



# Puerto Rico's Development Roadmap

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# INTRODUCTION

**Roadmap: “A high-level plan, defining an overarching strategic objective and capturing the major steps planned for achieving that objective. It is not backlog... a to-do list of the tasks required to complete a strategic initiative....”**

The Fundación del Colegio de CPA de Puerto Rico has, over the years, been active in addressing policy issues and this report is a result of said interest. It is well aware that each of the six policy topics dealt with in it could be an extensive study by itself. It felt, however, that a roadmap that projected overall strategic directions was a particular need in the present situation of Puerto Rico's economy. The project resulted from the Fundación's concern for Puerto Rico's economic development and the absence of a clear path or roadmap towards a better economic future for the Island, once the initial reconstruction phase is completed.

In December, 2017 Estudios Técnicos, Inc. was charged with preparing this report.

The project entailed a detailed review of previous efforts with a similar objective in order to learn from these experiences. As a result, the Fundación decided to concentrate the Project on six issues and not on the whole gamut of factors that influence development. These are:

Strengthening the Industrial System

Defining the Role of Municipalities

Rethinking Promotional Strategies

Policies and Strategies to Stabilize Population

A Tax System that Stimulates Investment

Optimizing the Management of Federal Programs and Funds

For each of the above, recommendations have been formulated with implementation as a primary concern. Thus, an assessment was made of why other similar initiatives had little impact and this effort tries to avoid the causes identified, among them recommending goals that exceeded the institutional capacity to achieve them.

The Fundación, its Directors and Estudios Técnicos, Inc. are cognizant of the importance of solving the energy problem. It was left out of the report because the issue has received ample attention in other venues.

# PROJECT HIGHLIGHTS

The report recommends **specific actions** that are considered necessary for dealing with these areas, including, but not limited to, the following:

1. Strengthen the Island's capacity for successful **integration into the global economy** with efforts that go beyond export promotion.
2. Promote Puerto Rico as a **service exporter** in key advanced services sectors.
3. Adopt an **innovation policy** to make innovation and institutional learning a key competitive strategy.
4. Put in place an economic **promotion strategy** that is not tax driven.
5. **Strengthen internal inter-industry linkages** is an essential action to stabilize the sector.
6. Develop and adopt a coherent and consistent policy for **dealing with the diaspora** throughout the United States.
7. **Proactively stimulate investment and economic growth.**
7. Recognize the **tax system** as a core component of any development strategy.
8. Create **autonomous regions** in which cost sharing is possible, essential for a greater municipal role in development.
9. **Stabilize population and stem outward migration** by improving social infrastructure, in particular education, health and labor reforms.
10. Organize a specialized central agency for the **management of federal programs** and funds to handle what is perhaps the most critical element in future development prospects.

# PROJECT HIGHLIGHTS

The Report identifies “policy vacuums” in the above areas that have limited the successful execution of development initiatives. Even with the expected inflow of funds after María, future economic development will be hampered unless there are coherent, well designed and coordinated policies in each of the six areas.

Furthermore, although centered on the six strategic areas, the Report makes clear that a systemic approach is necessary and that this approach must take into account the specific conditions of a small, open, regional economy. There are, of course, other factors that impact development and were not included in the Report, foremost among them the energy situation, amply discussed in the media, academic conferences and in legislative hearings.



CHAPTER

1

# PREVIOUS EXPERIENCES

# PREVIOUS EFFORTS

- A number of projects were sponsored by both the private sector and the government related to the Island's economic development have been completed in the previous two decades.
- The 1999/2000 report by A.D. Little and ETI generated major changes in economic policies, including the introduction of the cluster concept, the development of the Technology Corridor and the regional initiatives, and the need for improvements in the knowledge infrastructure.
- In 2003 the PR Chamber of Commerce produced a report with the title "Hacia la Economía Posible", subsequently MIDA produced a report that highlighted ten priorities, the Private Sector Coalition also produced a report and the Puerto Rico Bankers Association sponsored a series of round tables on the subject of economic development and, in addition, the Government sponsored a number of similar initiatives.
- In 2004 A.T. Kearney was hired by the Calderón Administration to put together the PR: 2025 report. With a new Administration beginning in 2005, the Project was abandoned.
- Boston Consulting Group completed a study for the DDEC in 2013, but it added little to existing reports.
- MIDA, the PR Chamber of Commerce, the successor to PR: 2025 and the Private Sector Coalition all produced similar reports.

# PREVIOUS EFFORTS

- Most of these efforts suffered from a loss of continuity with changing leadership in the associations and changing administrations in the Government. Some, such as the Bankers Association round tables, had no structure to pursue implementation and others simply lacked focus. This was the case with the PR 2025 project that ended up with some 165 strategies or the Alliance for Development report that proposed a very large number of strategies with no clear priorities identified.
- The following table summarizes these reports, except for the Arthur D. Little and the BCG reports. What is clear from the table is that the contents were not particularly different from each other. The lessons learned did not differ.

# SUMMARY OF REPORTS

Reports		Areas											Other
		Social Contract	Education	Health	Labor Market	Power and Water	Land Use	Government Restructuring	Fiscal Management	Solid Waste	Knowledge Management		
A	Hacia la Economía posible (2003)	X	X	X	X		X	X	X		X	Export promotion; Knowledge infrastructure	
B	Puerto Rico 2025 (2004)	X	X	X	X	X	X	X	X	X	X	Knowledge infrastructure ; Investment and Export Promotion; Public Safety; Recreation, Culture and Transportation	
C	Plan estratégico para el desarrollo de Puerto Rico	X	X	X	X	X	X	X	X	X	X	Tourism; Transportation; Public Safety; Insurance; Recreation, Culture; Agriculture; Export promotion, Knowledge infrastructure	
D	Una visión para Puerto Rico: 10 prioridades (2008)	X	X	X	X	X	X	X	X	X	X		
E	Temas de actualidad del desarrollo económico de Puerto Rico (2008)	X	X		X	X		X	X	X	X	Transportation; Physical and Knowledge Infrastructure; Investment Promotion	
F	Plan de Reactivación y Desarrollo Económico (2009)		X		X	X		X	X		X	Social, Knowledge and Physical infrastructure	

\* The Arthur D. Little and Boston Consulting Group reports are not in the table.

# PREVIOUS EFFORTS

## LESSONS LEARNED

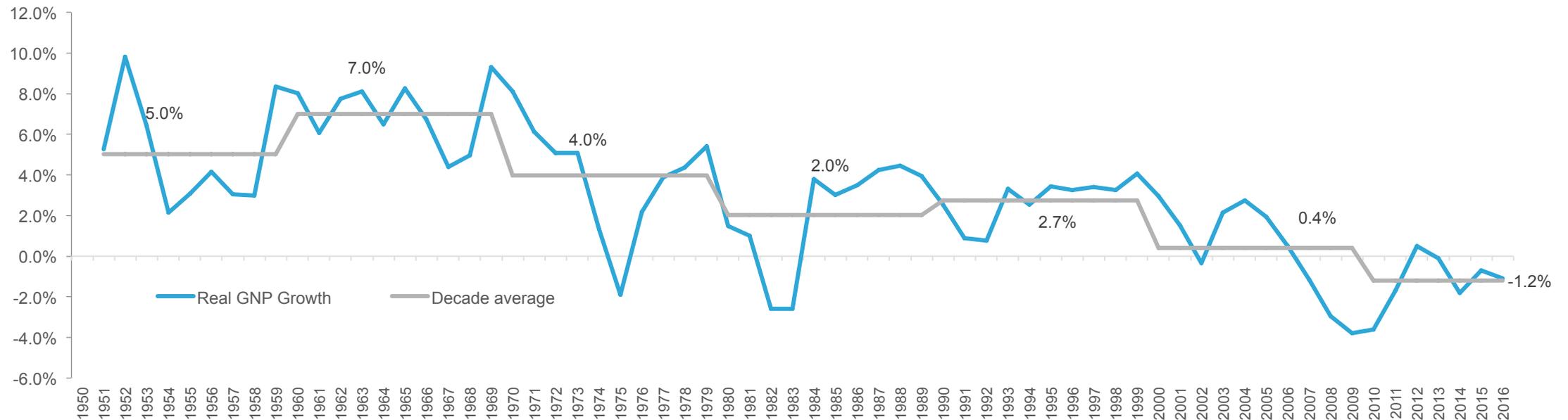
- There is a broad consensus on what needs to be done to support economic growth, but that consensus is lost on implementation.
- Absence of continuity from Administration to Administration is a major problem since economic growth policies require long term commitments.
- Implementable recommendations across a broad spectrum of stakeholders help in providing continuity. For example, the cluster concept has no opposition, but tax measures almost always do.
- Innovation implies a change in procedures, structures and organization, and thus focusing on “disruptive innovations” makes implementation more difficult than focusing on incremental innovations, as is done in this report.
- Proposals for a new economic development roadmap must incorporate these lessons, particularly given the fragile state of Puerto Rico’s institutional framework.

# THE ECONOMY



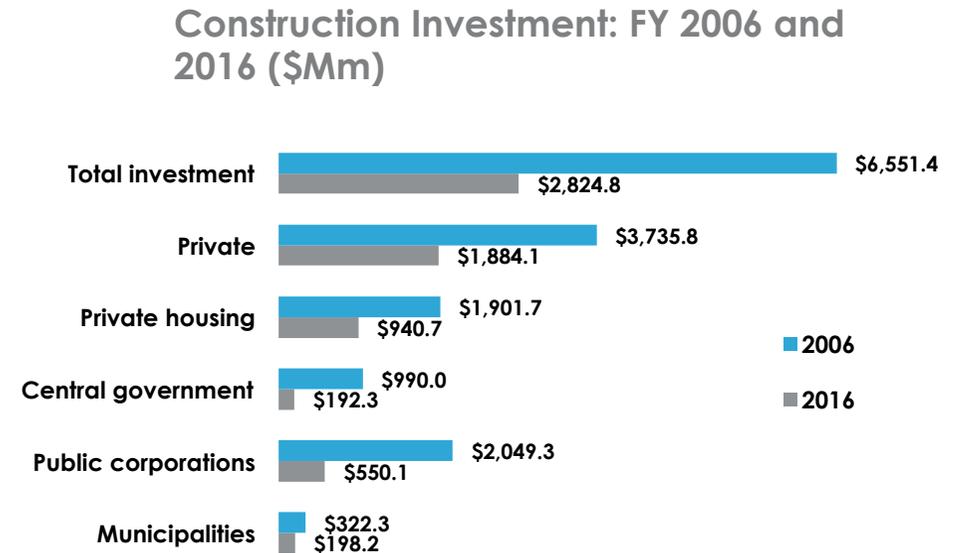
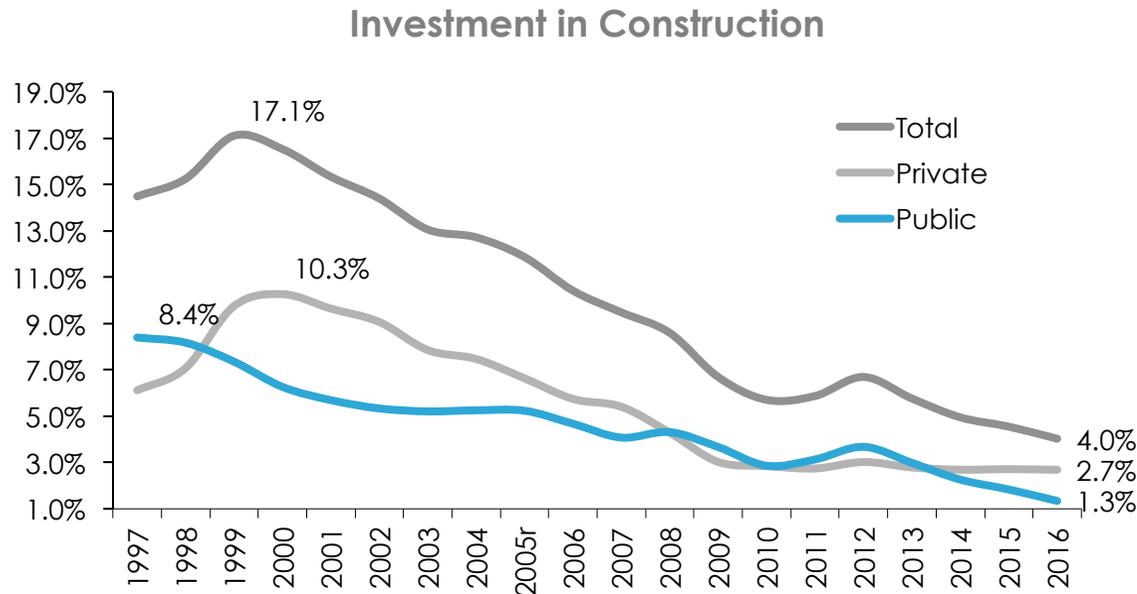
## PUERTO RICO REAL GNP

- Over the past five decades: a collapse of the capacity to generate growth occurred, and the recent experience is clearly the culmination of a long process of economic under-performance. The following graph shows a rapidly declining rate of growth over the last seven decades.
- Major structural transformations have resulted making useless the traditional economic tool kit for dealing with recessions.



## INVESTMENT IN CONSTRUCTION

- The share of construction investment in the GNP has declined considerably, to less than 4.0% by 2016.
- Between fiscal year 2006 and 2016, total investment in construction decreased by \$3.7 billion.

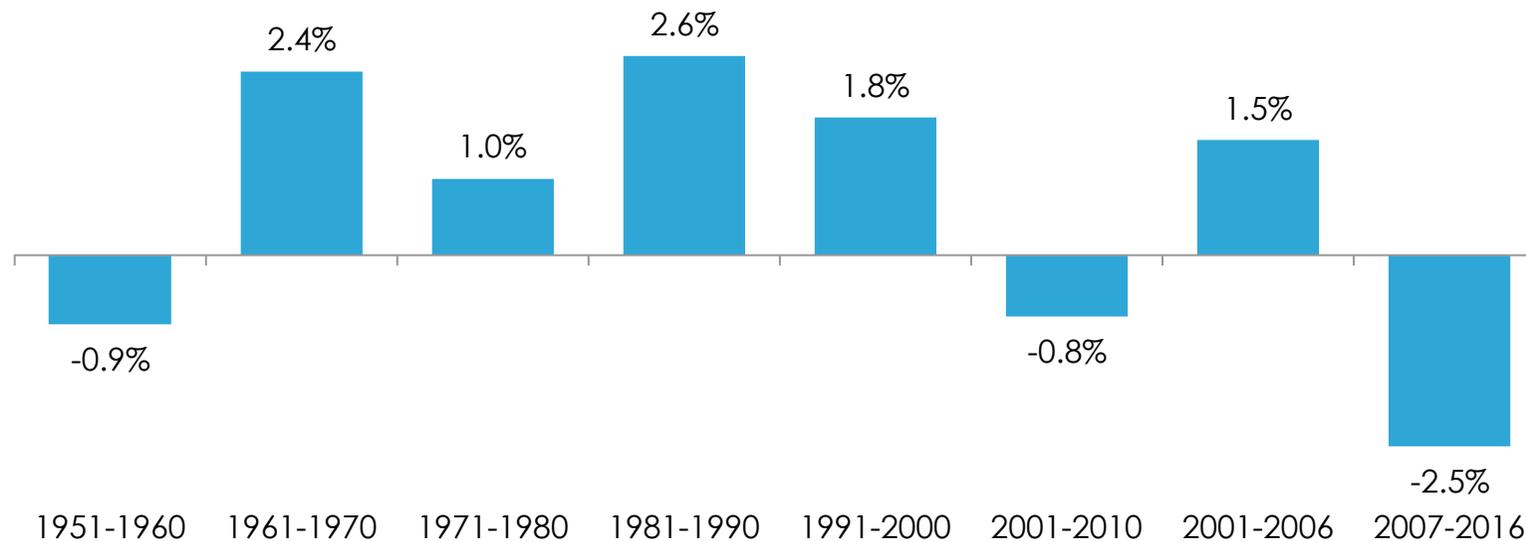


Source: Puerto Rico Planning Board. *Statistics on Construction Investment*, Fiscal Years 2005 and 2016.

## EMPLOYMENT

- After several decades of growth in employment, the period after 2000 is characterized by slow and negative growth, with employment falling from 1,232,000 in 2007 to 986,000 in 2016.

Average Growth of Total Employment per Period (NSA), 1951-2016

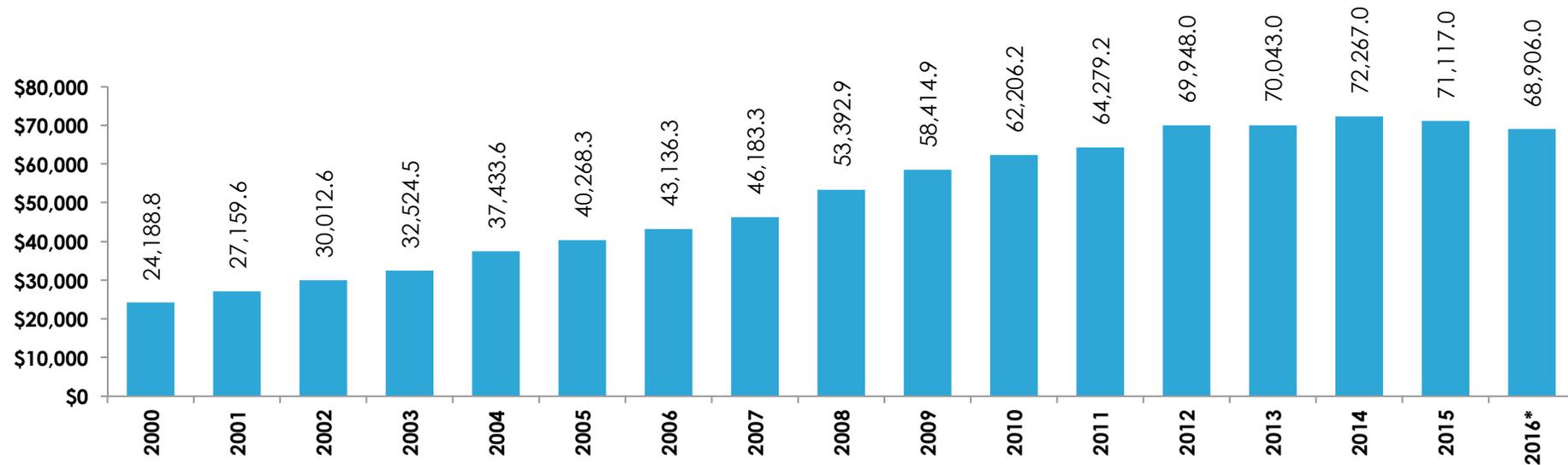


Source: Department of Labor and Human Resources, Employment and Unemployment, Household Survey. NSA = Not seasonally adjusted.

## INCREASING PUBLIC INDEBTEDNESS

- One important development, which has had a very negative impact on the economy, is the significant increase in the public debt. Between 2000 and the end of 2016, the total public circulating debt (Excluding interest) rose from \$24.2 billion to \$69.0 billion.

Total Circulating Public Debt - Fiscal Years



Sources: Office of Management and Budget, Budgets, various years; Government Development Bank... \* Calendar year.

## INCOME DISTRIBUTION

- P.R.'s unequal income distribution, as measured by the GINI coefficient, is the highest among all jurisdictions in the United States.
- The percentage of the population under the poverty level is very high.

**GINI Coefficient for Puerto Rico and Selected Jurisdictions, 1999 - 2015**

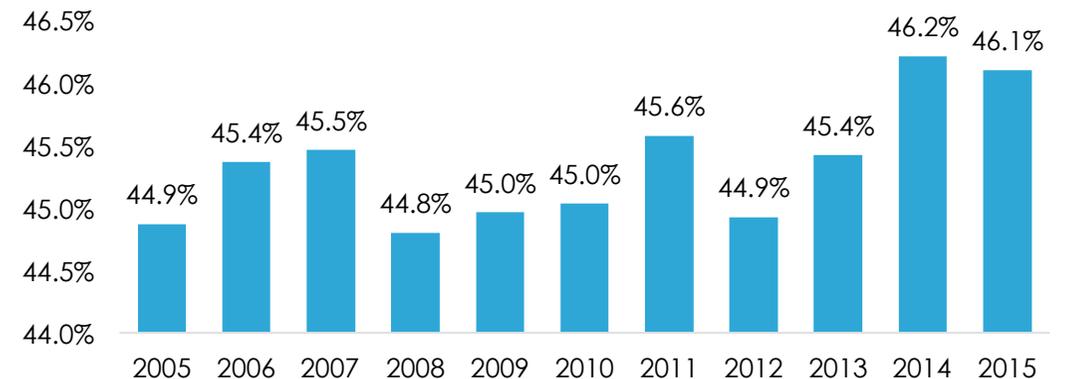
	1999	2009	2010	2011	2012	2013	2014	2015
<b>PR</b>	<b>0.574</b>	0.532	0.537	0.531	<b>0.533</b>	<b>0.547</b>	0.547	0.559
<b>U.S.</b>	0.476	0.469	0.469	0.475	0.476	0.481	0.480	0.482
Alabama		0.471						0.481
Florida		0.469						0.487
Hawaii		0.425						0.435
Luisiana		0.473						0.491
New York		0.502						0.514
Tennessee		0.467						0.479
West Virginia		0.463						0.458

\* 2009 corresponds to 2010.    \*\* 2014 corresponds to 2013.    \*\*\* 2014 corresponds to 2012.    NA = Not available.

\*\*\*\* 2009 corresponds to 2007.

Sources: U.S. Bureau of the Census, American Community Survey Briefs, various years; Puerto Rico Community Surveys; Jorge M. Mattar and Pedro J. Rivera, coords. (2005), *Globalización y desarrollo: desafíos de Puerto Rico frente al siglo XXI*, CEPAL, Santiago de Chile, ch. IV, section C, p. 222; World Bank (2017), DataBank World Development Indicators, GINI Index WB Estimate (Extracted May 23, 2017).

**Percentage of Population Below the Poverty Level in Puerto Rico 2005-2015**



Sources: US Census Bureau (2016), *American Community Survey 1-Year Estimates* [Table S1701]; ACS Briefs (2016), *Poverty: 2014 and 2015* (September), Table 1.

# THE ECONOMY: LONG TERM TRENDS

## HOURLY COSTS IN MANUFACTURING

- Hourly compensation costs have increased, but are still below those in the mainland but above most of our competitors.
- Higher Compensation Costs make Puerto Rico less competitive.
- Jurisdiction with higher costs have compensated by promoted higher productivity : Ireland, South Korea & Singapur.

Hourly Compensation Costs  
2000-2016 <sup>(1)</sup>

	Average Hourly Earnings of Production and Nonsupervisory Workers <sup>(2)</sup>											
	Puerto Rico*	United States***	Puerto Rico	U.S.	Mexico	Brazil	Ireland	South Korea	Taiwan	Singapore	India	China
2000	NA	\$24.95	NA	\$14.32	\$4.70	\$4.34	\$16.40	\$9.62	\$7.31	\$11.72	\$0.70	NA
2001	\$16.92	\$26.21	\$9.85	\$14.76	\$5.41	\$3.63	\$17.73	\$9.00	\$7.16	\$12.21	\$0.71	NA
2002	\$17.96	\$27.35	\$10.30	\$15.29	\$5.59	\$3.08	\$19.60	\$10.24	\$6.83	\$12.14	\$0.73	\$0.60
2003	\$18.90	\$28.56	\$10.46	\$15.74	\$5.31	\$3.22	\$24.57	\$11.33	\$6.96	\$12.75	\$0.81	\$0.68
2004	\$19.45	\$29.30	\$10.84	\$16.14	\$5.26	\$3.82	\$28.28	\$12.63	\$7.27	\$13.20	\$0.85	\$0.74
2005	\$20.29	\$30.13	\$11.10	\$16.56	\$5.61	\$5.01	\$29.79	\$14.83	\$7.92	\$13.24	\$0.91	\$0.83
2006	\$21.23	\$30.47	\$11.48	\$16.81	\$5.88	\$5.99	\$31.58	\$17.36	\$8.05	\$13.76	\$0.95	\$0.95
2007	\$22.41	\$32.07	\$11.94	\$17.26	\$6.17	\$7.10	\$36.70	\$19.43	\$8.18	\$15.70	\$1.17	\$1.21
2008	\$23.03	\$32.78	\$12.09	\$17.75	\$6.48	\$8.44	\$41.82	\$16.80	\$8.69	\$18.86	\$1.26	\$1.59
2009	\$23.48	\$34.19	\$12.28	\$18.24	\$5.69	\$8.12	\$41.94	\$15.03	\$7.77	\$17.54	\$1.23	\$1.74
2010	\$23.38	\$34.75	\$12.29	\$18.61	\$6.13	\$10.00	\$40.66	\$17.88	\$8.31	\$19.29	\$1.46	\$1.98
2011	\$23.55	\$35.51	\$12.73	\$18.93	\$6.49	\$11.61	\$42.73	\$19.19	\$9.28	\$23.07	\$1.59	\$2.62
2012	\$23.90	\$35.70	\$12.65	\$19.08	\$6.35	\$10.80	\$40.72	\$20.44	\$9.40	\$24.42	\$1.59	\$3.07
2013	\$25.19	\$36.49	\$13.03	\$19.29	\$6.80	\$10.59	\$41.98	\$22.09	\$9.41	\$25.78	NA	\$4.12
2014	\$25.78	\$37.04	\$13.78	\$19.56	\$6.76	\$10.54	\$43.38	\$23.77	\$9.49	\$26.82	NA	NA
2015	\$26.44	\$37.71	\$13.03	\$19.90	\$5.90	\$7.97	\$36.02	\$22.68	\$9.51	\$25.41	NA	NA
2016**	\$26.37	\$37.64	\$12.42	\$20.21	NA	NA	NA	NA	NA	NA	NA	NA

(1) Compensation costs include direct pay, social insurance expenditures, and labor-related taxes. (2) Not including compensation costs.

\*Includes all employees of the manufacturing industry. Estimated on the basis of the hourly wage for all employees, based on the average hourly number of hours for manufacturing, and applying the same ratio of compensation to salary of the U.S. workers. \*\*Jan-Sept. \*\*\*Average weekly hours of all employees.

Sources: U.S.BLS (2013). *International Labor Comparisons*; U.S.BLS (May 2017). *Quarterly Census of Employment and Wages for Puerto Rico*; The Conference Board (2016). *International Labor Comparisons*; U.S. BLS, *Employment, Hours and Earnings - National* (May 2017). NA means data not available.

**Notes:** Earnings statistics are typically obtained from establishment surveys or from administrative data sources. Average earnings are generally adjusted to total compensation using data from periodic labor cost surveys. Other sources include censuses of manufacturers, tabulations of employer social security contribution rates provided by the International Social Security Association, information on contractual and legislated changes in social insurance benefits, and statistical series on indirect labor costs from employer confederations. Total compensation for each country is calculated by adjusting earnings series for items of direct pay, social insurance, and labor-related taxes and subsidies not included in earnings. Hourly compensation costs are converted to U.S. dollars using the average exchange rate for the reference year. The exchange rates used are prevailing commercial market exchange rates as published by the International Monetary Fund.

# PREVIOUS DISASTERS

## Cost of Damages from Hurricane Georges

- Total damages left by Georges (1998) were estimated by FEMA at \$5.7 billion, with over \$4 billion inflicted upon housing and other structures, and \$350 million in damages to the electrical grid.

	Concept	Impact Georges
	<b>Infrastructure Damage</b>	<b>\$5,179</b>
	<i>Electric</i>	\$358
	<i>Water</i>	\$21
	<i>Transportation</i>	\$31
	<i>Housing &amp; other structures</i>	\$4,746
	<i>Communications</i>	\$22
	<b>Economic Damages</b>	<b>\$500</b>
	<i>Agricultural output</i>	\$166
	<i>Government</i>	\$334

Impacts are presented in 2016 dollars, after adjusting for inflation using the Puerto Rico Consumer Price Index (CPI) for fiscal years 1998-2016.

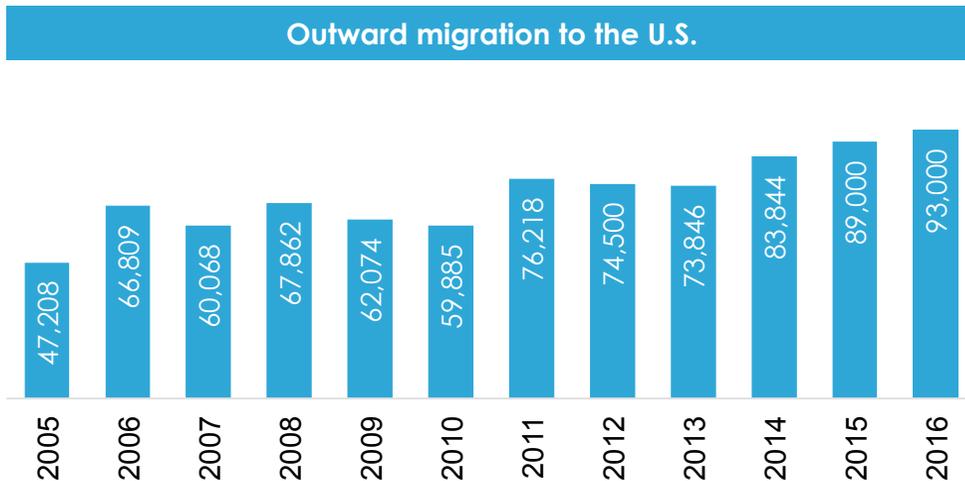
## ECONOMIC CONTEXT

- Compared to Georges, Hurricane Maria impacted an economy that had undergone a long process of economic contraction that had weakened its infrastructure, production activities and, to a significant extent, its capacity to respond to the event.

Economic Indicator (FY)		1998	2016
	GNP growth	3.2%	-1.1%
	Non-Farm Salaried Employment	992.7	895.2
	Debt as % of GNP	63.6%	100.1%

## ECONOMIC CONTEXT

- Outmigration reached 93,000 persons in 2016.
- Average Net Migration in the past two years surpassed 64,000.
- The young-adult population will continue to represent the majority of out-migrants.
- Local conditions after the hurricane have caused a dramatic increase in migration. Net migration for 2017 is estimated at close to 200,000 persons, although many will return in 2018, as reflected in January and February data on air passenger traffic.



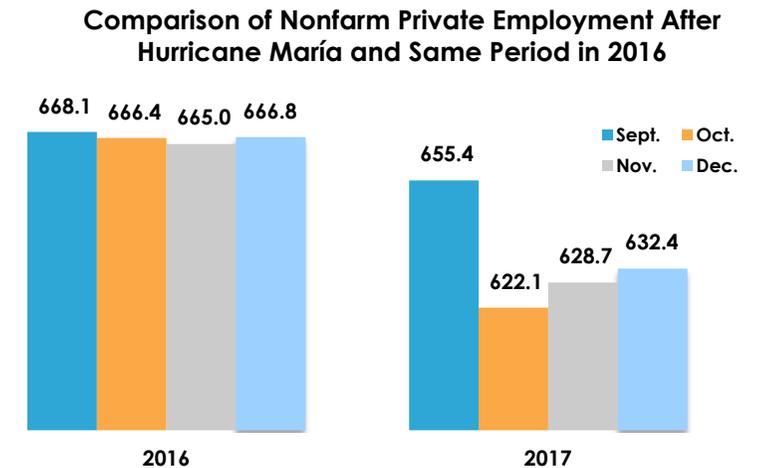
**Net Migration**

2014	55,092
2015	65,089
2016	64,757
2017	142,059
2018	63,927
2019	51,441
2020	40,943
2021	32,730

Note: For 2017 through 2021 estimates by Estudios Técnicos, Inc.

## EMPLOYMENT

- Prior to the hurricanes in September, nonfarm salaried employment declined 1.9% y/y and -0.3% m/m in August, the same pattern since the beginning of the year. The hurricanes contributed to deepen that trend. However, improvement in private employment was observed between October and December.
- As expected, on a month-to-month basis nonfarm salaried employment decreased 0.4% in September and -3.8% in October, but it started to recover in November, when it increased 1.2% m/m, and increased 0.6% in December.
- Total employment, which takes into account the self employed, and those employed in agriculture, managed to recover from hurricane Maria. By December of 2017 total employment had managed to reach its December 2016 total.



Source: U.S. BLS. Establishment Survey. SA = Seasonally adjusted.

## EMPLOYMENT

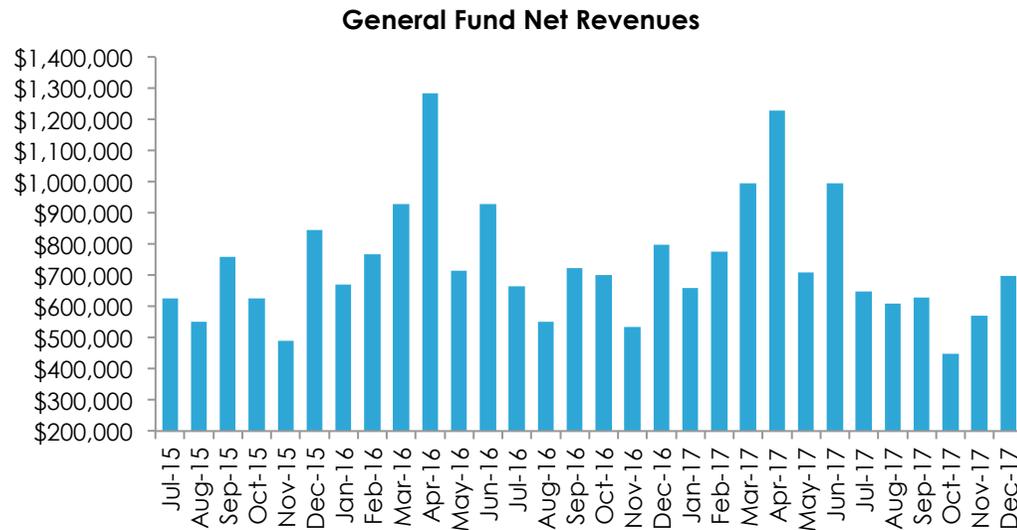
- Compared to December of 2016, non-farm salaried employment was still 45,000 below.
- Retail employment also decreased, it was down 9,000 Jobs compared to December of 2016.
- Meanwhile finance was down 1,300 compared to the previous year.
- This is contrary to Total employment, which includes the self employed, which had recovered all employment lost after the hurricane by December.
- Salaried employment should continue to recover over the coming year as economic activity picks up due to recovery & reconstruction efforts.

INDUSTRIAL GROUP	December 2016	December 2017	Difference
Total Non Farm	893,100	847,800	-45,300
Mining, Logging & Construction	24,500	21,500	-3,000
Manufacturing	73,900	69,100	-4,800
Trade, Transportation & Utilities	171,200	158,900	-12,300
Wholesale Trade	29,100	25,900	-3,200
Retail Trade	126,500	117,500	-9,000
Information	17,400	17,300	-100
Financial Industries	42,500	41,200	-1,300
Professional and Business Services	114,900	113,800	-1,100
Educational and Health Services	122,800	115,700	-7,100
Leisure and Hospitality	82,000	77,300	-4,700
Other Services	17,600	17,600	0
Government	226,300	215,400	-10,900

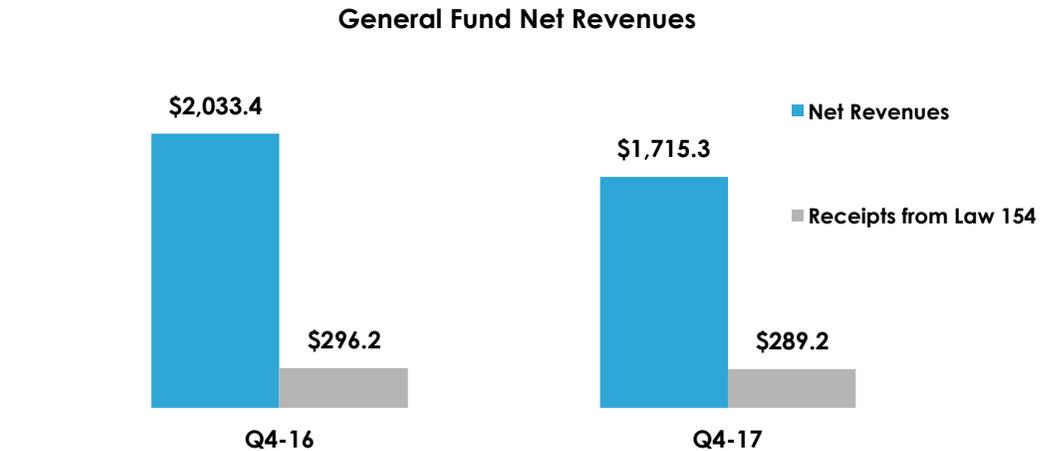
Note: Employment in Restaurants and other food and drinking services establishments are included in the accommodation and food services sector and not in retail. BLS, CES Non-farm salaried employment for 2017.

## FISCAL REVENUES

- In the 4Q of 2017 General Fund Net Revenues were \$318 million below their 4Q-2016 total. This was the result of the reduction in economic activity and the temporary moratorium of the SUT, which ended in December 31st.
- According to the Treasury Department, they estimated that revenues for fiscal 2018 would be \$1,300 lower than anticipated as a result of hurricane-related losses.
- In the first seven months of fiscal 2018 revenues were \$417.6 million below their fiscal 2017 total.



Source: P.R. Treasury Department.

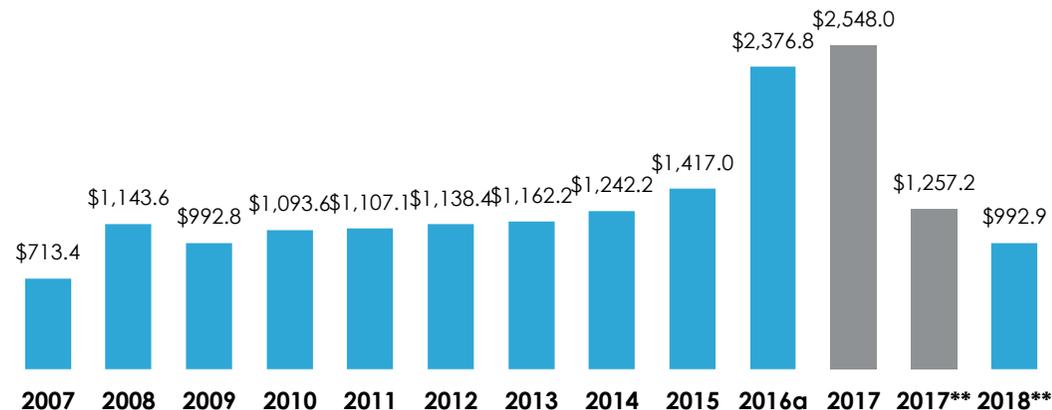


Source: P.R. Treasury Department.

## FISCAL REVENUES

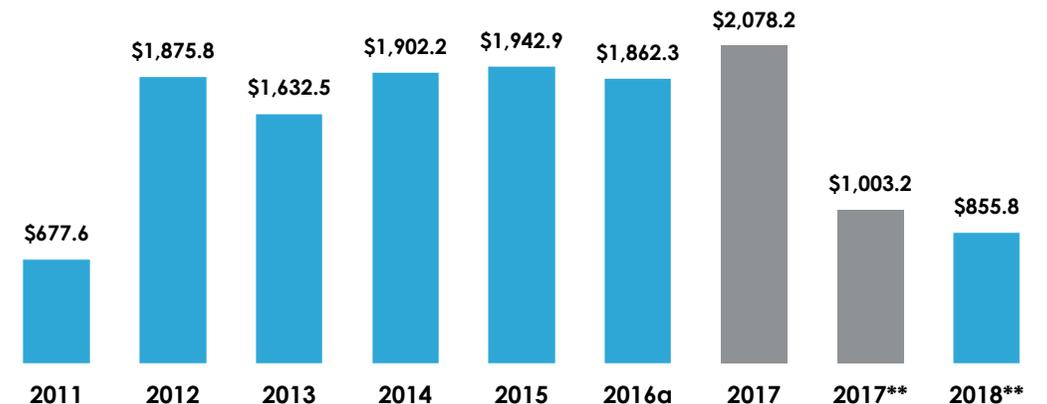
- The hurricanes have affected SUT receipts on two accounts: closing of businesses, and the moratorium declared by Treasury until December 31st. During first half of 2018 SUT revenue was \$264 million below its first half 2017 total.
- Receipts from Law 154 also declined the first half of 2018, they were \$147 million below their 2017 first half totals.

**Sales and Use Tax (SUT) Revenues (\$Mm)**  
2007-2018 Fiscal years



Source: Puerto Rico Treasury Department (2017). Sales and Use Tax Revenues. (a) Effective July 2015 there was an increase in the rate to 11.5%. \*\* Up to December.

**Foreign (Act. 154) Revenues (\$Mm)**  
2011-2018 Fiscal years



Source: Puerto Rico Treasury Department (2017). General Fund Net Revenues. \*\* Up to December.

## MANUFACTURING ACTIVITY

- The hurricane caused disruption in manufacturing activity, but no overall structural destruction of production facilities.
- Manufacturing activity, according to PR's PMI, did fell after August, to 33.1 in September, but started to recuperate rather rapidly, with the index rising to 48.1 in October and a further increase to 53.5 in November, a level almost similar to that in August (53.8), which was the highest since November 2016. The fourth quarter increased to 51.7, marking an improvement in the manufacturing sector after hurricane Maria. In January the PMI reached 58.5.
- The components that contributed the most to the improvement of the index, were New Orders, with the index rising to 52.5, and Production, with a significant increase to 65.0 from 9.4 in September. Essentially, production increased to compensate for the decline in September.

**Puerto Rico PMI (NSA)**



Source: Puerto Rico Institute of Statistics.

# ETI'S ECONOMIC FORECAST POST-MARIA

(ASSUMES A DELAY IN GOVERNMENT SPENDING CUTS UNTIL FY 2020)

Data is in fiscal years (July-June). Hurricane María occurred in fiscal 2018.

Estimated Economic Impact of Federal Relief Funds and Insurance Disbursements			
Fiscal Years—2018 and 2019			
Concept	Expected Growth (%)		
	2017	2018	2019
<b>Real GNP</b>	<b>-2.4%</b>	<b>2.1%</b>	<b>6.2%</b>
Personal Consumption Expenditures	-0.1%	3.7%	0.3%
Government Construction Investment	-10.0%	29.2%	411.5%
Private Construction Investment	4.0%	29.7%	1.0%
Government Spending	-5.0%	7.2%	6.6%

Source: Estimates by Estudios Técnicos, Inc. (2017)

# THE NEW FISCAL PLAN

As expected, a new fiscal plan was submitted to the Fiscal Oversight and Management Board (FOMB) on January 24th, in substitution of the one approved on March 2017. A revised version was submitted on February 12th. Its key elements are:

1. Assumes that the government will receive \$70.1 billion in disaster-related funding, to be spent during a period of five years 2018 - 2022, distributed as follows: 

Disaster Related Funding in the New Fiscal Plan			
\$49.1bn Federal Assistance	+	\$21.0bn Private Insurance	= \$70.1bn Disaster Relief Assistance

2. The public debt will not be paid during the period.
3. Reduce spending by \$1,740 million and the structural deficit during the five years.
4. Various reform measures, such as the consolidation of agencies, modernization of systems, improving tax collections, etc., will exert a net effect of \$2,462 million in savings.
5. The tax reform to be enacted will reduce the top tax brackets below 30% to individuals and businesses, with reductions in all brackets, which would mean an additional \$500.0 million returned to tax payers every year.
6. The B2B tax will be reduced from 4.0% to 2.0% in 2019 and to 0.0% in 2020.

# THE NEW FISCAL PLAN

7. The SUT tax rate for processed food will be gradually reduced to 6.0%.
8. In the case of fiscal revenues, estimate a decrease of 18.3% in fiscal 2018. Revenue estimates during the following four years would still be below pre-hurricane levels. Receipts from Law 154 are expected to decrease 15.3% in fiscal 2018, and will continue to fall as a result of the TCJA.
9. Assumes a decline in population, of 7.7% in fiscal 2018, and such decrease will continue until fiscal 2022 albeit at a slower rate, at an average of 2.9% in the next four years.
10. Estimates a contraction in real GNP of -11.0% in fiscal 2018, with real growth turning positive in fiscal 2019 to 8.4% and afterwards. Yet, there is conflicting data for fiscal 2018, as they estimate for the same year an inflow of \$12.8 billion in disaster-related funds for assistance and reconstruction spending. Such an amount should implicate a different result.

*(A revised version of the Plan was submitted after the report was completed but it does not differ materially from the previous version, rejected by the FOMB. In all likelihood numbers related to the tax reform and expected federal funding will change in the coming months. )*

# THE NEW FISCAL PLAN



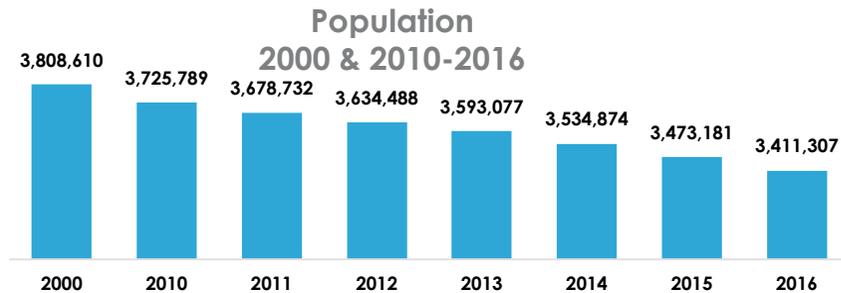
CHAPTER  
**3**

**POPULATION**

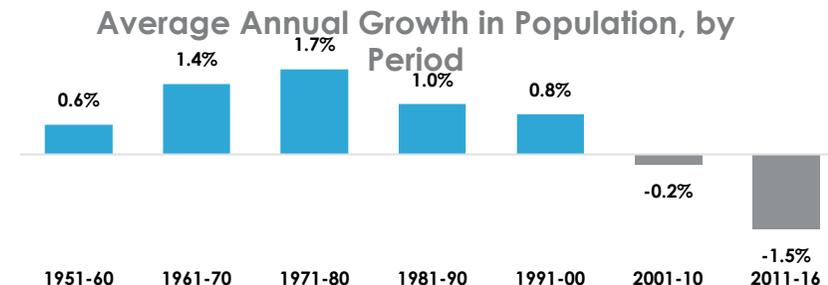


# POPULATION AND DEMOGRAPHICS

- The loss of population, its aging, and rising emigration have been the trends that, together with declining real growth have characterized the period 2000 – 2017, and will definitely accelerate in 2017 and 2018. Between 2001 and 2010, total resident population declined at a CAGR of -0.2%; between 2010 and 2016 it fell by -1.5% Compound Annual Growth Rate (CAGR).
- Between 2000 and 2016, the proportion of the age cohort of 65+ in the population rose, from 11.2% to 19.0%, while that of the younger age cohorts (0 – 24 years) declined, from 40.0% to 30.2% in the same period.



Source: U.S. Census (2017). American Community Survey (PEPANNRES). Census Summary Files (Age Groups and Sex).



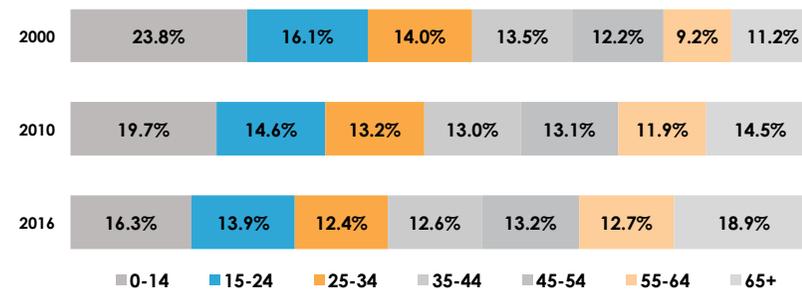
Sources: U.S. Census Bureau (2016). Decennial Census (Various Years); ACS Annual estimates.

## Median Age of Population in Puerto Rico



Source: U.S. Census Bureau (2017). 2000 & 2010 Census (Table P13). American Community Survey 5-year Estimates (Table B01002).

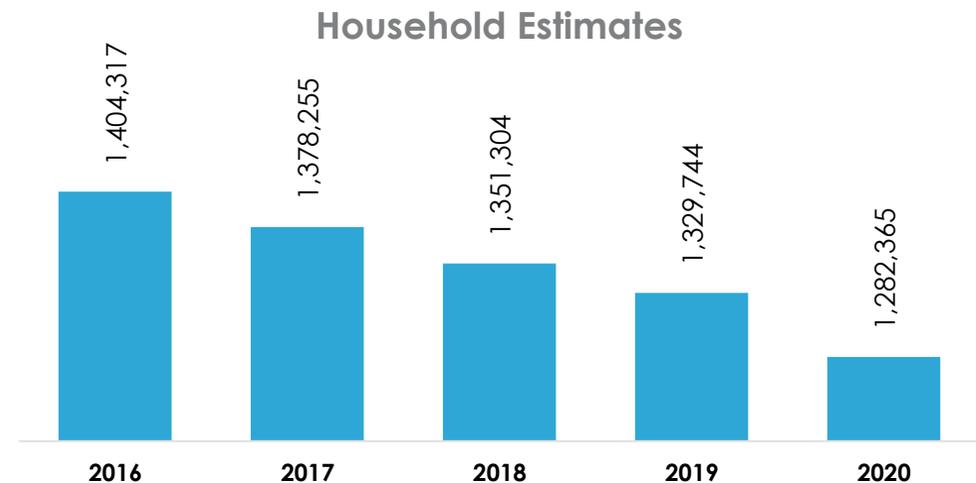
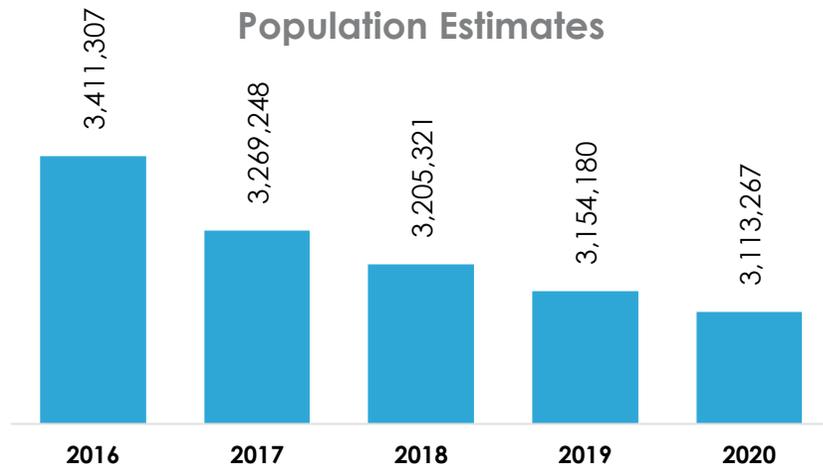
## Population by Age Groups 2000, 2010 & 2016



Sources: U.S. Census (2017). American Community Survey (PEPANNRES, PEPAGESEX), Census Summary Files (Age Groups and Sex).

# POPULATION AND HOUSEHOLD ESTIMATES

- Population is expected to decline significantly over the next four years, reaching 3.1 million by 2020
- Migration will be the main driver of change in population. It is estimated to peak in 2017 at 142,000 before returning to pre-Maria levels of 60,000 in 2018. During this period the natural rate of population growth should be near 0 as birth and deaths are estimated to be almost identical.
- The rate of migration could decline as the segments of the population with more probability of leaving the Island continue to dwindle. Constrains in labor markets may increase labor prospects and salary levels, causing some degree of inward migration.
- Household formation should also be negatively impacted by high migration rates in 2017.



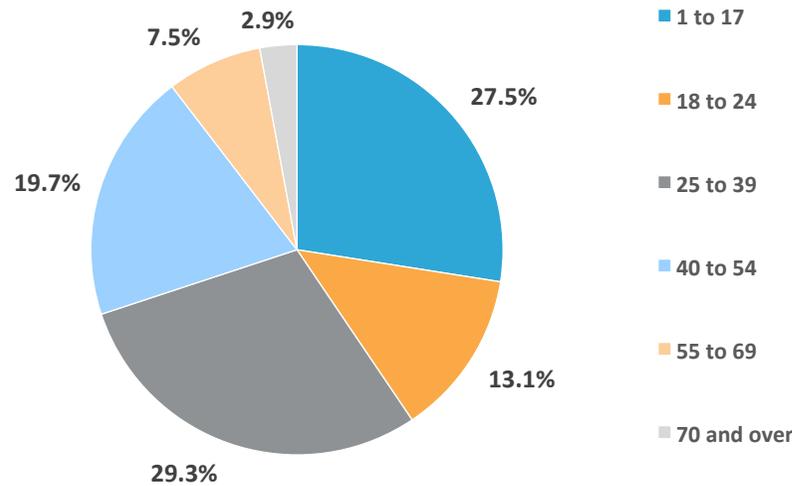
# MIGRANT PROFILES

## MIGRATION IS MORE PREVALENT AMONG YOUNGER COHORTS MIGRANT PROFILE

Out of all emigrants, 39.8% are 24 years old or younger.

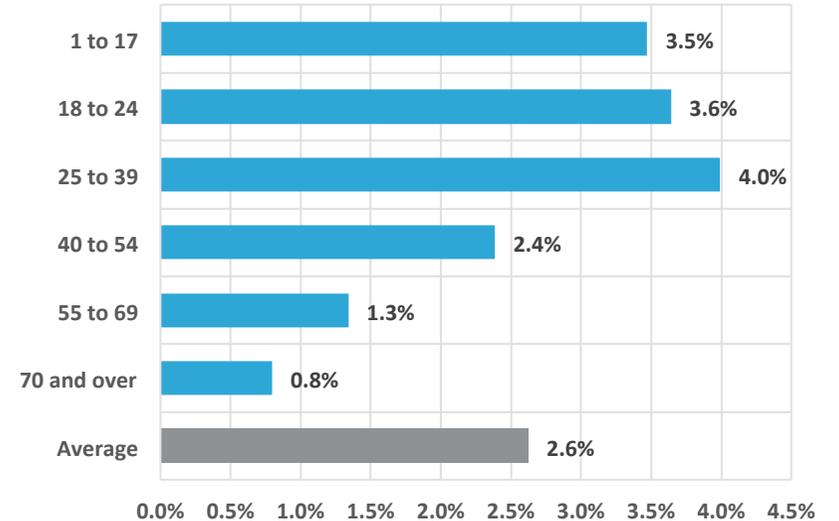
The probability of a young person migrating is 1.5 times that of someone 40 to 54 years old.

Net Migration in Puerto Rico, by Age Group  
2016



Sources: US Census Bureau (2017). *2016 American Community Survey 1-Year Estimates* [Tables B07001PR and B07401PR]. Estimates by Estudios Técnicos, Inc. (2018).

Probability of Migration, by Age Group  
2016

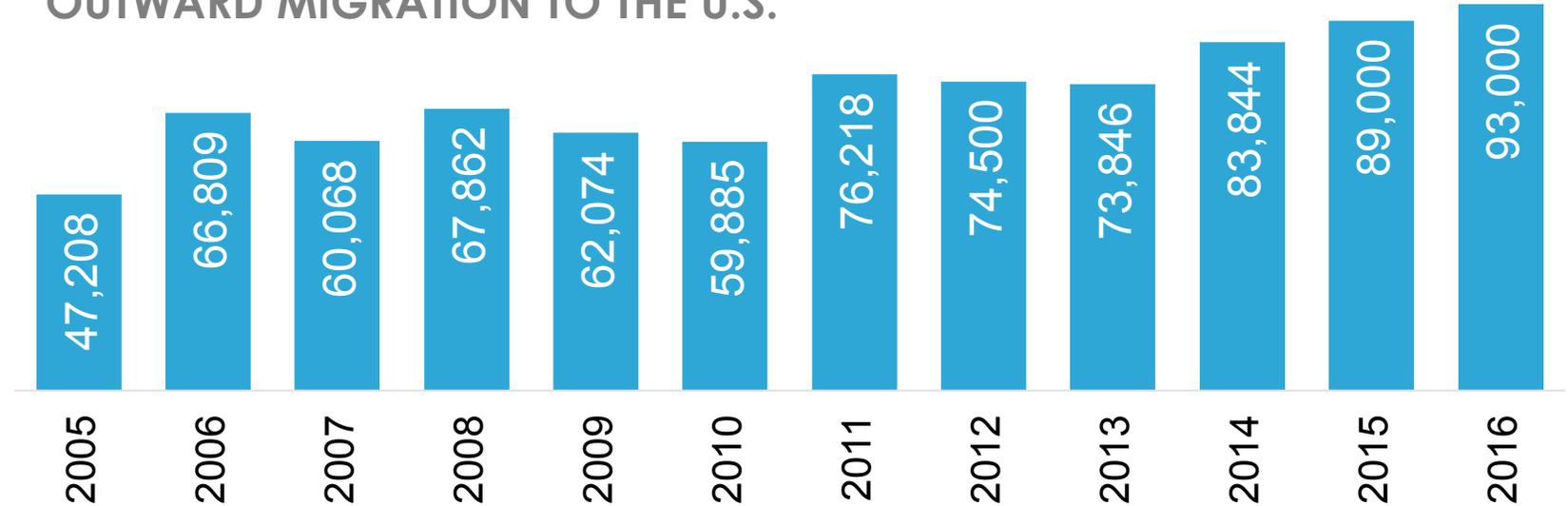


Sources: US Census Bureau (2017). *Annual Estimates of the Resident Population by Single Year of Age and Sex* [Table PEPSYASEX]. US Census Bureau (2017). *2016 American Community Survey 1-Year Estimates* [Table B07401PR]. Estimates by Estudios Técnicos, Inc. (2018).

# MIGRATION

OUTWARD MIGRATION TO THE U.S.

Net Migration	
2014	55,092
2015	65,089
2016	64,757



- The estimate for calendar 2017 is for out-migration of some 250,000, of which some 175,000 occurred after hurricane María.
- 2018 should go back to numbers similar to 2015-2016.

# BENCHMARKING



# OTHER JURISDICTIONS EXPERIENCED SIMILAR CONDITIONS

- Sustained economic contraction and fiscal imbalances have become more apparent in the past decades
- The three case studies that follow focus on jurisdictions that have suffered economic stagnation and population loss.
- Each has lessons for Puerto Rico.
- Governments have adopted several policy measures to manage shrinking societies by boosting population to previous levels, but also have adapted to their new socioeconomic realities, i.e. retirement cities, right-sizing, smart shrinkage, among others.

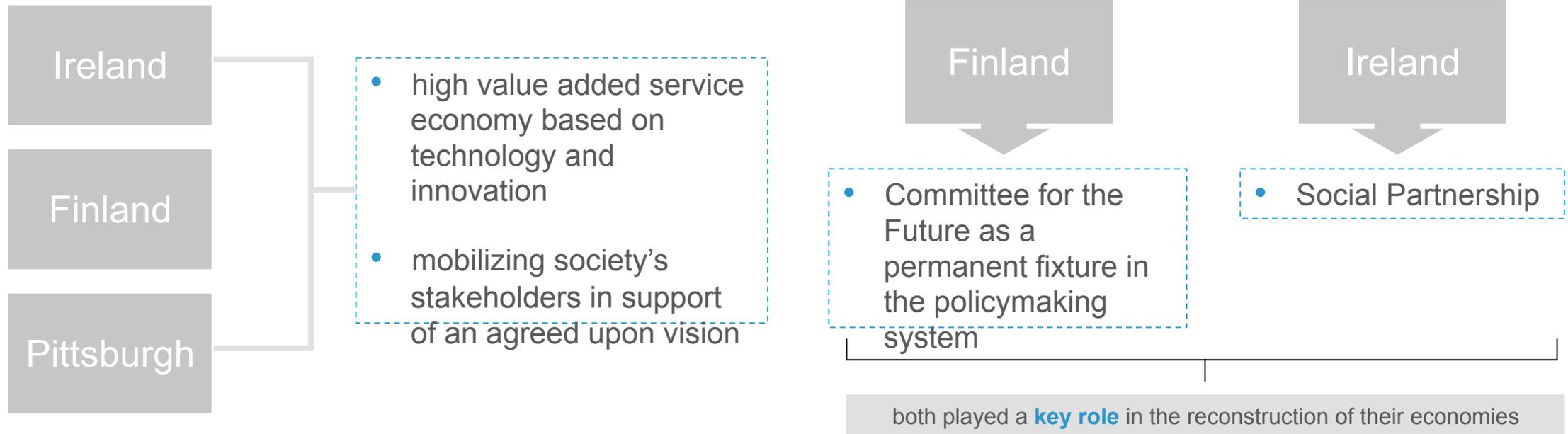


# THREE EXAMPLES OF JURISDICTIONS THAT SUFFERED SEVERE LOSS OF POPULATION & INCOME

- Finland
  - Between 1990 and 1993, Finnish GDP decreased more than 14% from its peak and unemployment went from a historic low of 3% to nearly 20%.
  - The state recognized the importance of institutional innovation (even within the political realm) by developing what is known as the *Committee for the Future*
- Ireland
  - Coherent transition from a manufacturing-oriented incentives to service (IT) incentives
  - Institutional continuity of state incentives; policy shift built on human capital availability and previous tax incentives that were already central to Irish economic policy
- Pittsburgh
  - Public-private partnerships, cost-efficient provision of government services, along with initiatives for culture and recreation were deemed crucial for economic development and a better quality of life for citizens
  - A targeted strategy - focuses on identifying the potential assets of the community – like labor, talent, money, social groupings, and attractive structures – in order to leverage them as a means of attracting economic activity and government resources.

# LONG-TERM REVITALIZATION

- Initiatives that are common to many of these success stories:



- The challenges faced by Puerto Rico will require improved foresight and planning capacity, making risk management part of the economic policy decision making process and making network creation and participation a core concern.
- A small open economy in a context characterized by uncertainty must adopt a risk management approach to economic policy making. In other words, given the exposure to external shocks, economic policymakers must estimate risks and incorporate those risks in their decision-making.

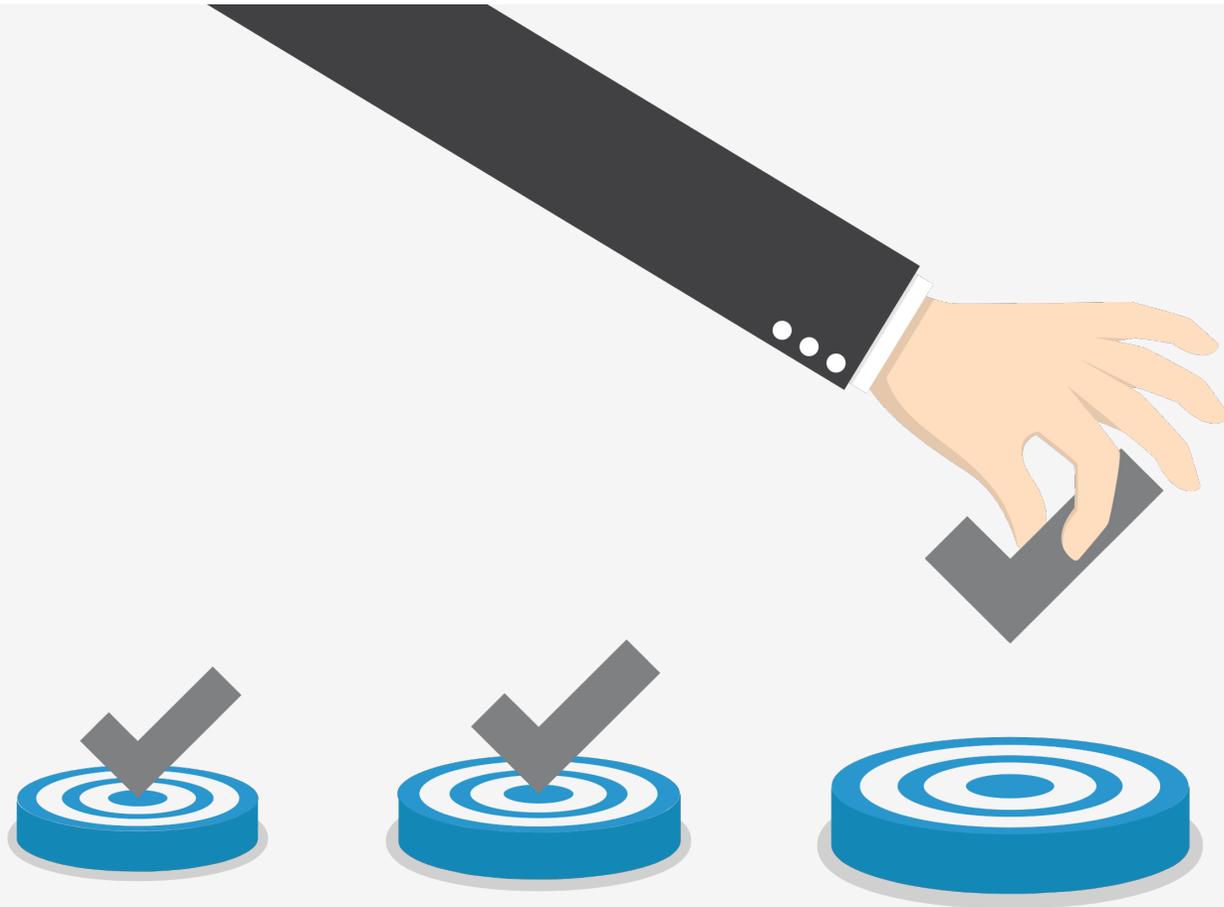


CHAPTER

5

# GOALS AND OBJECTIVES

# GOALS



This section presents objectives and goals for the economy of Puerto Rico during the short and medium term. The section begins with a description of the process used to establish the economic goals, followed by a discussion of a baseline scenario under which no measures are undertaken. Afterwards, the goals and objectives are presented, alongside some key policy recommendations.

# METHODOLOGY

The methodology for goal-setting by Estudios Técnicos, Inc. followed a three-stage process:



A special emphasis was placed upon the regional aspects of the economy, as the impacts of migration and other capital flows in Puerto Rico resemble those of a regional market in the United States. This has important implications with regards to the scope, importance, and interpretation of growth goals in the context of long-term development.

The baseline forecasts were developed using a combination of policy-type models, available information from federal agencies, historical estimates, auxiliary regressions/econometric models, and imputations based upon news reports, average values of commodities, etc. Following this, the goals were initially chosen as a percentile of the best-performing baselines and were afterwards adjusted in view of new available information (if any).

## BASELINE FORECASTS

Forecasts were prepared for the following components:

### Population

According to Stimson, Stough, and Roberts (2006), long-term regional growth is dependent upon the population base, as it determines the economies of agglomeration and urbanization present in an economic area.

### Consumption Expenditures

These are Puerto Rico's main driver of regional economic growth. Their performance and share of overall economic activity are important metrics for development.

### Real Wages

An indicator of the level of concentration in economic activity of Puerto Rico. According to Krugman (1999), real per capita wages will be greater in "core" regions of economic activity, as the other ("peripheral") regions have a competitive advantage in keeping wages low. As interregional trade costs decline, however, these differences should smooth out in the tangible economy.

### Investment

A key metric for development; greater amounts of fixed capital investment imply more dynamism in the public and private sectors, and an increase in the region's productive capacity.

### Government Expenditures

an indicator on the cost of the regional apparatus to the regional economy. Its performance across time serves to measure the public sector's impact upon the domestic economy.

## BASELINE FORECASTS

These indicators succinctly capture both performance and development aspects of a regional economy. Note that neither GNP nor employment are included as indicators, as they do not necessarily equate with improvement in the community's welfare (see for example, Leven, 1964). In particular, GNP has an additional exogenous component in the trade balance which offsets local dynamics, whereas employment goals ignore significant qualitative aspects of development and may even contradict other metrics (ibid).

The following chart shows the baseline forecasts for several components of the economy during fiscal years 2021 thru 2025.

**Forecasts of Real Average Growth in Puerto Rico**

Fiscal Years -- 2021 - 2025



Source: Estimates by Estudios Técnicos, Inc. (2018).

- **After moderate economic growth in fiscal 2018 and 2019, and contractions in 2020 and 2021, personal consumption should average 1.0% over the next five years.**
- **Population growth should average -0.8%, while investment and government expenditures remain low throughout the period.**

# GROWTH GOALS

The following table outlines what we believe are key achievable growth rates through the 2021-2025 period, given the starting point of the aforementioned forecasts. The highest expected growths lie on the investment side, particularly those in the Information, Communication, and Technology (ICT) sectors. Consumption, the island's main economic engine, should also return to moderate real growth.

### Target Growth Rates for 2021 - 2025

Investment	5.0%
Consumption	2.0%
Natural Increase in Population	0.1%
Net Migration	0.0%
Real Wages	1.6%

Source: Estudios Técnicos, Inc. (2018).

#### Key growth targets:

- Investment will average 5% growth, while consumption should aim to increase by at least 2%.
- The natural increase in population should turn positive while net migration moves towards 0.

# PROPOSED TARGETS ARE IN LINE WITH RECENT HISTORICAL EXPERIENCE

- All of the proposed target growths lie within the upper 50% of recent historical growths.
- The highest changes lie in investment and population, which need a drastic adjustment to become Puerto Rico's strengths once more.
- Targets reflect key policy objectives:
  - Stability in population and consumption
  - Improved investment potential
  - Modest government increases in line with a more restrained spending policy

## Comparison of Forecasted and Proposed Growth Targets with Historical Growths

Fiscal Years -- 2000 - 2016

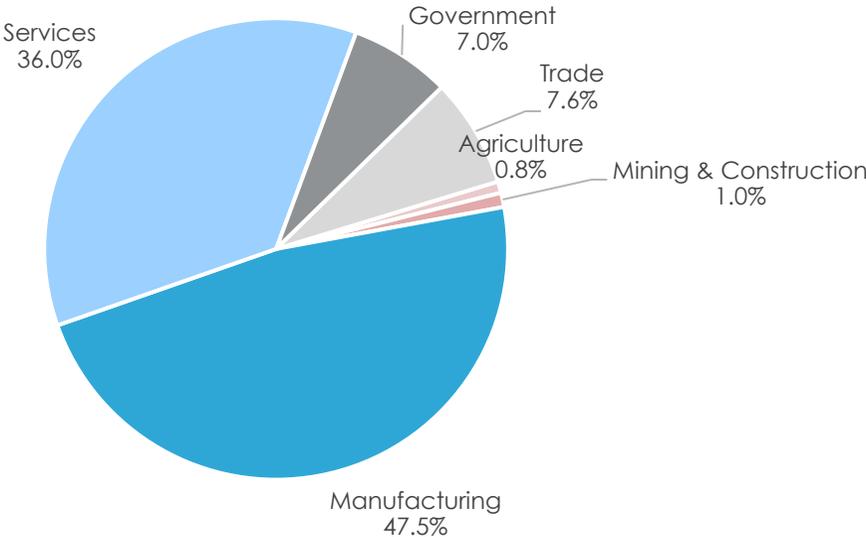
Variable	Forecasted Values		Growth Targets	
	Growth	Percentile (2000-2016)	Growth	Percentile (2000-2016)
Consumption	1.0%	33	2.0%	65
Investment	0.6%	64	5.0%	81
Government	-1.0%	42	0.5%	56
Population	-0.8%	41	0.1%	76
Real Wages	0.01%	43	1.6%	59

Sources: PR Planning Board (2017). Statistical Appendix (Various Years). US Census Bureau (2018). Annual Estimates of the Resident Population [Table PEPANNRES].

# PROPOSED TARGETS ARE NOT DISRUPTIVE TO INDUSTRIAL STRUCTURE

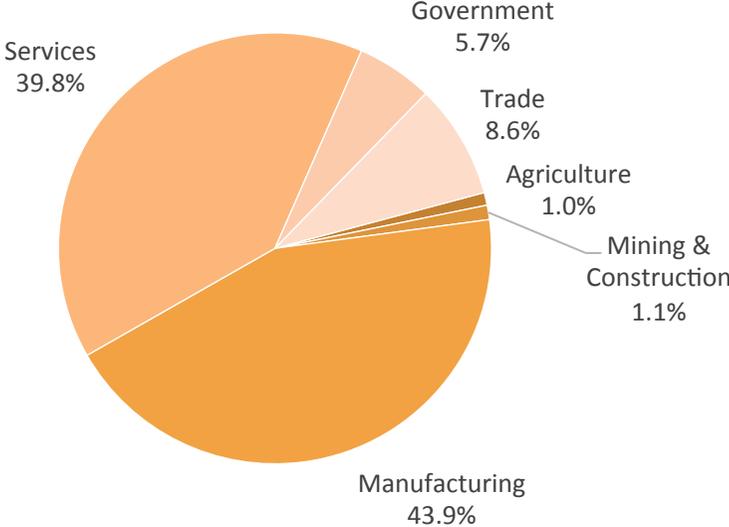
**These targets are achievable because they are not disruptive to the economic structure. Manufacturing continues to be the main sector while services continue to grow.**

**GDP Composition of the Economy of Puerto Rico Actual (Fiscal Year 2016)**



Source: PR Planning Board (2017). 2016 Statistical Appendix [Table 10].

**GDP Composition of the Economy of Puerto Rico After Growth Targets (Fiscal Year 2025)**



Source: PR Planning Board (2017). 2016 Statistical Appendix [Table 10].

# GROWTH GOALS



- An important metric is to reduce net migration as much as possible, by attracting more skilled human capital towards the island to counteract the population decline. Emphasis should also be given to the younger population, in order to drive up the natural population increase and stave off the accelerated aging process experienced during the past 7 years.
- Finally, while no official metric exists, a positive growth in service exports, particularly in its participation with respect to the overall investment levels, should be attained. Long-term trends point to an increasing importance of services across all segments of economic activity, including manufacturing. Puerto Rico is uniquely positioned and has the tools necessary to increase its role as a service exporter; therefore, its growth is a long-term policy target for the economy of Puerto Rico.

# THE LIMITATIONS OF GROWTH GOALS AND REGIONAL DEVELOPMENT

With some exceptions, the overarching focus upon economic growth goals can be considered a staple of policymaking in Puerto Rico. Regional goals have often been chosen in tandem with national goals, overlooking the significant differences they exhibit. Leven (1964) established three (3) main differences between establishing economic growth as a goal in a national economy viz. a regional one:

- 1) The scope of monetary and fiscal measures – national economies can counteract instabilities by monetary and fiscal measures, whereas unilateral response of regional economies cannot offer such support.
- 2) Short-run vs. Long-run growth maximization – a large national economy “does not have the problem of committing a limited supply of land to large increments of slow-growing industries. For a bounded metropolitan region, this limitation may be critical.” (ibid).
- 3) Economic inequality – federal governments are vastly better equipped to handle inequities in income distribution and production than regional ones.

# DEVELOPMENT OBJECTIVES

In addition to quantitative goals Puerto Rico should aspire to a society that is characterized by the following:

**Flexibility** – Refers to the need for an open economy to have the capacity and agility to adapt to rapidly changing external and internal context conditions. Many of our laws and regulations as well as the structure of the public sector have generated rigidity rather than flexibility.

**Productivity** – Without improved productivity a society cannot achieve higher standards of living for its population. Economic debate in Puerto Rico has emphasized Jobs, but productivity has been mostly absent.

**Sustainability** – This refers to environmental issues, increasingly recognized as key to long term development. In Puerto Rico this is particularly critical with respect to the coastal zone and availability of water.

**Pluralism** – Development as a process has to include Access to social services and employment opportunities for all. In the case of Puerto Rico it means taking steps to reduce the present high levels of inequality.

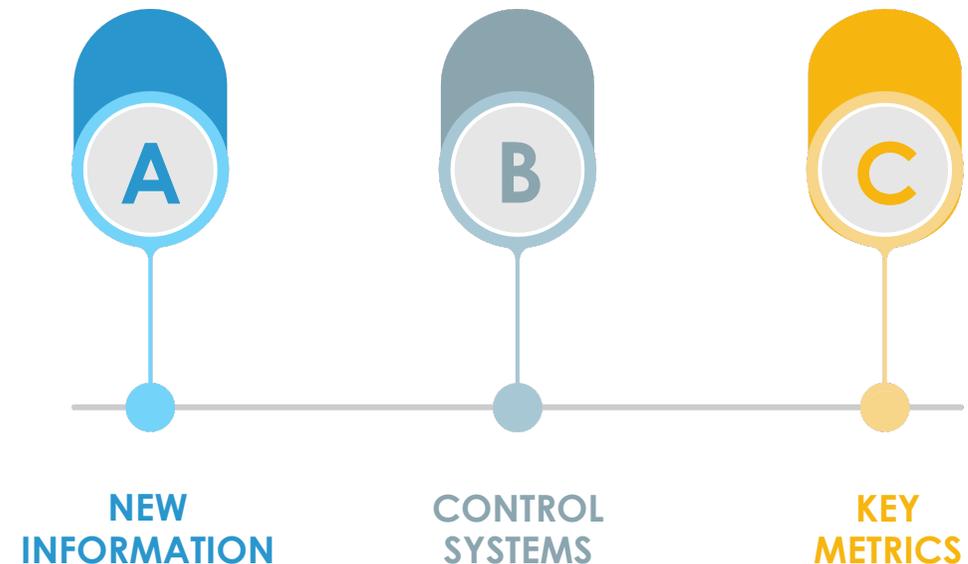
**Constancy** – Refers to the need to assure continuity in development efforts and avoiding the short term perspective that has characterized many of these efforts in Puerto Rico.

**Innovation** – An innovative society is one that is recognized as a path developer along many dimensions. Puerto Rico in the forties and fifties was a hub of innovation in public administration, social programs, health services and economic policies.

# FORESIGHT CAPACITY AND EXECUTION

Regional development requires significant foresight, oversight, and execution skills to handle both external and internal changes. External changes should be met with a) a fast and comprehensive analysis of new information, b) a proper set of control systems for regulating management response, and c) rapid development of key metrics to assess new unknowns – essentially a risk management infrastructure across policy and operational dimensions. **Internal** changes should be met with **evolution of the policy apparatus, and improvements in the underlying theories and assumptions used to model the island's economy**. Without these components, policymaking will become haphazard, without internal coherency and subject to outside risks.

### External Changes

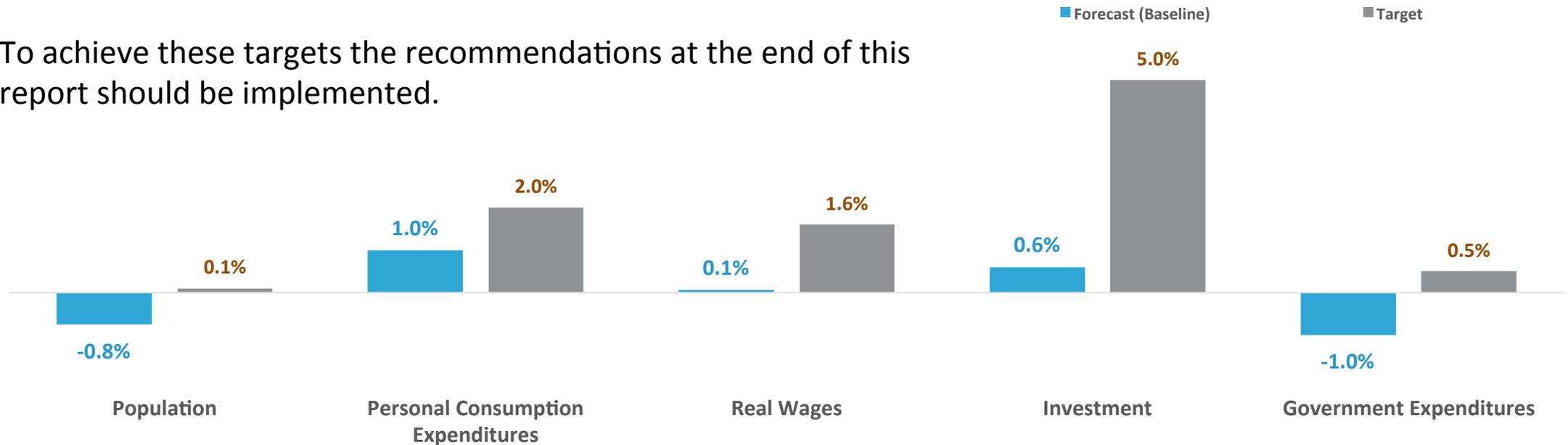


# GROWTH TARGETS VS. ECONOMIC EXPECTATIONS 2021-2025

## Comparison of PR Forecasts and Growth Targets in Selected Indicators

Fiscal Years -- 2021 - 2025

To achieve these targets the recommendations at the end of this report should be implemented.



Source: Estimates by Estudios Técnicos, Inc. (2018).



CHAPTER

6

# STRATEGIC DIRECTION

# STRATEGIC DIRECTIONS

- Strategic orientation refers to the clustering of incentives, plans, and policies towards achieving a set of common objectives, while considering interactions between new and existing policies.
- Strategies must incorporate external context conditions and internal factors that influence decision making.
- These directions harness existing resources, and (given proper execution) would eventually shift Puerto Rico towards an advantageous position in terms of long-term growth.
- To align Puerto Rico's strategic orientation towards the future, we recommend two (2) key policy directions:

1

service exports, and

2

a 'retain, attract, and grow' approach to manufacturing.

# THE GLOBAL CONTEXT

- Puerto Rico, although a regional economy of the US is not immune to impacts from changes in the global economy.
- The changed center of gravity in the global economy as a result of the ascendancy of China and India explains the creation of the Pacific Alliance by various Latin American countries.
- It also explains the growth of Chinese investments in the region that now surpass those of the U.S.A. in various countries Latin American and Caribbean countries.
- Technology trends include the increased control by various major firms, increased interconnectivity and thus, vulnerability to external shocks. The next major technology benchmark is the “blockchain” technology used by Bitcoin and similar activities.
- The new tax environment in the United States, a result of moving to a territorial tax system poses major challenges for Puerto Rico looking forward. The Tax Cuts and Jobs Act removes Puerto Rico's tax based competitive advantage.
- Increased volatility in commodity markets and the shift to trade in intangible have implications for Puerto Rico's economic policy.
- Uncertainty in the economic context, as stated previously makes risk management an essential component of economic policy-making.

# THE NATURE OF A REGIONAL ECONOMY

- The prevalence of risk in a regional very open economy such as ours is greater than in a closed, larger economy. Puerto Rico's economy behaves as a regional, not a national economy.
- The lack of control over labor and capital flows conditions domestic policy. (i.e. no barriers to trade, no monetary policy, free movement of labor and capital and significant leakages).
- The absence of economies of scale presents a major obstacle in a number of areas, including import substitution for consumer goods, R&D and production for the internal market. Network creation should be a core concern for small economies as a means of overcoming the absence of scale economies. Denmark provides an excellent example of optimizing network creation and management.
- The limited diversification of the productive sector while having a consumption sector that is much more diversified makes imports unavoidable for a wide range of products.
- Imposed complexity is the result of importing technology developed for larger, more developed economies. It makes the regulatory apparatus less able to manage the consequences.
- Outward orientation is an essential need for these economies but in the present global context it involves more than simply stimulating exports. Insertion in the global context is a much more complex multi-dimensional process.

# AN INTEGRATED SYSTEMS APPROACH

**“A List of ingredients is not enough to make a dish”**

**Robert Solow, quoted in the World Bank Growth Report**

- Development is a complex process in which interactions among its many components is a paramount concern that fragmented or sectorial approaches do not capture
- It entails the integration of social, environmental and economic factors and a recognition of the need for a small, open economy to balance risks
- As technology advances the level of complexity increases and the challenges to technology importing economies assume a greater importance
- Based on the above, a new manner of dealing with traditional government services and policy approaches is required
- The following table provides a schematic illustration of what is entailed in an integrated approach

# THE DEVELOPMENT INFRASTRUCTURES & SOCIAL OBJECTIVES

- One can define development as the concerted activities related to six basic infrastructures in order to achieve specified social objectives.
- These six infrastructures are the following:

Physical	Social
Environmental	Institutional
Cultural	Knowledge
- Social objectives expressed as conditions that should characterized a developed economy are those below:

Flexibility	Productivity
Sustainability	Pluralism
Constancy	Innovation
- These are merely illustrative of what could be social objectives for a particular society.
- The following table integrates infrastructures and social objectives. Columns reflect how each infrastructure can support the objective of that particular column. The last column reflects the need for an innovation policy that covers all the infrastructures.
- Rows suggest how each infrastructure supports all of the objectives.

# THE DEVELOPMENT INFRASTRUCTURES & SOCIAL OBJECTIVES

INFRASTRUCTURES	OBJECTIVES					
	Flexibility	Productivity	Sustainability	Pluralism	Constancy	Innovation
<b>Physical</b>	Integrated planning and decentralization	Emphasis on connectivity	Focus on renewable energy and decentralized initiatives Iniciativas locales	Stimulate local initiatives (acueductos comunitarios)	Long range planning	Needed a public policy on innovation that covers all infrastructure areas
<b>Social</b>	Descentralization of social programs	STEM programs in education	Training programs that integrate social and environmental concerns	Integrated housing and social service programs	Improve efficiency and decentralized delivery	Needed a public policy on innovation that covers all infrastructure areas
<b>Environmental</b>	Improve regulations	New energy sources and better land use planning	Include the environment in the Fiscal Plan	Better and more accessible information	Create non government environmental policy entity	Needed a public policy on innovation that covers all infrastructure areas
<b>Institutional</b>	Consolidate processes, deregulate and re-regulate	An investment focused tax system	Adequate and balanced laws and regulations	Consider social infrastructure as a development tool	Minimize political intervention in government activities	Needed a public policy on innovation that covers all infrastructure areas
<b>Cultural</b>	Stimulate institutional learning	Culture as an economic sector	A change of vision: Culture as consumption Culture as investment	Strengthen support for community initiatives	Increase intervention in cultural policy by non government entities	Needed a public policy on innovation that covers all infrastructure areas
<b>Knowledge</b>	Reduce market entry obstacles	Improve technology transfer capacities (Fundación Chile)	Work towards an autonomous innovation system	Improve access by SMEs to new technologies	Strengthen K-12 educational system and R&D infrastructure	Needed a public policy on innovation that covers all infrastructure areas



CHAPTER  
**7**

**KEY COMPONENTS**

# INTRODUCTION

**The CPA Foundation has identified six areas considered essential in any Roadmap for Puerto Rico's economy. The six are:**

1

Promoting a robust industrial system

2

Rethinking promotional strategies

3

A tax system that stimulates investment

4

Defining the role of municipalities

5

Policies and strategies to stabilize population

6

Optimizing the management of federal programs and funds

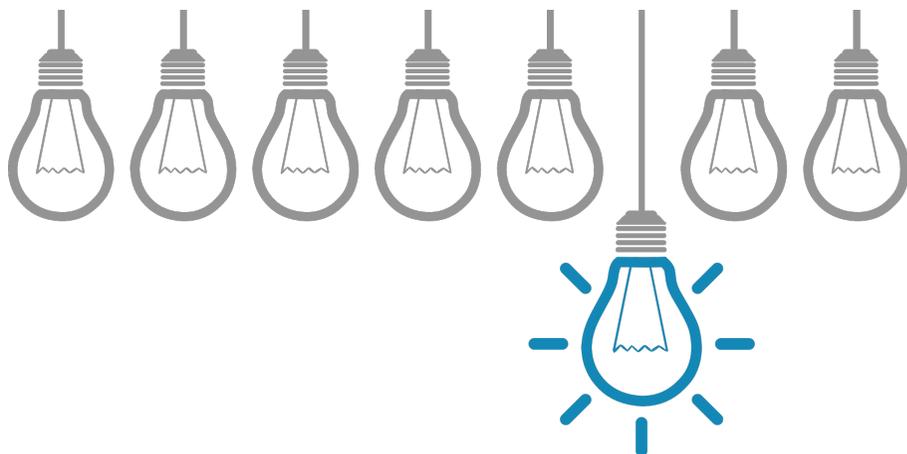


**Roadmap for Puerto Rico's Economy**  
**PROMOTING A ROBUST INDUSTRIAL SYSTEM**

## THE KEY IS INNOVATION

*“Innovation is not limited to the most advanced economies. Innovation is also not limited to the high-technology sectors. **Innovation has today become a global phenomenon, affecting all sectors of the economy** [Emphasis added].”*

S. Dutta, et.al., eds. (2017). *The Global Innovation Index 2017* (10th ed.), p. v.



- Innovation has become a key driver of global economic and productivity growth; it enhances the productive capacities of an economy.
- Innovation blurs the frontiers between manufacturing, services, and agriculture.
- Certain industrial sectors within manufacturing have provided a basis for innovation activity in our economy: pharmaceuticals, electronics (incl. computers) and medical and professional devices.
- New R & D activities have been created as a result of the above, for example, those related to clinical trials.
- Intensify efforts to strengthen collaborative agreements between industries and academia.

# 1

## Roadmap for Puerto Rico's economy: PROMOTING A ROBUST INDUSTRIAL SYSTEM

# THE KEY IS INNOVATION

- Innovation in growing economies is an inclusionary process. Although manufacturing is a center or driver of innovation and economic growth, the process should be seen as an economy-wide process. This justifies the need for an economy such as ours to have a public policy on promoting innovation.
- The New Asian Tigers (Indonesia, Malaysia, the Philippines, and Vietnam), are intensifying innovation strategies, moving into ICT use and services within all production and logistic processes.
- An important question is how innovative is our economy, and how the manufacturing sector can support economy-wide innovation, from agriculture to services.
- The incentive structure should be combined with the goal of stimulating innovation. The role of technology based startups assumes major importance in this endeavor.

# 1

## Roadmap for Puerto Rico's economy: PROMOTING A ROBUST INDUSTRIAL SYSTEM

### MANUFACTURING AND SERVICES: OPPORTUNITY TRENDS

- The composition of the tech sector has greatly changed. **Tech manufacturing as a percentage of total tech employment has decreased, but that of tech services increased.**

Trends in Tech Employment and Share in Private Employment, 2001 - 2016 (Calendar years)

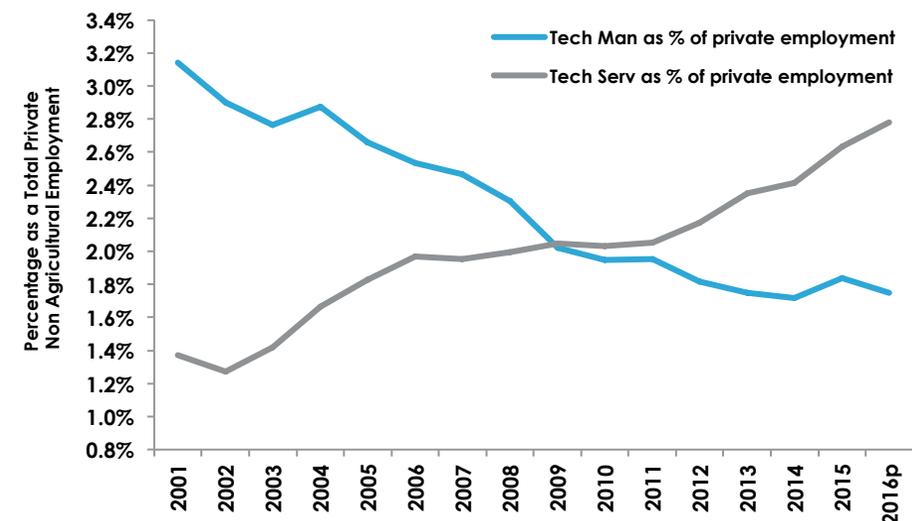
Year	Tech Manufacturing	Tech Services	Total Tech	Non Agricultural Private	Tech Man as % of Tech emp	Tech Man as % of private employment	Tech Serv as % of private employment	Tech as a % of private employment
2001	22,820	9,949	30,849	726,192	69.6%	3.1%	1.4%	4.5%
2002	20,562	9,016	27,833	709,317	69.5%	2.9%	1.3%	4.2%
2003	19,987	10,280	27,966	723,567	66.0%	2.8%	1.4%	4.2%
2004	21,339	12,339	30,537	741,958	63.4%	2.9%	1.7%	4.5%
2005	19,842	13,644	29,607	746,775	59.3%	2.7%	1.8%	4.5%
2006	18,861	14,639	28,827	744,225	56.3%	2.5%	2.0%	4.5%
2007	18,107	14,345	28,040	734,125	55.8%	2.5%	2.0%	4.4%
2008	16,434	14,227	25,913	714,550	53.6%	2.3%	2.0%	4.3%
2009	13,645	13,848	22,381	676,158	49.6%	2.0%	2.0%	4.1%
2010	12,922	13,470	21,308	664,117	49.0%	1.9%	2.0%	4.0%
2011	12,997	13,670	21,353	665,642	48.7%	2.0%	2.1%	4.0%
2012	12,365	14,793	21,260	680,633	45.5%	1.8%	2.2%	4.0%
2013	11,907	16,014	21,616	680,992	42.6%	1.7%	2.4%	4.1%
2014	11,577	16,307	21,627	675,333	41.5%	1.7%	2.4%	4.1%
2015	12,295	17,656	22,904	670,142	41.1%	1.8%	2.6%	4.5%
2016p	11,586	18,463	22,407	666,167	38.6%	1.7%	2.8%	4.5%

**COMPOUND ANNUAL GROWTH RATE**

2001-2016	-4.4%	4.2%	-0.6%	-0.59%
2001-2006	-3.7%	8.0%	0.4%	0.49%
2007-2016	-2.3%	1.3%	-0.4%	-0.53%

Sources: US Bureau of Labor Statistics (BLS); Department of Labor and Human Resources.

Shares of the Two Main Groups of Tech Employment in Total Private Salaried Employment



Sources: US Bureau of Labor Statistics (BLS); Puerto Rico Department of Labor and Human Resources.

### MANUFACTURING AND SERVICES: OPPORTUNITY TRENDS

- The rise of the tech sector is playing a leading role in the worldwide economic transformation, with technological innovations substituting manual labor.
- In Puerto Rico, manufacturing lost over 38,000 jobs between 2006 and 2017. However, several core innovation sectors have seen an upward trend.
- Whereas total tech employment (including manufacturing) experienced a contraction, the same isn't true for employment in tech services, which increased at a compound annual growth rate (CAGR) of 4.2% through 2001-2016. The reason for the fall of overall tech employment resides in the tech manufacturing sectors, where employment decreased at a compound annual growth rate of -4.4%.
- This is entirely consistent globally with the increased importance of services and the increased technology component of material goods, for example, automobiles.

The tech sector is typically defined, and is composed of a series of industries in manufacturing and services, aimed at advancing technological innovations that are used in other sectors of the economy, or exported.

#### NAICS Tech Sectors\*

333: Machinery Manufacturing

334: Computer and Electronic  
Products Manufacturing

335: Electrical Equipment and  
Appliance Manufacturing

5182: Data Processing, Hosting and  
Related Services

5191: Other Information Services

541330: Engineering Services

5415: Computer Systems Design and  
Related Services

5416: Management and technical –  
Private

541611: Administrative Management  
and General management  
Consulting Services

5417: Scientific Research and  
Development Services

\* Sectors for which there is information  
available for Puerto Rico.

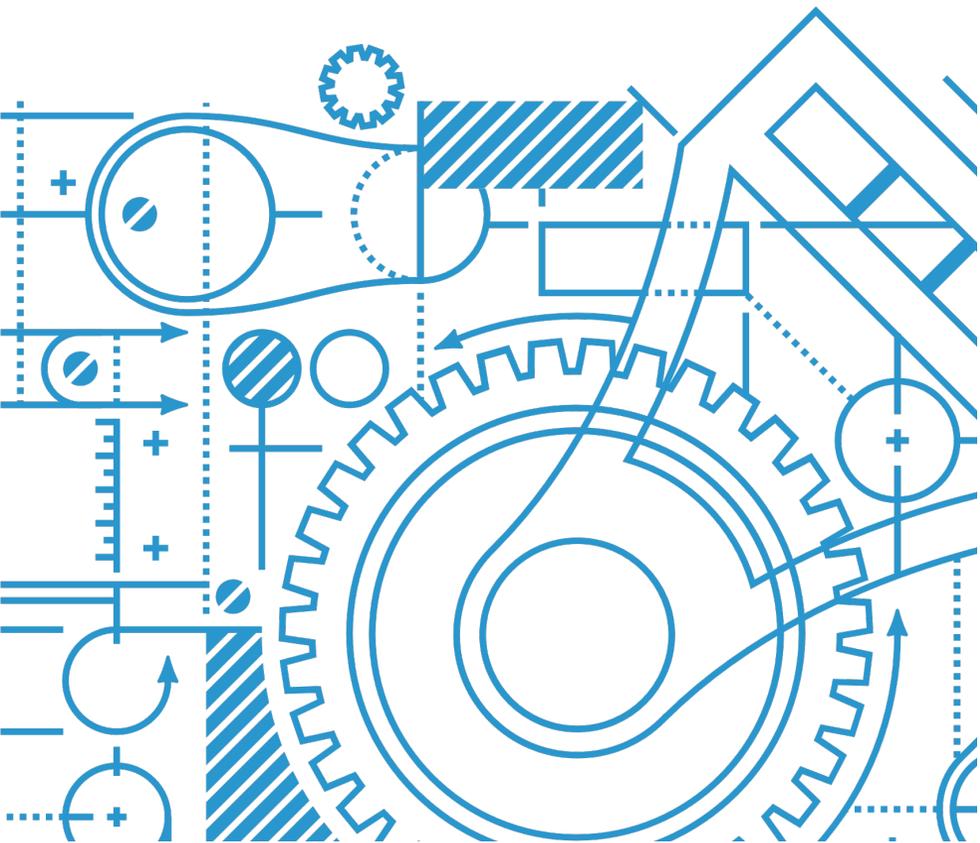
# 1

## Roadmap for Puerto Rico's economy: PROMOTING A ROBUST INDUSTRIAL SYSTEM

### EVOLUTION OF MANUFACTURING SUBSIDIES

- Business activity in Puerto Rico has been subsidized by the U.S. government through several tax provisions for over eighty years: US Revenue Act of 1921 (Section 931); Tax Reform Act of 1976 (Section 936); Section 30A (Substituting in 1996 for Section 936 until 2005); through the US CFSC (Section 901 which replaced Section 936).
- Over the past several years there has been an increasing discussion in the US about how effective these incentives are in achieving goals such as increased employment, when compared to their cost:
  - T. J. Bartik (2017). *A New Panel Database on Business Incentives for Economic Development Offered by State and Local Governments in the United States*: “**existing research on incentives [show] that in some cases they can affect business location decisions, but that in many cases they are excessively costly and may not have the promised effects.**”
  - PEW Charitable Trust (2017). *How States Are Improving Tax Incentives for Job Growth*: “**While these tax credits, exemptions, and property tax abatements are popular tools to create jobs, attract new businesses and strengthen the local economy, they also constitute high-risk investments that can squander billions in tax dollars without always paying off.**”
- In addition to the above, the recently approved Tax Cuts and Jobs Act imply that new approaches to investment promotion in Puerto Rico are needed.

# THE FUTURE OF MANUFACTURING



- In a recent Puerto Rico Manufacturers Association document, manufacturing is seen as the major economic sector for the future but it will be a very different sector with increased intangible production and an important service component.
- Innovation should be given a front seat in economic policy, as previously mentioned. Much of the traditional approach to innovation saw it as being embedded in inflows of capital investment in the manufacturing sector.
- The trends in the tech services sector clearly point out to promising growth sectors with respect, not only to employment growth, but also supporting innovation expansion in manufacturing and other sectors.

## ADVANCED SERVICE EXPORTS

- Under the new global economic structure, services will play an increasingly important role. Service exports are thus key to increasing Puerto Rico's long term competitiveness.
- Greater presence in Puerto Rico – approximately 790 new players in service exports as of 2016.
- Growing global market – the share of services in global trade increased from 9% in 1970 to 20% in 2014 (IMF, 2017).
- Relatively high resiliency with respect to goods exports (ibid).
- Relevant policy framework in place for attracting new investment (Acts 20 and 22).
- Weakening of manufacturing in the island prompts a search for new sources of growth. With the available resources, Puerto Rico is better-positioned to take advantage of its service-sector base.

# 1

## Roadmap for Puerto Rico's economy: PROMOTING A ROBUST INDUSTRIAL SYSTEM

# RECOMMENDED MEASURES

- Puerto Rico needs a well conceived innovation policy that will make innovation a cross cutting condition for economic development, not just in manufacturing, but throughout the economy. The models exist of such policies in jurisdictions such as Chile, Finland, Singapore and others. Fundación Chile is a model of an explicit action to integrate the economy in the global context.
- Another key component of our recommendation is for a concerted effort to strengthen the internal linkages in the economy through the completion of value chains in the Island. This entails a very different approach in industrial policy, that must include a cluster based approach in order to localize supply-chains.
- Thirdly, the merging of advanced services and manufacturing production is increasingly evident in many productive activities and this has brought with it the elimination of hard and fast distinctions between economic activities. Puerto Rico must have in place initiatives that recognize this as an essential component of industrial policy.
- The recommendations above should be the responsibility of an independent entity, a permanent economic development board with its major responsibility initiating and monitoring development programs. The Administration has already initiated two projects that are congruous with this recommendation, the DMO and "Invest Puerto Rico".



# RETHINKING PROMOTIONAL STRATEGIES

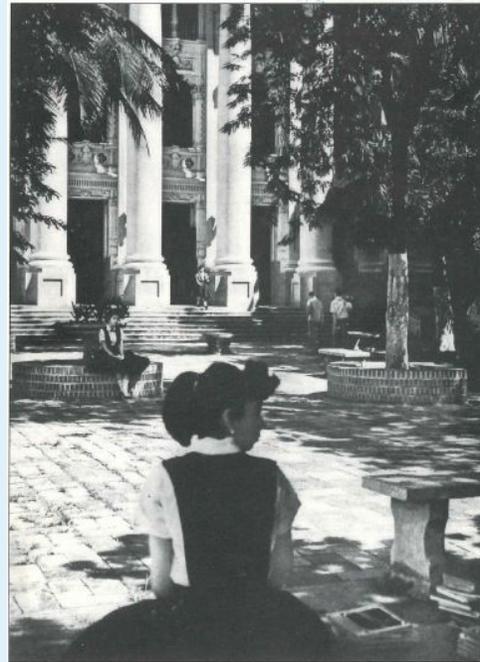
# PROMOTIONAL STRATEGIES

- Traditionally, Puerto Rico has depended on tax incentives as the key component of its promotional strategies. This promotional strategy was weakened considerably because all of our competitors in effect offered similar incentives.
- Promoting technology intensive, mid level and emerging firms requires very different approaches than promoting large mature manufacturing establishments. The focus should be placed on the former.
- Manufacturing is not a homogeneous category since it includes emerging technology firms, mature manufacturing establishments, and in the case of Puerto Rico local and externally owned establishments. Each has its own needs so a “one size fits all” approach will not work.
- The merging of manufacturing and services (or the “servicification” of manufacturing as the World Bank calls it) requires a very different set of instruments and knowledge from promotional agencies than has traditionally been the case. Sector knowledge becomes an even more important component of promotional activities.
- PRIDCO has not had sector specialists in its promotional staff. If for example, bio-pharma is a key sector the agency should have a specialist in that area, likewise with other sectors deemed priority promotional targets.

# POLICY RECOMMENDATIONS

- Promotional efforts should incorporate Asian economies, including the new East Asian tigers (in particular, Malaysia, Philippines and Indonesia).
- An integrated rather than a fragmented approach to promotional efforts – strengthen brand recognition. Currently, PR Tourism Company, PRIDCO, and PR Export Company each has a separate promotional strategy. There is no clear Puerto Rico brand, as was the case in the fifties, when Puerto Rico's brand was based on projecting “quality” across a broad range of activities: cultural, economic and social(see examples of Puerto Rico's promotions in the next slide).
- Create a dedicated program for value chain completion through improving capacity of local firms to become part of multi-national firms' supply chains. A key component of a new promotional strategy is the need to identify gaps in the value chains of different industries and tailor incentives accordingly.
- Promotional strategies should adopt a flexible approach to permit more agile adaptation to changing market conditions.
- Constant monitoring of competing destinations is essential, recognizing that competitors include counties, cities and states in the mainland and not just Singapore, Ireland and other national economies. The new Federal Tax Law reinforces this need.
- Adopt a “retain, attract and grow” format for promotional policies, recognizing that each component requires very different promotional tools. Likewise, emerging tech and mature industrial firms have different requirements as to incentives. “One size fits all” incentives will not be effective.
- A strong policy on the Puerto Rican diasporas as instruments of economic promotion and growth is recommended. For decades the Puerto Rican population in the mainland has been of minor interest to Puerto Rican policy makers in the Island. Promotional strategies should leverage the Puerto Rican diaspora not only in terms of potential consumption opportunities but also strategic alliances for productive activity. Measuring and monitoring these groups is essential for future investment, capital flows and integration mechanisms.

# PUERTO RICO'S BRAND IN THE 50's and 60's



### Renaissance in Puerto Rico —as seen by a girl of fifteen

**T**HAT HIGH SCHOOL GIRL in the foreground of our photograph is fifteen. When she was born, Puerto Rico was a "stricken land." We wish you could be here to talk to this Puerto Rican girl today.

She might start by telling you about everyday things. The good food her mother buys in the new supermarkets. The new house her family lives in. Her father's job in one of Puerto Rico's new factories.

Then, as she warmed up, she would probably have something to say about her lessons and her teachers. How they teach her two languages—Spanish and English. How they take her to museums and art exhibitions and concerts.

And she would surely want to tell you about the interesting television programs that she and her classmates watch on Channel Six, an admirable new station in San Juan. Channel Six is an educational television station in the Western Hemisphere. Education is one of the chief goals of Puerto Rico's remarkable new Operation Serenity. It receives nearly a third of Puerto Rico's entire budget. No other country except Israel spends so much on education.

Beyond this, the Commonwealth will actually dip into emergency funds to help a gifted student continue his studies.

Today, one third of Puerto Rico's total population is going to school—grade school, high school, vocational school, or one of the island's universities.

Puerto Rico is proud of her spectacular industrial renaissance. But this "sunny, scrubbed, and cultured land" is prouder still of the way her people are putting their prosperity to use.

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Reveries at the Central High School in San Juan. Officially proud of her big role in our historical renaissance, she is the Puerto Rican intellectual championess. Photograph by [unreadable]

### Pablo Casals is coming home —to Puerto Rico

**T**he first concert given in the master's honor at St. Augustine. The first concert given in Puerto Rico was given in the honor of the master beyond the Atlantic.

While the master's likeness looked from the steps, Casals played his lullaby, wailed his joy and wept.

The tears of that emotion from an inscription to Casals' work handwriting "Eis in me olim." The master's smiling eyes.

How are people brought from the world's greatest musician to Puerto Rico, the island of the future?

**MAESTRO BEATS GREAT NEW MUSIC FESTIVAL IN SAN JUAN**

The Cash Concert in San Juan, Puerto Rico, April 1955, was the first of a series of concerts given in the honor of the master beyond the Atlantic.

The Puerto Rican Chamber Music Society of the United States and Puerto Rico, Inc. are proud to announce the first of a series of concerts given in the honor of the master beyond the Atlantic.

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## POLICY RECOMMENDATIONS

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- Constant monitoring of competing destinations is essential, recognizing that competitors include counties, cities and states in the mainland and not just Singapore, Ireland and other national economies. The TCJA reinforces this need.
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# TAXES AND ECONOMIC DEVELOPMENT

# 3

## Roadmap for Puerto Rico's economy: TAXES AND ECONOMIC DEVELOPMENT

- This section focuses on the role of taxes on economic development, although some data is presented on the present tax structure in Puerto Rico.
- Assessments of tax systems typically analyze a number of detailed aspects such as:
  - Controlling evasion
  - Dealing with inequities
  - Determining rates
  - Impacts on local entities
  - The structure of tax agencies
- Although these are major issues, the section focuses on the structure of tax systems and their impact on economic development.

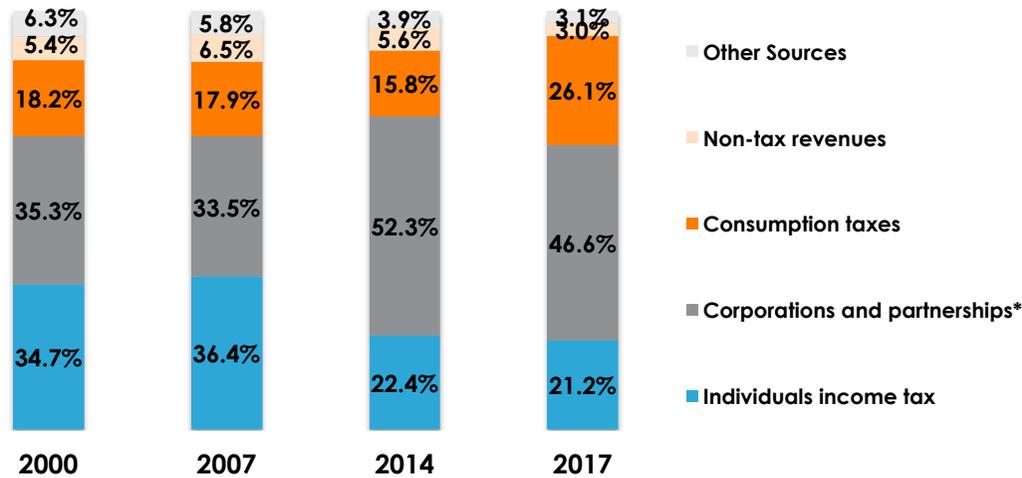
## THE PAYING TAXES 2017 REPORT

- Puerto Rico is ranked 161 while Ireland is 4, Singapore is 5 and some of our competitors in the region such as the Dominican Republic (149) and Costa Rica (60) are better ranked.
- The Report measures the Total Tax Rate that includes not only the tax rates but also the cost of compliance with tax legislation and regulations. Puerto Rico's TTR (62.3) is the highest in the Central America/Caribbean region. For comparison purposes, the Dominican Republic's is 42.4 and Panama's is 37.2.
- The above situation is a major reason why transaction costs are so high in Puerto Rico and suggests the need for the tax system to be made simpler and less costly to comply with.
- Changes in the tax system, however now have to be framed within the parameters of the Tax Cuts and Jobs Act that not only threaten sources of Puerto Rico's fiscal income such as those from Law 154, but by lowering corporate rates limit options in Puerto Rico.

# EVOLUTION OF THE TAX BASE

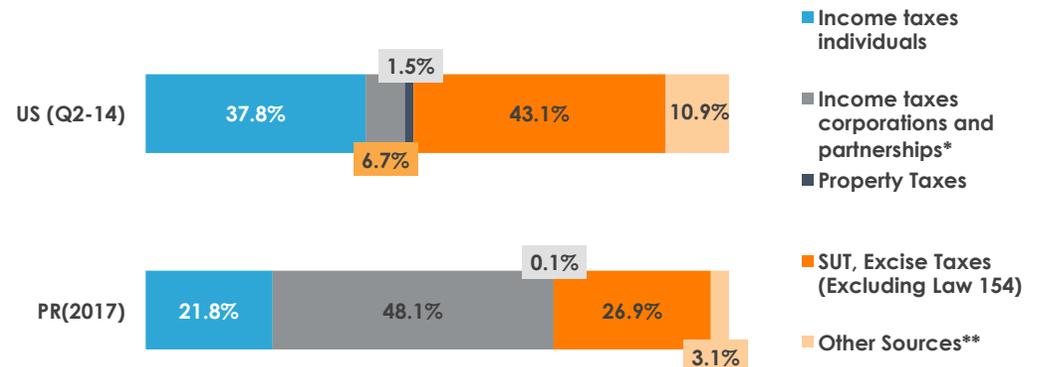
- The majority of revenues to the government (68%) come from income taxes.
- From 2000 to 2017, the share of corporate income taxes increased significantly (35.3% - 46.6%), as well as the share of consumption taxes (18.2% to 26.1%). In contrast, the share of individual income taxes declined from 34.7% to 21.2%.
- One recommendation would be to continue the trends, by reducing further the dependence on income taxes from individuals and increase the share of consumption taxes, and improve the proportion of the SUT that is actually collected.

Distribution of Net Revenues to the General Fund by Main Source



Source: PR Treasury. \* Includes receipts from Law 154.

Distribution of Net Revenues from Internal Sources  
Puerto Rico and US



Sources: PR Treasury (2017), Net revenues to the General Fund; US Census Bureau (2014), Quarterly Summary of State & Local Tax Revenue (Table 3). \* Include receipts from Law 154. \*\* Includes licenses, and non-tax revenues.

# RECENT CHANGES

- The new federal tax reform enacted in December (The TCJA) is expected to have significant impacts on manufacturing, particularly in the pharmaceutical and medical equipment and supplies sectors.
- The impact on fiscal revenues is also a major concern as the CFCs provide over one third of fiscal revenues, from Law 154 payments and other taxes.
- An increase in corporate taxes is not viable given the federal reform's impact.

**Total Fiscal Revenues Received by the General Fund from US Corporations - Fiscal Years (Millions of dollars)**

	2007	2008	2009	2010	2011	2012	2013	2014r	2015r	2016p	2017p
<b>Total</b>	<b>1,507.7</b>	<b>1,522.4</b>	<b>1,493.1</b>	<b>1,244.4</b>	<b>2,088.6</b>	<b>3,158.3</b>	<b>2,930.3</b>	<b>3,249.7</b>	<b>3,130.4</b>	<b>3,054.0</b>	<b>3,165.9</b>
Exempt Corporations*	549.0	413.0	392.0	399.0	398.0	364.0	306.0	440.5	399.7	382.9	414.6
Withheld to nonresidents	933.6	1,087.8	1,081.7	830.4	1,000.4	890.8	982.9	899.9	784.1	808.8	673.0
Toll Gate Tax	25.1	21.6	19.4	15.0	12.6	27.7	8.9	7.1	3.7	0.0	0.0
Act 154	0.0	0.0	0.0	0.0	677.6	1,875.8	1,632.5	1,902.2	1,942.9	1,862.3	2,078.2
<b>Total as a % of Net Revenues to the GF</b>	<b>17.0%</b>	<b>18.2%</b>	<b>19.4%</b>	<b>16.1%</b>	<b>25.6%</b>	<b>36.4%</b>	<b>34.2%</b>	<b>36.0%</b>	<b>34.9%</b>	<b>33.3%</b>	<b>33.9%</b>

Source: P.R. Treasury Department.

r- Revised figures.

p- Preliminary figures.

\* Starting in fiscal year 2014, estimates by Estudios Técnicos, Inc. based on the proportion they represented of total receipts from corporations and societies in fiscal year 2013.

## THE CURRENT TAX SYSTEM...



- Lacks Simplicity
- Fosters consumption and avoidance instead of savings
- Is inefficient in its implementation and management.
- Lacks cohesion between multiple public policies such as, industry-specific incentives and the proposed tax incentives code.

> 5 Tax Form Documents

Exemptions For Over 40  
Income Categories

Tripartite Consumption Tax  
(SUT, VAT, Excise Tax)

Sources: PR Treasury Department (2018). *Formularios y Anejos* [Filtered by Tax Form Documents]. KPMG (2014). *Commonwealth of Puerto Rico Tax Reform Assessment Project: The Case for Change*.

## THE ROLE OF TAXES IN ECONOMIC DEVELOPMENT

- The OECD has done extensive work on the subject. A recent report analyzes the structure of taxes and its role in economic growth and reaches the following conclusion:
- “A revenue neutral growth-oriented tax reform would be to shift part of the revenue base from income taxes to less distortive taxes. Taxes on residential property are likely to be best for growth...In practical policy terms, a greater revenue shift could probably be achieved into consumption taxes”.
- In sum, the OECD concludes that a development friendly tax system should emphasize property and consumption based taxes.

## SOME GLOBAL TRENDS

- The move towards consumption taxes, specifically VAT is evident in the literature.
- The variants that are prevalent are those that
  - have few exemptions,
  - are uniform among sectors and products,
  - are easily implemented and monitored
  - were carefully implemented
- Specific investment related measures such as
  - Expensing investment (TCJA)
  - R&D incentives (Ireland)
  - Service exports (Finland)
  - Capital Gains (opportunity zones)

## RECOMMENDATIONS

Emphasize consumption and residential property taxes

Assess the VAT as a mid and long term option

Expensing investment in productive activities

Incentives in support of an innovation system

Eliminate Capital Gains Taxes in specific areas

Integrate tax reform and new incentives code

The potential disruption of a change to a VAT could be understood as an opportunity to make structural changes in the tax system as a whole. For instance, a change in the tax incentive code and a separate tax reform are both market disruptions that could be better integrated in a comprehensive change to the tax system. Introducing the VAT requires a careful and extended planning and educational process. This is why we do not recommend implementing the VAT as a short term solution.



# DEFINING THE ROLE OF MUNICIPALITIES

## MUNICIPAL CHALLENGES AND ADMINISTRATIVE STRUCTURE

- Municipalities face three (3) main challenges over the coming years: 

A reduction in state subsidies

Decreasing Population

Post-Maria Reconstruction Efforts

- Because of this, cost-saving measures and improved resource management will be indispensable to sustain and improve core services.

- Two main options are available to improve municipal management: 

Consolidation

Regionalization

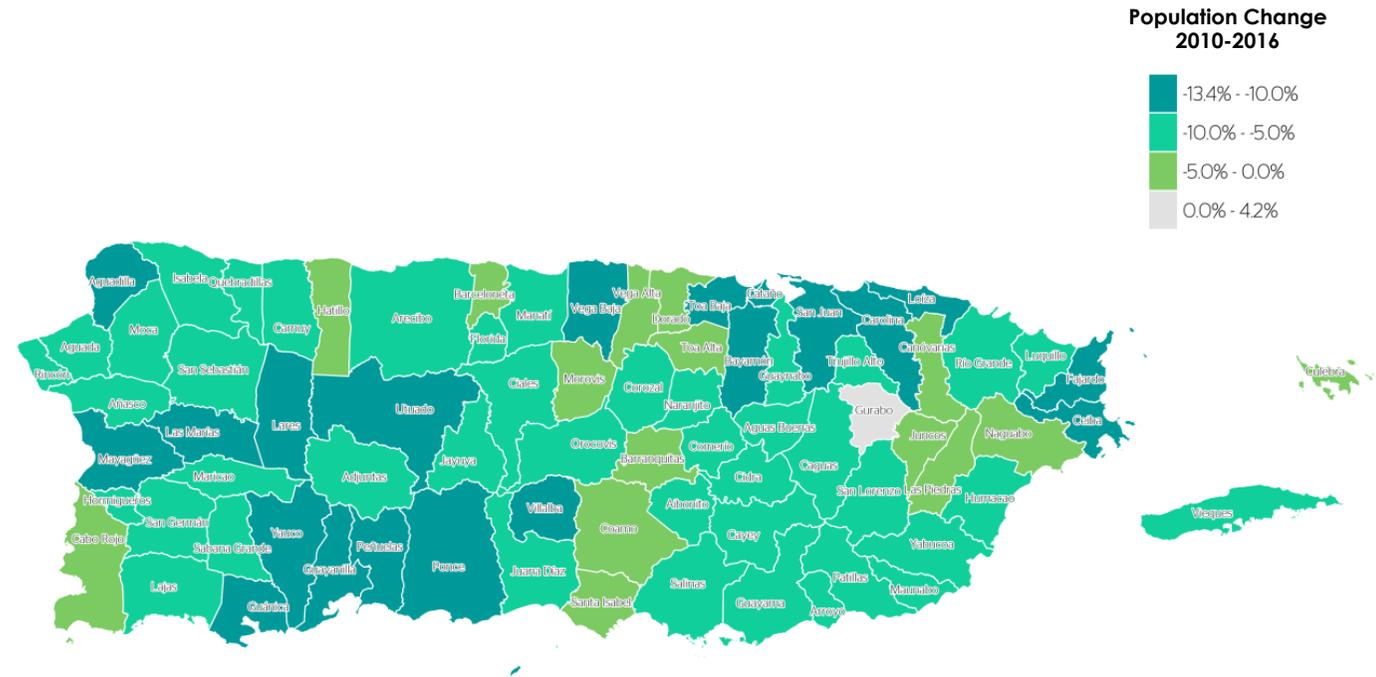
- There is a possibility that several municipalities will fall under the FOMB's supervision.

# 4

## Roadmap for Puerto Rico's economy: DEFINING THE ROLE OF MUNICIPALITIES

# POPULATION GROWTH

- A declining in population has affected all municipalities.
- The metro area and the southwestern regions were the most impacted by the population declines.
- These tendencies should accelerate particularly as a result of hurricane Maria.
- Estudios Técnicos, Inc estimates that in fiscal 2018 over 140,00 residents will leave the Island.
- This declining population presents a challenge for municipalities as it will affect economic activity and likely reduce municipal revenues as well.

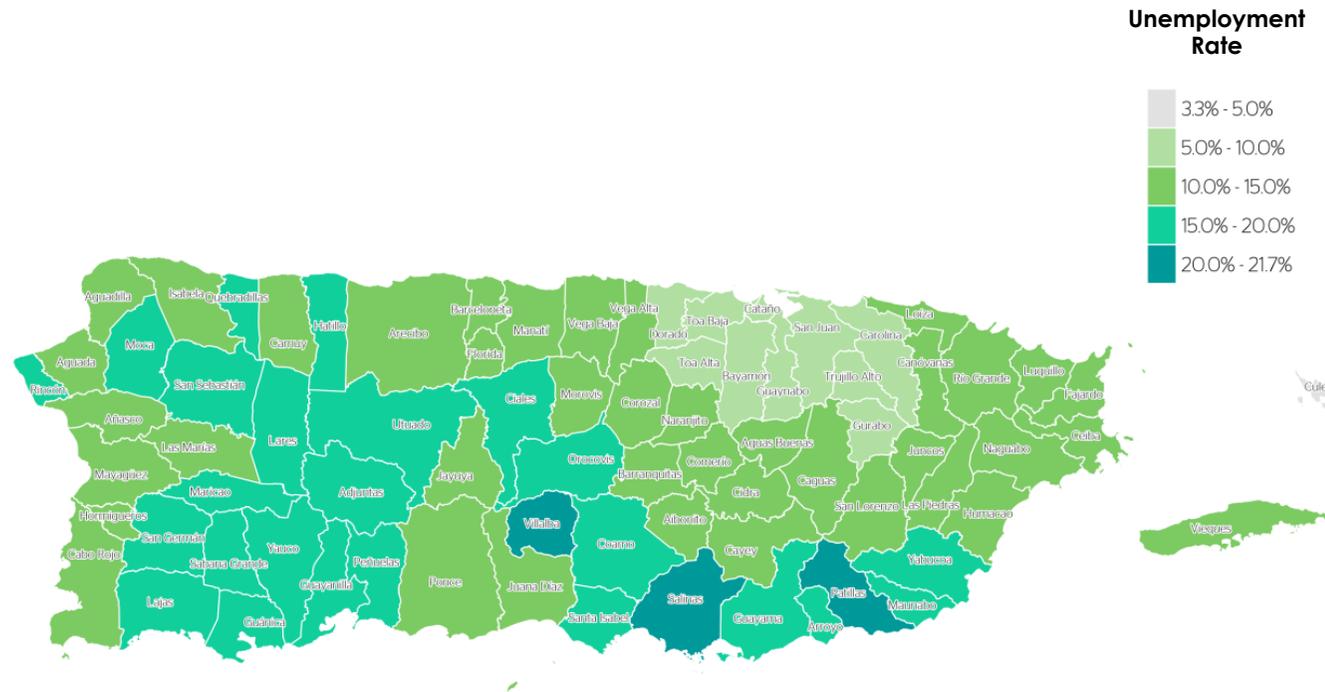


# 4

## Roadmap for Puerto Rico's economy: DEFINING THE ROLE OF MUNICIPALITIES

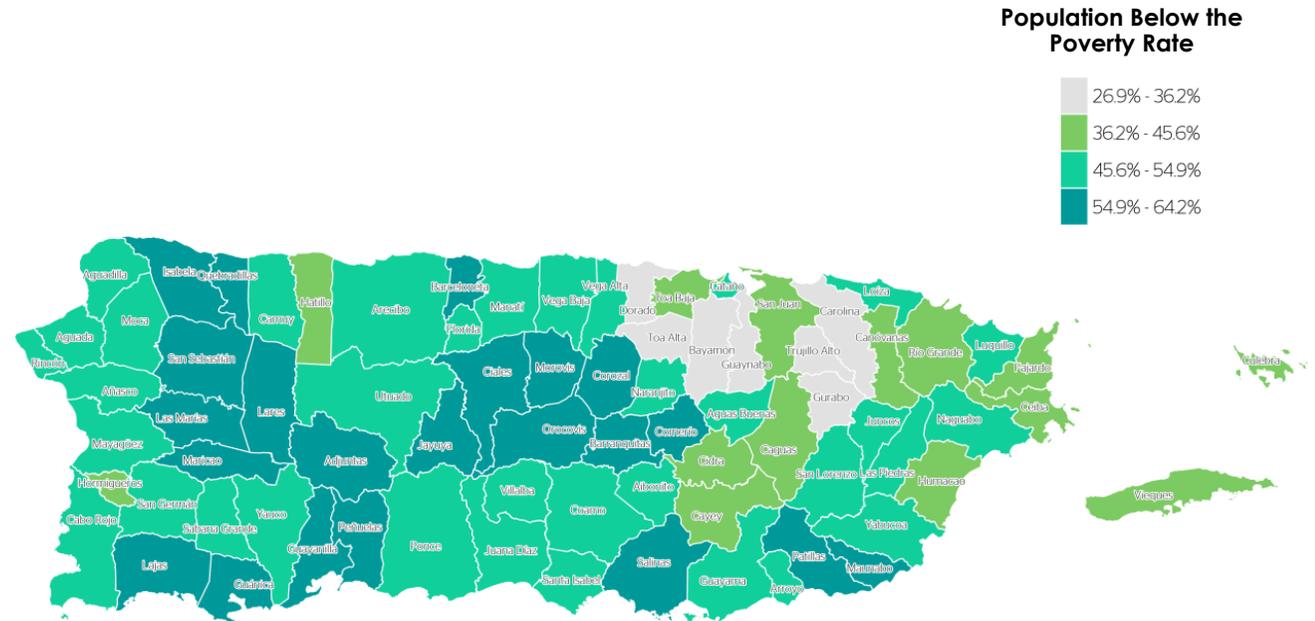
# UNEMPLOYMENT RATE

- The unemployment rate is lowest in the metro area.
- The highest levels of unemployment were reported in the central and southern regions.
- These municipalities, some of the hardest hit by hurricane Maria, will likely see a steep decline in their revenues.
- This comes at a time where State transfers are declining along with an increase in migration, further eroding the municipal economic base.



# POVERTY IN THE MUNICIPALITIES

- As was the case with unemployment, the municipalities with the least amount of population below the poverty rate were in the metro area.
- The center and southern areas of the Island have some of the highest poverty rates, many of which with over 55% of the population below the poverty rate.
- This presents a major challenge in the coming years for the municipalities. If employment and income can't be increased, providing essential services will be a difficult task.
- Low employment and incomes also means fewer options for municipalities to increase fiscal revenues.

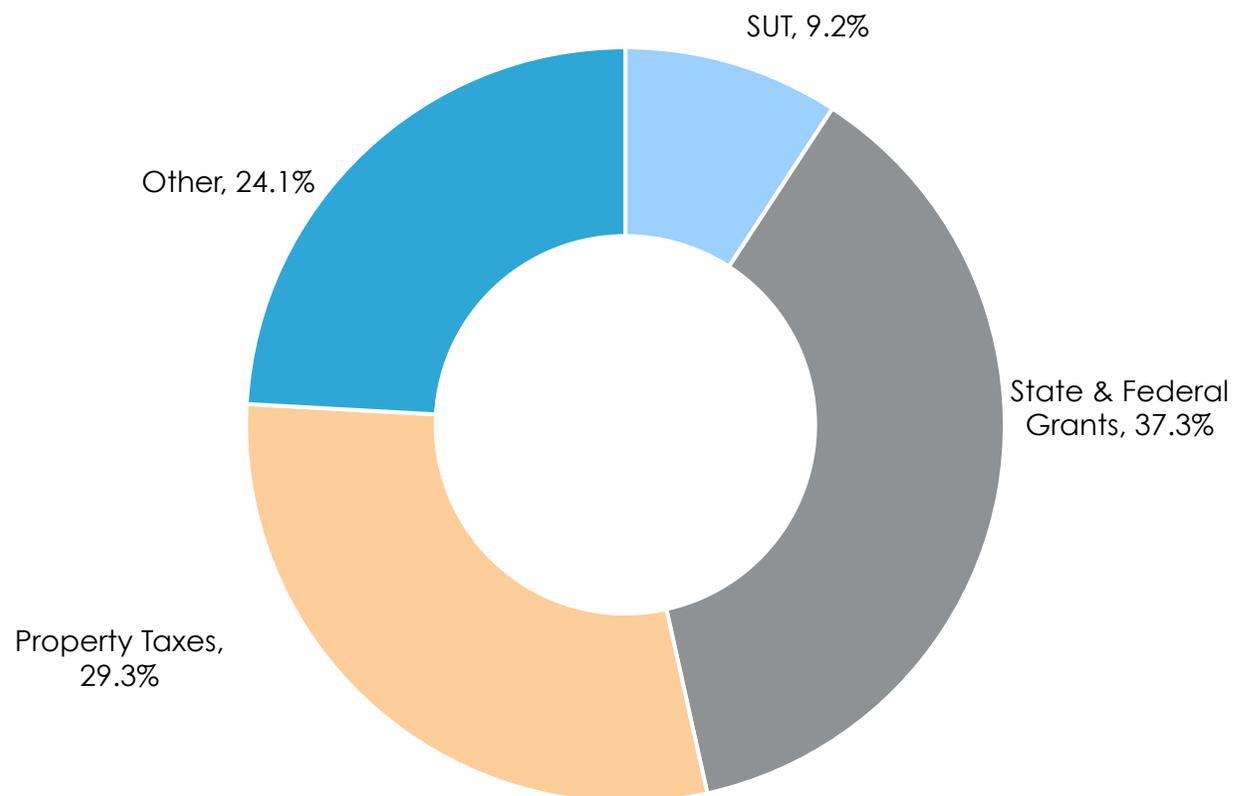




# FINDINGS OF THE 2016 MUNICIPAL STUDY

SPONSORED BY THE FUNDACIÓN DEL COLEGIO DE CPAs

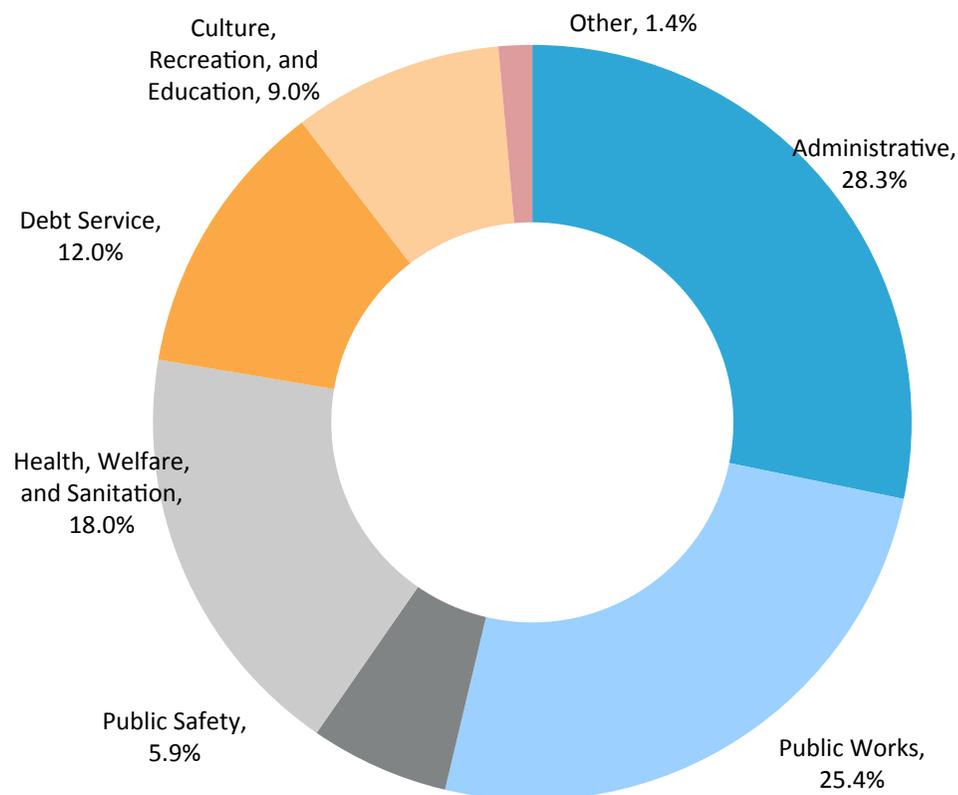
## MUNICIPAL REVENUE BY SOURCE



Source: Municipal Single Audits, fiscal years 2013 & 2014.

- Municipalities rely heavily on State & Federal grants (37.3%). This is more pronounced for smaller municipalities, wherein larger municipalities depend less on State transfers.
- Therefore, any change reduction in State transfers must be compensated by either an increase in municipal taxes or a decline in spending.
- Property taxes present a unique opportunity to raise revenue as many municipalities, particularly the smaller and rural municipalities have lower revenue from property taxes.
- Sales & Use Tax represents 9.2% of total municipal revenues and is the third largest source of revenue.

# MUNICIPAL SPENDING BY TYPE



Source: Municipal Single Audits, fiscal years 2013 & 2014.

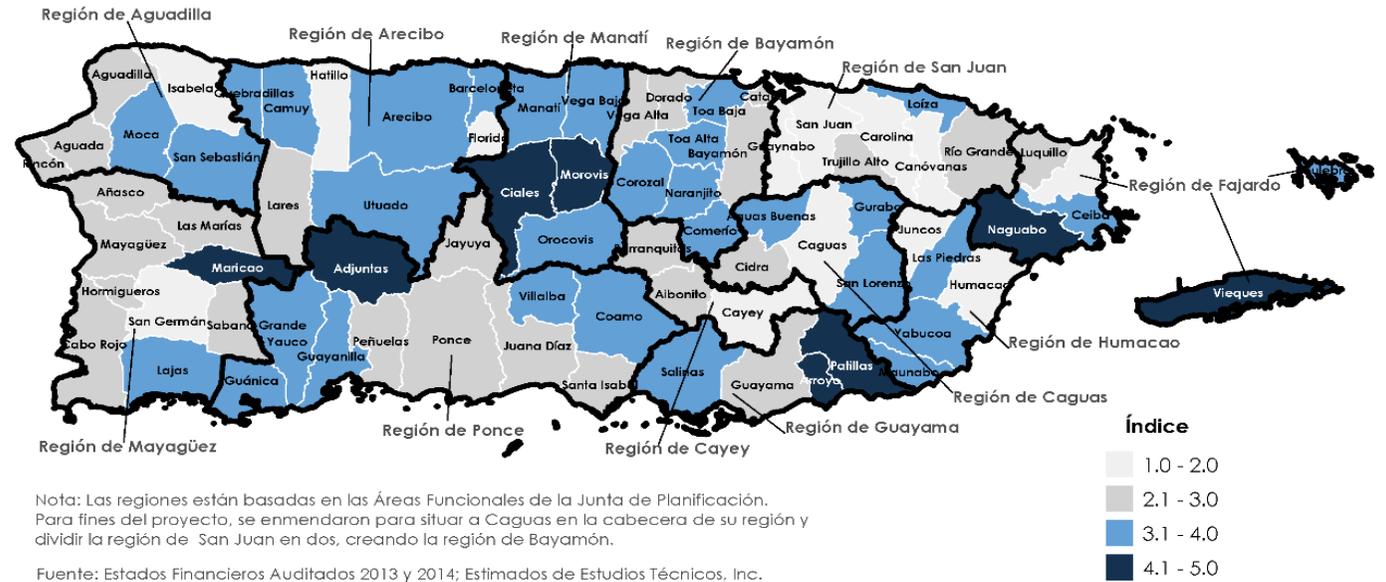
- For many municipalities, particularly smaller ones, spending was concentrated on two factors: Administration and Public Works.
- This is quite worrisome, as over 28% of spending goes towards the day-to-day management of the municipalities. In some cases, administrative costs were over 40% of total spending.
- Municipalities must begin to reduce spending on operating costs so as to have more resources available for essential services.
- Reductions in Spending could be achieved through consortiums or other cost-sharing agreements.

# FISCAL, ECONOMIC, AND SOCIAL INDEX

- The map in the next slide presents the fiscal index known in Spanish as ISFES. This index was developed and presented in the 2016 study “Estudios para Evaluar la Estructura Municipal de Puerto Rico”.
- The index takes in to account 5 variables:
  - Dependency – on State and Federal transfers;
  - GDP per capita – by municipality;
  - Administrative Costs;
  - Median Household Income; and
  - Debt service – as a percent of total income net of State and Federal transfers.
- The darkest municipalities, those with the highest value in the index (1-4) are considered the most vulnerable.
- The 2016 study recommended that any effort to reduce cost and begin consortium practices be done in the Arecibo and Humacao regions.
- These are the recommended regions for most of the consortia recommended later on.

# FISCAL, ECONOMIC, AND SOCIAL INDEX

- The municipalities with shades of blue, as determined by the index presented in the previous slide, should be considered as the most vulnerable in fiscal terms. The most vulnerable municipalities have an index value greater than 3.1.
- As such, these municipalities are most at risk of falling under the FOMB's supervision.
- This index contains data from 2014, fiscal conditions should have dramatically changed since this time.
- The fiscal vulnerability of the municipalities could improve thanks to federal funds for reconstruction efforts post-Maria (HUD-CDBG). However, these funds cant be used for operational costs, so municipalities that can improve revenues of economic activities related to the rebuilding efforts could potentially see an improvement in their fiscal situation in the short term.
- For a further detail on the impact of federal funds see the federal funds section.



# 4

## Roadmap for Puerto Rico's economy: DEFINING THE ROLE OF MUNICIPALITIES

# IMPACT OF MARIA ON MUNICIPALITIES

- The map in this slide presents the municipalities where the strongest winds were estimated.
- The path of the hurricane closely follows those municipalities most vulnerable given the fiscal index presented in the 2016 study “Estudios para Evaluar la Estructura Municipal de Puerto Rico” and in the previous slide.
- In the 2016 study the Arecibo and Humacao region were some of the most fiscally vulnerable, this is precisely where the hurricane path is traced.
- As such, these two regions should be considered as key places to begin the consortium and cost-sharing efforts.



## KEY FINDINGS OF THE 2016 MUNICIPAL STUDY

1. Lack of uniformity when it came to the municipal Single Audits (for 2013 and 2014) as well as the municipal budgets.
  - a) Municipalities would often classify revenues and expenditures in different manners and in separate accounts. This makes it difficult to accurately compare revenues and expenditures amongst municipalities.
  - b) Having a uniform system of accounts and reporting structure would allow a separate entity to accurately evaluate and set efficiency goals for municipalities.
2. Smaller municipalities were primarily dependent on State & Federal transfers, and given the lack of revenues could not acquire debt. Larger municipalities in general depended less on transfers and more on debt issuance.
3. This meant that in the study, municipalities could be classified in two ways:
  - a) Small and dependent on State & Federal transfers (grants); or
  - b) Large and in debt.
4. Administrative costs tended to be higher for smaller municipalities, as operating the local governments tended to be more costly given no economies of scale.

## CONSOLIDATION DOESN'T GENERATE SIGNIFICANT SAVINGS BY ITSELF

- Mayors and their respective municipal assemblies cost local tax payers an average of \$1.6 million. Even if all the mayors and municipal assemblies were eliminated it would save tax payers a maximum of \$122.6 million.
- **Therefore, average savings generated by consolidating municipalities without some level of regionalization would be almost negligible.**

Cost of Political Structure		
Municipality	Mayor & Municipal Assembly	% of Total Expenses
Aguadilla	\$1,501,931	2.3%
Arecibo	\$2,693,460	3.9%
Arroyo	\$1,902,651	12.5%
Culebra	\$531,952	7.7%
Fajardo	\$2,549,172	5.4%
Humacao	\$3,592,524	5.2%
Jayuya	\$1,140,910	5.4%
Maunabo	\$136,986	0.7%
Naguabo	\$651,261	3.9%
Orocovis	\$903,994	3.4%
Sabana Grande	\$2,669,897	10.3%
San Lorenzo	\$1,476,190	5.6%
Vieques	\$683,177	4.9%
Average	\$1,571,854	5.5%

Source: Single Audits, 2013&2014

# REGIONALIZATION IS KEY

- On the other hand, regionalization of certain services can generate meaningful improvements in service quality and costs, by:
  - Eliminating Redundancy
  - Cost sharing arrangements
  - Reducing Administrative Costs
  - Achieving Economies of Scale
- As the FOMB recommended, the Commonwealth should retain at least 20% of current subsidies municipalities to change their operating model and avoid further fiscal imbalance. Municipal receipts should be tied to meaningful structural reforms.
- The services that should be regionalized include, but are not limited to:
  - Solid waste disposal
  - Management of Federal Funds
  - Security (municipal police)
  - General administrative services



## POLICY RECOMMENDATIONS

- Create an inter-agency commission with the goal of executing a coordinated plan towards improving municipal efficiency and organizational structure and also avoid the dangers of fragmenting development policy.
- Improve guidelines on administrative processes, work plans, and operational procedures.
- Standardize, harmonize and improve the reporting of financial, budget and Project information, adopting the Chart of Accounts already in place under the Municipal Administrative Regulation.
- Develop quality metrics to measure the effectiveness of municipalities in each designated programme area.

Source: Estudios Técnicos, Inc. (2017). *Estudio Para Evaluar la Estructura Municipal de Puerto Rico*.

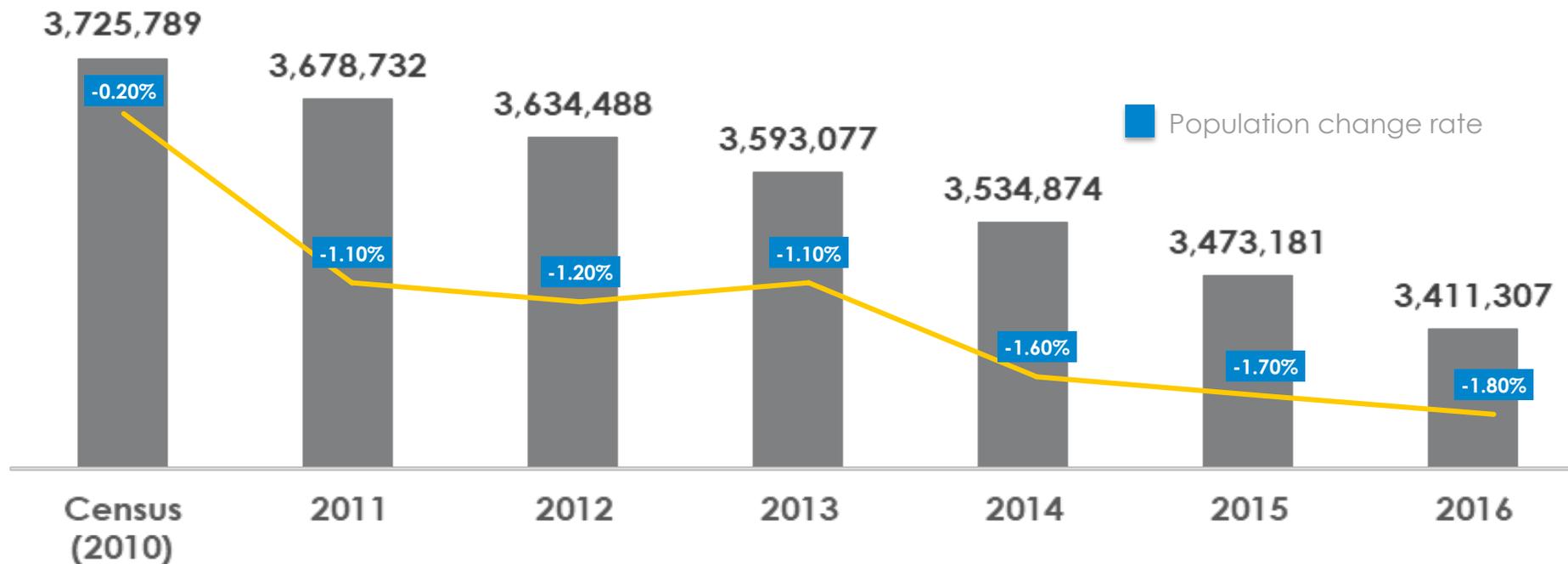
## POLICY RECOMMENDATIONS

- Implement a shared services approach, in which efficiencies are obtained by consolidation of functions and process reengineering (see PR Fiscal Agency and Financial Advisory Authority, 2018, p. 73).
- Foster the usage of inter-municipal agreements and regional structures to promote efficiencies of scale (ibid.).
- Create oversight and fiscal control mechanisms, preferably through a designated commission.
  - Establish reductions in state transfers
  - Enact fiscal plans and enforcement procedures
  - Create savings reserves for financially fragile municipalities
  - Directly supervise the planning and budget processes, and the compliance of cash flows to the budget guidelines



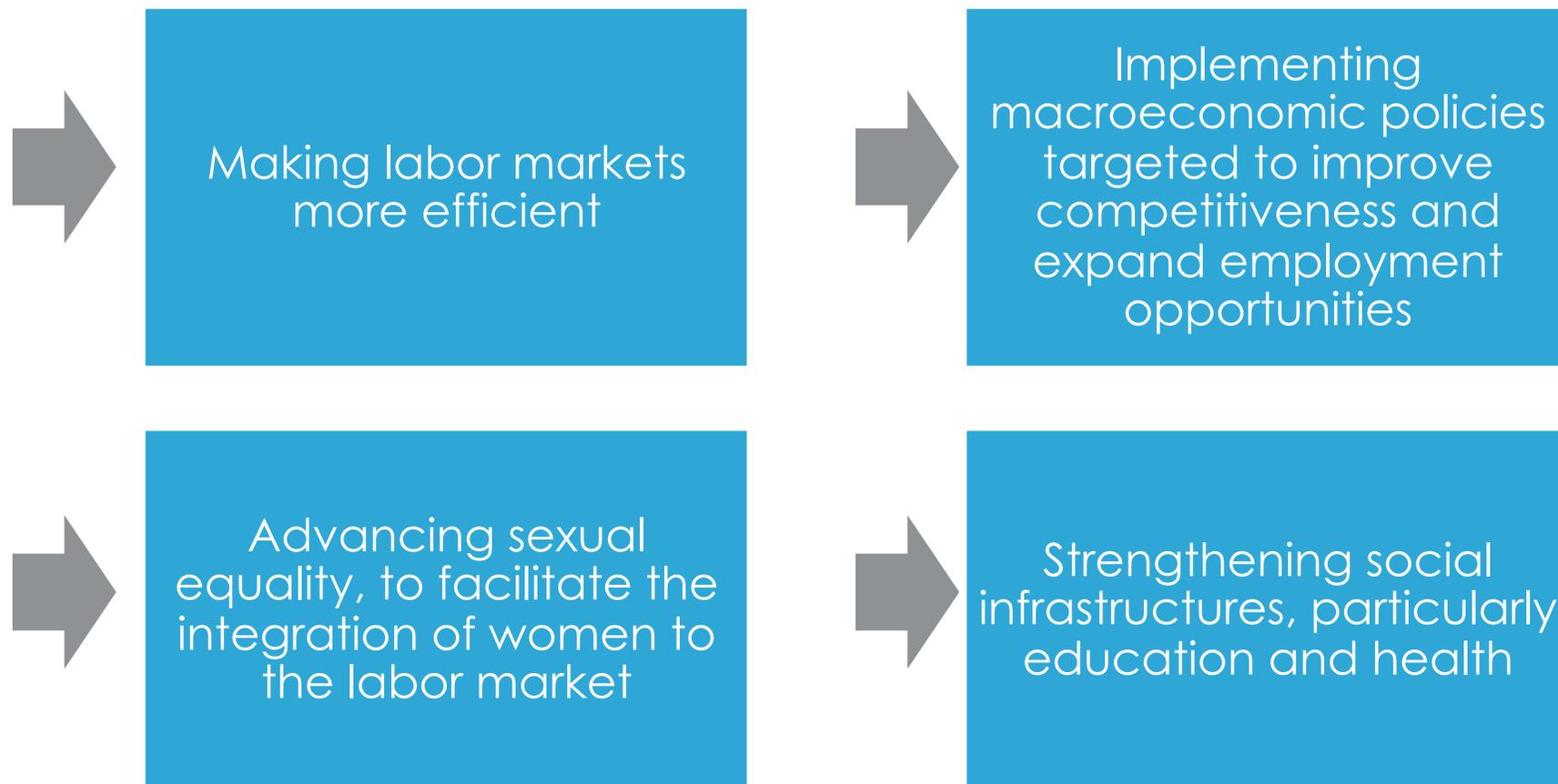
# POLICIES AND STRATEGIES TO STABILIZE POPULATION

## POPULATION IN PUERTO RICO 2010-2016



Source: US Census Bureau (2017). Annual Estimates of the Resident Population [Table PEPANNRES].  
Puerto Rico Planning Board.

Other jurisdictions that have faced these challenges, have focused their efforts in:



# THE CONTEXT IN PUERTO RICO



- Poverty, inequality and the lack of opportunities for social mobility in Puerto Rico exacerbates the probability of migrating.
- Thus, any strategy developed for stabilizing the population :
  - **Must be** designed based on a framework that addresses poverty
  - **Should** emphasize on improving employment opportunities
  - **Has to** focus on the provision and strengthening of complementary services and social infrastructures
  - **Requires to** pay attention to the particular needs of our vulnerable populations

# 5

## Roadmap for Puerto Rico's economy: POLICIES AND STRATEGIES TO STABILIZE POPULATION

A focus on providing opportunities and a better quality of life to vulnerable populations: some examples



### YOUTH

- Development of programs to improve the opportunities and facilitate the transition from school to college
- Promotion of volunteerism and other "school to work" programs to increase youth employability opportunities
- Education and capacity building opportunities
- Implementation of prevention and after school programs
- Complementary services for young parents (day care, housing incentives, among others)
- Incentives to promote entrepreneurship



### WOMEN WITH CHILDREN

- Provision of complimentary services (day care, after school programs)
- Expansion of early intervention services (for children 0-5)
- Training and capacity building opportunities
- Equal opportunity policies
- Labor flexibilities (for example paternity leave)
- Incentives to promote entrepreneurship
- Housing incentives



### AGING POPULATION

- Complementary services for the aging population through municipalities and NPOs (housekeepers, day care, assisted living, among others)
- Incentives to care givers
- workforce re-training opportunities
- Volunteerism and community service programs
- Promote community-based health initiatives

## STRATEGIES FOR DEALING WITH POPULATION LOSS

- Part of Puerto Rico's measures to stabilize population include (as previously mentioned) **a strong policy for dealing with the Puerto Rican diaspora.**
- This policy must incorporate the capacity to access Puerto Rican human capital in the mainland, including professionals that have left Puerto Rico.
  - Attracting these professionals on a non-permanent basis could resolve some of the shortages experienced in specific niches (e.g. medical specialists).
- *A broad overhaul of the current measurement system in the island is needed.*
  - Outdated metrics need to be updated
  - Additional metrics need to be developed
  - Consistency and uniformity



# OPTIMIZING THE MANAGEMENT OF FEDERAL PROGRAMS

# FEDERAL FUNDS AND ECONOMIC DEVELOPMENT

- As with any other source of funds, federal funds also have a degree of uncertainty. From a grantor's point of view and also from the grantee's capacity to execute and manage funds according to rules and regulations.
- During the past decades the Island's efforts have been placed on capturing additional federal funds and improving management and execution.
- The fiscal crisis has incremented the pressure on government services and thus, local programs have been replaced with imported programs from the federal government.
  - The above has undermined the Island's capacity to create effective programs and institutions.
- Disaster relief funds are fundamentally different from ordinary federal programs.
  - Funds are time sensitive and require added capacity for deployment
  - Execution must move beyond compliance-focus. Therefore, federal programs must be adapted to fit local socioeconomic conditions.
  - Innovation policy must be incorporated into program design strategies. NGOs and public institutions must design relevant solutions, rather than imported one-size fits all programs used in other jurisdictions.
  - The effective use of federal funds will require a strong collaboration between the central government and municipalities, which is currently not in place.
  - Municipal governments are key to immediate relief efforts, however, a regional or central agency must be responsible for a comprehensive approach.

# FEDERAL FUNDS AND ECONOMIC DEVELOPMENT

The previous mantra of fiscal responsibility that permeated when the government financed its work via private funds in municipal markets has changed to compliance and adequate use of federal funds.

## Estimated Federal Funding for Relief and Reconstruction As of February 21, 2018

Concept	Amount
CDL Loan (October 2017)	\$4.7
FEMA (Public & Individual Assistance)*	\$7.4
CDBG-DR (February 2018)	\$1.5
US Budget Resolution FY 2018:	
CDBG	\$11.0
Reconstruction electricity grid	\$2.0
Medicaid	\$4.8
<b>Subtotal</b>	<b>\$15.8</b>
Food Stamps	\$1.3
Estimated Additional Reconstruction Funding**	\$18.4
<b>Total</b>	<b>\$49.1</b>

\* January-September 2018 (FEMA January 18, 2018 DRF monthly report). \*\*The Fiscal Plan projects an estimated \$49.1 billion in total Federal Assistance, which includes reconstruction. The approved funding as of February 21, 2018, however, totaled \$30.7 billion; this included only funds for disaster relief and individual aid. The difference is expected to lie in reconstruction costs.

# FEDERAL FUNDS AND ECONOMIC DEVELOPMENT

Move beyond capturing funding opportunities, resources must be placed within management and execution.

- Main objectives
  - The objective is to create the institutional design necessary to deploy a vast amount of federal funds within a jurisdiction that has limited experience in such endeavors.
    - The historical record of Puerto Rico's capacity to manage and effectively use federal funds is lackluster. In order to maximize the effects of federal funds in the economy, capacity must be built-in.
- Short-term priorities:
  - In the short-term, the government must focus on establishing a federal funds management office with a municipal and central government component.
  - Also, create regional federal funds offices between municipalities (shared services).
  - Coordinate and manage the current portfolio of federal funds within the government.
  - Coordinate efforts with recently created Central Recovery and Reconstruction Office of Puerto Rico.
  - Such measure requires creating a new agency charter independent from the Governor's Office and with adequate representation from Municipalities. Other jurisdictions have appointed a chief reconstruction officer.
- Actions:
  - To enable shared services between municipalities, local government must initiate a pilot program to transfer resources from existing federal funds offices, to a regional federal funds office.
  - Under Article 2.001 of *Ley de Municipios Autónomos*, municipalities can engage in such agreements. To incentivize municipalities, the central government could condition a certain portion of federal funds to an allocation that only considers regional federal funds offices, rather than individual municipalities.

# FEDERAL FUNDS AND ECONOMIC DEVELOPMENT

Maximize vicinity hiring and/or local hiring requirements for federal programs and improve internal linkages.

- Main objectives
  - Priority on procuring goods and services locally rather than importing excess capacity.
  - Time constraints within disaster relief funds create added pressures on accelerating expenditure rates, which also tend to favor businesses that currently provide services to the federal government and potentially negates other potential service providers.
  - Develop a centralized procurement tool following federal standards contained in 2 CFR 200 and international standards promoted by *Red Interamericana de Compras Gubernamentales*.
- Short-term priorities:
  - Modernize current procurement infrastructure at *Administración de Servicios Generales* and municipalities. A pilot program can be developed to create a modern and centralized procurement tool exclusively for disaster relief funds.
  - Grant management systems must place priority on procuring goods and services locally. When local capacity is limited, a second-tier mechanism could be developed to facilitate joint ventures with outside companies. Other changes within government
- Actions:
  - Governor must prescribe an executive order which directs government instrumentalities to guarantee compliance with reasonable efforts to hire or contract local resources. ASG agency director must create internal memorandum on new rules and procedures. As a pilot program, only disaster-related funds could only be required to abide by such rules. Finally, knowledge- transfer clauses can be required for non-resident contractors. i.e. training local personnel.

# FEDERAL FUNDS AND ECONOMIC DEVELOPMENT

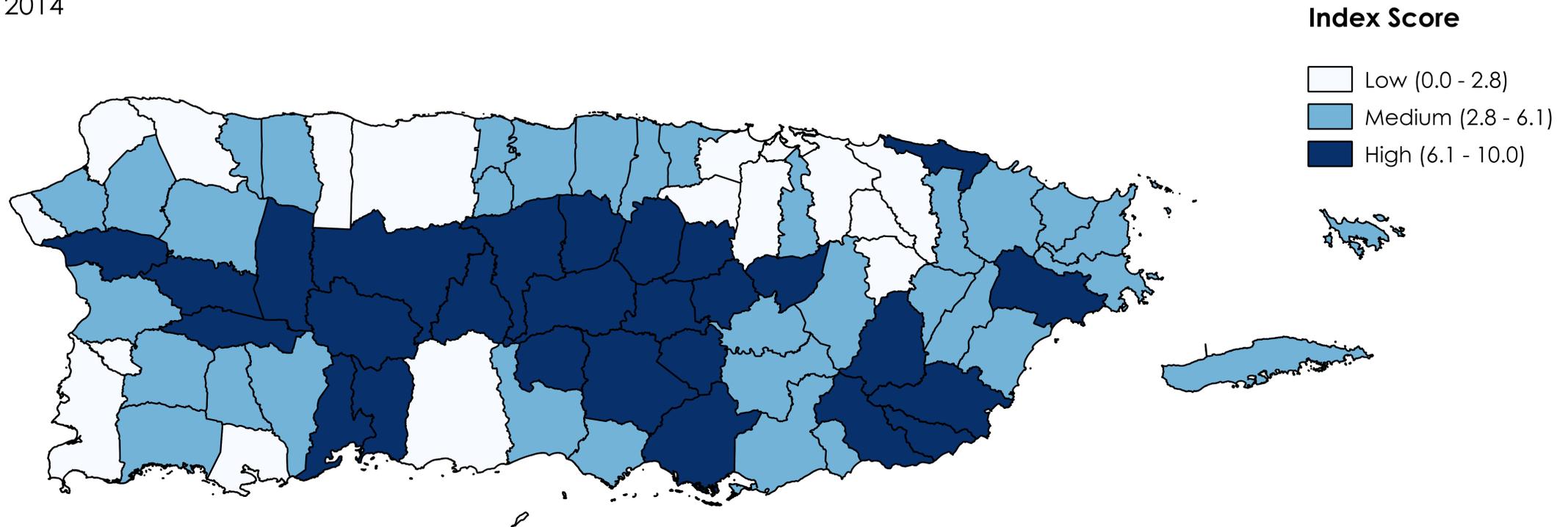
Define a new set of geographical boundaries as a proxy for a method of distribution of funds

- Main objectives
  - When limited resources are combined with a high number of unmet needs, it is recommended to concentrate the use of funds in particular areas. Such strategy allows for deeper and stronger effects in the economy.
  - A substantial portion of disaster relief funds are required to be distributed by the local grantee. To optimize such distribution or allocation, the system must be able to understand needs which arose due to the disaster, but also the prevailing socioeconomic conditions, productive capacity and supply-chain mechanisms within the jurisdiction.
- Short-term priorities:
  - Create geographical boundaries which consider, infrastructure needs, demographic trends, productive activity, and essential services in order to concentrate new public investments.
  - Direct new investments to most vulnerable and affected areas.
  - CRRO and federal funds office could create rules to distribute federal funds taking into account development zones based on the above principles. (see following map for an example of varying conditions)

## THE DISTRIBUTION OF FEDERAL FUNDS MUST CONSIDER LOCAL CONDITIONS

### Puerto Rico Vulnerability Index

2014



Source: Estimates by Estudios Técnicos, Inc. (2018).

The Map combines socioeconomic variables with information that potentially establishes a proxy of damages .

# FEDERAL FUNDS AND ECONOMIC DEVELOPMENT

Develop a matrix of funding sources

- Main objectives
  - Funding sources with broader eligible uses must be prioritized for strategic public interventions. Less flexible options could have a higher outsourcing component.
  - Create safeguard that limit the use of federal funds to finance recurrent expenditures
- Short-term priorities:
  - Prioritize use and government interventions
  - Prioritize innovative and autonomous program design
  - Determine optimal combination of funding sources
  - Determine rules defining eligible uses and match unmet needs
- Actions
  - CRRO and federal funds office could develop regulation to imbed the above objectives within federal programs.

# FEDERAL FUNDS AND ECONOMIC DEVELOPMENT

Create reconstruction programs beyond traditional housing reconstruction activity

- Main objectives
  - Incentivize rehabilitation efforts within urban areas or higher density locations within municipalities.
  - The high number of vacant units in urban areas creates an opportunity to capitalize on existing infrastructure. Moreover, a substantial portion of current housing stock is considered informal housing and not compliant with building codes. Due to fiscal constraints, municipalities were not able to enforce local ordinances and many abandoned properties remain within urban areas.
- Short-term priorities:
  - Buyout programs combined with demolition activities. Fund local *estorbos públicos* programs via federal slum and blight demolition activities. The strategy must recognize that abandoned or empty properties could be transformed into assets that promote urban renewal (i.e. green parks on empty lots).
  - Also, municipalities could try to induce concentration of disperse population via housing grants and stronger infrastructure investments on strategic areas.
  - Federal funds can be combined to formalize informal housing via subsidized loans from SBA and joint venture with local banking institutions.
- Actions:
  - Develop a targeted code enforcement program which address vacant and blighted properties.
  - Limit efforts which try to fund small investments via scattered efforts. No changes in legislation are required.
  - Tax policy on property could be used to deter reconstruction on areas with less density.

# FEDERAL FUNDS AND ECONOMIC DEVELOPMENT

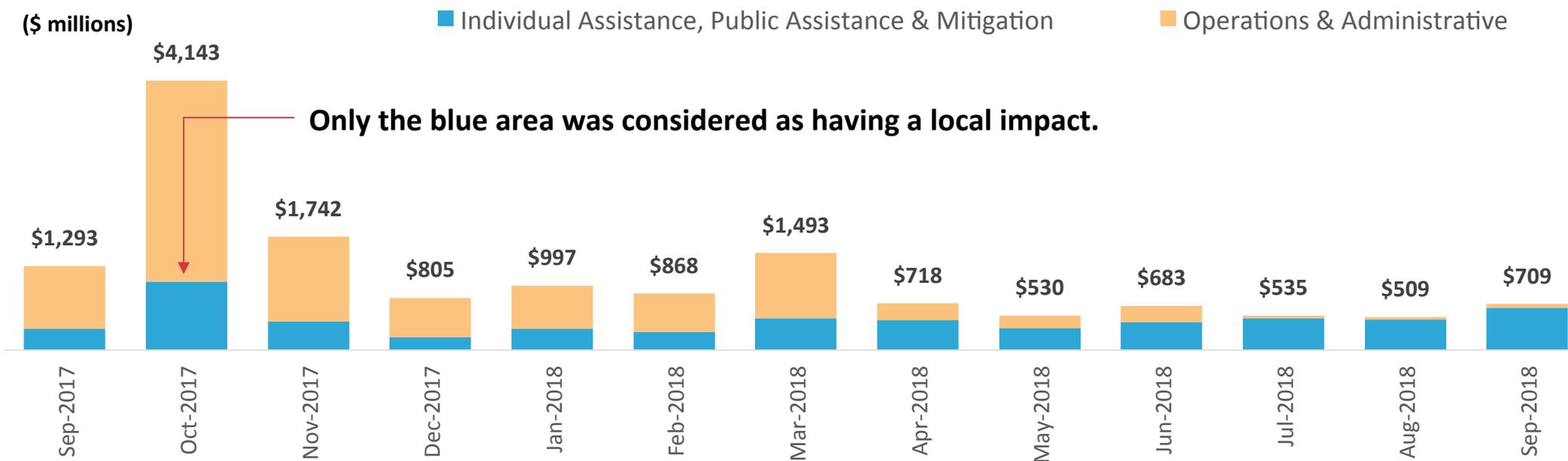
Anchor investments via local institutions

- Main objectives
  - Academic institutions and NGOs must play a central role in rehabilitation efforts
  - Importance to address critical projects targeted to local needs but are also congruous with regional/central priorities.
- Short-term priorities:
  - Increase spectrum of government action and provide greater assurances for long-term survival of economic development initiatives.
  - Municipal governments are key to immediate relief efforts, however, a regional or central agency must be responsible for a comprehensive approach.
- Actions
  - Capitalize on robust relationships with key local development actors via regional federal fund offices and the creation of disaster-development zones.

# INFLOWS OF FEDERAL FUNDS

## Monthly Estimates of FEMA Disbursements

September 2017 - September 2018



Sources: US Federal Emergency Management Administration (2018). *Disaster Relief Fund Monthly Report* [Appendixes B and C]. Estimates by Estudios Técnicos, Inc. (2018).

# FEDERAL FUNDS & MUNICIPALITIES

## SUMMARY

- Deployment of new policy targeting decentralization and regionalization through federal funds
  - Create regional structure of shared services for federal funds management
  - Pilot program with recovery funds
  - Consolidate federal funds offices between municipalities
  - Increase local government capacity to manage and use federal funds
  - Action plans for federal funds disbursements must be regional rather than place-bound
    - Natural disasters effects are regional, not municipal



# CONCLUSIONS AND RECOMMENDATIONS

# EXECUTION

- The recommendations made are mostly designed to avoid major conflicts with stakeholders and thus make execution easier.
- They are incremental and can be put in place without major structural disruptions. The execution strategy is illustrated by the following quote:

**“Cross the river by feeling for the stones”** [Deng Xiao Ping, cited in the Growth Report](#)

- The government and the private sectors in Puerto Rico have very scarce resources to undertake a number of major initiatives simultaneously. Thus it is essential to define priorities and a carefully laid out Action Plan.
- Designing a system of metrics to gauge progress is essential. There is an old adage in planning that states that “you get what you measure”.
- Assuring continuity is essential. This is achieved by creating an institutional framework that makes it possible. Thus, the recommendation of creating a private sector entity to manage economic development policies and actions is essential. This recommendation, with some differences, has been made on a number of occasions.

# EXECUTION

Although the Foundation recognizes the importance and urgency of the reconstruction efforts, this report is oriented towards longer term sustainable development. The recommendations considered priorities are the following:

1. **Strengthen the Island's capacity for successful integration** into the global economy, recognizing that this requires a major overhaul of the economic policy making entities in the government and that the process incorporates dimensions beyond export promotion and investment attraction.
  - **Promote Puerto Rico as a service exporter** in key advanced services sectors and make the necessary institutional changes to improve effectiveness, recognizing that service exports require a very different approach and support mechanisms, as well as very different skill levels in the promotional entities. Law 20 of 2011 provides a major stimulus for service exports from Puerto Rico.
  - **Adopt an innovation policy** with the objective of introducing innovation in every sector and, of course, the government and municipalities. The result would be to make innovation and institutional learning a key competitive strategy.
2. **Puerto Rico must adopt an economic promotion strategy** that is not tax driven and relies on tax advantages to induce external investment.
  - **With respect to manufacturing, adopting a “retain, attract and grow” strategy** is key. Incentives will vary with the needs of particular firms and the stage at which they find themselves. PRIDCO, or the responsible entity, must have sector specialists in its staff, which has not been the case.
  - **Incentives cannot be one size fits all**, since emerging and mature firms have different needs and retention, attraction, and growing of industries also requires different approaches.

# EXECUTION

- 3. Puerto Rico must develop and adopt a coherent and consistent policy for dealing with the diaspora**, not only for dealings with Congress, but also as support for the Island's development strategies, mobilizing the resources of the Puerto Rican community in the mainland. This will require changes in the present public sector approach to the diasporas.
- 4. Stabilizing population and stemming outward migration** can be achieved through a combined effort aimed not only at job creation but improving social infrastructure, in particular education, health and labor reforms.
- 5. The tax system is a core component of any development strategy**. Puerto Rico's must be simple, consumption based and with low compliance and monitoring costs. Specific tax measures for priority policy areas are a key component of any tax system.
- 6. Municipalities must play a more important role in development** than heretofore, but in order to do so, changes in the way in which they are currently organized must be made. The creation of counties or autonomous regions in which cost sharing is possible and that can generate scale economies, is seen as essential.
- 7. The management of federal programs and funds requires that a central agency be created** to handle what is perhaps the most critical element in future development prospects. As of today such programs are handled in a fragmented manner that has cost the Island billions of dollars in such funds.

# BIBLIOGRAPHY

- Caballero, Ricardo J., *Specificity and the Macroeconomics of Restructuring*, MIT Press, Cambridge, 2007.
- Comisión del Gobernador sobre Descentralización y Regiones Autónomas, *Informe*, enero de 2016.
- Francis, Norton, *Using the Tax Structure for State Economic Development*, Brookings Institute, 2016.
- Gresik, Thomas A., *The Taxing Task of Taxing Transnationals*, *Journal of Economic Literature*, September, 2001.
- Hungerford, Thomas, *Taxes and the Economy: An Economic Analysis of Top Rates since 1945*, Congressional Research Service, 2012.
- Kotler, Philip et. al. *The Marketing of Nations*, The Free Press, 1997, New York.
- KPMG, *Unified Tax Code of Puerto Rico: Tax Policy Implementation Options*, October, 2014.
- Krugman, P. (1999). The Role of Geography in Development. *International Regional Science Review*, 22(2), 142-161.
- Leven, C. (1964). Establishing Goals for Economic Development, pp. 587-589. In Friedmann, J., & Alonso, W., eds. (1964). *Regional Development and Planning: a Reader*. Cambridge, MA: MIT Press.
- Loungani, P., Mishra, S., Papageorgiou, C., & Wang, K. (2017). *World Trade in Services: Evidence From a New Dataset [Working Paper]*. Retrieved from <https://www.imf.org/en/Publications/WP/Issues/2017/03/29/World-Trade-in-Services-Evidence-from-A-New-Dataset-44776>.
- Mankiw, N. Gregory, Weinzierl, Matthew and Yagan, Danny, *Optimal Taxation in Theory and Practice*, *The Journal of Economic Perspectives*, Fall 2009.
- N'Ylimon, Nantob, *Taxes and Economic Growth in Developing Countries: A Dynamic Panel Approach*, University Library of Munich, 2015. Noonan, Michael, *The Knowledge Box Economy*, Finance Ministry, Ireland, 2016.
- North, Douglass C., *Transaction Costs, Institutions, and Economic Performance*, International Center for Economic Growth, San Francisco, 1992. OECD, *Tax and Economic Growth*, Paris, n.d.
- Ogilvy, David, *Ogilvy on Advertising*, John Wiley & Sons, 1983, New York.
- Razin, Assaf and Slemrod, Joel (eds.), *Taxation in the Global Economy*, National Bureau of Economic Research, The University of Chicago Press, 1990.
- Roberts, Brian H., Stimson, Robert J., and Stough, Roger. (2006). *Regional Economic Development: Analysis and Planning Strategy*. Berlin, Germany: Springer-Verlag.
- Scotchner, Suzanne, *Innovation and Incentives*, MIT Press, Cambridge, 2004.
- Slemrod, Joel and Gillitzer, Christian, *Tax Systems*, MIT Press, 2013.
- Villamil, José J. *Ponencia sobre el P. de la C. 3070*, diciembre de 2010.
- Wasylenko, Michael, *Taxation and Economic Development: the State of the Literature*, *New England Economic Review*, March, 1997.
- World Bank & PWC, *Paying Taxes 2017*, Washington, DC, 2017
- World Bank, *Doing Business 2018*, Washington DC, 2018

