 staff members, almost all under a temporary work arrangement. The project-based nature of this industry results in a limited number of permanent or year-round jobs created by the incentives. Once the project is complete, most of the

employees that worked on the production do not have another job guaranteed by the same production entity. No established footprint in terms of production studio or supplemental services has been detected, and revenues and royalties are typically not generated and retained in Puerto Rico, with very few exceptions (i.e. local productions).

IV.5.1. Creative Industries Incentive ROI

Creative industries receive several incentives both associated with the decree and other incentives that remain outside of Act 60. The production is exempt of property tax even for the temporary property built for the film. Those subcontracted by the film project are also exempt from municipal taxes.

Additionally, film crews are exempt from the room tax, pursuant to the provisions of Act No. 272-2003, as amended, known as the "Government of Puerto Rico Room Occupancy Rate Tax Act". The alluded act, which established the room tax, expressly states that the following persons are exempt from room tax:

1. Diplomats
2. Federal employees
3. Personnel related to the film industry.

Non-residents paid by companies not located in Puerto Rico are not subject to income tax, and 40%-55% of eligible local expenses are covered by tax credits provided by the Government.

Expenses paid to non-residents receive a 20% tax credit. This is often argued as a "washout", as non-residents are subject to a 20% withholding from their income. A sample of the non-residents that were paid found that some do file tax returns in Puerto Rico and have this withholding reimbursed. For the analysis in this section, said amount was assumed to not be reimbursed and presented as a "washout".

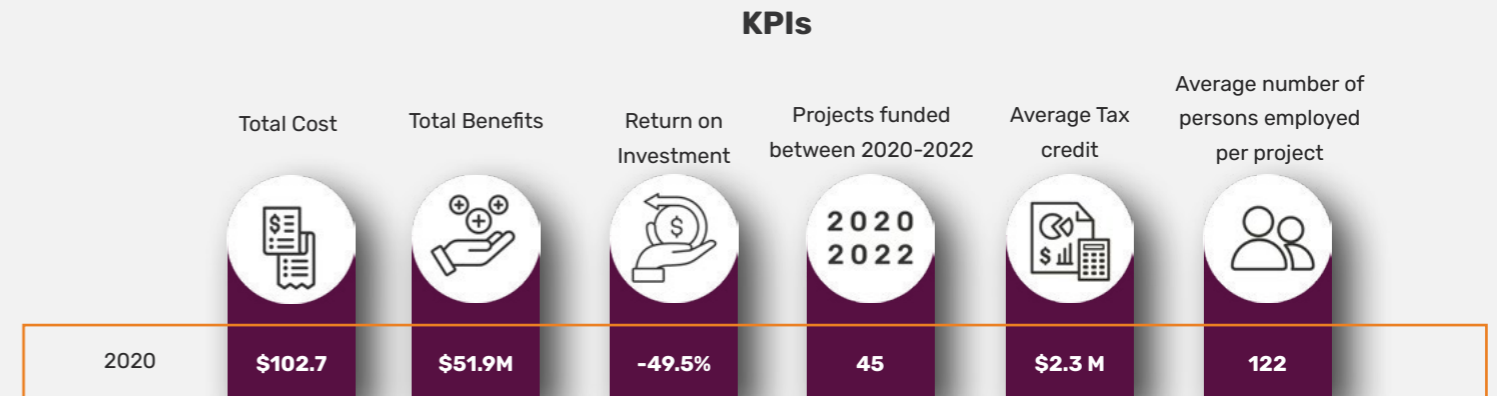
Companies are subject to a filling fee equal to 1%

of production costs with a maximum of \$250,000. Although, this filling fee is considered an eligible local cost and a tax credit for 40%-55% of the filling fee is provided.

Benefits associated with the industry are: SUT, (1) income tax of the persons hired during the filming or development of the project, (2) the 20% withholding tax of non-residents, and (3) the filling fee. Additionally, all expenditures in addition to the above-mentioned categories were assumed to pay 12.6% in general taxes to the Government of Puerto Rico. The rate of 12.6% represents the average of all general fund revenues and other taxes levied by the Government of Puerto Rico as a percent of GDP (average of the three years). This is likely to include an optimistic number in terms of revenues, as many of these taxes include some direct or indirect revenue associated with foreign corporations.

The overall net impact of this incentive is shown in Figure 26. Generally, the Government of Puerto Rico recovers only half of the investment made in the industry. Given the nature of the tax credit, which represents a large cost as a percent of the investment (40%-55%), as well as substantial tax exemptions, it is difficult for the Government of Puerto Rico to generate a positive ROI without a more permanent presence and/or infrastructure of the industry. An example would be the establishment of a local film studio, with intellectual property retention and consistent revenues reported locally.

Figure 25 – Key Metrics of Creative Industries Incentives



Note: Financial results for 2020-2022, latest available data.

Incentives Breakdown

- 100% Exemption from Room Tax;
- 100% exemption on dividends income (0% dividend tax);
- 90% exemption on property taxes;
- 100% exemption on municipal taxes including license tax;
- Fixed Income Tax rate between 4% and 10%;
- A 40% Production tax credit on all PR payments and 20% Production tax credit on all payments to Qualified Nonresident individuals;
- A 75% exemption for subcontractors from construction, license and other municipal taxes for construction related to the filming;
- Exemption from SUT for goods imported for use in filming (so long as goods do not remain in Puerto Rico).

Eligibility

- Feature films, short films, documentaries, series, mini-series, commercials, music videos, videogames, etc

Figure 26 – Detailed Breakdown of Tax Returns & Audited Expenditures – Creative Industries

BENEFITS		2020 - 2022
Filing Fee		\$2,343,243
Additional Taxes (Economic Activity)		\$24,474,927
20% Withholding		\$13,786,455
Employment Income Tax		\$5,059,646
Employment SUT		\$6,192,795
Total		\$51,857,066
COSTS		2020 - 2022
Tax Credits		-\$102,055,289
Room Tax		-\$632,523
Total		-\$102,687,811

Note: Financial results for 2020-2022, latest available data

IV.6. Tourism Incentives

Incentives related to tourism can be divided between direct and indirect incentives. Only direct incentives could be estimated in this study. In terms of direct incentives, a company may receive (1) tax credits for development of the tourism related project, (2) preferential income tax rates and (3) tax exemptions and benefits during the operational phase of the project, including special benefits for the first year of operations.

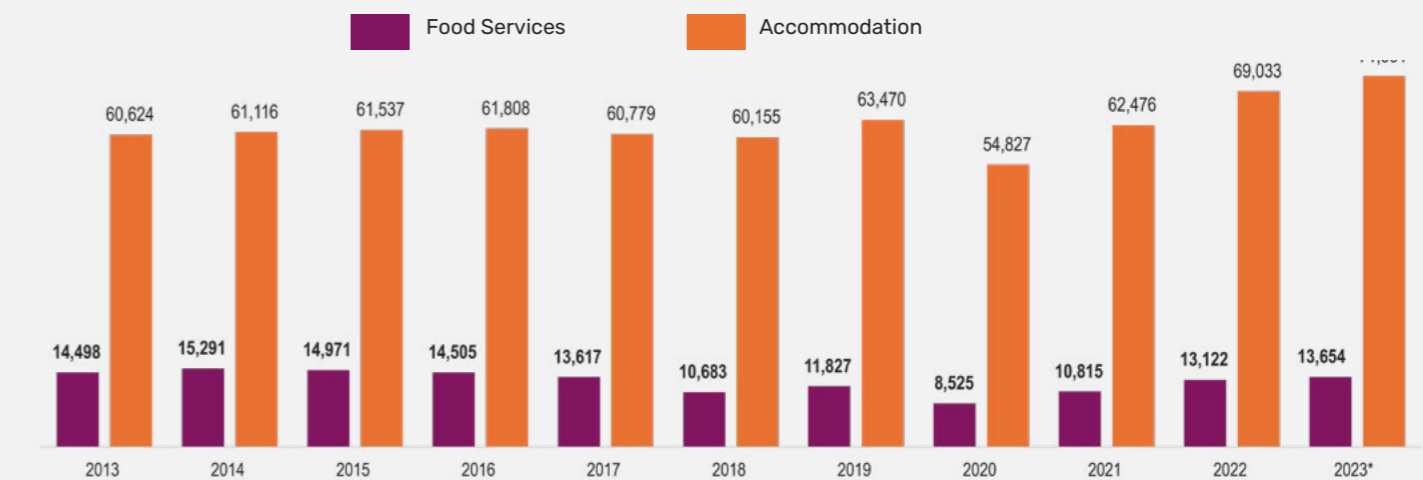
Moreover, hotel operators benefit from marketing done by the Puerto Rico Tourism Company (PRTC) and the Discover Puerto Rico (the official Puerto Rico destination marketing organization), from subsidies provided to cruise ships and airlines to bring passengers as well as general exemptions provided to tourist areas (exemption from dry law during emergencies and elections for example). These benefits are what we consider indirect incentives.

IV.6.1. Tourism Related Activities

Activities that are often related to tourism are food services and accommodations. Yet, not all food services activities directly benefit from tourism. Employment in accommodation is considered more closely related to tourism activities and trends. Figure 27 and Figure 28 show employment and the average annual pay of both industries over the past decade. Employment and wages have only increased in the last couple of

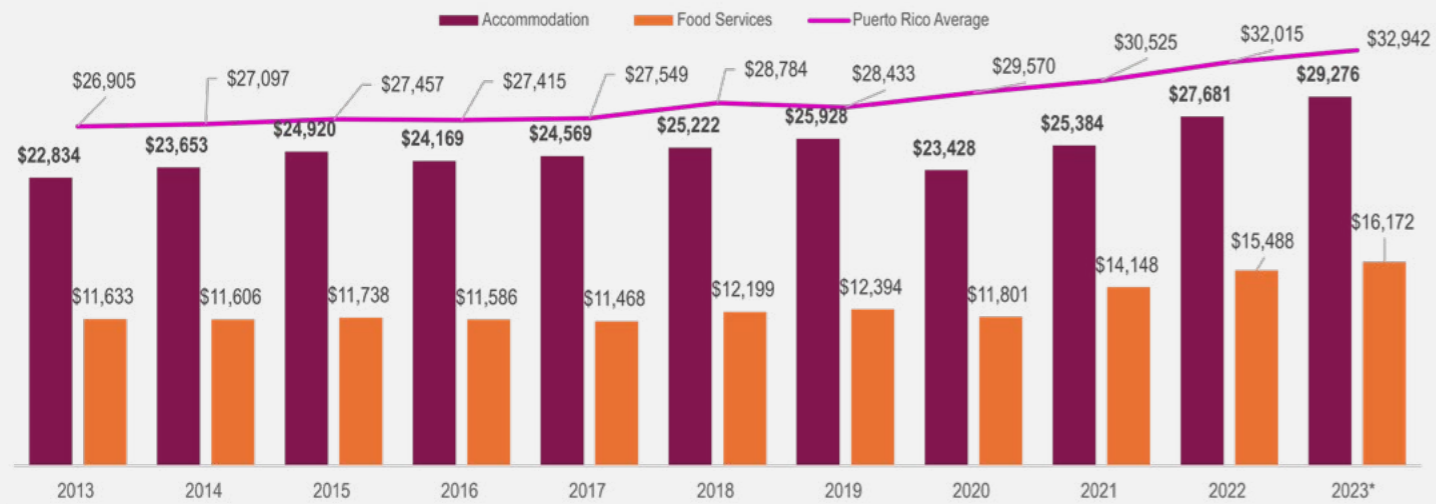
years, initially likely due to COVID-19 mitigation funds and other federal spending, however over the past year the tourism activity has continue to strive, seen by the number of passengers landing in the San Juan airport, and by the record collection of room tax. Even so, both industries provide salaries below the average for Puerto Rico.

Figure 27 – Employment in Accommodations & Food Services



Source: QCEW (Private Employment) *Average for January - July 2023

Figure 28 – Average Annual Pay in Accommodations & Food Services

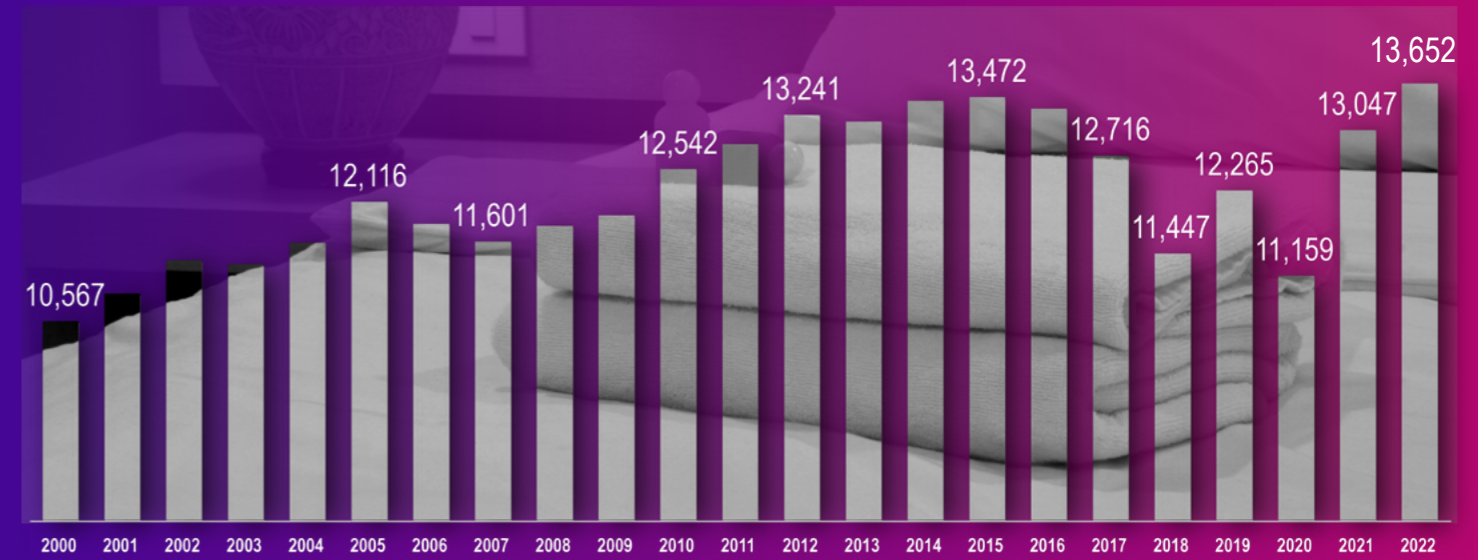


Source: QCEW (Private Employment) *Average for January - July 2023

One of the main purposes of the tourism incentives is to increase the hotel room inventory and quality on the Island, to be able to provide lodging for a growing number of tourists. Although tourism incentives have been available for several decades, the performance over the past two decades has been below what could have been expected. In Figure 29 the number of available hotel rooms (average for the year) can be observed. Between 2000 and 2012, over 3,000 were added. Between 2012 and 2022, fewer than 200. This is partly due to the stock that was damaged because of Hurricane Maria.

The argument could be made that investments after this point were to repair the damaged room inventory. Looking at the complete picture 2000-2022, over 3,000 hotels room were added and/or repaired. During this time the Government of Puerto Rico awarded over \$2 billion in tax credits, of which over \$844 million had been sold or used by May 2023. This represents an average investment of \$273,000 per room added between 2000 and 2022.

Figure 29 – Hotel Rooms Available 2000-2022



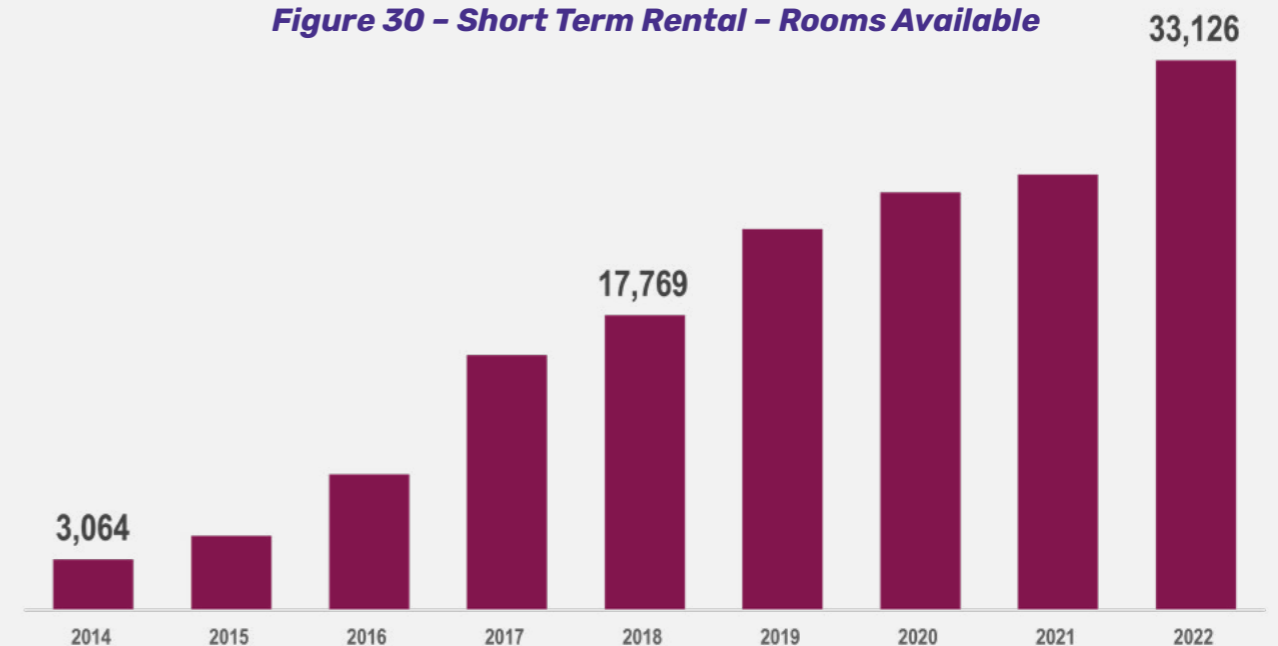
Source: PR Tourism Company, Rooms available divided by number of days

This incentive is one of the few where a counter-factual can be provided. Specifically, if no incentives were awarded, would the inventory of rooms available increase or decrease? Let's look at short-term rentals.

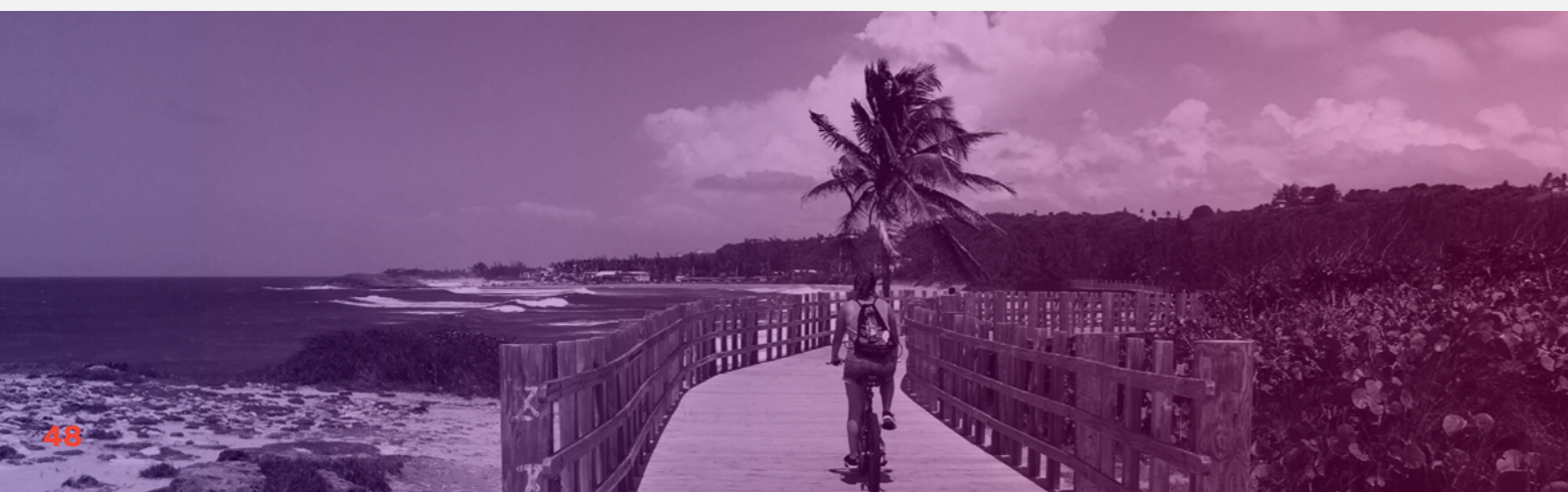
Since 2014, over 33,000 rooms (over 17,000 units) were added to the short-term rental (STR) inventory, through online platforms, view Figure 30. Even though

the target audiences that hotels and STRs look to attract are different, the cost at which a hotel client is attracted is significantly higher than the STR, since STRs typically do not benefit from incentives. Additionally, the spillover economic effect is argued to be higher than a hotel, given the locations of STRs which transcend traditional tourist corridors.

Figure 30 – Short Term Rental – Rooms Available



Source: ABEXUS Analytics



IV.6.2. Tourism Incentives ROI

The ROI was estimated using only data available for the year 2022. This incentive would benefit from a time series analysis, viewing the initial tax credits and how the project costs and benefits accumulated over time while adjusting for net present value (NPV). Unfortunately, sufficient data isn't available for this type of analysis.

Using only one year of data, comparing current revenues and operational costs (preferential rates) against tax credits cashed in 2020, could unfairly skew the analysis. To illustrate this point, we need to consider that none of the benefits generated by the decree holders in 2020 are directly related to tax credits for new projects awarded in 2020. That is, the benefits of a decree holder in 2020 are going to be related to past investments made by the decree holder, hence credits given to the decree holder in the previous years. This is the main limitation of the data available to analyze tourism-related incentives.

Figure 31 presents the general data related to 175 tourism decree holders, which represent a direct employment of 11,820. An average of \$100 million tax credits were claimed every year (between 2020-2022) from over \$330 million approved per year for the same period. Financial data was obtained for the year 2020 and updated through the databases in CRIM, PRTC, and PRDL available for 2022.

Figure 32 presents the ROI estimates for the tourism incentives in 2022. Tourism incentives were analyzed to determine their cost from a fiscal standpoint, based on the investment made by the Government of Puerto Rico. Using only the data for 2022, the analysis generates an almost break-even position for the Government of Puerto Rico. For every dollar invested,

the same is collected by the PRDT.

This return increases if you assume some visitors come exclusively because of these incentives. Up until now the investment is relatively break even for the Government of Puerto Rico, but the effectiveness of the tax credits and preferential rates in increasing the room inventory has decreased.

The Government of Puerto Rico has an opportunity to fine tune and improve tourism incentives, their eligibility & investment requirements, to better focus on tourism activities that generate economic activity and increase the offering to attract more tourists.

Revenue related to casinos was NOT included in this analysis as it would unfairly skew the results. All casino projects analyzed were positive thanks to the fact that casino revenue alone was \$169.8 million in 2022. Additionally, spending by tourists was not included as an added benefit given that there are non-incentivized lodging options where tourists could have stayed.

Another factor that would change the ROI results is scenarios with higher income tax rates. The churn analysis for this industry was limited as almost all corporations that receive the incentive operate under the tax decree. The 5% rate was selected, because for those businesses not related to lodging like restaurants, parking lot operators, and others, the rates could be increased and compared using the churn methodology.

Finally, there is a high level of variability regarding the amount of tax credits claimed each year. If they increase even by 5%, the ROI will turn negative.

Figure 31 – Key Metrics of the Tourism Incentives

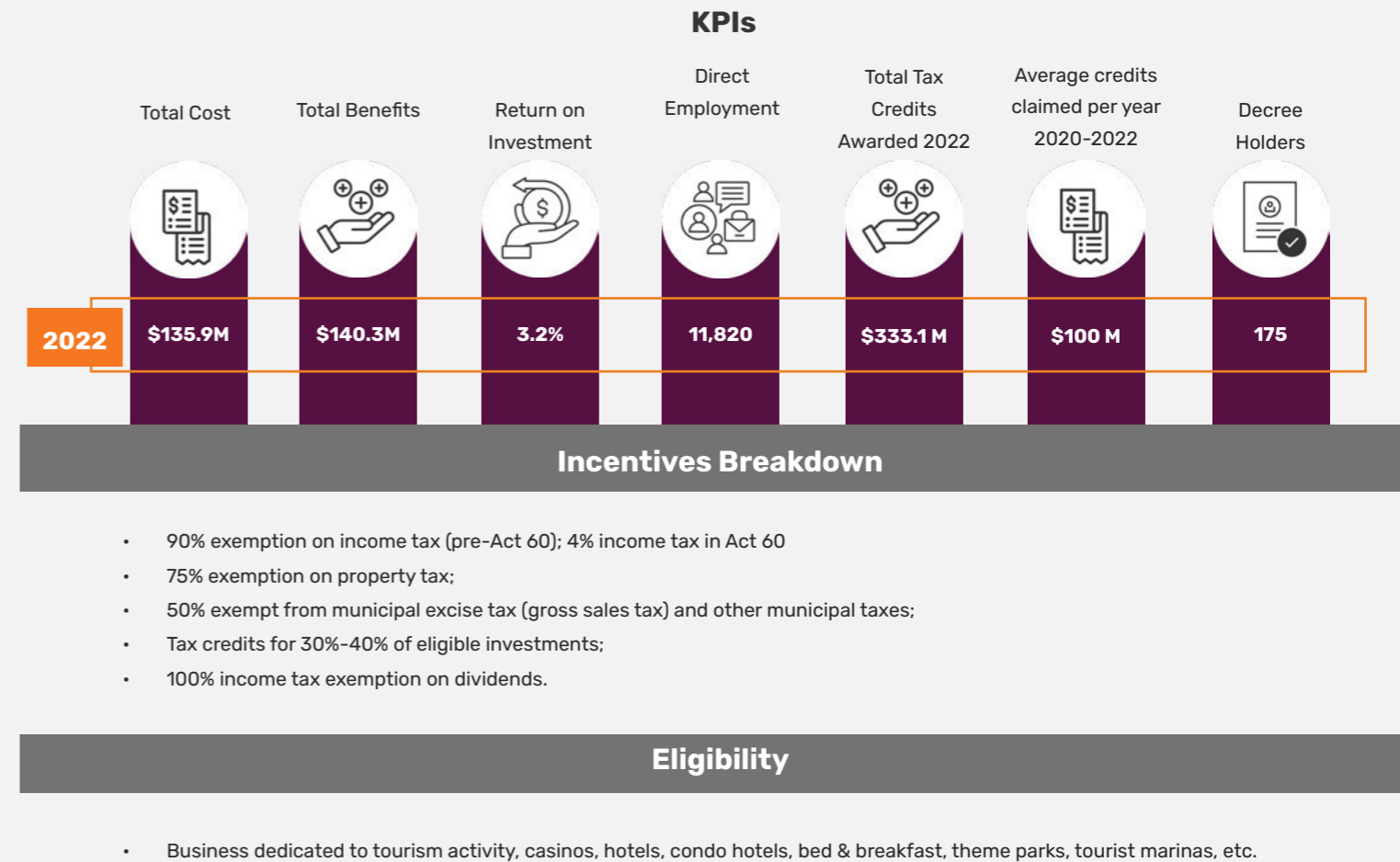


Figure 32 – Detailed Breakdown of Tax Returns of Tourism Decree Holders 2022

BENEFITS

	2022
Corporate Income Tax (3.9%)	\$26,815,160
Municipal Excise Tax	\$330,271
Room Tax	\$80,608,283
Property Tax	\$2,822,134
Personal Income Tax	\$12,687,828
Personal Sales Tax (IVU)	\$17,037,403
Total	\$140,301,079

COSTS

	2022
Corporate Income Tax (6%)	-\$6,967,608
Municipal Excise Tax	-\$495,407
Property Tax	-\$24,308,091
Tax Credits	-\$104,122,895
Total	-\$135,894,001

Note: Financial results for 2022, latest available data

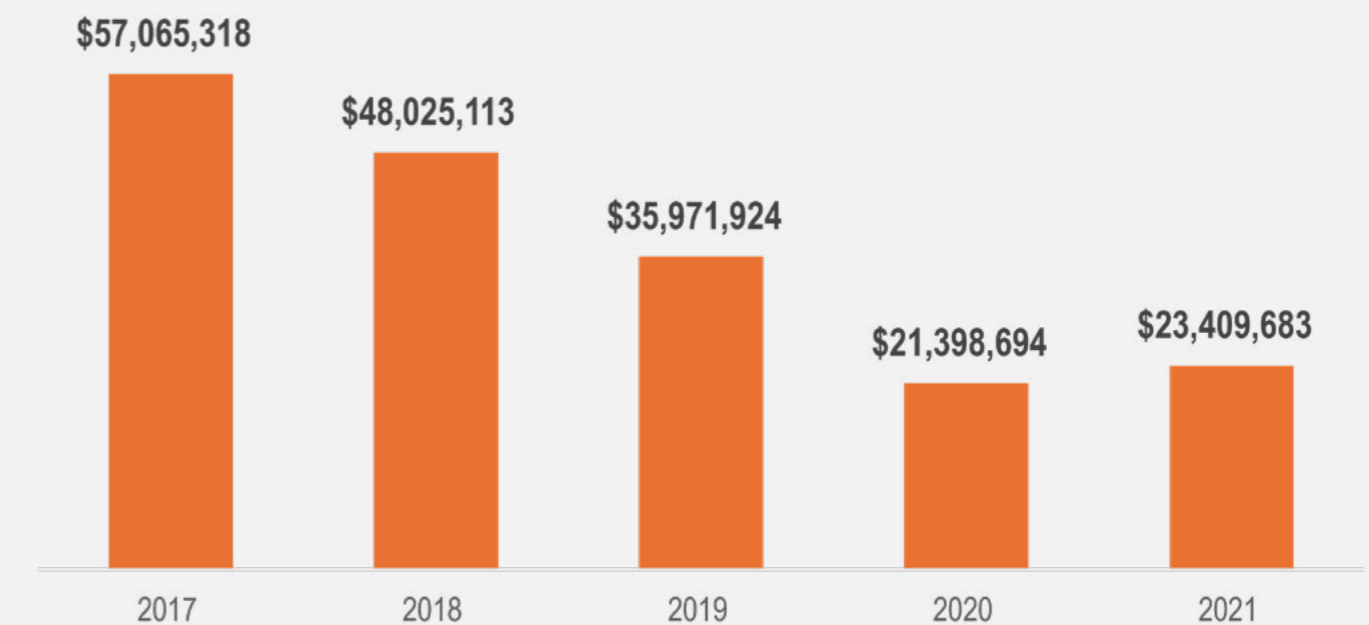
IV.7. Agriculture Incentives

Agricultural data was some of the most difficult to acquire for the report, collecting most of it from the tax returns of corporations and individuals that hold bona fide farmer status.

Employment data from the agriculture industry comes from the Housing Survey collected by the PRDL, since few employees of the industry are categorized as salaried employees. (See Figure 34). A reduction in overall incentives could have affected employment in agriculture, which often has some of the lowest wages in the economy. Over the past two years the incentives in the industry have experienced a decline to nearly \$20 million in comparison to the \$57 granted in 2017. Agriculture incentives extend to multiple items, such as:

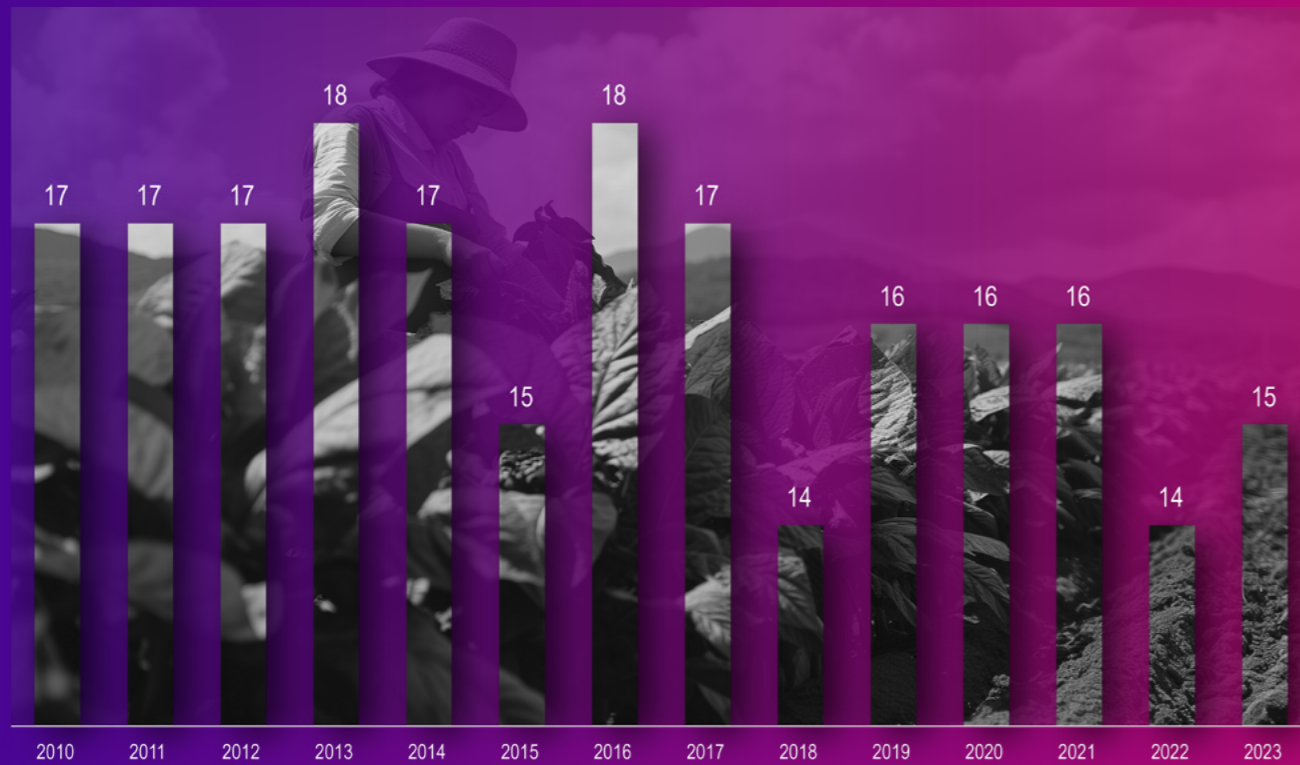
1. Salary Subsidy
2. Christmas Bonus
3. Fertilizer Credits
4. Citric Incentives
5. Machinery & Equipment
6. Coffee Harvest Bonus
7. Insurance Subsidy
8. Precision Techniques Training
9. Incentives for General Investments in Equipment, Works and Permanent Improvements

Figure 33 – Agricultural Incentives Awarded



Source: PR Department of Agriculture

Figure 34 – Employment in Agriculture



Source: PR Department of Labor & Human Resources, Housing Survey

IV.7.1. Agricultural Incentives ROI

Figure 35 shows the proportion of agriculture tax beneficiaries in terms of corporations and individuals. Of the 4,206 beneficiaries, 3,575 are individuals and 631 are corporations. Farming income was just over \$251 million and only 2,131 salaried direct jobs were reported. (See Figure 36). A detailed analysis of the tax returns is provided in Figure 37.

Figure 35 – Agricultural Decree Holders by Type



Source: PR Department of Agriculture

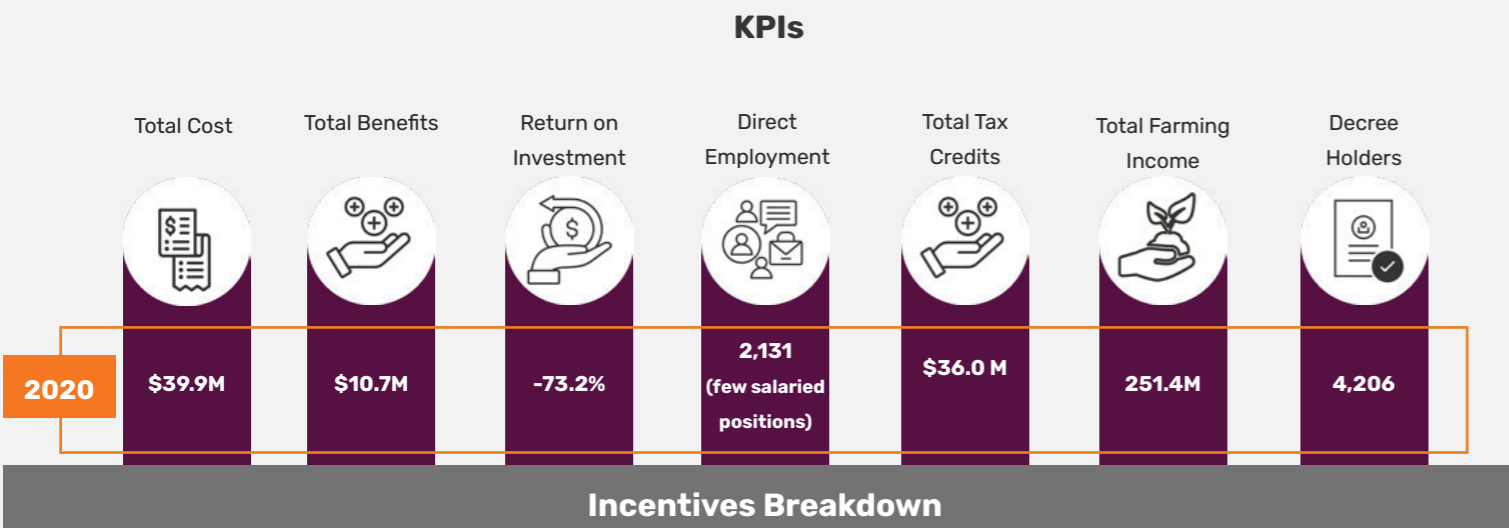
Unlike other tax incentives, recipients whose eligible income is generally subject to a four percent (4%) income tax rate, the income of agricultural beneficiaries is 90% exempted, with the remaining 10% of the income subject to ordinary tax rate.

Due to the fact that nearly all agricultural companies in Puerto Rico are recipients of tax incentives and that there is only a small pool of corporations to compare with, the churn analysis was not applied to the estimates of this report. Most of the costs associated

with agriculture incentives are related to cash transfers and property tax exemptions.

It shall be noted that if the 90% exemption on income is discarded as a cost, a negative ROI is still estimated for the sector. Nevertheless, given that this industry is highly subsidized internationally (particularly in developed economies), the negative ROI should not be considered as a failed investment, but rather, investments in food security or other policy considerations.

Figure 36 – Key Metrics of the Agricultural Incentives



Incentives Breakdown

- 90% exemption on income tax;
- 100% exemption on property tax if at least 35% of property is used in agriculture;
- 100% exempt from patent tax (gross sales tax) and other municipal taxes;
- Access to salary subsidy, machinery & equipment, fertilizer credits among several others.

Eligibility

- Business dedicated to agricultural activity, including but not limited too animal husbandry, vegetable cultivation, milk processor, etc.

Figure 37 – Detailed Breakdown of Agricultural Incentives Tax Returns

	BENEFITS	COSTS	
Corporate Income Tax (1.9%)	\$409,179		Corporate Bona Fide
Other Municipal Taxes	\$38,758		
Property Tax	\$297,884	-\$18,487,557	
Sales Tax	\$27,786		Individual Bona Fide
Personal Income Tax (1.6%)	\$759,729	-\$5,017,234	
Sales Tax (IVU)	\$5,776,962		
Total Tax Credits		-\$21,398,694	
Personal Income Tax	\$952,847		Direct / Indirect Impact
Sales Tax (IVU)	\$2,411,640		
Total Tax Credits	\$10,674,785	-\$39,886,251	

Note: Financial results for 2020, latest available data

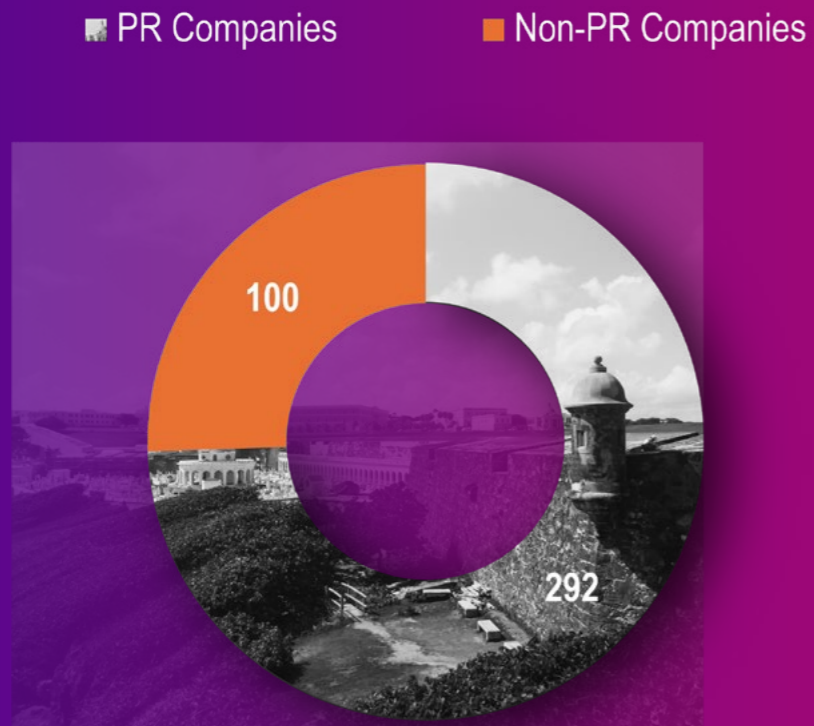
IV.8. Private Equity Fund Incentives

Private Equity Fund data was collected from a survey conducted by the DEDC and the Office of the Commissioner of Financial Institutions of Puerto Rico (OCIF) during the months of August and early September of 2023. As part of the survey, the Private Equity Funds sent their tax returns to compliment those acquired from the PRDT.

Based on the survey results and the tax returns analyzed in this study, close to \$450 million has been invested by Private Equity Funds under Act No. 185-2014, as amended, known as the "Private Equity Funds Act" and Act 60 in Puerto Rico based companies. The valuation of Puerto Rico based companies with investments from incentivized capital investment funds surpassed \$840 million.

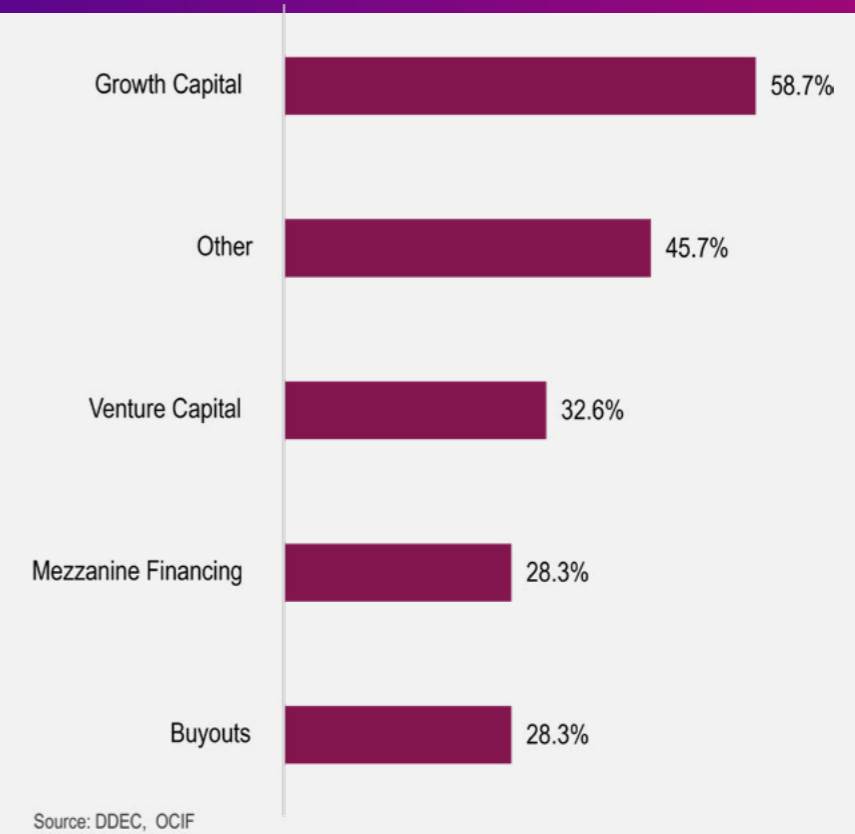
Nearly 75% of all investments made by these funds have been in Puerto Rico based companies, view Figure 38. The primary purpose of the investment funds has been growth capital. More than 50% of the investments are related to real estate, view Figure 39 and Figure 40.

Figure 38 – Investments in Local Companies by Incentivized Capital Funds



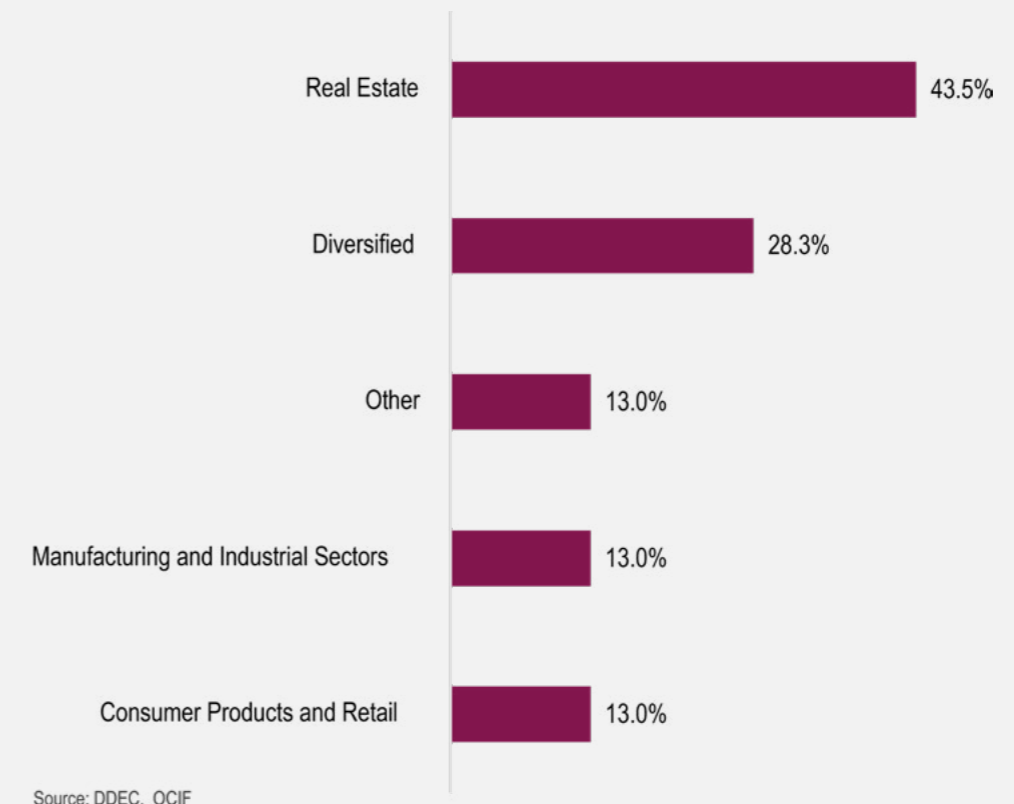
Source: DEDC, OCIF

Figure 39 – Fund Incentive Purpose



Source: DDEC, OCIF

Figure 40 – 50% or More of Fund Investment Sector



Source: DDEC, OCIF

IV.9. Qualified Physician Incentives

Qualified Physicians incentives are available since the enactment Act 14 on February 21 of 2017. An analogous incentive program was included under Act 60. The purpose of the incentive was to attract and retain medical professionals on the Island. As of year 2020, over 4,000 Qualified Physicians were granted tax decree.

The Qualified Physicians program is one of the costliest incentives for the Government of Puerto Rico, since the incentivized physicians generate some of the highest income for individuals on the Island, with an average net income of over \$270,000, view Figure 41. It is difficult to determine which physicians would have remained in Puerto Rico without the incentive.

Figure 41 – General Data – Incentivized Doctors 2020 Tax Returns



Source: Department of Treasury PR

If it is assumed that all physicians would have remained in Puerto Rico without the incentive, the Government of Puerto Rico experienced a reduction of over \$222 million in income tax revenue (adjusting for an increase in SUT due to additional disposable income), view Figure 42. Even if only half of the physicians would have remained in Puerto Rico without the incentives, this would represent a tax revenue loss of over \$110 million for the Government. The \$110 million - \$222 million

would represent between 32%-65% of Pay as You Go pension payments of the Puerto Rico Department of Health for fiscal year 2022.

It is noted that an ROI should not be estimated for this incentive program, since its purpose and/or objective goes beyond economic growth, but rather it fits within the realm of the Island's health policy.

Final Remarks

The complexity inherent in Puerto Rico's tax incentive programs has often led to misunderstandings in public discussions, especially concerning the true costs and benefits of such policies. Tax incentives, by their nature, involve intricate calculations of foregone revenue, potential economic gains, and the qualitative impacts on local development. The public discourse sometimes simplifies these aspects into binary outcomes—beneficial or detrimental—without acknowledging the nuanced economic interplays at work. A data-centered discussion is essential to unpack these complexities, offering a clear view of how incentives shift economic activities, influence corporate behaviors, and impact government revenue. The objective assessment of these factors is crucial to developing a well-rounded understanding of the incentives' effectiveness and ensuring that policy formulations are grounded in empirical evidence.

The comprehensive data collection and analysis of Puerto Rico's economic incentive programs under Act 60, as well as previous legislation, have provided deep insights into the actual costs and benefits associated with these initiatives. The findings present a mixed bag of outcomes, with sectors like foreign manufacturing and export services showing substantial fiscal contributions, while agriculture and the creative industries have not met their economic potential. This disparity highlights a misalignment between the incentives and the sectors' capacity to contribute to fiscal growth, with pharmaceuticals and medical devices (predominantly foreign entities) significantly bolstering fiscal revenues.

One of the primary challenges identified has been the inconsistency and inaccessibility of data across various governmental databases, which has occasionally hindered a comprehensive analysis. Additionally, the persistence of legacy decrees under old acts poses a challenge in fully assessing the impact of Act 60. The

gradual transition to newer regulations is expected to provide more clarity on the effectiveness of the revamped incentives structure.

There is a critical need to refine the evaluation structure to ensure they are aligned with the strategic economic goals of Puerto Rico. This involves reassessing the criteria for eligibility, potential benefits, and the overall design of the incentives to ensure they stimulate the desired economic activities and outcomes. Enhancing data management practices, integrating disparate databases, and ensuring the granularity and accuracy of data will be crucial for ongoing monitoring and evaluation of incentive programs. This will aid in making data-driven decisions that can dynamically adjust to changing economic conditions.

The incentives must not only address short-term fiscal gaps but also align with long-term economic planning. This involves setting clear objectives for each incentive program, such as job creation, export enhancement, and sectoral development, and regularly reviewing these objectives against achieved outcomes. Building a transparent and accountable framework for administering and monitoring these incentives will be key to gaining public trust and ensuring the effective use of public resources.

This report represents an initial, yet significant, step towards fostering a serious, data-centered discussion on economic incentives in Puerto Rico. While it marks a progression towards more detailed analysis, it is important to recognize that this evaluation does not yet capture the full spectrum of economic behaviors or the potential counterfactual scenarios that might unfold from changes to incentive structures.

Figure 42 – Medical Incentive Cost (All Doctor's would have Remained)

Tax	4% Preferential Rate	Normal Income Tax	Cost
Income Tax	\$ 45,655,284	\$ 278,672,454	-\$ 233,017,170
SUT	\$ 48,710,836	\$ 38,394,001	\$ 10,316,835
Total	\$ 94,366,120	\$ 317,066,455	\$ -\$ 222,700,335

Source: Department of Treasury

Final Remarks

Moreover, we acknowledge that our ROI analysis focuses primarily on the quantifiable aspects of economic incentives, but it does not fully account for other intangibles or broader economic development considerations that are also crucial, largely due to current data limitations. However, this report does move beyond the limitations of traditional assessments that often rely on aggregated measures from national accounts, other general economic indicators or analyses which equate domestic tax expenditures with the behavior of foreign direct investment.

By delving deeper into specific data points and the direct impacts of individual incentive programs, this report offers a nuanced understanding of how these incentives function within the broader economic system. This approach lays a firmer foundation for

future analyses, which will aim to incorporate a wider range of economic behaviors and potential outcomes, including intangible benefits and economic development impacts, further refining the effectiveness of Puerto Rico's incentive policies.

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