



**PROJECT ASSESSMENT:
CURRENT STATUS OF THE ECONOMIC, SOCIAL, ENVIRONMENTAL AND
INFRASTRUCTURE DEVELOPMENT IN PUERTO RICO**

December 2003, Puerto Rico

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Executive summary

- **The world is changing — Fast**
 - Accelerating pace of **demographic** change, **globalization**, and **technology** innovation
 - Fundamental shifts in location of global demand, trade, investment, etc.
 - More and more **competitors** in every field
 - Challenge to meet increasing health, education, infrastructure needs, while controlling costs and environmental impact

- **Where Puerto Rico stands**
 - In principle, PR has many of the assets to succeed in the global **knowledge economy** — “Glass is more than half full” — but is not taking advantage of these assets
 - Risk that Puerto Rico will become a **Victim**, not a **Beneficiary**, of global change

- **Others have successfully addressed similar “paradigm shifts” through vision and leadership**
 - Ireland, Singapore, UK, Canada
 - North Carolina, Colorado, British Columbia

- **Puerto Rico needs to make the same commitment to long term vision and leadership**
 - A New Economic Model, A New Social Model, A New Resource Model

Five Fundamental Forces are radically reshaping the world

Macro environment drivers

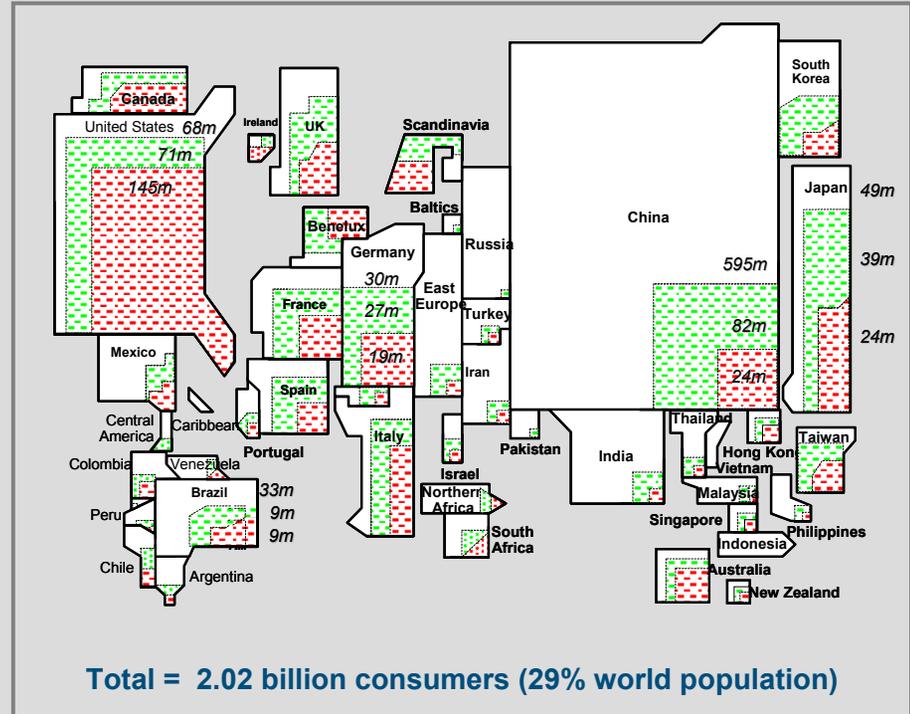
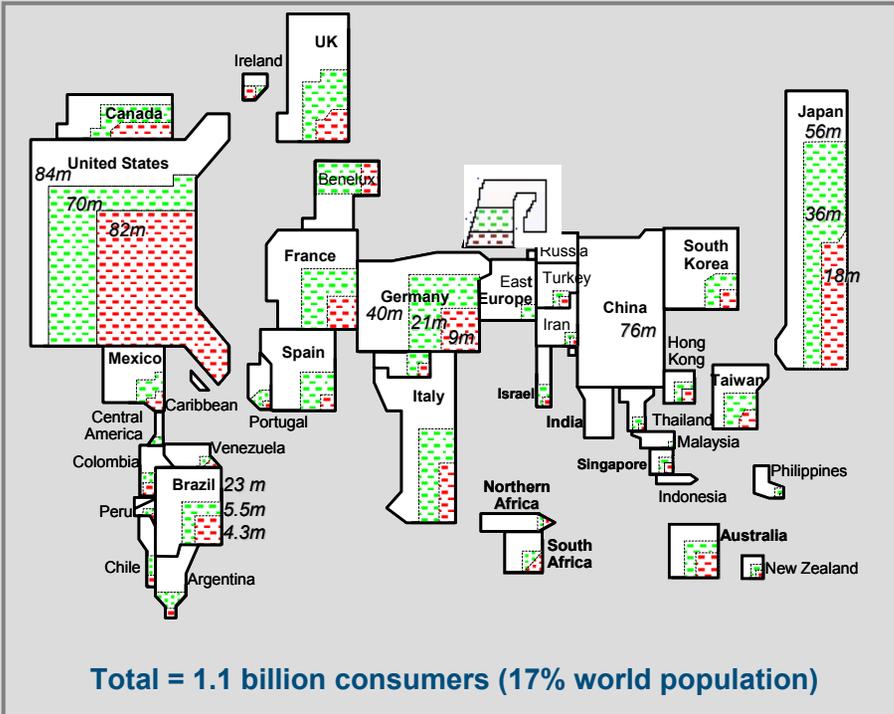


Massive shift in location of consumer demand and skilled labor supply

Middle and upper income consumers by Country

2000

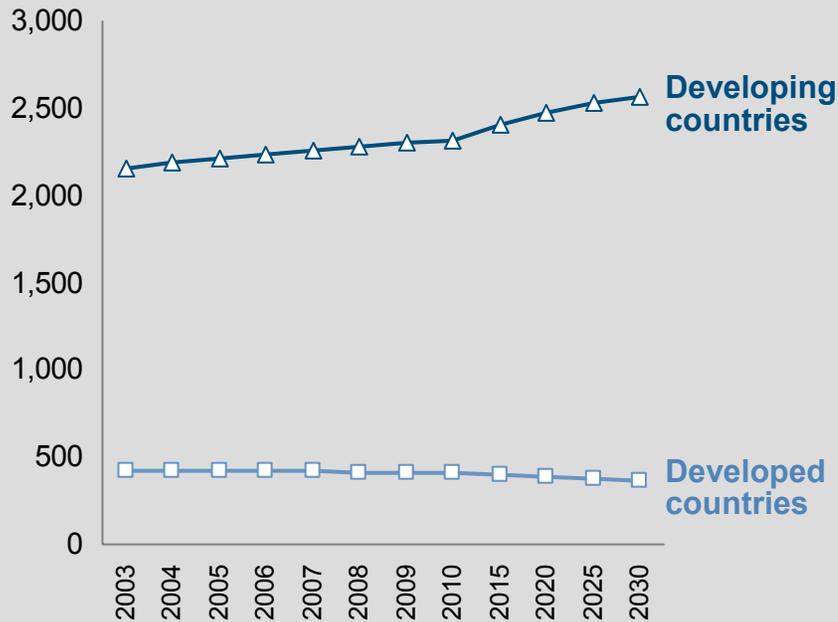
2025



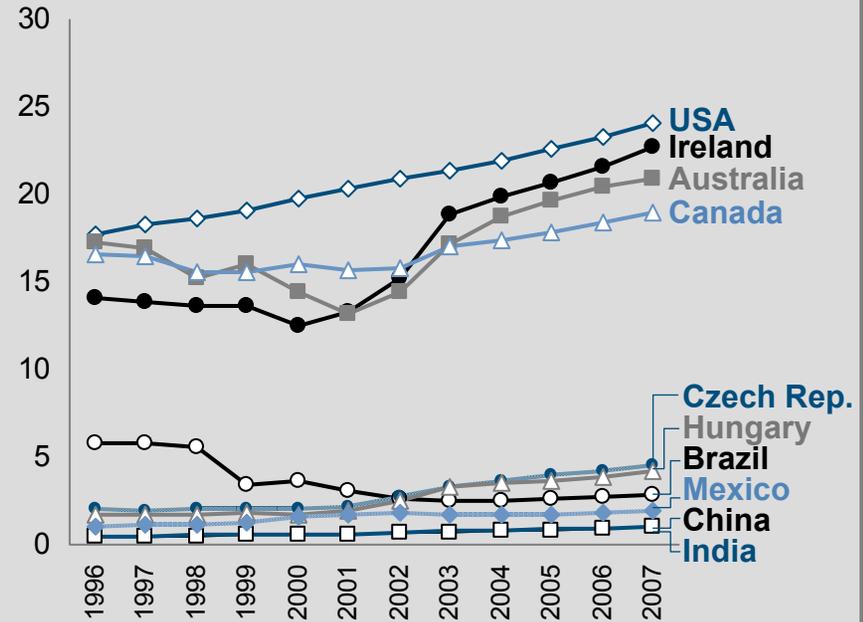
Source: World Bank, EIU, US Census Bureau, A.T. Kearney analysis

Continuing labor cost advantage for developing countries

15-39 year old age cohort
(millions)



Labor costs per hour
(US\$)

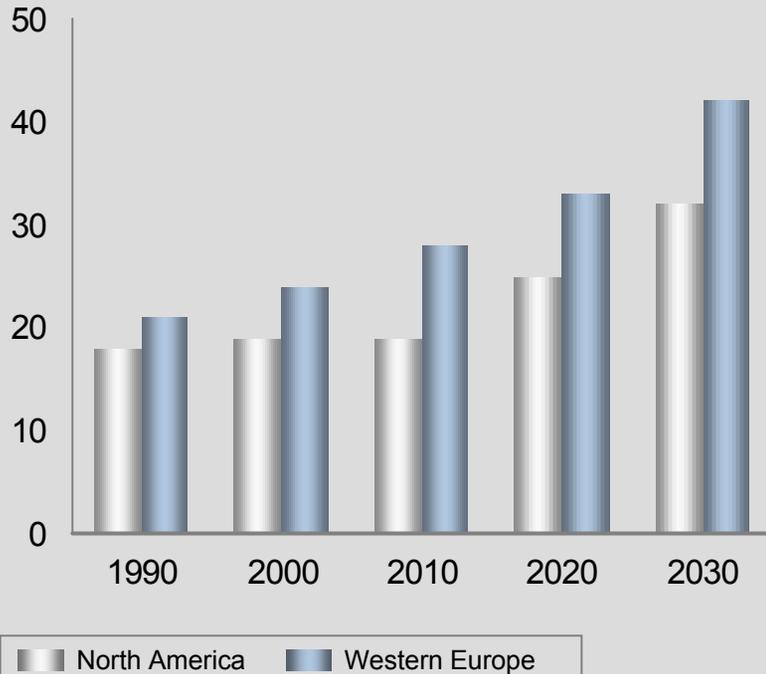


Sources: U.S. Census Bureau; EIU

Rising dependency ratios and healthcare and pension costs in developed countries

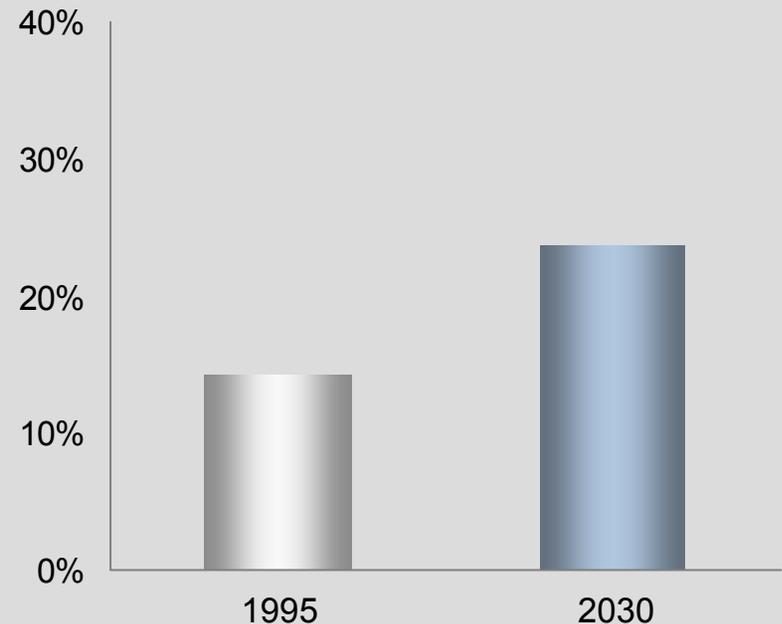
Rising dependency ratios

Retirees per hundred workers



Public spending on pension and health benefits

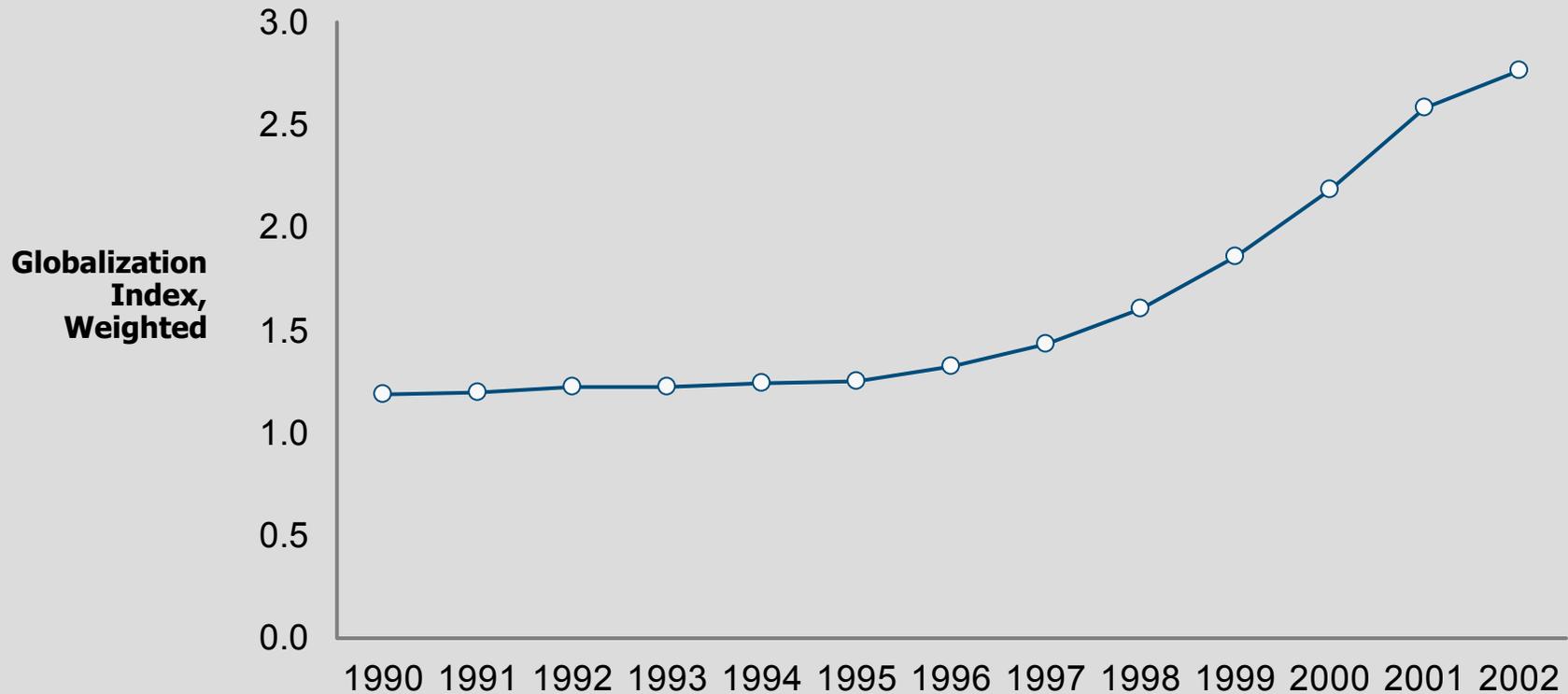
As a percentage of GDP



More and more countries are integrating into the Global Economy

Growth in Globalization

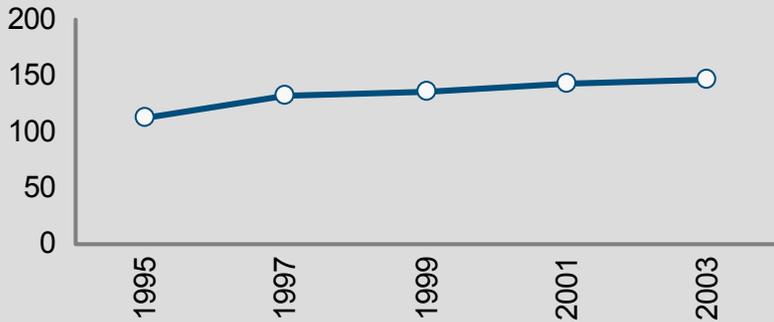
Weighted Scores from the A.T. Kearney Globalization Index™¹⁾



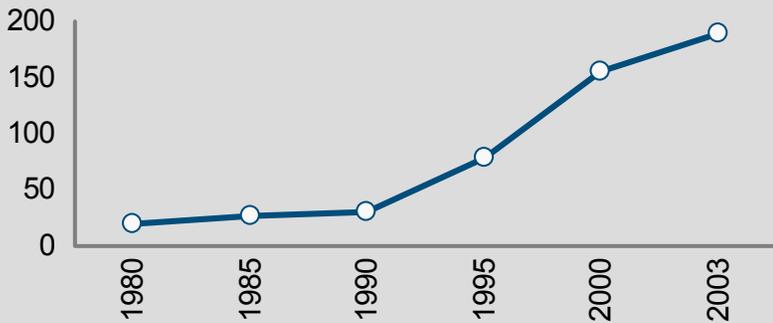
Note: 1) Globalization Index is an A.T. Kearney proprietary index composed of economic, political, social and technological factors measuring global integration

Free trade agreements are leveling the playing field

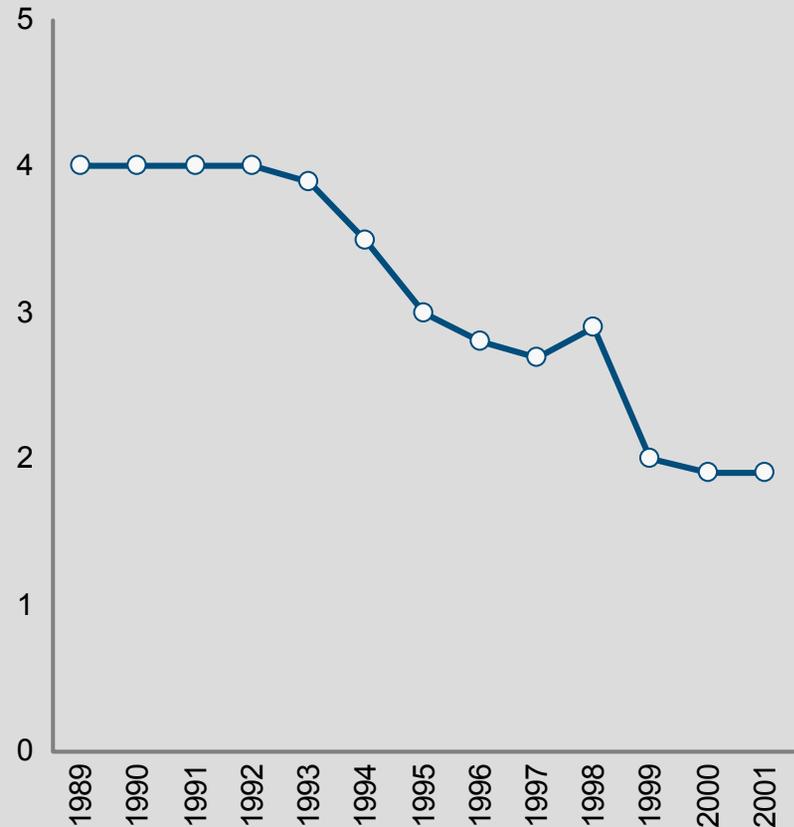
Number of WTO members



Number of regional trade agreements



Weighted average US tariff rates¹⁾

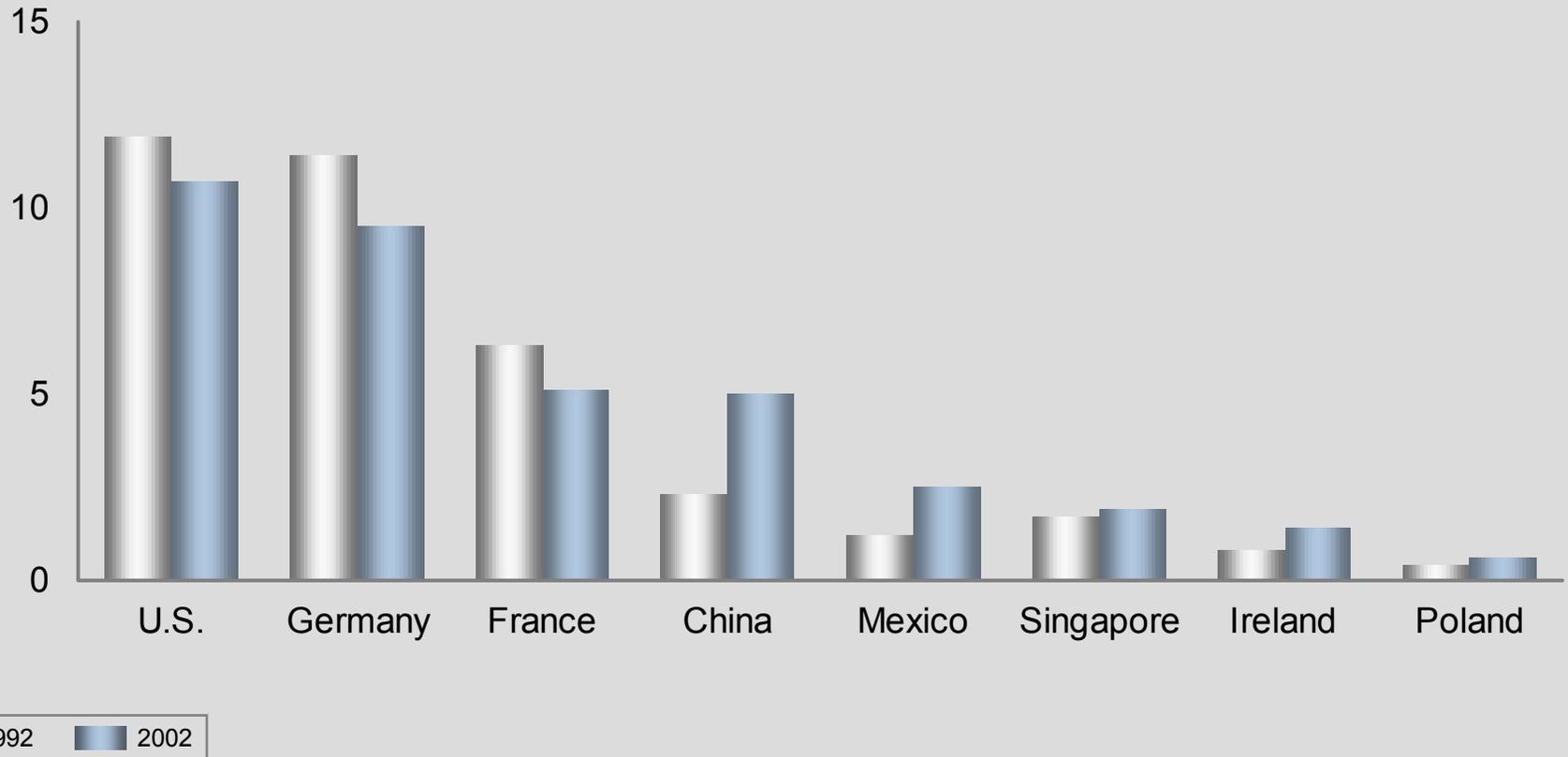


Note: 1) Excluding agricultural and fuel products
 Sources: UNCTAD, World Trade Organization (WTO)

New dragons are grabbing an increasing share of World Trade

Country merchandise exports as % of World Exports

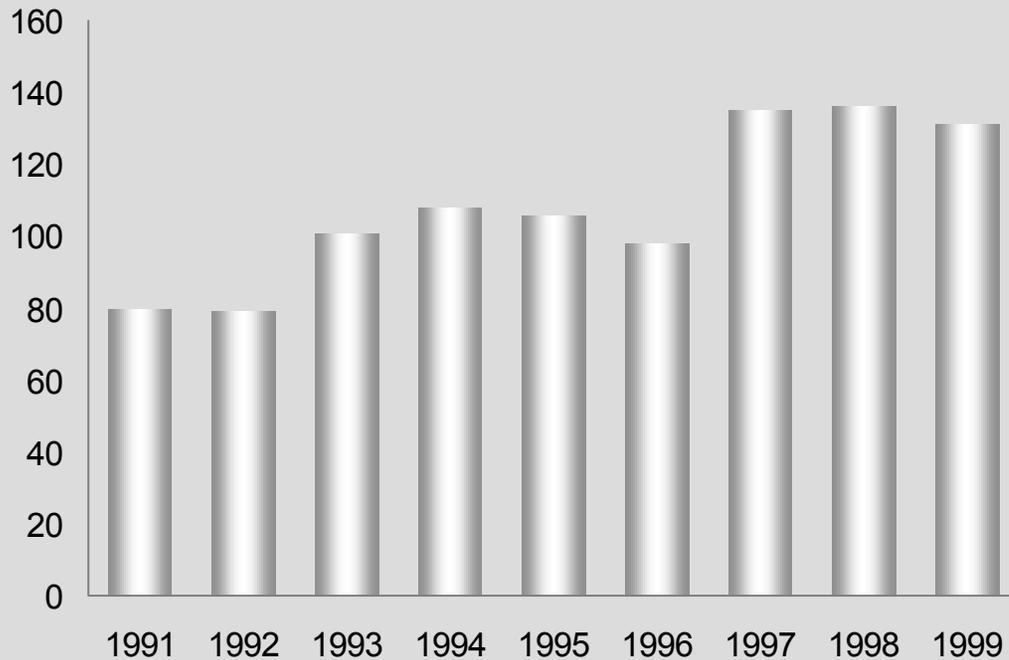
Percentage



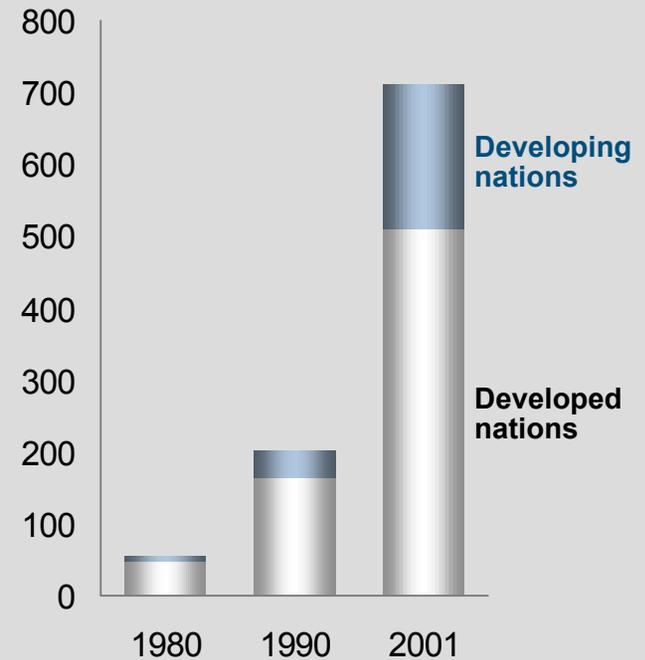
Sources: World Trade Organization

More countries are competing to attract investment — and succeeding

**Number of regulations
worldwide liberalizing FDI flows**



**Share of global FDI inward flows
(\$ billion)**



Shifts in location and trade are particularly pronounced in industries of importance to Puerto Rico — in Pharma ...

Key trends in Pharmaceutical industry

- **Shift from Brands to Generics**
 - Government efforts to contain costs
 - Major branded products losing patents¹⁾
- **Increasing investment demands** on Pharmaceutical companies
 - Lackluster pipelines and increased cycle time and costs for drug approval
 - Growth potential for biotech products and medical devices
- **Increased outsourcing** of Active Pharmaceutical Ingredients (API) to reduce costs and increase flexibility

New competitive supply models

- **Asian manufacturers increase their share** of the API manufacturing market, while western firms focus on high-tech niches²⁾. Recent announcements:
 - GSK will continue to reduce its API capacity outside Asia
 - India and China will become leading global sources of generic API's
 - Abio, a company funded by the Singapore Government, built a large-scale custom manufacture of monoclonal antibodies
 - Generic versions of several biologics are already available in India and in Eastern European countries

Notes: 1) 25-30% of branded products will lose patents between 2003-2007

2) Controlled drug substances, biologics, early phase, and high potency ingredients, peptides and oligonucleotide

Sources: ChemWeek Magazine, Bear Sterns, A.T. Kearney

In high tech manufacturing ...

Major production facility shutdowns and expansions — top Computer Equipment Manufacturers 1999 – 2001

Example
CEM industry

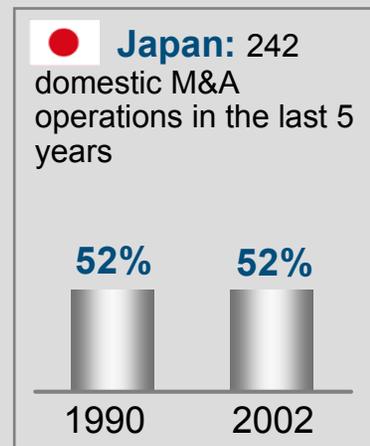
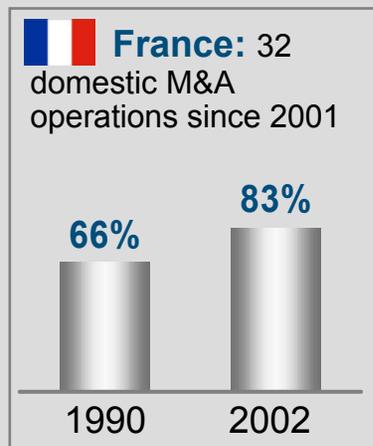
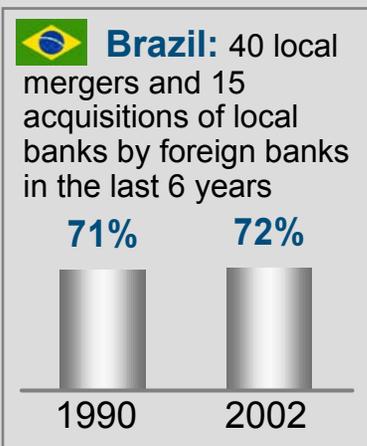
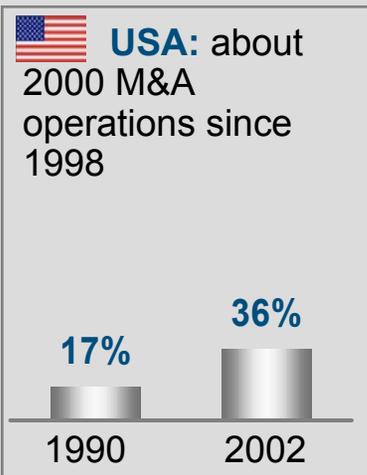


● Facility shut-down ● Facility expansion

Sources: A.T. Kearney

Industry consolidation in the financial services sector ...

Banking industry consolidation (Asset share % of the 10 major players)



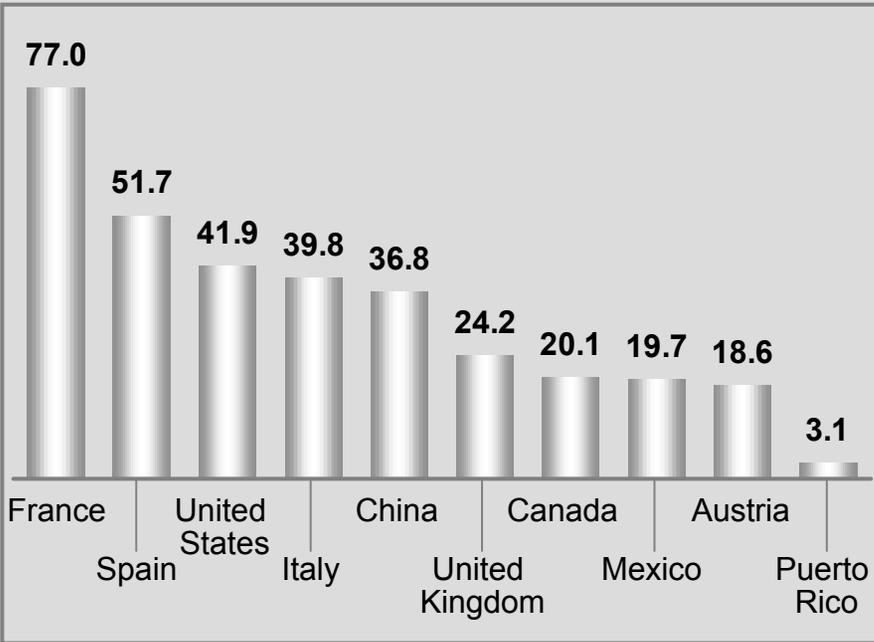
Notes: 1) Market share of Germany refers to the top 5 players

Source: Thompson Financial; Análise A.T. Kearney

In Tourism, where China is growing fast ...

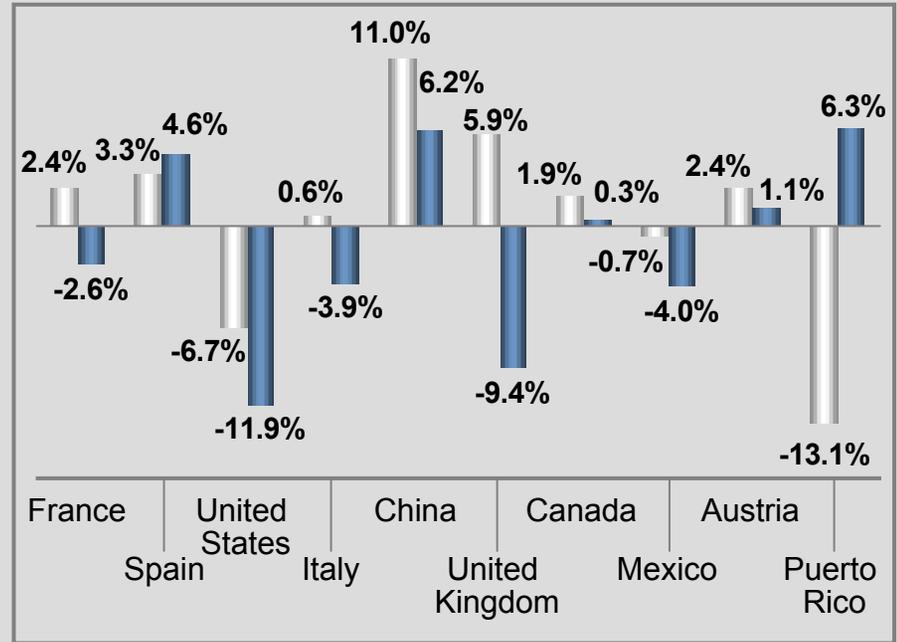
International tourist arrivals

(MM/2002)



International tourism arrivals

(% variation)



2002/2001 2001/2000

According to the World Tourism Organization (WTO), if the rhythm is maintained, China will be the most visited country by 2020

In Professional Services — a massive shift of “white-collar” jobs to developing countries

Offshore market size & growth by year

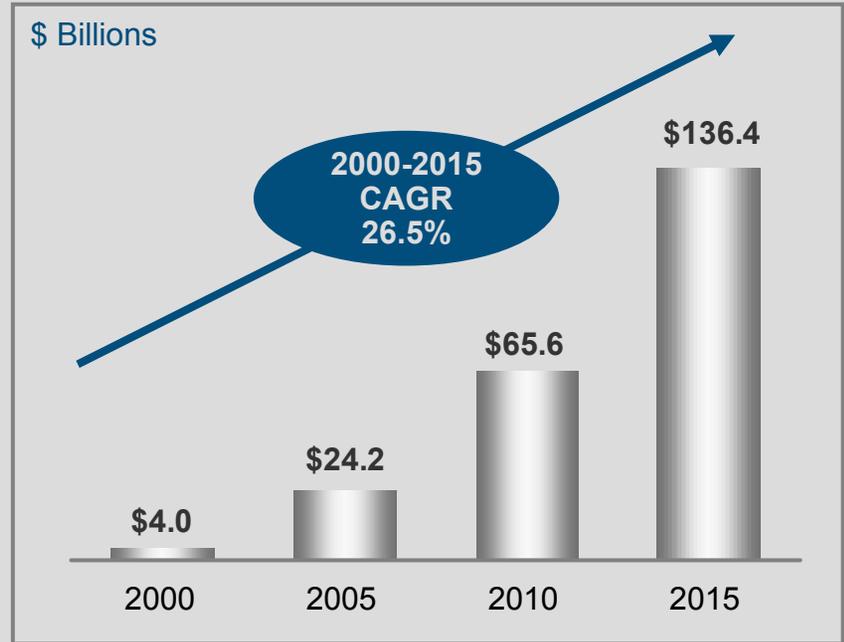
Interview results

Business benefits realized



Source: A.T. Kearney Interviews

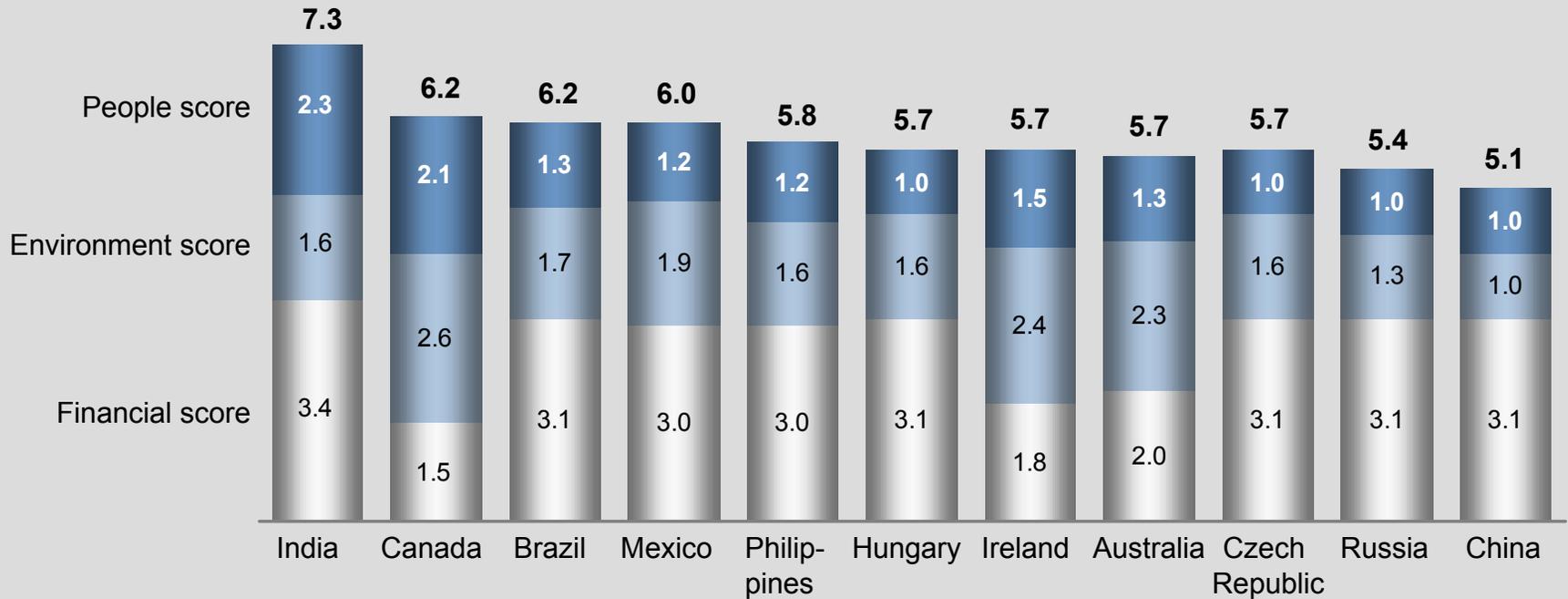
Projected value of business offshoring by U.S. Companies — 2000-2015



Source: Forrester Research; U.S. Department of labor, Gartner Inc.; A.T. Kearney analysis

A number of countries are competing for this new trend

A.T. Kearney evaluation of country attractiveness for offshore outsourcing index¹⁾



India is expected to retain its leadership position for at least 5-7 years

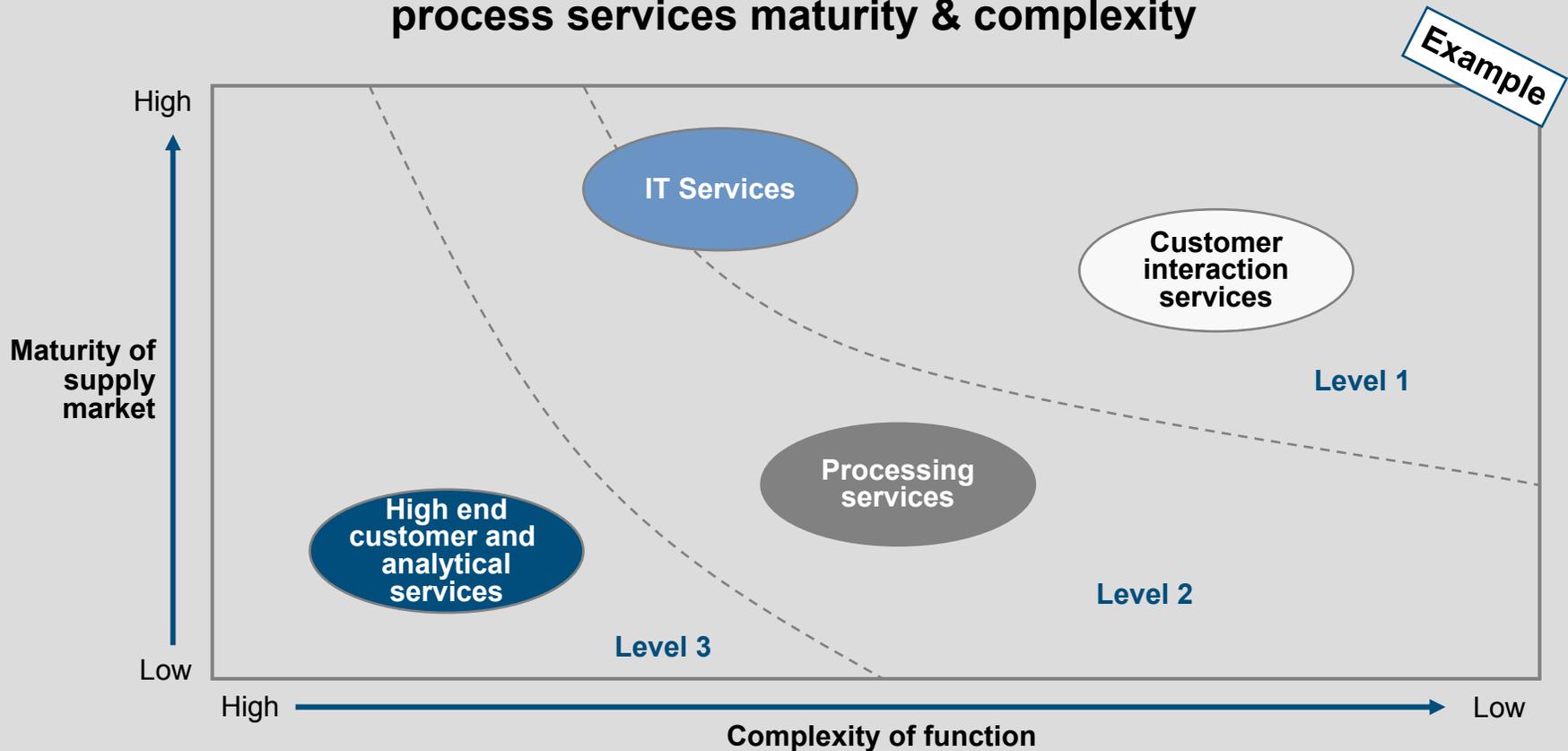
Notes: 1) Scoring methodology reviewed and confirmed by leading industry analysts from Giga, Gartner and IDC

2) Total bars may not match sum of individual component due to rounding

Source: World Bank, ICRG, World Markets, Economist, UNESCO, IDC, Giga, Gartner, B of A; A.T. Kearney analysis

Not just basic data-entry, but more complex R&D and business processes are being offshored

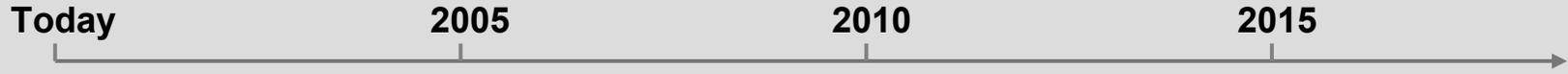
Offshore IT and business process services maturity & complexity



- IT Services
Software dev., help desk,...
- Customer interaction services
customer service, customer sales, Client d-base maintenance,...
- Processing services
Accounts receivable, customer acct mgmt, etc.
- High end customer and analytical services
information research, Financial reporting, modeling, etc.

Source: A.T. Kearney analysis

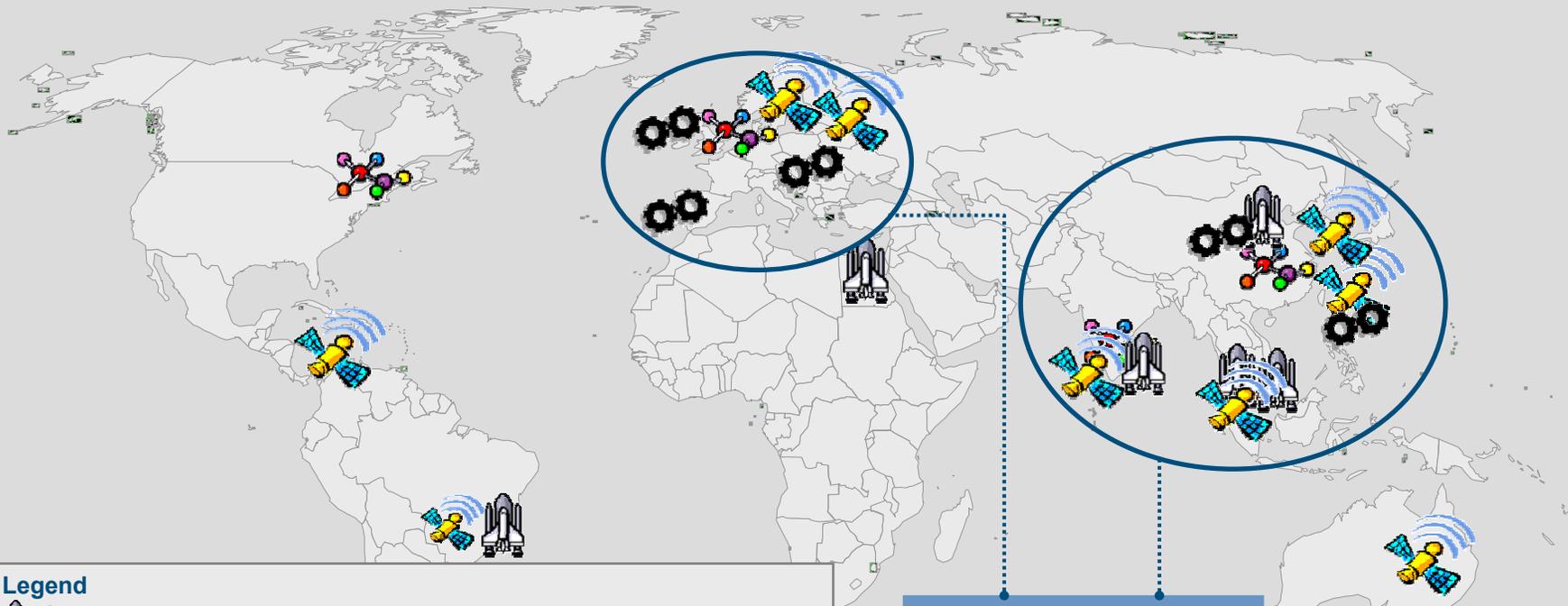
Alongside demographic and economic shifts, the world will continue to see significant changes in technology



	Today	2005	2010	2015		
Bio/Health/Medical		<ul style="list-style-type: none"> • Synthetic implants for many organs • Genetically engineered organism 	<ul style="list-style-type: none"> • Designer babies • Genetically customized drug 	<ul style="list-style-type: none"> • Replacement organ growing • Artificial sense 	<ul style="list-style-type: none"> • Artificial brain cell 	
Information processing			<ul style="list-style-type: none"> • Molecular computing • Optical neuro-computer • Quantum computing 	<ul style="list-style-type: none"> • All optical integrated logic 	<ul style="list-style-type: none"> • DNA computer • DNA storage device 	
Energy	<ul style="list-style-type: none"> • Home fuel cell 	<ul style="list-style-type: none"> • Solar power station • Portable fuel cell 	<ul style="list-style-type: none"> • High efficiency solar cell 	<ul style="list-style-type: none"> • Micro gas turbine 	<ul style="list-style-type: none"> • Magma power station 	<ul style="list-style-type: none"> • Seabed gas hydrate crystals utilization
Material		<ul style="list-style-type: none"> • Lower resistance polymers 	<ul style="list-style-type: none"> • Carbon nanotube composite 	<ul style="list-style-type: none"> • Carbon fullerene composite 	<ul style="list-style-type: none"> • Polymer gels for bioreactor 	<ul style="list-style-type: none"> • Atomic customized material
Machine sensor	<ul style="list-style-type: none"> • Multi-speaker voice recognition 		<ul style="list-style-type: none"> • Odor and flavor sensor • Full voice interaction with machine 	<ul style="list-style-type: none"> • Emotionally responsive toys 	<ul style="list-style-type: none"> • Toys with full sensory 	
AI/Robotics	<ul style="list-style-type: none"> • Computer shopper agent 	<ul style="list-style-type: none"> • Intelligent industrial machinery • Real-time language translation 	<ul style="list-style-type: none"> • Self developing software 	<ul style="list-style-type: none"> • Robotic security & fire guards • Toys with personality 	<ul style="list-style-type: none"> • Synthetic TV celebrities 	<ul style="list-style-type: none"> • Housework robot
Microsystems			<ul style="list-style-type: none"> • Biocomponents-on-a-chip 		<ul style="list-style-type: none"> • Nanomachines • Smart systems-on-a-chip 	

Source: BT exact, RAND

While the US continues to lead in many fields, other technological innovators are emerging around the world



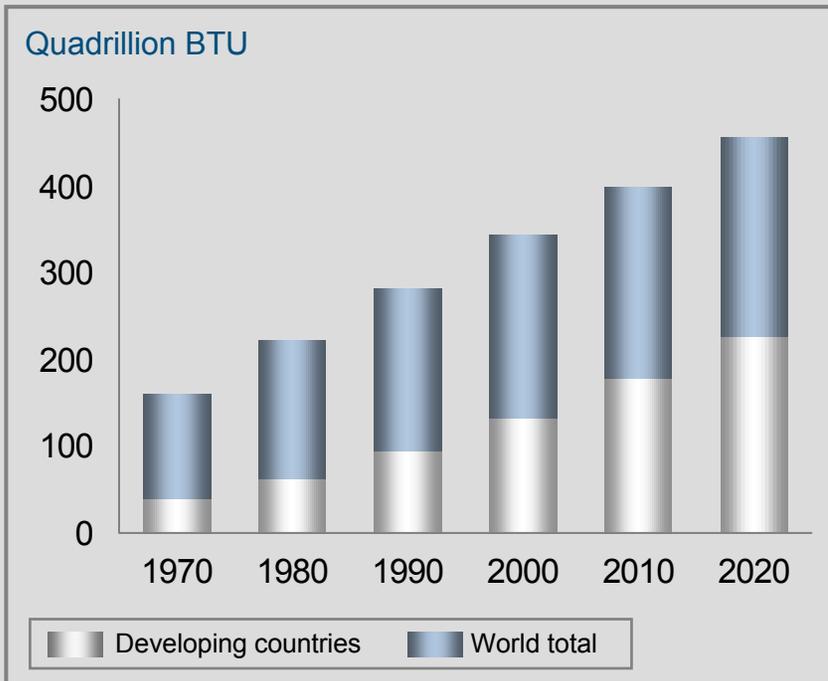
Legend

- 
Aerospace
 Israel; China; Southeast Asia (Thailand, Vietnam, Malaysia); India; Brazil
- 
Manufacturing technologies, engineering
 China; Taiwan (Taipei, Hsinchu); Germany (Bavaria, Saxony); Belgium (Flanders); Portugal; Ireland; Czech Republic; Hungary
- 
Information and communication technology
 Large cities in Scandinavia; The Netherlands; Estonia; Brazil (São Paulo, Campinas); Costa Rica; India (Bangalore); Taiwan; South Korea; Singapore; Malaysia (Kuala Lumpur); Australia (Queensland)
- 
Biotechnology
 Canada (Toronto); Denmark (Copenhagen); Sweden (Malmö); China; India

Innovations in various technological fields will likely be concentrated in Scandinavian countries and their Eastern and Central European neighbors, as well as East Asia, Southeast Asia, China, and India

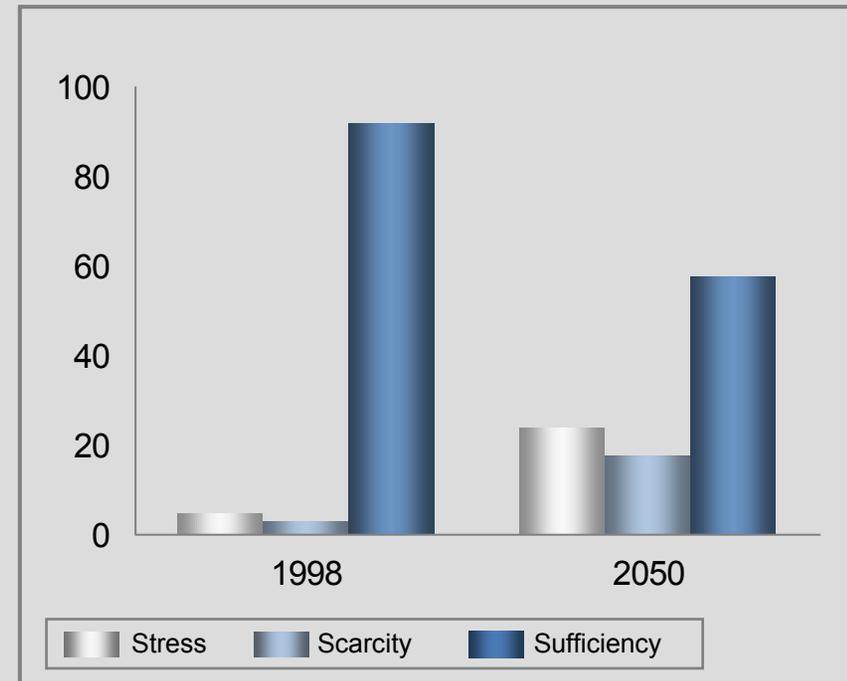
At the same time, demand for scarce resources will continue to rise

Projected energy consumption comparison



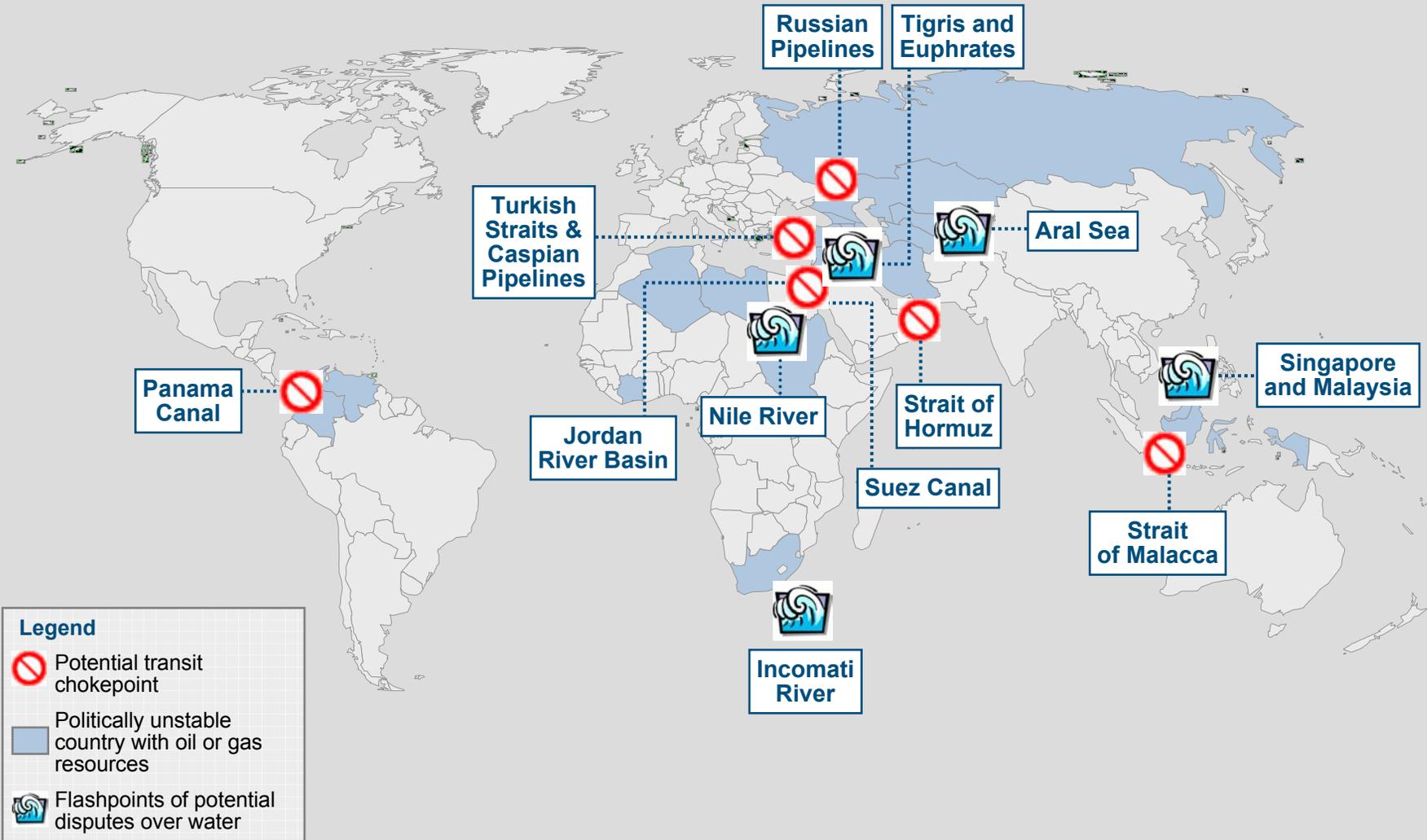
Water availability

As percent of world population



Sources: CGIAR = consultative group on international agricultural research; IWMI = international water management institute

Energy and water “hotspots” may fuel conflict and resource shortages



Technology and global integration in turn are fueling increased civic empowerment, activism and regulation

Enablers

- Media
 - Information and communication technology
 - Transportation
- **Increased knowledge**
 - **Well-connected Networks**

Concerns

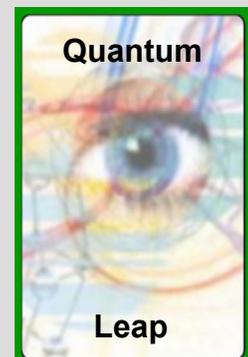
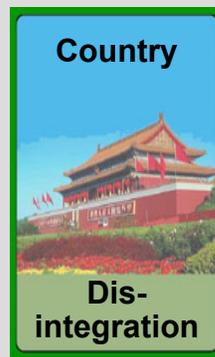
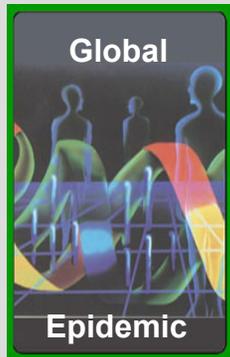
- Societal concerns (dominance of certain culture, immigration, etc.)
- Corporate scandals, accountability
- Intellectual property rights, tax liabilities, etc. due to digital technology/e-commerce
- Botched privatization + deregulation efforts
- New developments at the frontiers of ethics (biotechnology,..)

Increase in simultaneous citizen activism and government regulation

Examples include:

- Corporate attacks (BP, Shell)
- Anti-US reaction, especially around the war in Iraq
- Activist protests against World Economic Forum, WTO, World Bank/IMF meetings
- Tax evasion on the rise
- Anti-offshoring/anti-globalization movements
- Threats of “New mercantilism”, such as the “Buy American Act”
- Other nationalist backlashes (Bolivia, Venezuela, anti-immigrant sentiment in continental Europe)

For all its benefits, globalization increasingly generates risks and resistance



- Scare of new diseases
- Exacerbated by high rates of travel
- Public hysteria causes most damage

- Middle East
- China and Taiwan
- Resource shortages threaten new conflicts

- China's income disparity undermines national cohesiveness
- Social unrest
- Massive unemployed populations

- Reform fatigue
- Growing protectionism

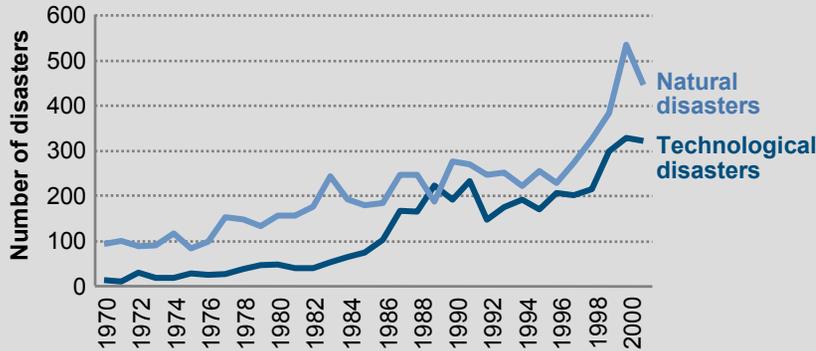
- New attacks cripple confidence
- Fear of WMD attacks

- Vulnerable systems
- At risk from sophisticated hackers
- Fear of major system disruption

- New energy sources
- Increased lifespan
- Improved agricultural efficiency
- Improved security

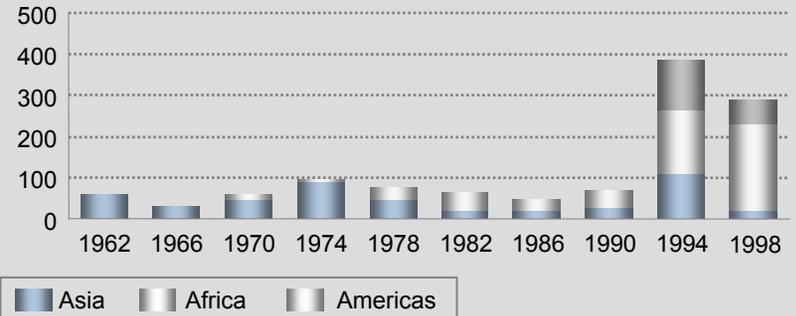
Interdependence breeds risk

Natural and man-made disasters are becoming more frequent



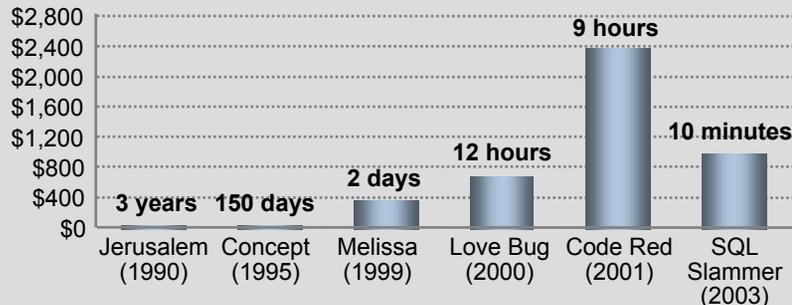
Major disease outbreaks are increasingly common

Cholera outbreaks (1,000's of cases)



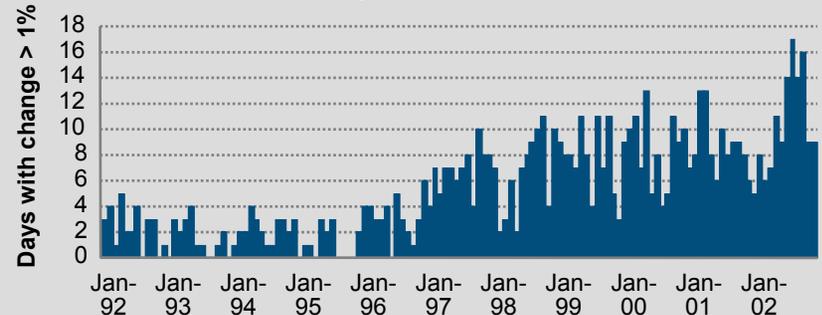
Computer viruses are causing more damage in less time

Worldwide economic damages caused by computer viruses at peak distribution (\$ M)



Market volatility is on the rise

Volatility of the S&P 500



Source: Centre for Research on the Epidemiology of Disasters (CRED), Richard Power, Tangled Web and Reuters, World Health Organization, A.T. Kearney analysis

Puerto Rico often feels insulated from these risks but should not



Summary of implications for Puerto Rico

■ Demographics

- Fundamental shift in markets for goods and sources of supply

■ Globalization

- New competitors
- Industry-specific shifts

■ Technology

- Whole new industry-platforms
- New resource models

■ Environment and resources

- Risk of global shortages

■ Empowerment, activism and regulation

- A force for good (participation and responsibility) and for reactionary resistance to change

■ Wildcards/risks

- Regional conflict, terror attacks, epidemics

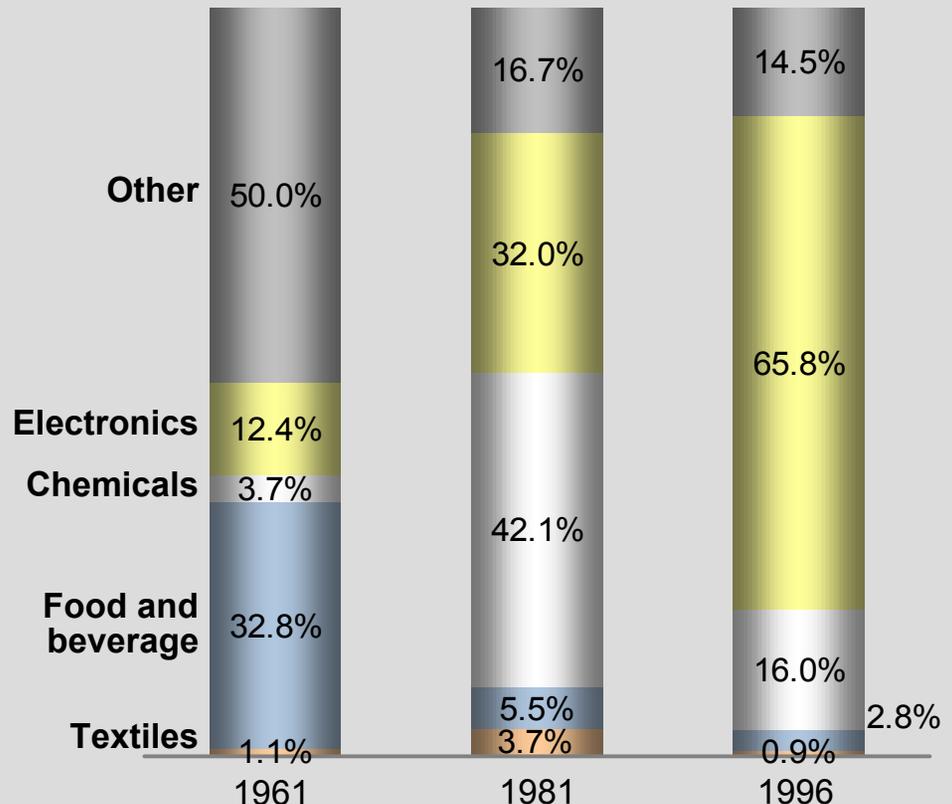
Will Puerto Rico become a victim or a beneficiary of these changes?

Facing the same paradigm shifts, places like Singapore have continuously reinvented themselves

Singapore economic development strategy

- Continuous reinvention:
 - 1960s: low-cost textile producer
 - 1980s: electronics and chemicals
 - 1990s: HQ and R&D hub
 - 2000s: IT and biotech research
- Six main policies:
 - investment in an efficient and transparent government system
 - Active promotion of FDI
 - Creation of a pro-business environment (favorable tax system, skilled labor force, etc.)
 - Promotion of free trade
 - Introduction of tight monetary policy
 - Encouragement of high savings
- Economic Development Board's constant reassessment in comparative advantage through a board of advisors consisting of top foreign business executives

Evolution of Singapore's industrial output

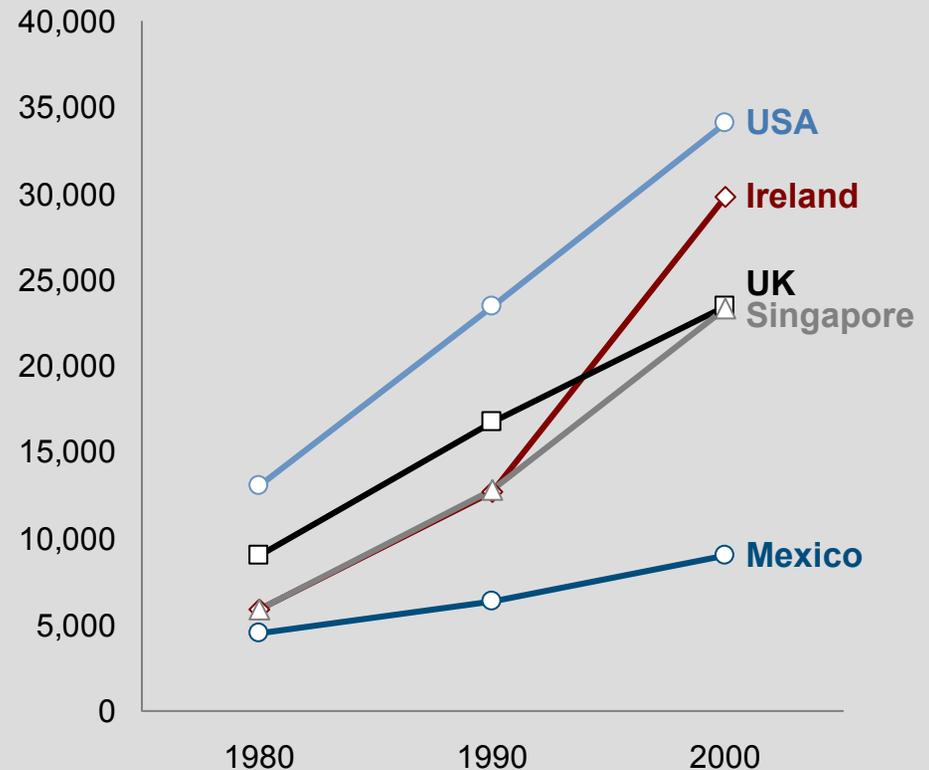


Ireland has achieved a similar transformation

Ireland economic development strategy

- Continuous reinvention:
 - 1960s: low cost manufacturing
 - 1980s: electronics, software companies, pharmaceuticals, international financial companies
 - 1990s: e-commerce, call centers
 - 2000s: IT and biotech research
- Focus on consensus building between the public sector, the private sector and the labor force for a common goal
- IDA “one-stop-shop” for investors, continuously working on reprioritization of targets/policies
- Selective process to attract foreign investors, while developing strong national companies with export potential
- Strategic promotion of Ireland’s skilled labor force, access to the EU market and favorable tax environment

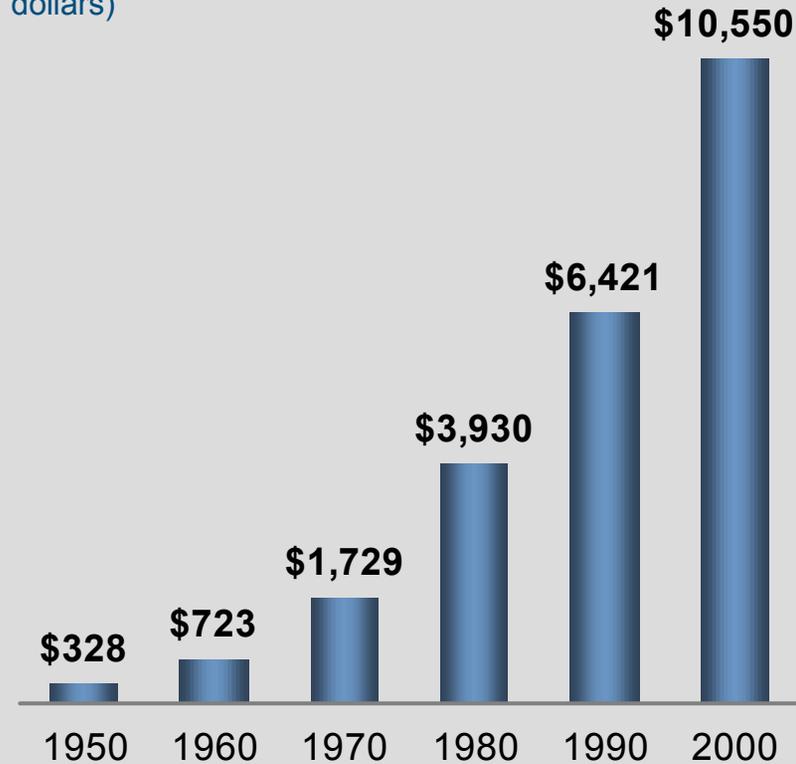
GNP per capita in PPP terms



50 years ago, Puerto Rico embraced the global economy and became one of the models of development

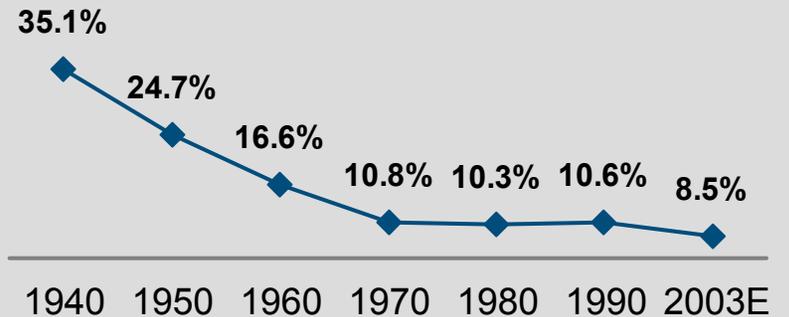
Growth of Puerto Rico's GNP per capita

\$ per capita (current dollars)



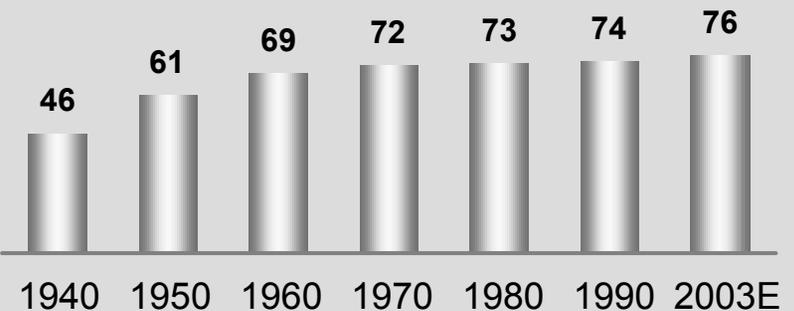
Illiteracy rate

% of population with 10 years old or above



Life expectancy evolution

Number of years



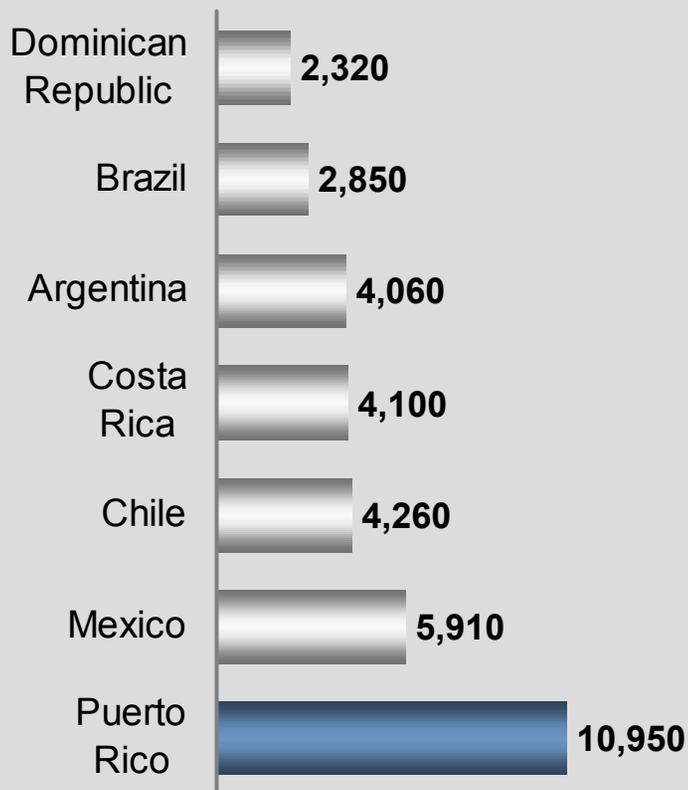
Today, by almost all measures, Puerto Rico ranks as the most developed society in Latin America

Comparisons from Latin America

GNP per capita

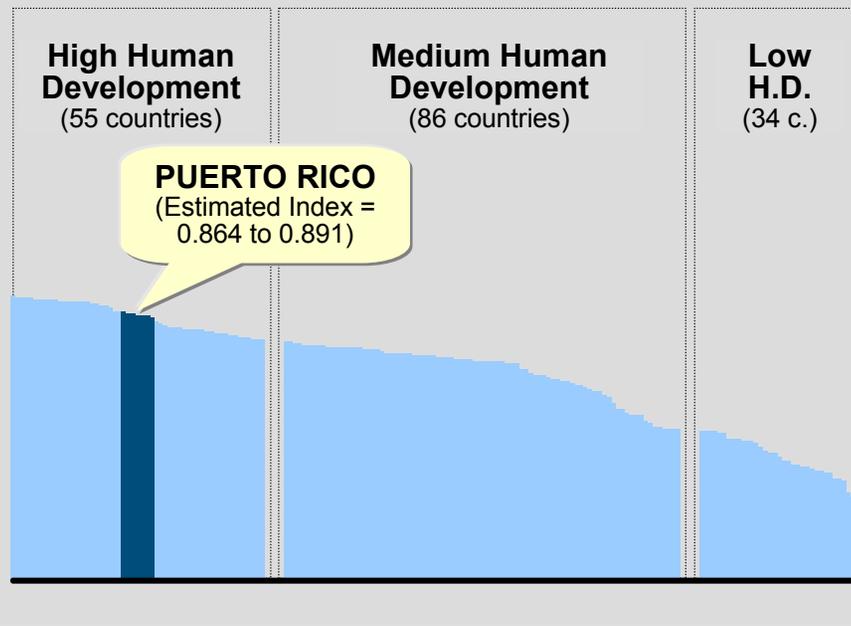
Current US\$

2002



Human Development Index

– HDI Report 2003 –



Most other countries in Latin America are “Medium Human Development” nations considering an aggregate of life expectancy, education attainment and standard of living

Source: World Bank; International Monetary Fund, International Financial Statistics; Planning Board; Human Development Report 2003; A.T. Kearney analysis

In principle, Puerto Rico has many of the assets to succeed in the global “knowledge economy”

- **High levels of openness** to trade and investment
- Strong position in key **knowledge-based growth industries**:
 - Pharmaceuticals, high technology, financial services, tourism, education, healthcare
- **Human capital**:
 - High tertiary education levels
 - Accumulated skills in key industries
- **Physical infrastructure** among the best in the region
- **Unique bridge between Latin America and the US**:
 - Transport/logistics hub
 - Ideal location and attractive assets for tourism and knowledge-based services
 - Cultural and linguistic blend
- **Macroeconomic, political and legal stability**

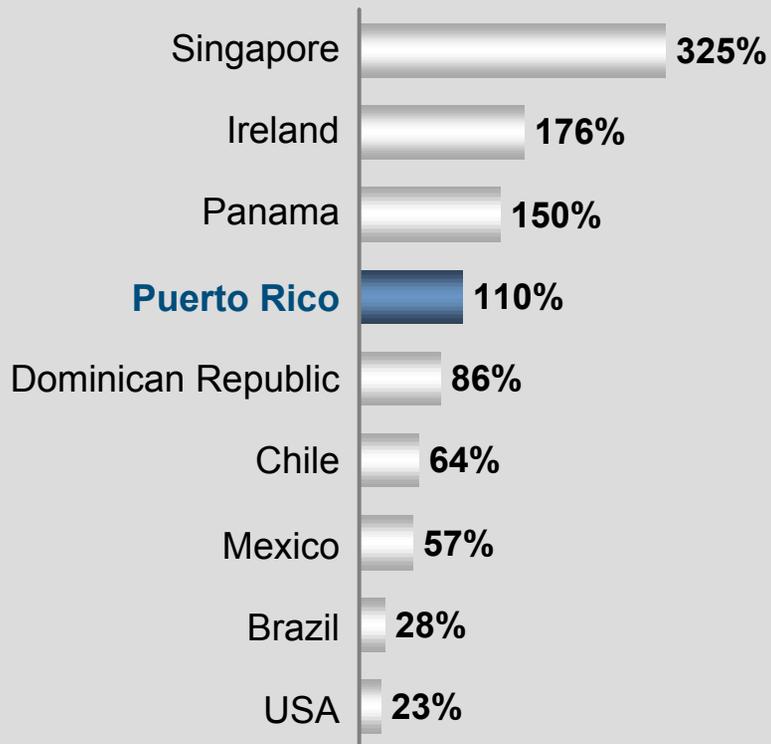
The economy is characterized by high levels of openness to trade and investment

Openness to trade

Exports and imports as a share of GDP

% of GDP

2001

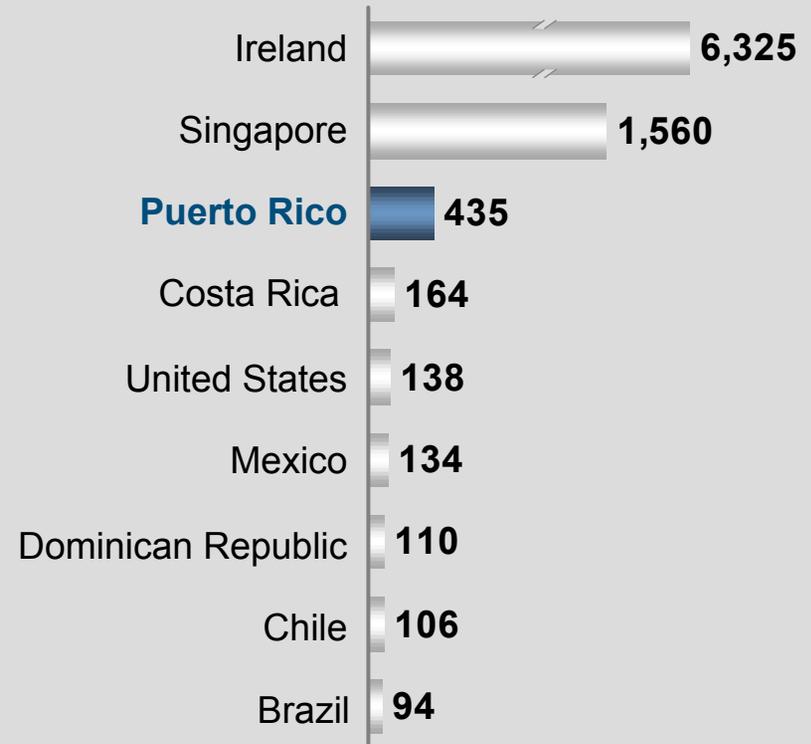


Inward direct investment

Direct investment per capita

US\$ per capita

2002



Note: Direct investment to Puerto Rico includes investment from US sources.

Source: International Monetary Fund, International Financial Statistics; UNCTAD; Planning Board, Statistical Appendix; PRIDCO; A.T. Kearney analysis

Puerto Rico plays host to a strong base of multinationals engaged in high technology manufacturing and export

Pharmaceuticals

Share of global exports



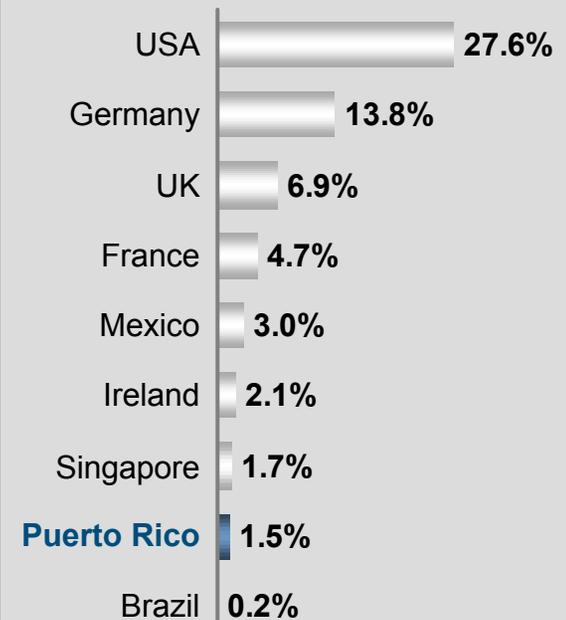
Computer hardware

Share of global exports



Scientific instruments

Share of global exports

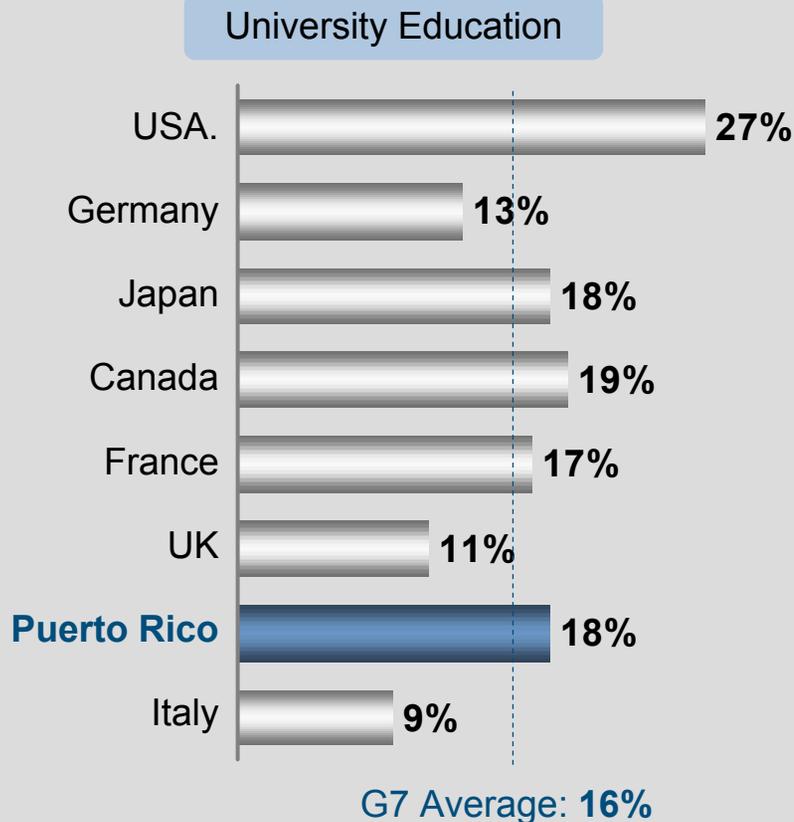


Puerto Rico is the world's largest pharmaceutical, 10th largest scientific and medical instrument and 18th largest computer parts exporter

Puerto Rico's accumulated human capital is among the strongest in Latin America and the Caribbean

Education attainment in 2001

% of population 25 years and over



Human capital endowment

- Levels of education **approximate OECD levels** – and are substantially higher than those in Latin America
- Some 11,000 active **lawyers**, 10,500 professional **engineers**, 8,000 **doctors**, and 4,000 **CPAs** are trained to minimum US standards
- Nearly **three-quarters of the senior and middle managers** at multinational companies are local residents
- Among the **largest concentrations of certified financial analysts and investment brokers** in the US is located in Puerto Rico
- Puerto Rico ranks **9th in engineering graduates** in the USA

The physical infrastructure in Puerto Rico is also among the best in the region

Airport traffic

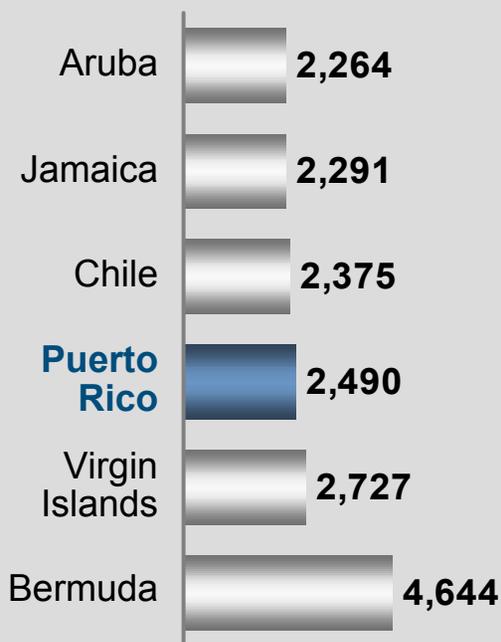
Number of flights per week – 2002



Puerto Rico holds **44% market share** of all flights to the Caribbean

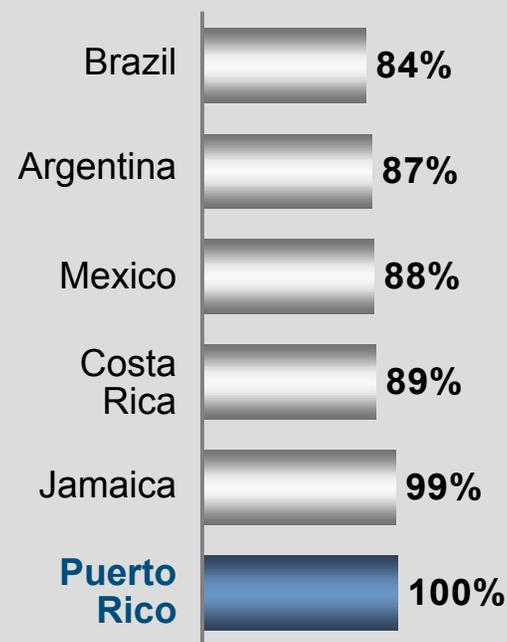
Internet penetration

Connections/10,000 people – 2002



Widespread penetration with **61% of Internet users** outside the San Juan metropolitan area

Population with access to improved urban sanitation



Sanitation coverage is either in the form of **public sewage access** or **septic tanks**

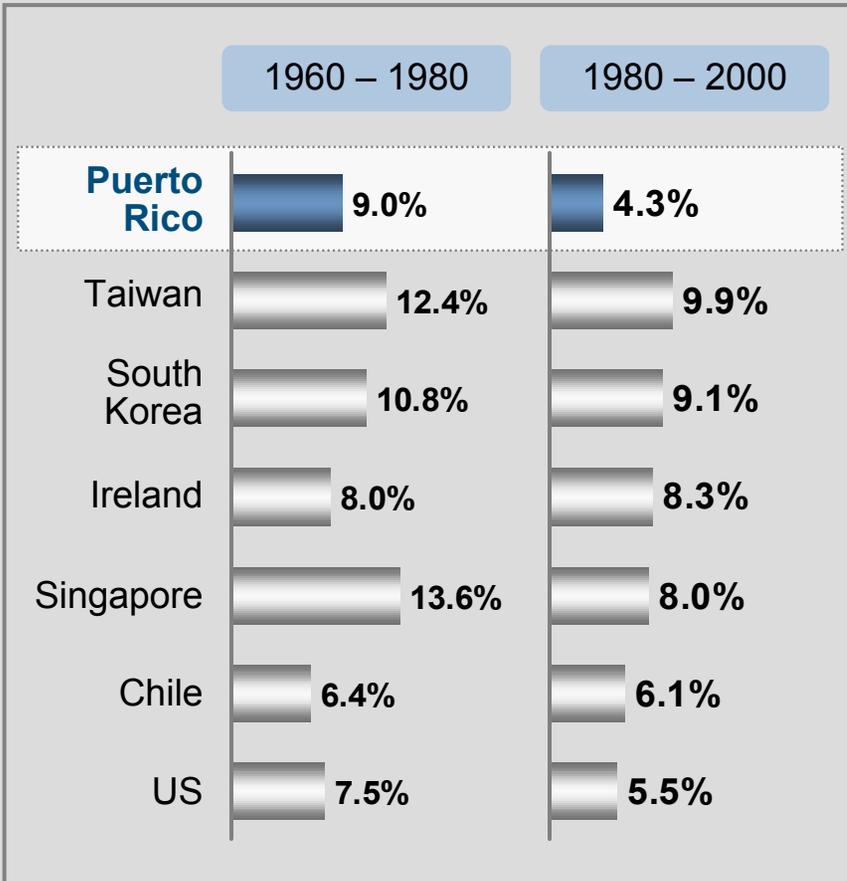
But there are many signs that Puerto Rico is not taking advantage of these assets

- **Declining economic growth rates**
- **Persistent unemployment and poverty**
- **Limited linkages** between export sector and local economy
- Economy highly dependent on **government and federal transfers, personal consumption and informal economy**
- **Government regulations and tax-structure** are a burden on the economy
- Underdeveloped **local entrepreneurial sector**
- Low levels of **venture capital investment, innovation and R&D**
- **Sources of competitive advantage** under threat

Low economic growth has inhibited income convergence

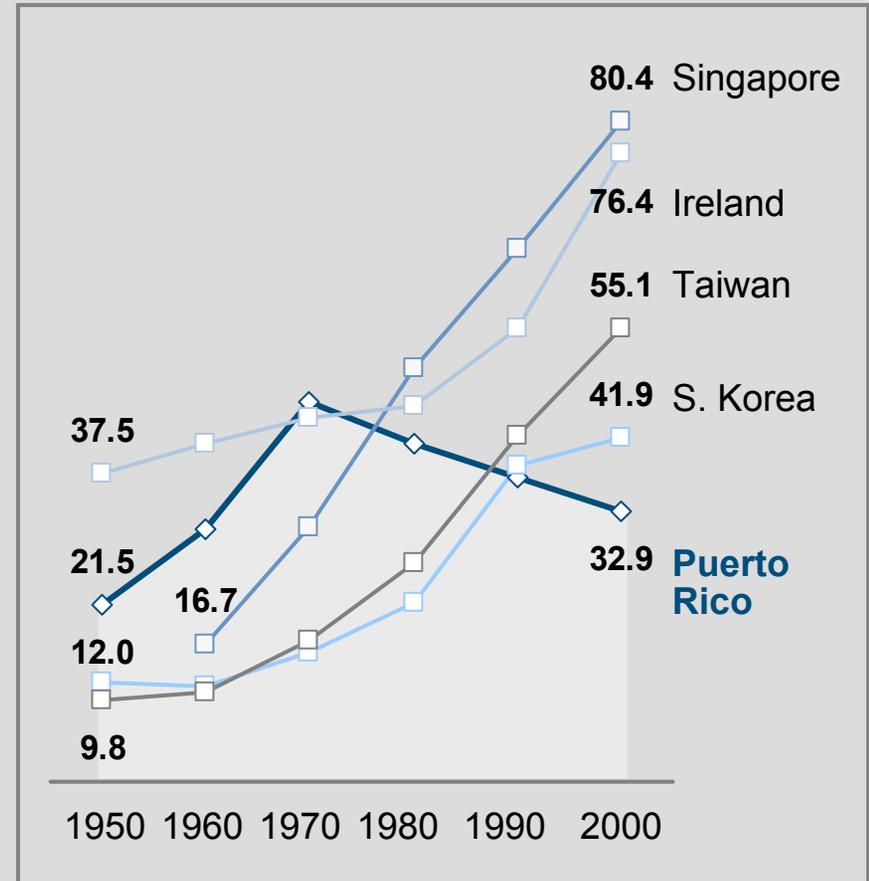
Slowing growth of per capita income

– Real PPP-adjusted GDP per capita –



Income convergence

– GDP per Capita as a % of US levels –

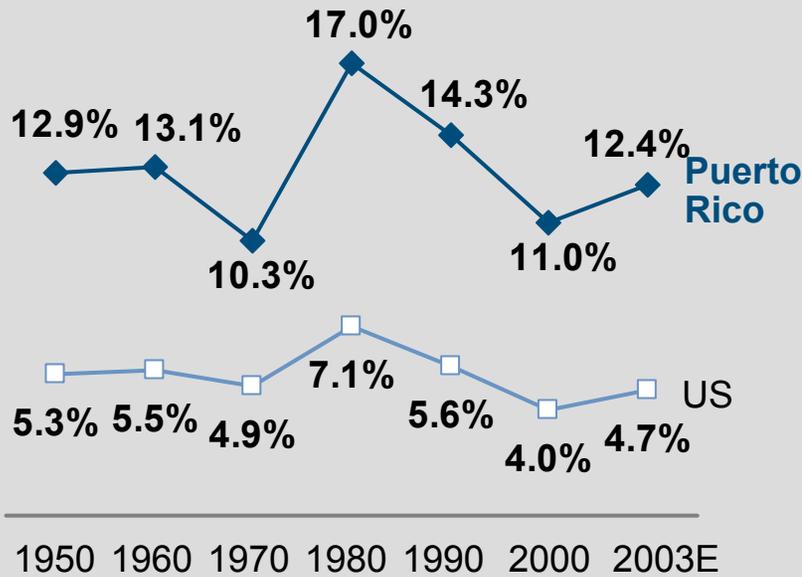


Source: Penn World Tables 6.1, Alan Heston and Robert Summers; World Bank, World Development Indicators 2002; A.T. Kearney analysis

Unemployment and poverty rates have remained stubbornly high

Unemployment rates

% of labor force

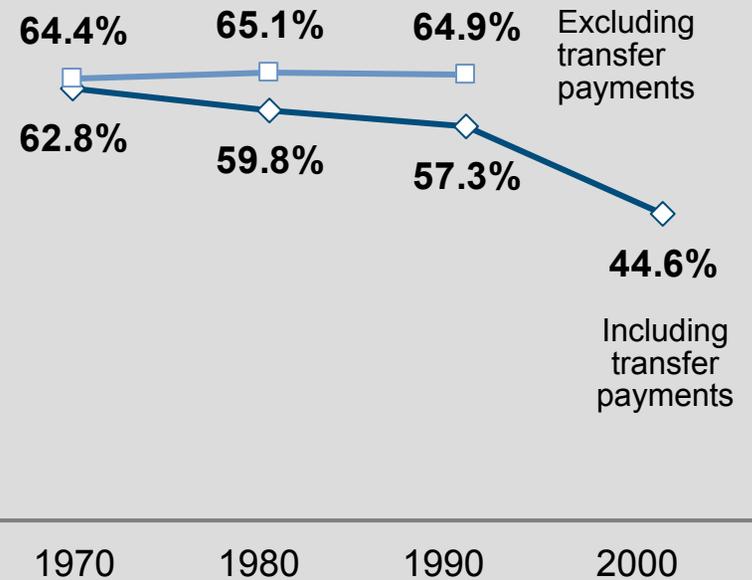


Youth unemployment rates reached levels between 25% and 35% at the turn of the century

Poverty rates

% of families living below the national poverty line

%

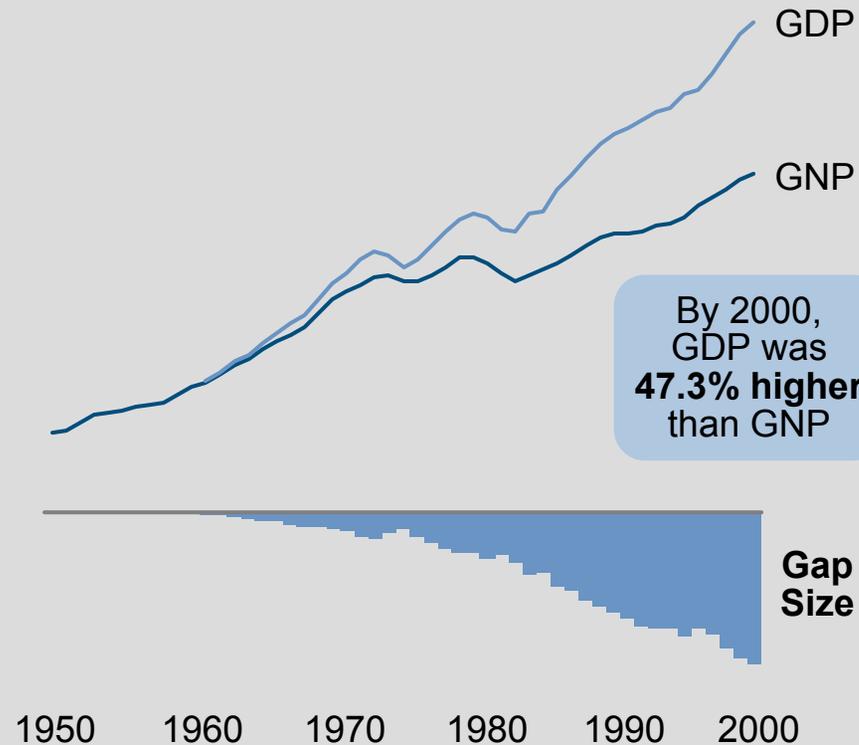


Source: Planning Board, Statistical Appendix; U.S. Census Bureau; U.S. Department of Labor; "Puerto Rico: Negotiating Development and Change", James L. Dietz; "La Pobreza en Puerto Rico: Una Guía para la Política Pública", Orlando Sotomayor; A.T. Kearney analysis

Export oriented development model has created limited linkages within local economy

Gap evolution between GDP and GNP per capita in Puerto Rico

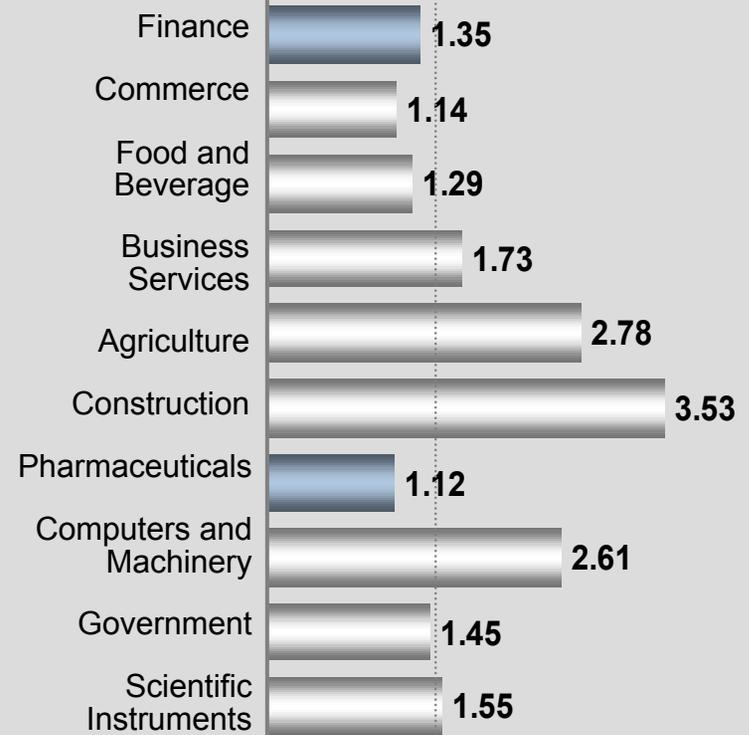
Constant 2000 US\$



Estimates of output and income multipliers

Output/income multiplier

1.49 Average for overall economy 1992

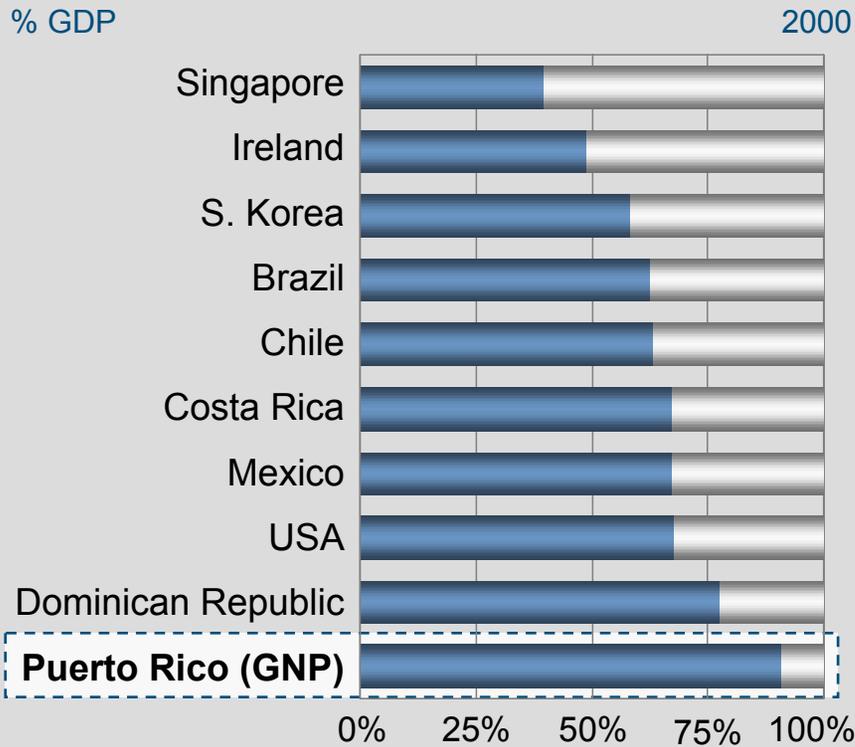


Source: World Bank, World Development Indicators; Planning Board, Economic Report to the Governor (2002); James Dietz, based on analysis by Dr. Angel Ruiz; A.T. Kearney analysis

Puerto Rico has very high levels of personal spending and mostly negative savings rate

Consumption

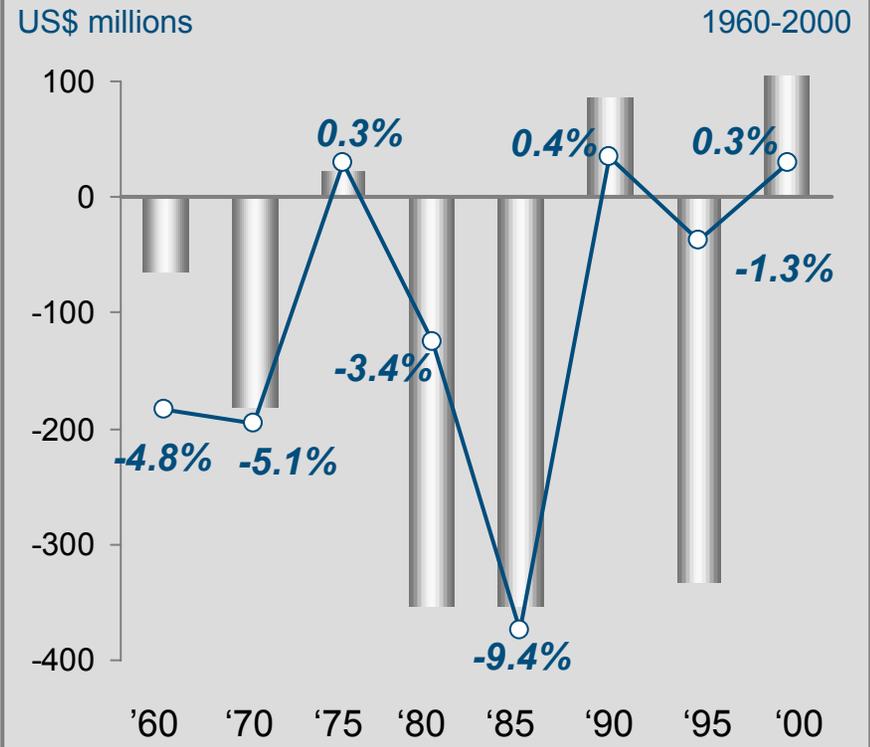
Share of gross domestic product



Personal consumption Others

Domestic savings

Disposable income — personal consumption



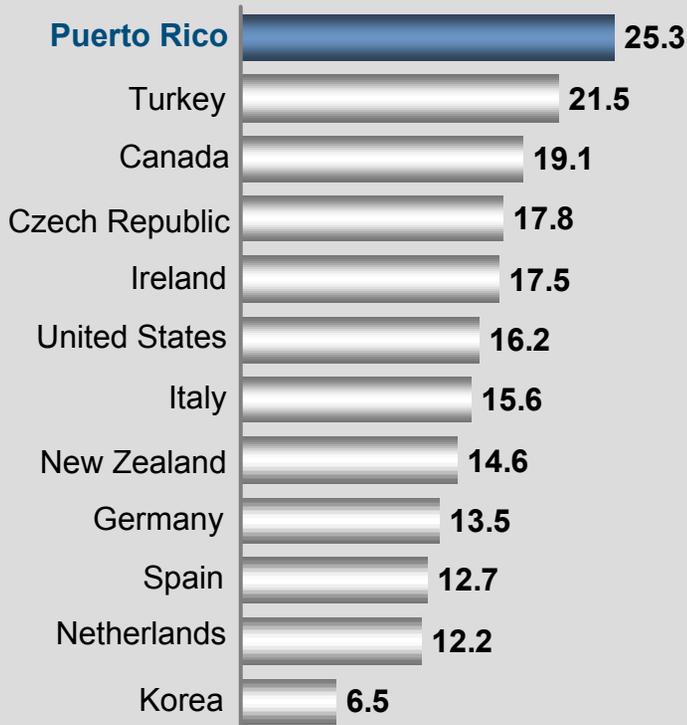
Savings rate

Source: Penn World Tables 6.1, Alan Heston and Robert Summers; Planning Board, Statistical Appendix; "Running with the Tigers," John Stewart; A.T. Kearney analysis

Government participation in the economy is high by international standards ...

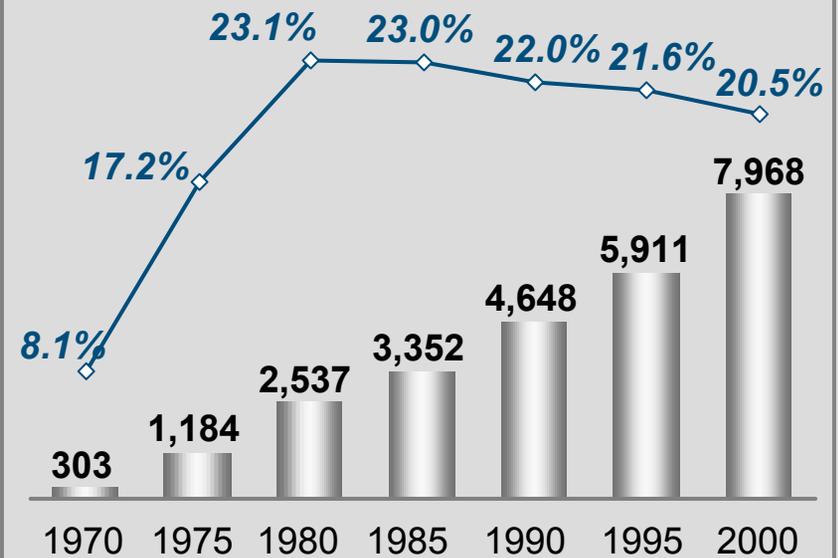
Government employment in Puerto Rico

% total employment 2000



Federal transfers

US\$ millions 1970-2000

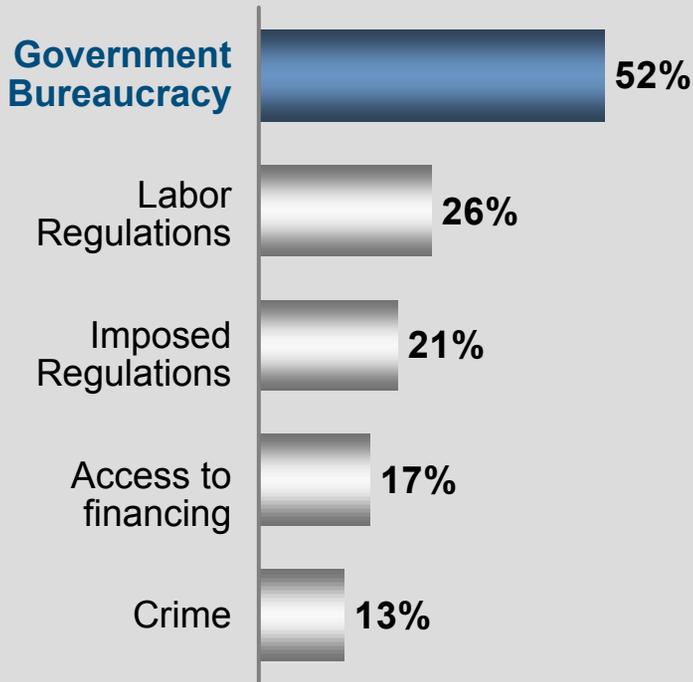


—○— as a share of personal income

...creating a burden for the private sector and stifling entrepreneurship

Main issues affecting the business environment in Puerto Rico¹⁾

2002

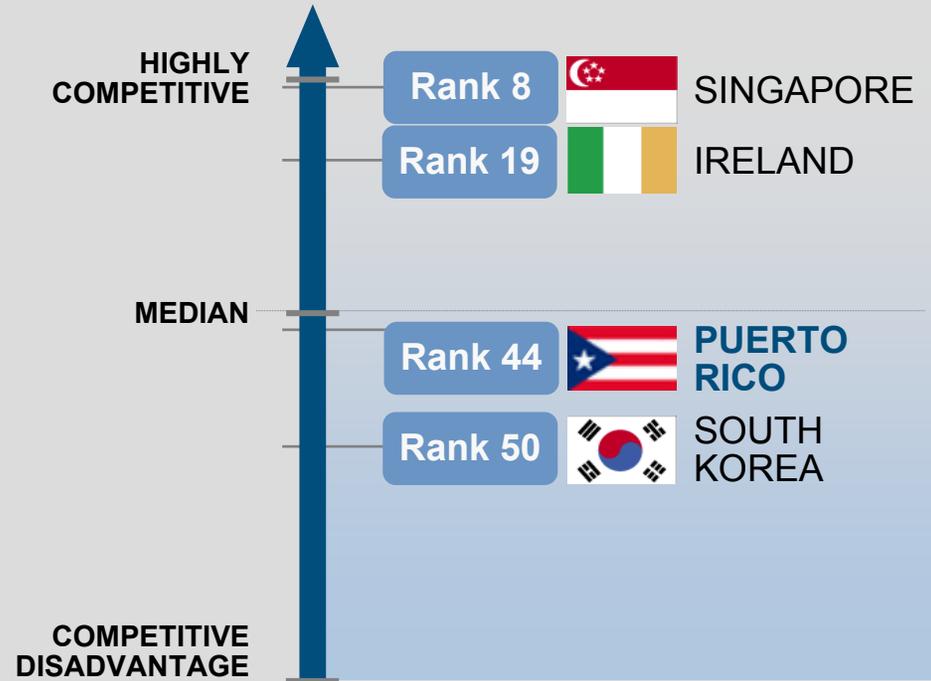


Administrative burden for start-ups

Rank in the Global Competitiveness Report

Rank out of 81 locations

2002



¹⁾ According to a survey on competitiveness conducted by Procomp

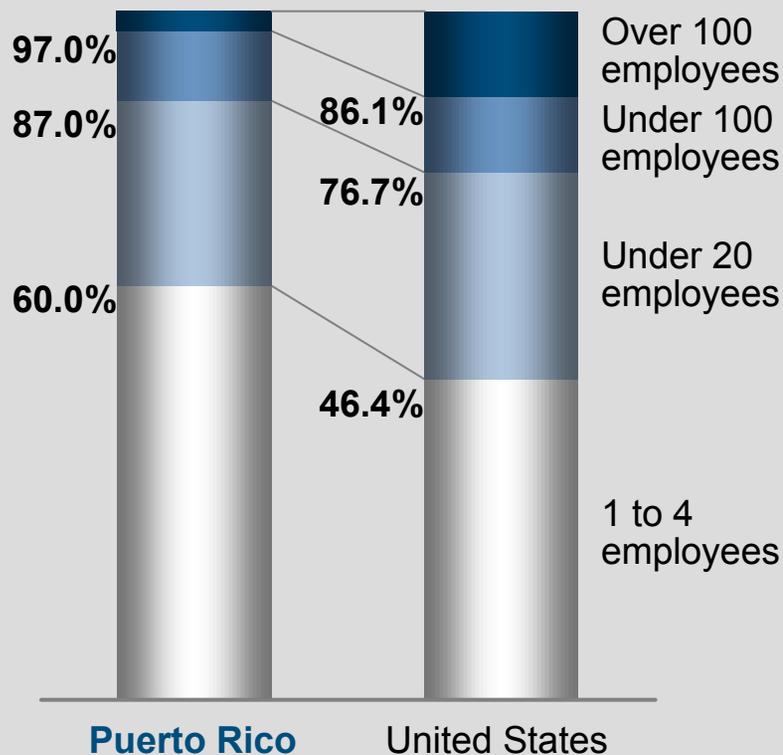
Source: "Análisis Preliminar de Competitividad de Puerto Rico", Procomp; Global Competitiveness Report 2001-2002; A.T. Kearney analysis

Local enterprise is characterized by small scale, limited productivity growth and low export participation

Payroll establishments

By employment size

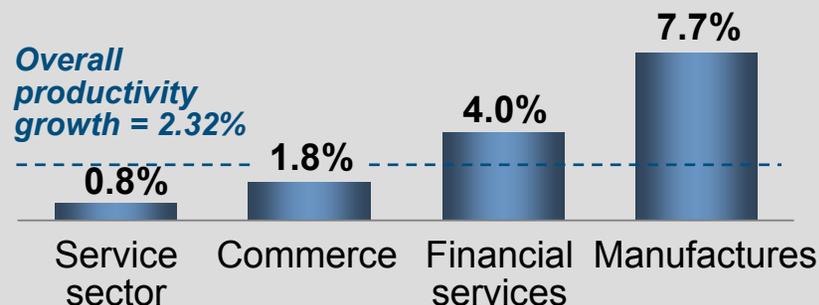
2001



Growth of labor productivity

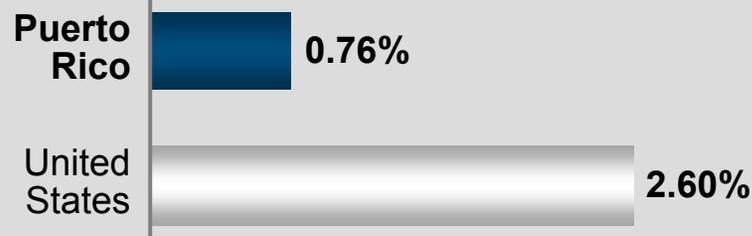
1990 to 2002

Overall productivity growth = 2.32%



Small businesses engaged in exports

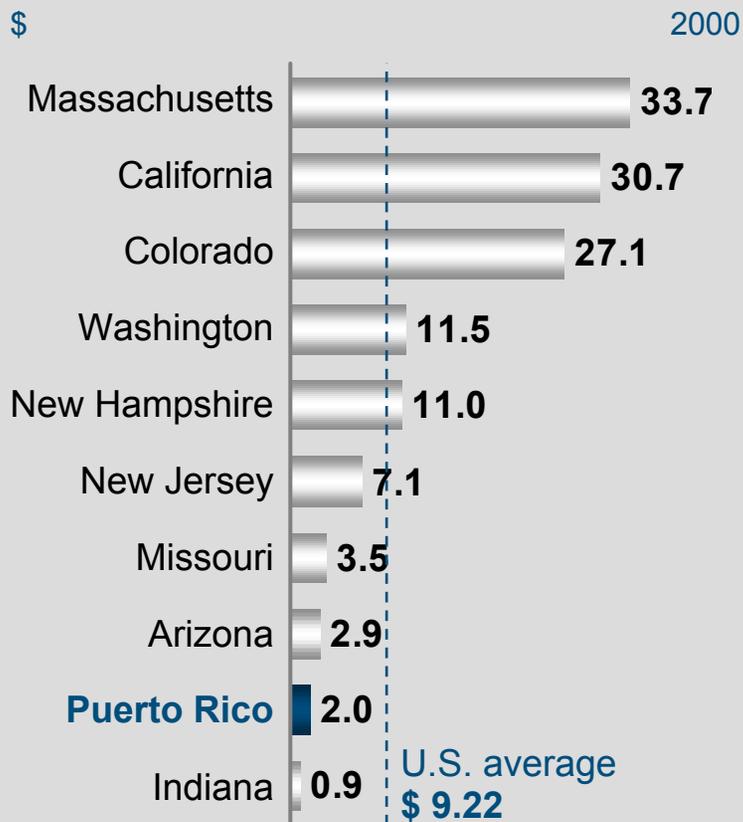
As a share of total firms



Source: U.S. Census Bureau, County Business Patterns (2003); Angel Ruiz; Planning Board, Statistical Appendix; U.S. Small Business Administration; A.T. Kearney analysis

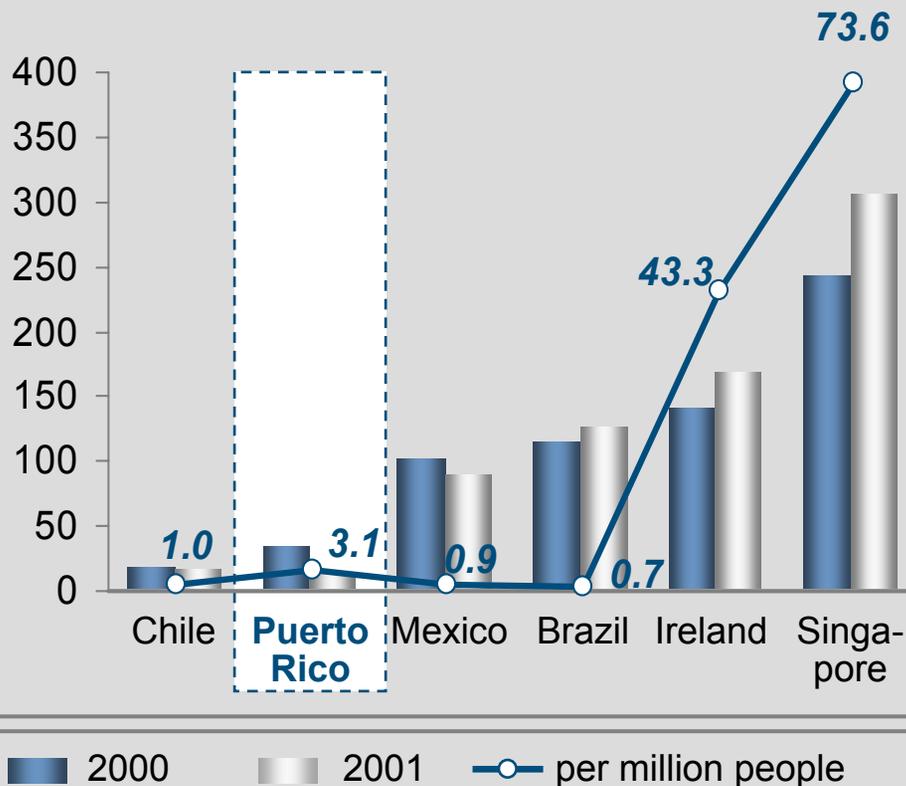
Lack of investment in local enterprise has limited Puerto Rico's capacity for technological innovation

Venture capital investment Per \$ 1,000 of gross product



Patents granted

Number of patents



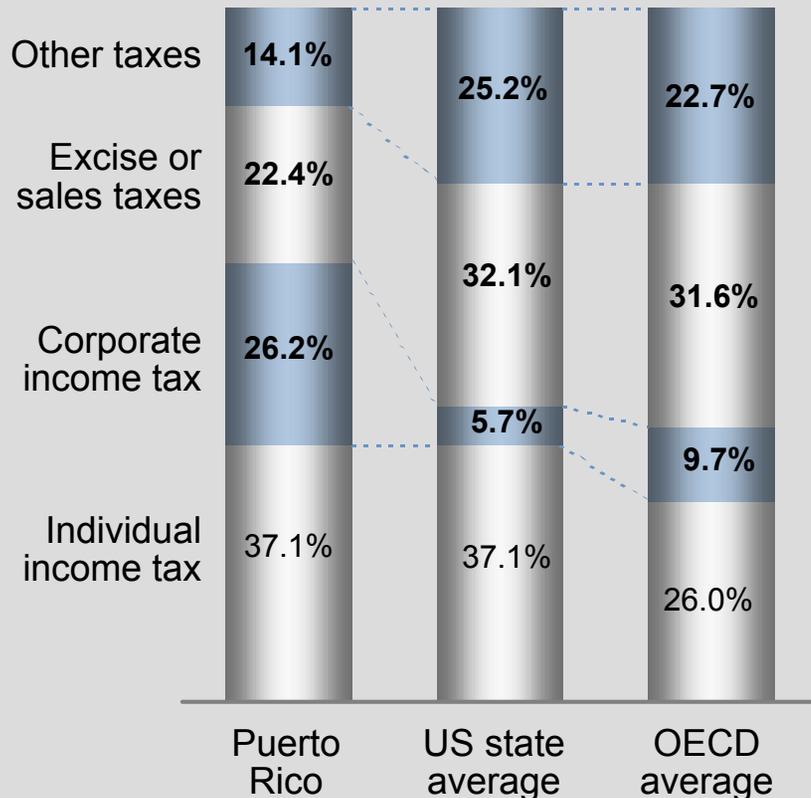
Source: Guayacan Fund annual reports; Technology Administration, State Science and Technology Indicators; U.S. Patent and Trademark Office; A.T. Kearney analysis

Dependency on taxes – particularly corporate taxes — as a source of revenue is high by international standards

Breakdown of commonwealth taxes

% of personal income

2002



A cumbersome, convoluted tax regime

- Current tax regime outdated — created in 1954, with only modest revisions since that time
- Largest share of taxes come from individuals — but generous tax shelters mean heaviest tax burden falls on middle-income taxpayers
- Heavy tax on earned income (33%) inhibits high paying jobs and encourages excess investment, speculation — and low-tax agricultural activity
- “Arbitrio general” excise taxes widely regarded as too complex and difficult to administer — creating interruptions in business transactions
- Excise tax multiplies costs through distribution and production chains 3 up to 17% by some estimates
- Tax code includes five separate definitions for corporations, each with different regulations
- Other distortions: heavy incentives for sugar and coffee, despite negative value added; four separate tax breaks for rental properties, etc.

Puerto Rico's sources of competitive advantage are under pressure

Sources of Competitive Advantage under Pressure

Labor costs

– Puerto Rico vs. selected locations –

\$US per hour in pharmaceuticals 2002

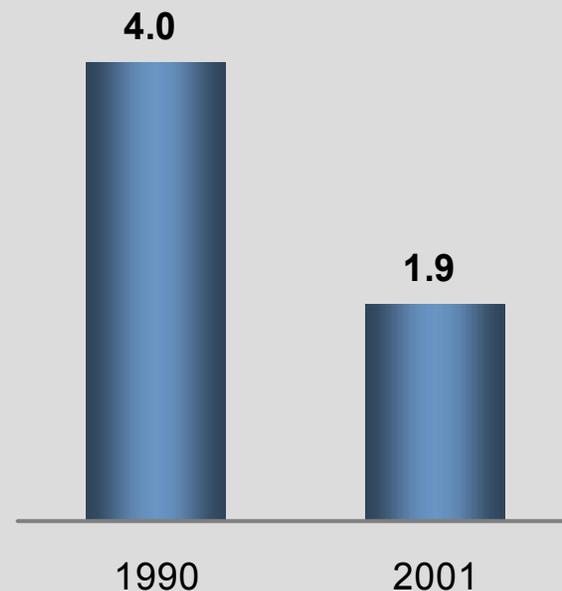


Eroding cost competitiveness from low-end assembly to high tech pharmaceuticals

Open access to US market

– Puerto Rico vs. rest of the World –

% Average US weighted tariff rate



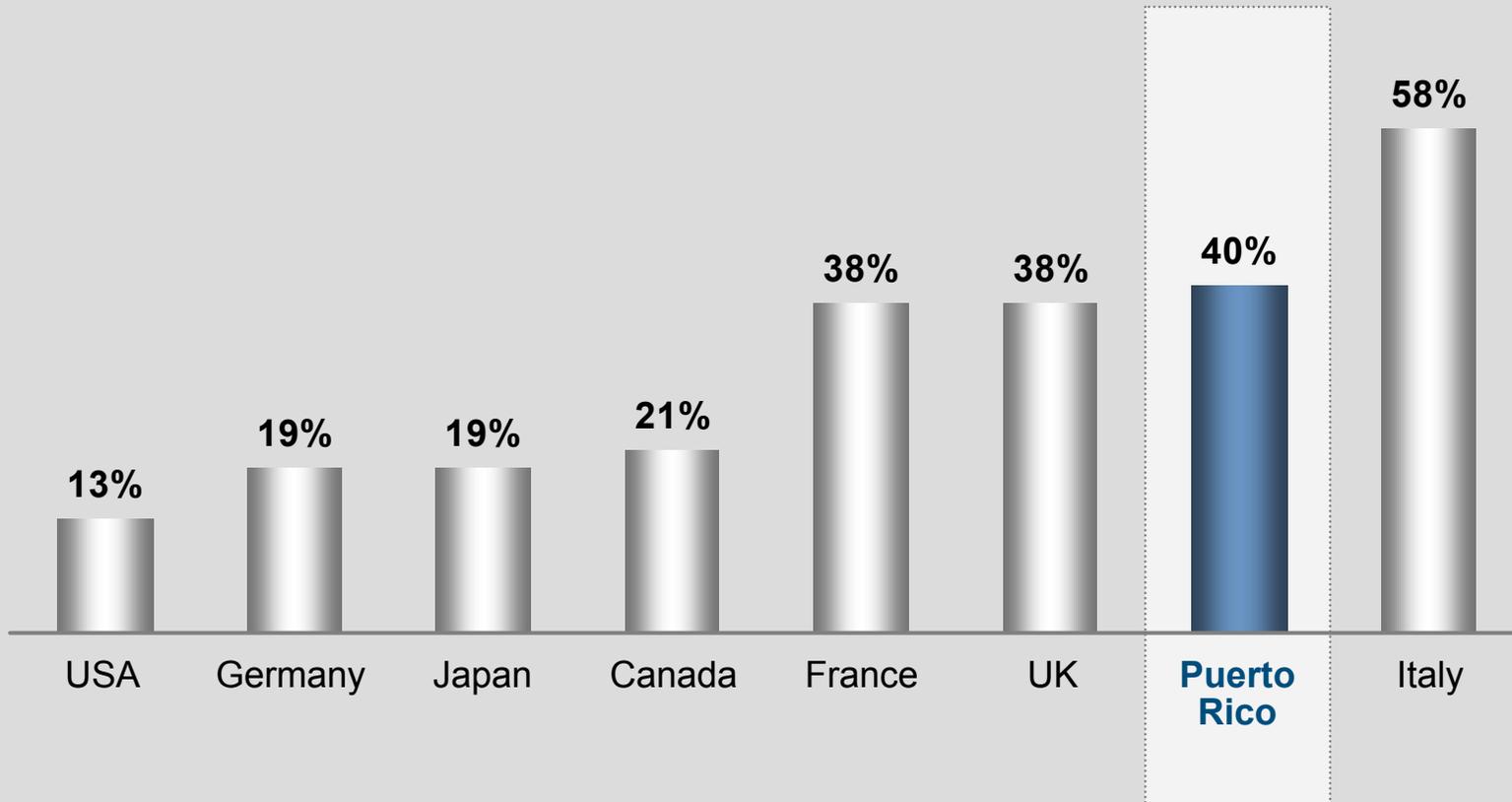
Expansion of free trade, with most nations enjoying low-barrier entry to key markets

Puerto Rico is also facing increasing social challenges and signals of distress

- **Education:** high drop-out rates, declining quality and excessive overhead
- **Health:** aging population aggravates high dependency ratio
- **Youth poverty and unemployment** create increasing stress on society
- **Teenage births** and **family stress**
- **Alarming homicide levels**
- Prevalence of **drugs**

Puerto Rico faces high drop-out rates in secondary school when compared to G7

Secondary School Drop-out Rates in 2001 (%)

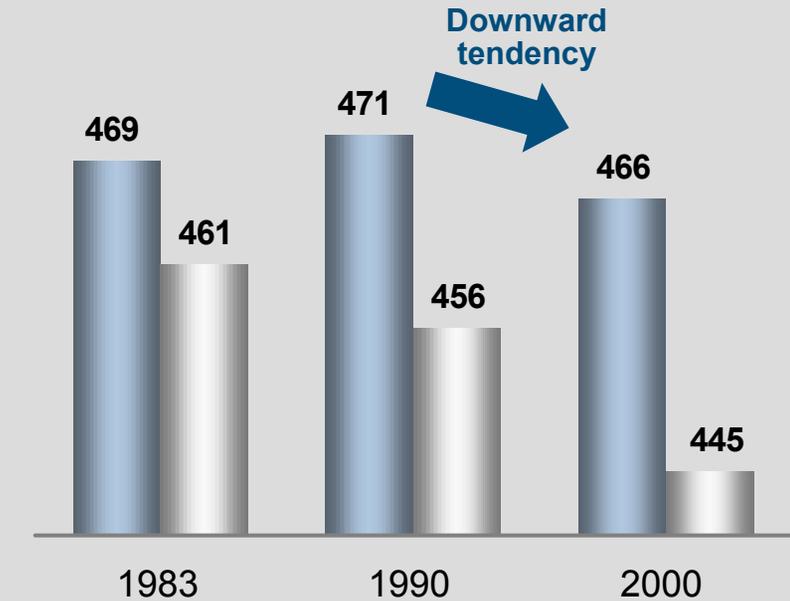


The quality of K-12 education has experienced a downward trend

Results of the CEEB¹⁾ aptitude tests

Verbal tests results

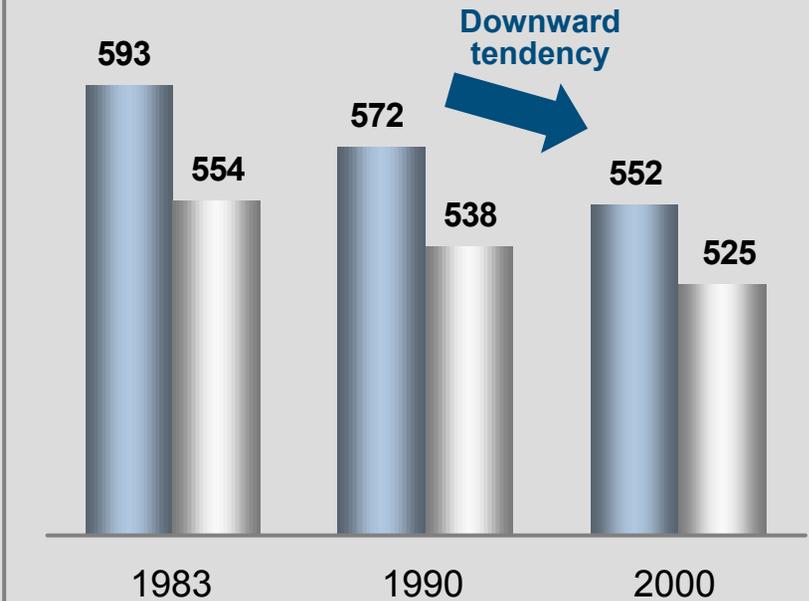
Average results 1983-2000



Private schools Public schools

Math tests results

Average results 1983-2000



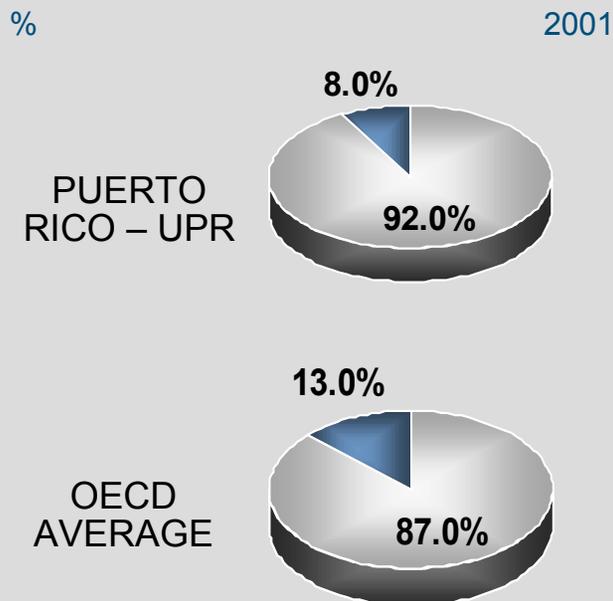
Private schools Public schools

Note: 1) College Board
Source: CEEB; A.T. Kearney analysis

Overhead expenses in education are high, with few resources allocated to R&D and permanent improvements

Budget spending profile

Higher education example



Operational spending Permanent Improvement

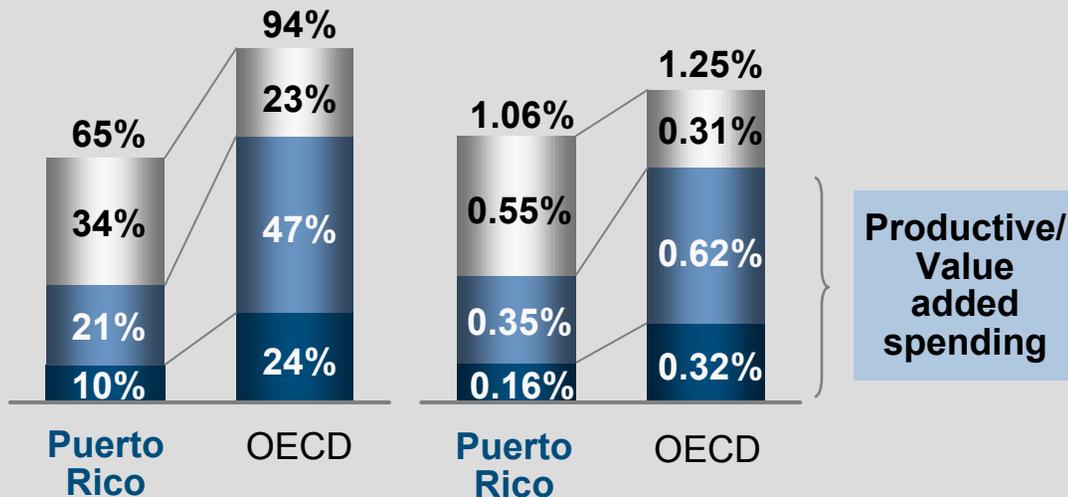
Puerto Rico allocates less resources to permanent improvements...

Spending on payroll and R&D

As a % of operational costs

As a % of GDP

2001

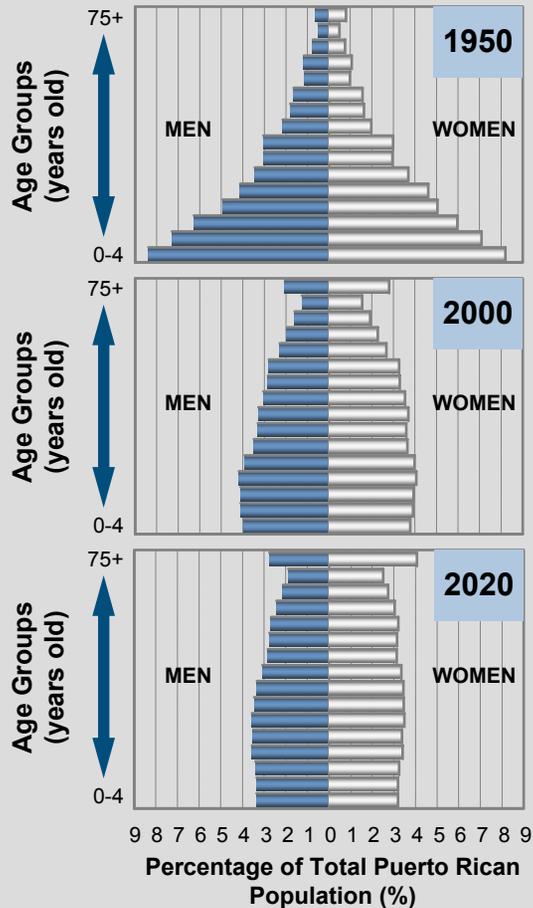


Expenses on R&D Teaching staff salaries Non-academic staff salaries

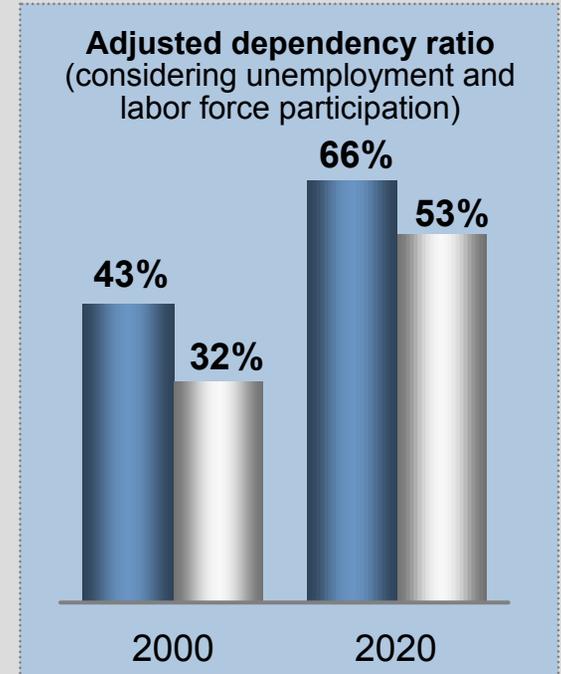
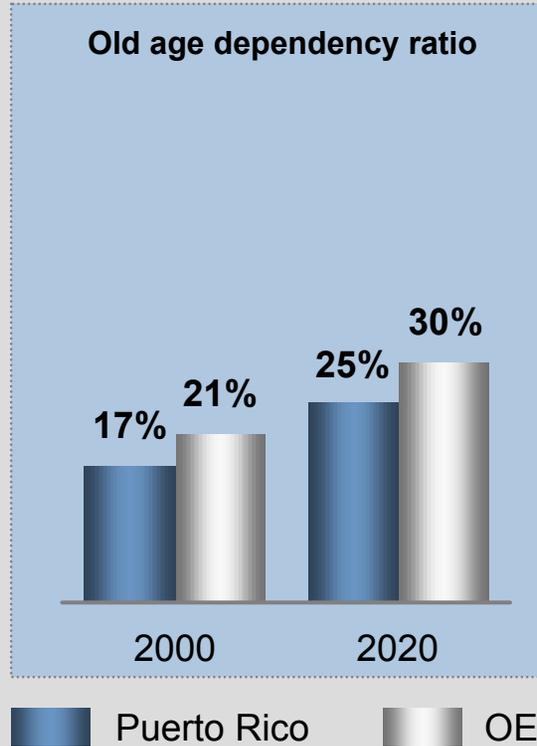
...and spends 44% less on teaching staff salaries, 50% less on R&D and 80% more on non-academic staff when compared to the OECD

Aging will aggravate Puerto Rico's already high dependency ratio, further pressuring health budgets

Puerto Rico's population is aging...



...and dependency ratios increasing



It is estimated that per capita health costs with the over 65 age group are 3 to 5 times higher than for the under 65

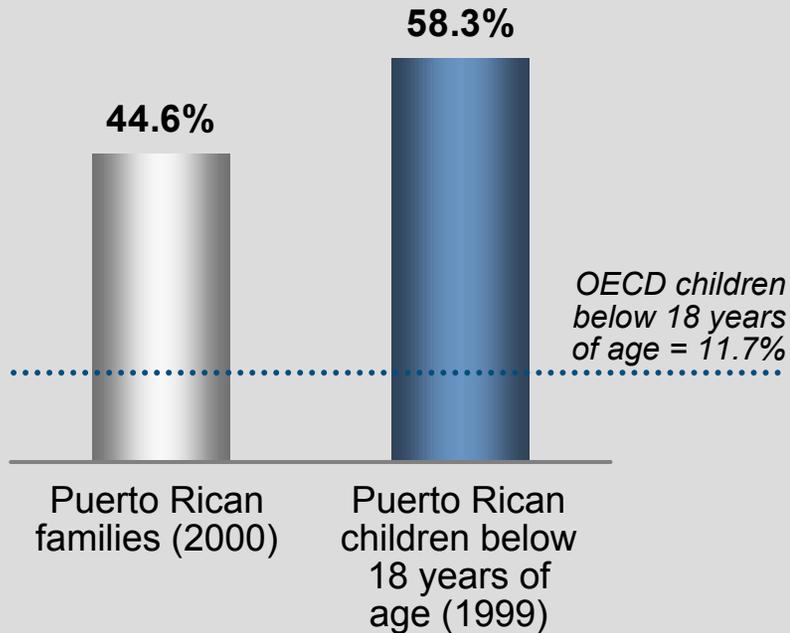
1) Old age dependency rate equals the ratio between the population aged 65 and over and the population between 15 and 64. The adjusted ratio considers only the employed population between 15 and 64 in the denominator

Source: Puerto Rico Planning Board – Census Office; Society at a Glance – OECD 2003; A.T. Kearney analysis

High poverty levels and unemployment rates, specially among the youth,...

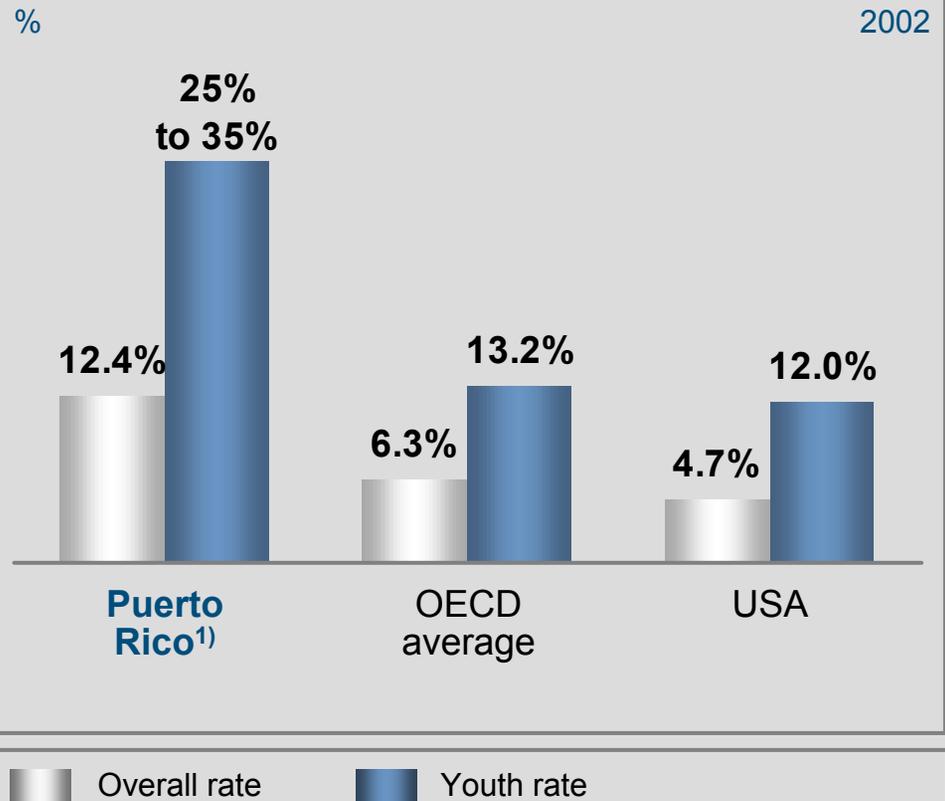
Children impacted by Poverty

% living below the national poverty line



Unemployment rates

Overall and youth unemployment

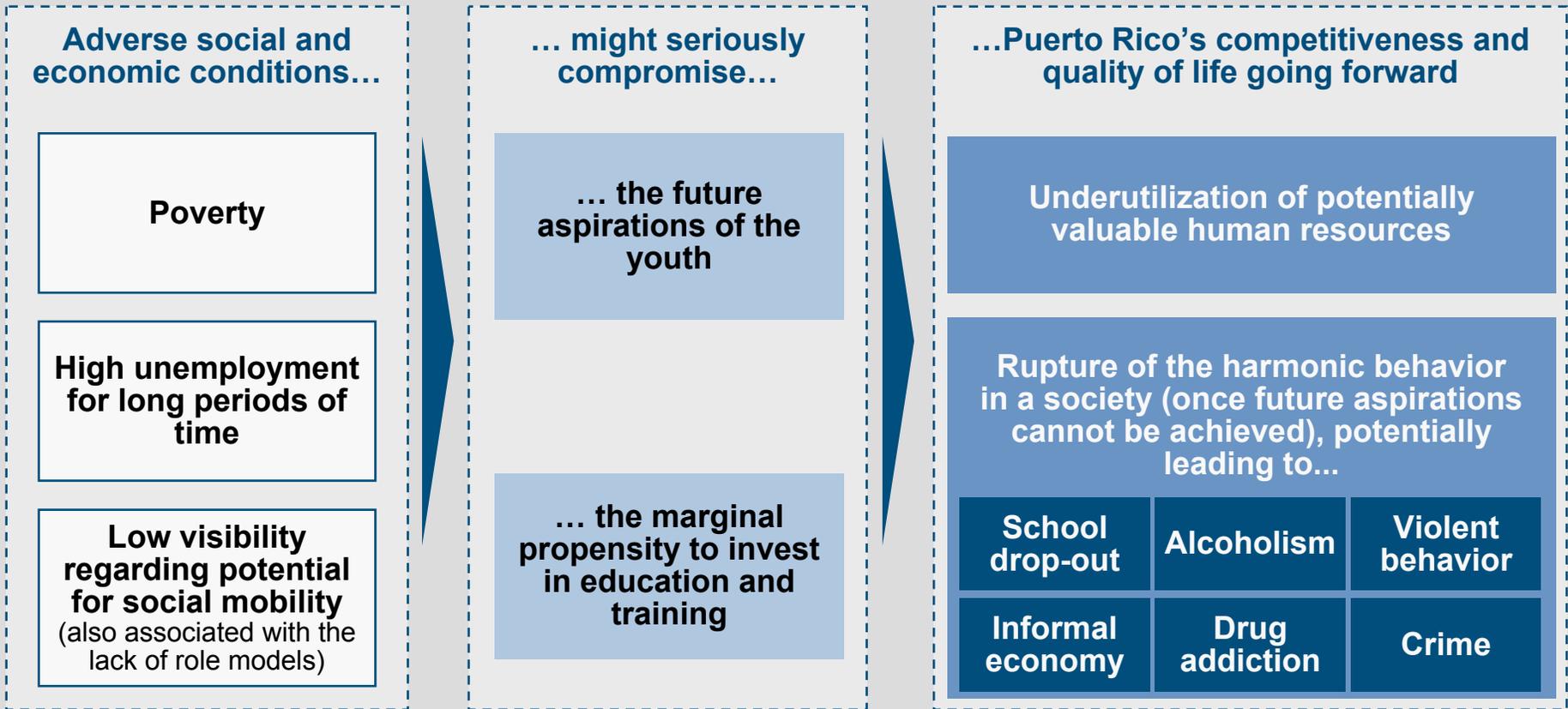


¹⁾ Overall unemployment rate for Puerto Rico is estimated to be 12.4% for 2003

Sources: US Census; OECD in figures – 2003 Edition – Statistics on the member countries; A.T. Kearney analysis

... are creating increasing stress in Puerto Rican society

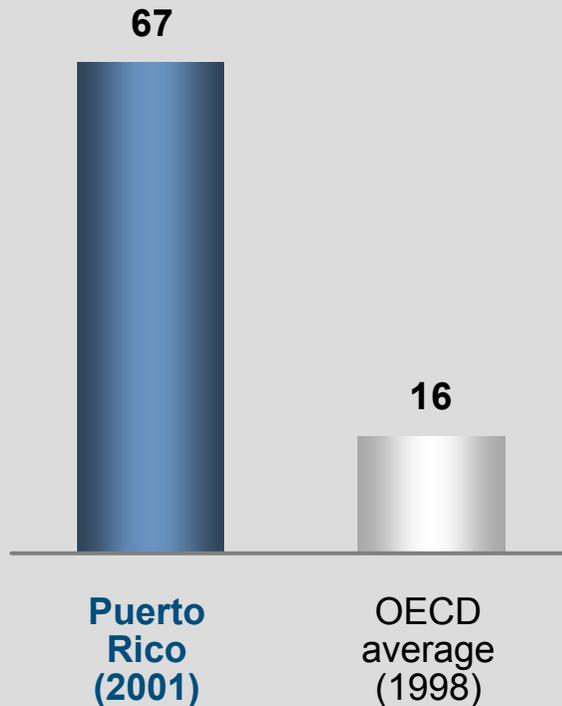
Theoretical cause and effect map
 Impact of social and economic conditions on family and society issues



Teenage births are high by international standards, with important consequences for family stability

Average number of births from adolescent mothers

Per 1,000 women aged 15 to 19 years old



Key facts

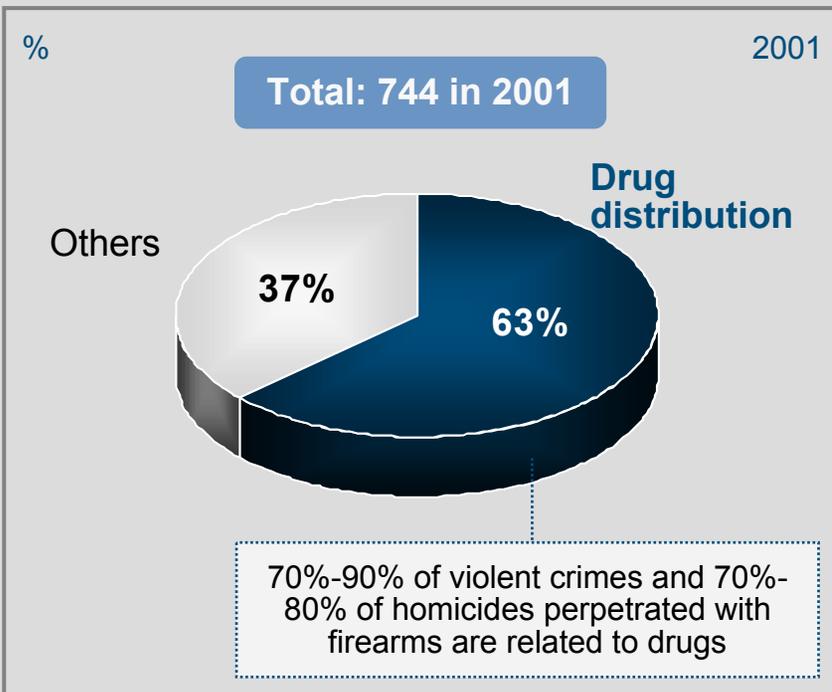
- **Teenage births** tend to be associated with a **wide range of disadvantages** for mothers, children and society:
 - Young mothers are **more likely to drop out of education**, be poorly paid, bring up their children as **single mothers** and live on welfare
 - Babies often encounter health problems such as **low birth weight**
 - Children from teenage mothers are more likely to become **victims of neglect** and to have **less attachment in school**
- **71%** of Puerto Rican **female-headed families** were **living in poverty** in 1999, vs. 44% in the case of married couples with children
- While the overall number of Puerto Rican families living below the poverty line declined in recent years, the **number of female-headed families living in poverty increased 12%** between 1990 and 2000

Sources: Informe Anual de Estadísticas Vitales 2001 – Department of Health; Society at a Glance – OECD; Puerto Rico Planning Board; Census; A.T. Kearney analysis

Illegal drugs distribution is an increasing issue, responsible for 63% of the current alarming homicide levels

Homicides for related causes

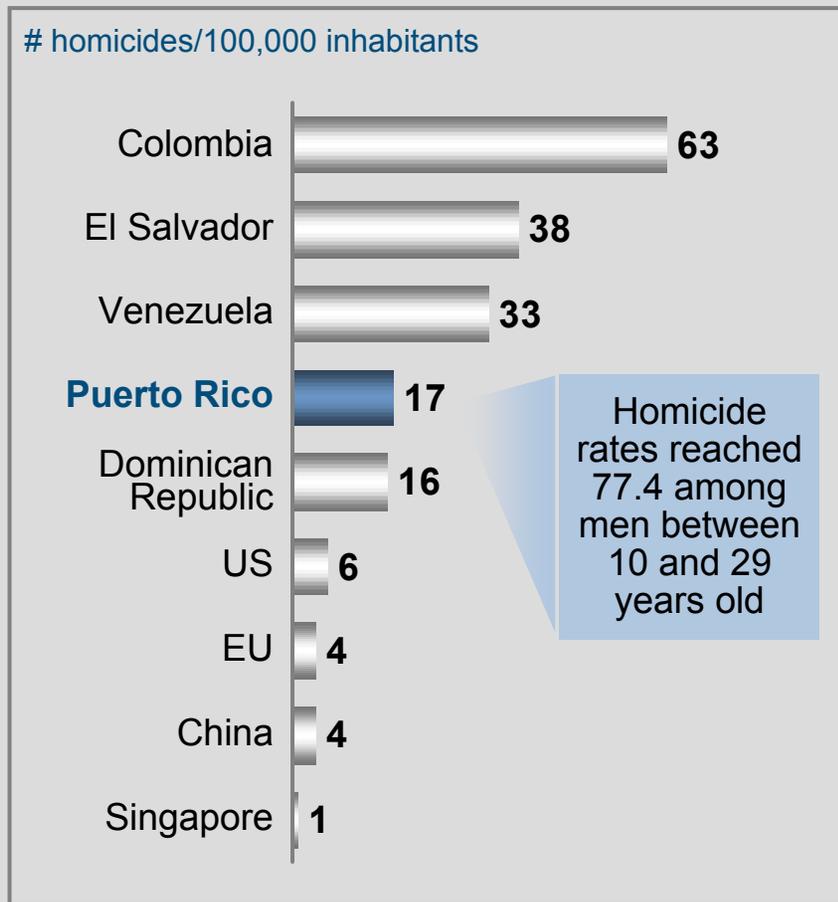
Percentage of murders in 2001



While in 1986, 1.6% of homicides were related to drugs, by 2001 this share had increased to 63%

Number of homicides

Average number of homicides from 1998 to 2000

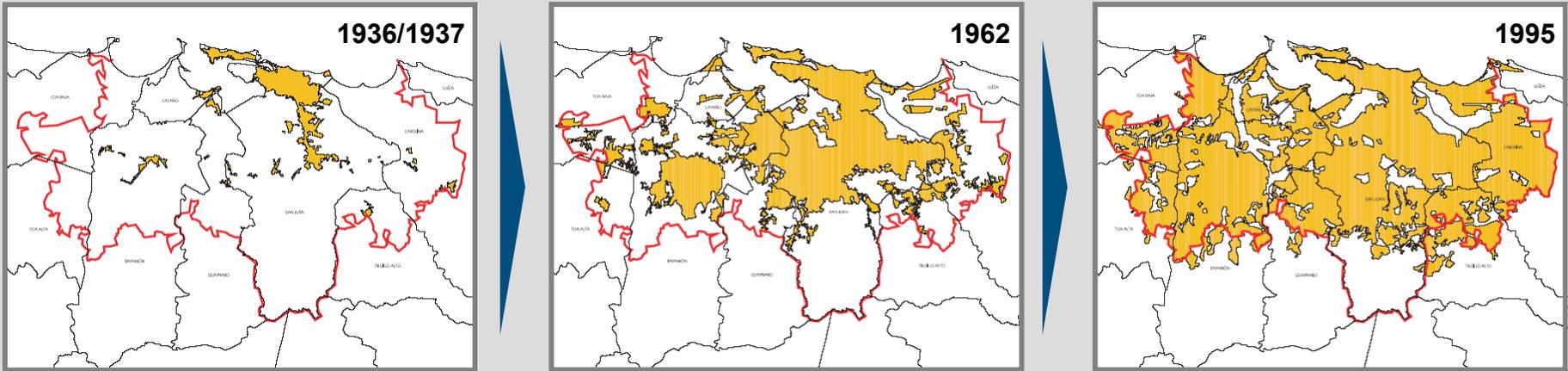


The infrastructure and environment in Puerto Rico are also facing challenges

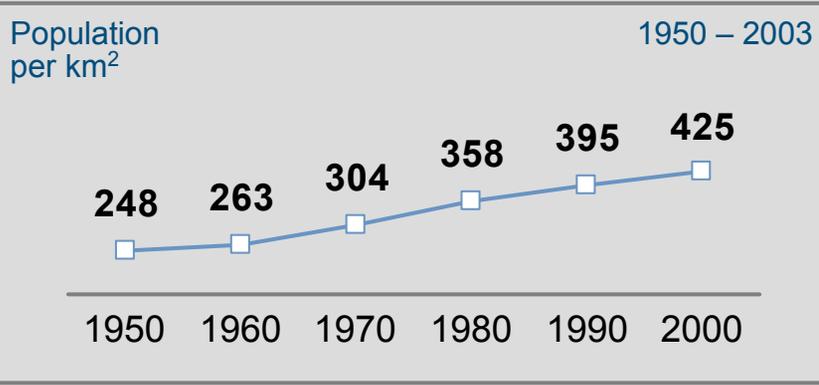
- High **population density** and **increasing consumption**
- Lack of **protected areas**
- Lack of **land-use planning and enforcement**
- Excessive **waste generation** and limited **recycling**; landfills reaching capacity
- Inefficient and unreliable **electricity and water** utilities
- Limited use of **public transportation**
- High **traffic** density and **congestion**
- **Inefficient ports** facing increasing competition

High population density and increasing consumption create pressure on land and natural resources

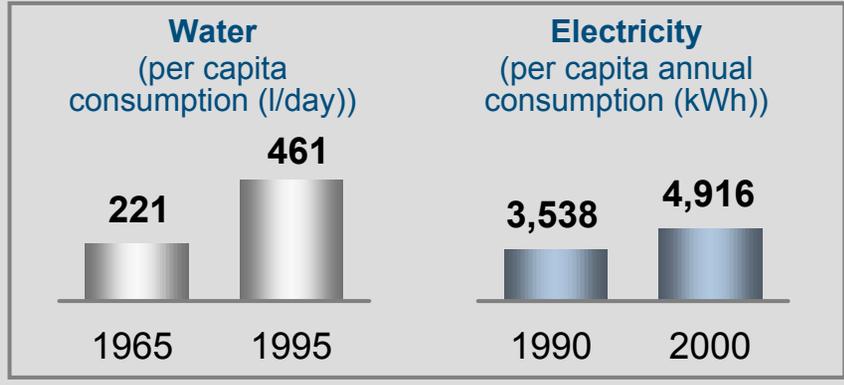
Urban Sprawl – San Juan Metropolitan Area



Population density evolution
Puerto Rico



Increasing demand for utilities
Puerto Rico



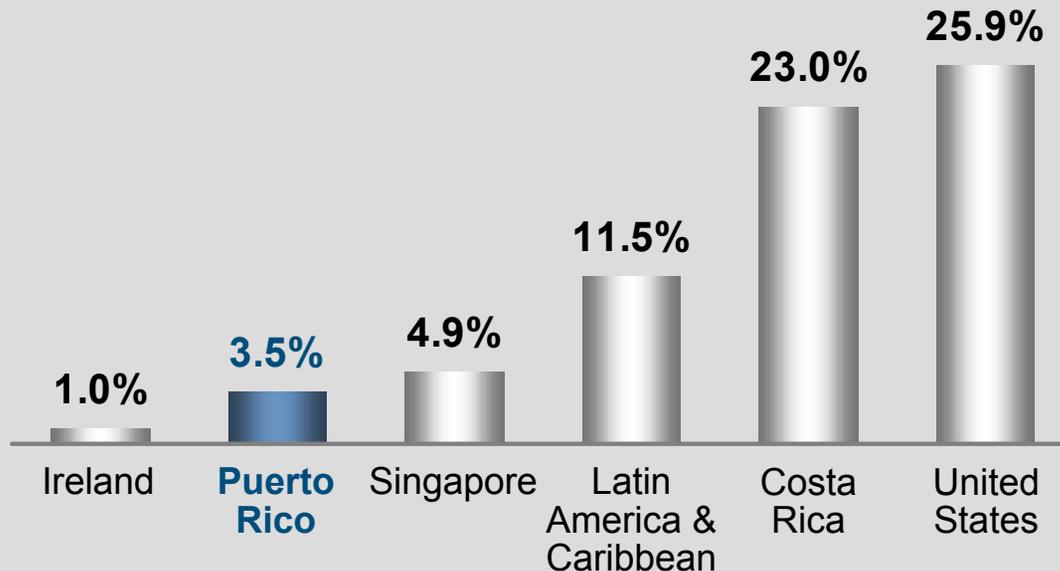
Sources: US Census Bureau; CIA World Factbook 2003; "Key information needs for the policy making process: Global environmental change and tourism", Alberto J. Beale; A.T. Kearney analysis

Puerto Rico has little protected land compared to other locations, and lacks a comprehensive land-use plan

Nationally protected areas

% of total land area

2002



Key facts

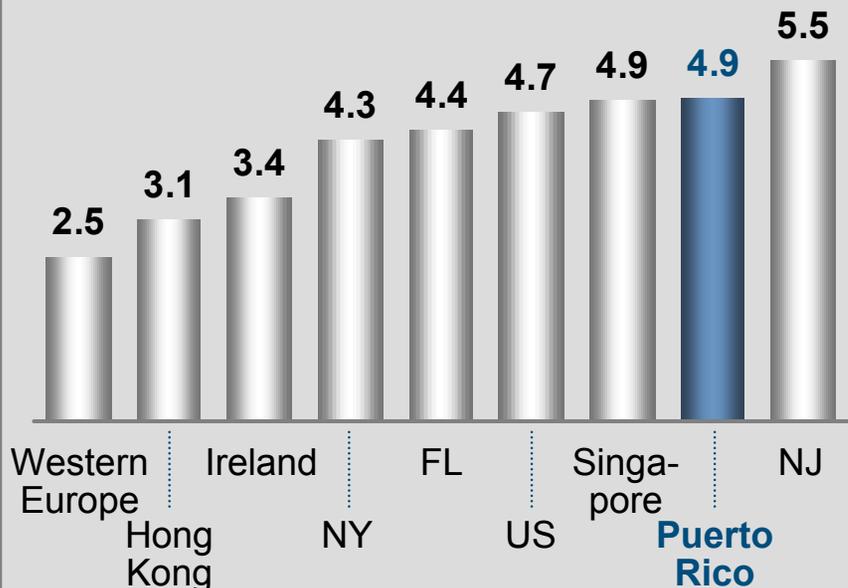
- Since critical areas were not historically designated for conservation, it is now difficult to prevent development
- One way to achieve this is through the purchase of land by the conservation trust. However, they estimate that to protect 12% (the international standard) of all land in this way would cost \$ 1 billion
- Moreover, 80% of forests are in private hands and have little protection
- Even when plans exist, such as Coastal Zones and Flood Plans, development still sometimes occurs

Given Puerto Rico's small size and high population density, it is even more important that a significant percentage of land be protected

Puerto Rico generates more waste per day than most peers, besides having a low recycling rate

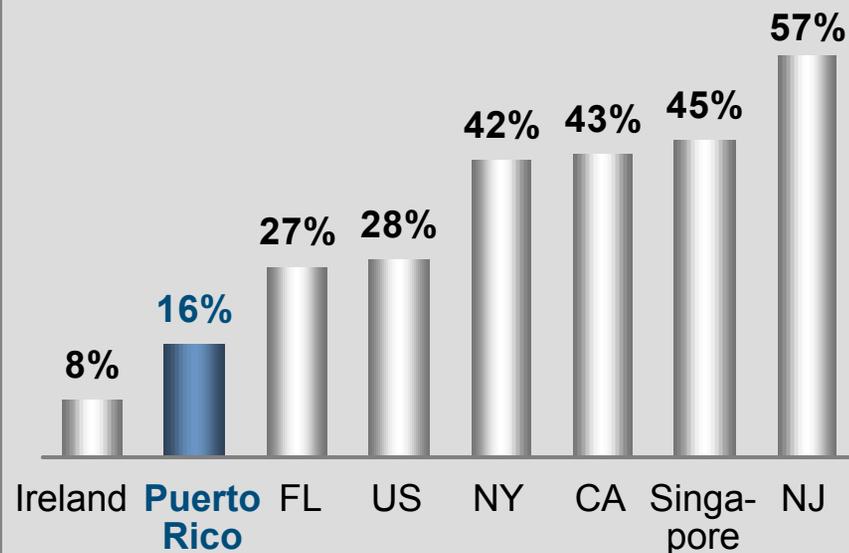
Waste generated

Pounds per person per day 2002



Waste recycled

% of total waste recycled 2002

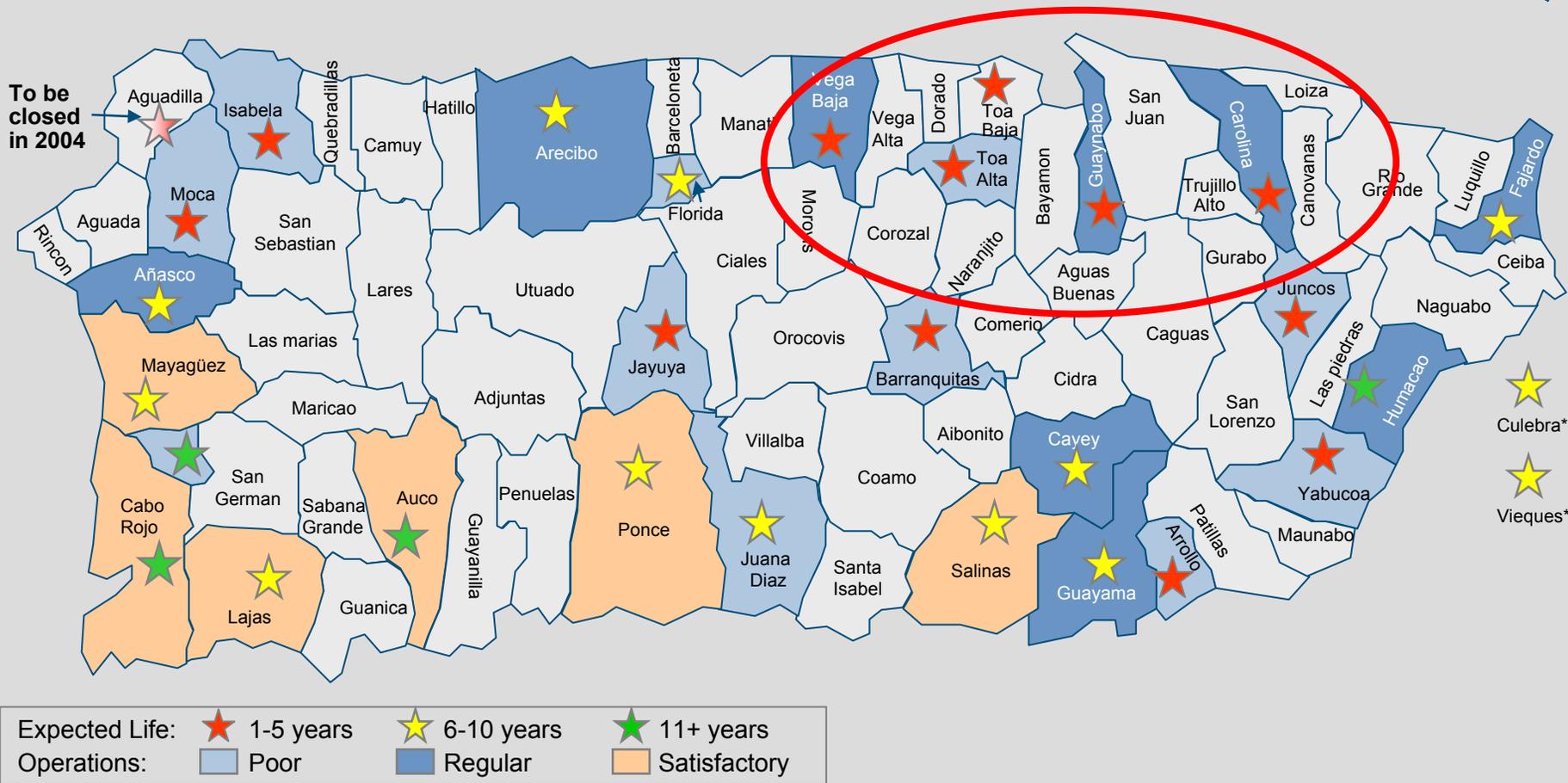


Despite the fact that law 70 of 1978 requires that Puerto Rico recycles 35% of solid waste by 2006, current trends indicate that this target will not be reached

At the current pace, only 14% of Puerto Rico's landfills will still have capacity in 11 years

Geographic distribution of the landfills in Puerto Rico Location, expected life and state of operations

Based on currently available data

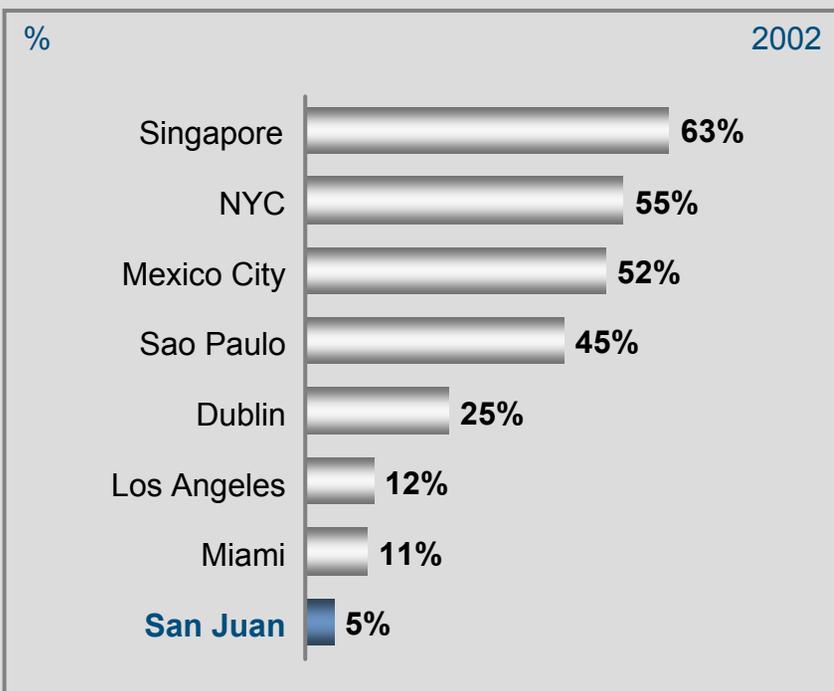


Source: Autoridad de Desperdicios Sólidos, 2002 y Junta Calidad Ambiental, 2001; A.T. Kearney analysis

Limited public transportation and low gas prices create an incentive to drive, causing traffic density and congestion

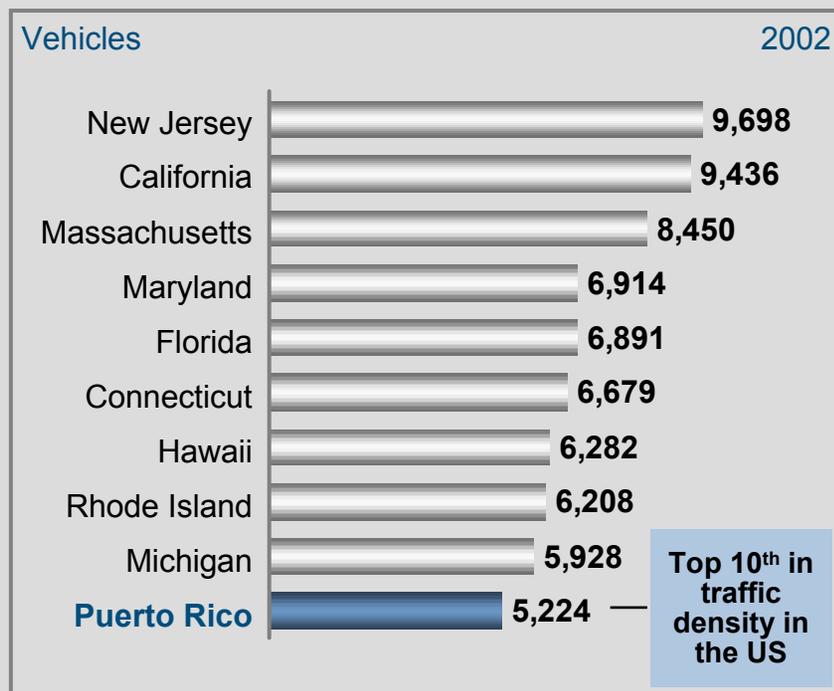
Usage of public transportation compares poorly to major global cities

% of workers that use mass transit to go to work



Puerto Rico ranks 10th in the US for traffic density

Average daily vehicle traffic per lane



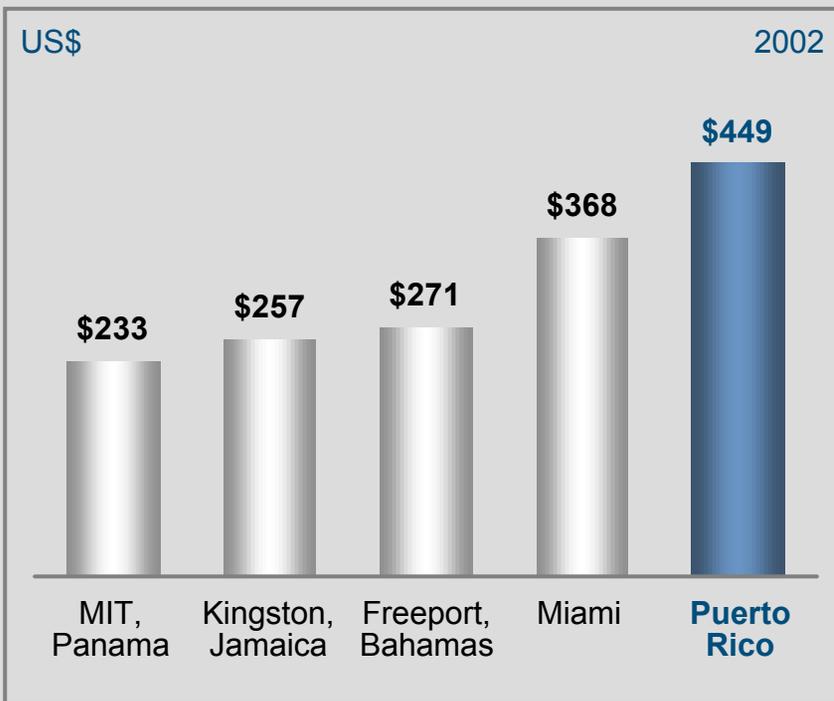
Vehicle occupancy in Puerto Rico is very low — according to the US Census, 79% of workers in Puerto Rico drive alone

Source: US Census, Dublin Transportation Office, Secretaria Municipal de Transportes. Interpress Service, Singapore Department of Statistics, Federal Highway Authority; A.T. Kearney analysis

By international standards, Puerto Rico's port operations are expensive, with low productivity and service levels

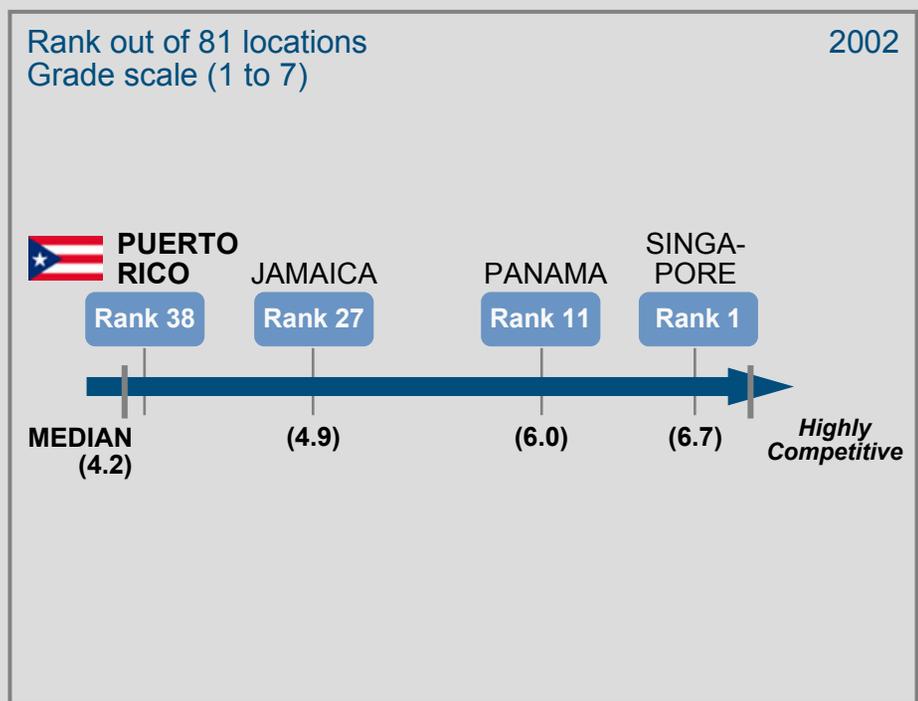
Transshipment handling costs

US\$ per transshipment container



Quality of port infrastructure

Rank in the Global Competitiveness Report 2002



The Penfold Report suggests that a potential new transshipment port in Puerto Rico would need a radically different rate structure in order to be competitive

Source: Ocean Shipping Consultants; "Análisis Preliminar de Competitividad de Puerto Rico", Procomp; Global Competitiveness Report 2001-2002; "The Evolution of Ports in a Competitive World" – World Bank; "Measuring Port Performance" – Patrick Fourgeaud – The World Bank; A.T. Kearney analysis

Conclusion: Puerto Rico has many assets to benefit from global shifts, but is not leveraging these effectively

Assets	Threats	Potential outcomes
Strong position in high-technology industries	<ul style="list-style-type: none"> Limited R&D, focus on next-gen technologies Limited local linkages Cost disadvantages 	<ul style="list-style-type: none"> Little to prevent firms moving to lower cost locations like Costa Rica and Asia
Strong services (financial & professional, tourism, health & education)	<ul style="list-style-type: none"> No promotion of services, except tourism Mixed success in tourism Declining quality in education 	<ul style="list-style-type: none"> Lose tourism to DR, Cuba; services to Miami, Panama; health & education to Cuba ...
Logistics and export hub for the Caribbean	<ul style="list-style-type: none"> Losing lead in infrastructure Shrinking production industries Limited promotion 	<ul style="list-style-type: none"> Lose port and export business to Jamaica, other islands
Superior human capital	<ul style="list-style-type: none"> Deteriorating education quality Ineffective institutions Limited high-end R&D 	<ul style="list-style-type: none"> Squandering most critical asset for the global economy
Attractive location for knowledge workers (Caribbean, culture, etc.)	<ul style="list-style-type: none"> Environmental degradation Crime and drugs 	<ul style="list-style-type: none"> Social and physical environment becomes a liability, not an asset
Entrepreneurial spirit (informal sector)	<ul style="list-style-type: none"> Red tape Risk-aversion Lack of incentives and support 	<ul style="list-style-type: none"> No basis for local innovation and sustainable local industry
Bridge between Latin America and the US	<ul style="list-style-type: none"> Little focus outside the US Even in the US, few linkages beyond MNCs and Latino market 	<ul style="list-style-type: none"> “Neither here, nor there”

“No matter how richly endowed an economic environment is with intellectual, social, human, and financial resources, some person has to organize these resources to pursue market opportunities.”

– *William Baumol, economist, NYU professor and author*

Puerto Rico needs to execute a fundamental redirection based on similar long term vision and leadership

The Balance Sheet

Slowing growth, unemployment, poverty, dependency, lack of innovation and enterprise



A New Economic Model
— *Enterprise, not Dependency*

Deteriorating quality, escalating costs in education & health; crime; disintegrating families & communities



A New Social Model
— *Empowerment & Responsibility*

Unsustainable use of resources; natural habitats under threat; inefficient development; high-cost, low reliability infrastructure at capacity



A New Resource Model
— *Sustainable Development*

Long-term Vision and Leadership are critical to execute these changes

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- The Case for Action

- **Appendix A: Detailed assessment results**

- Economic development
- Social development
- Infrastructure and environmental development

- Appendix B

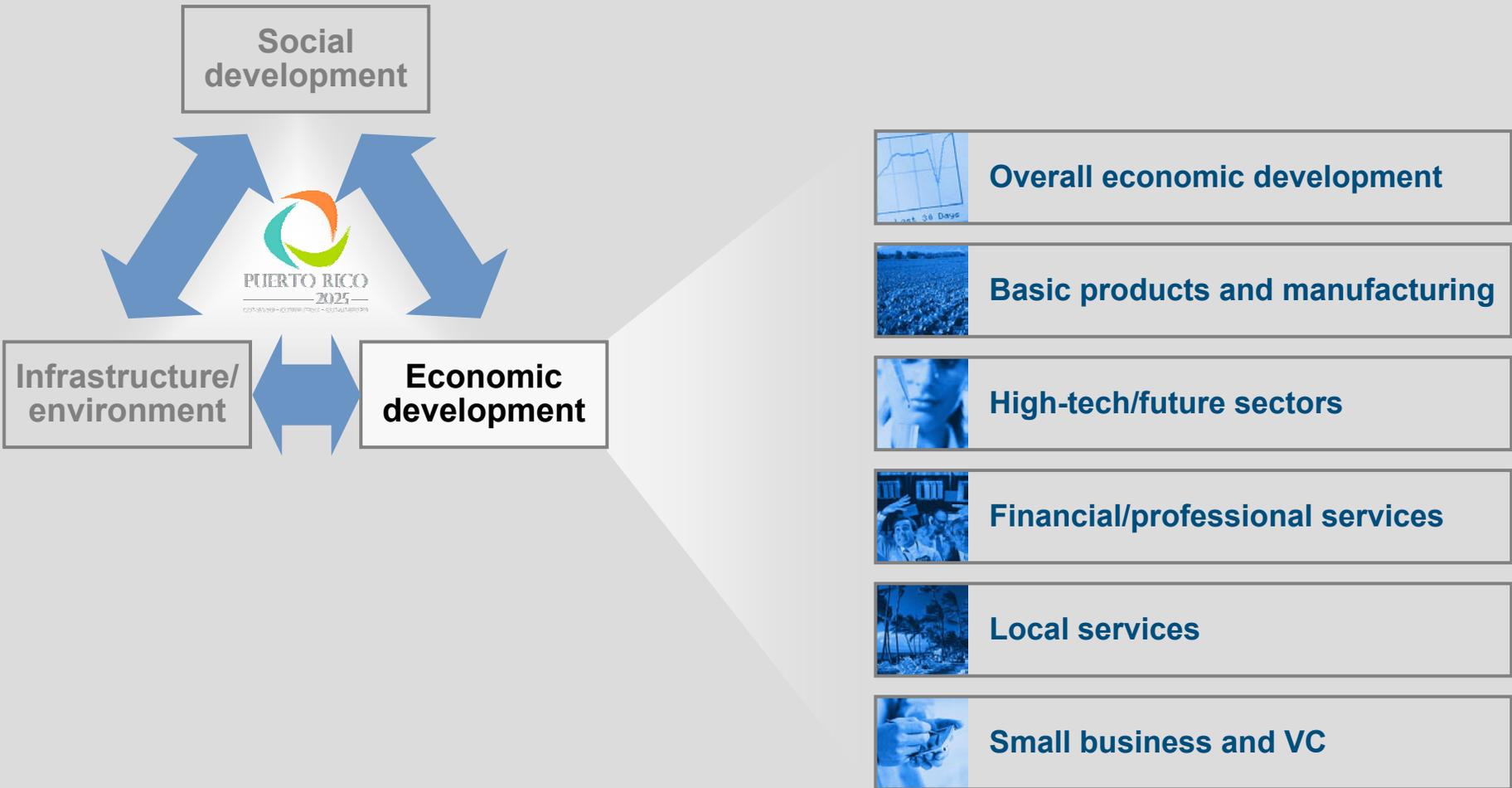
- List of Interviewees
- List of panel members
- List of reference studies on Puerto Rico

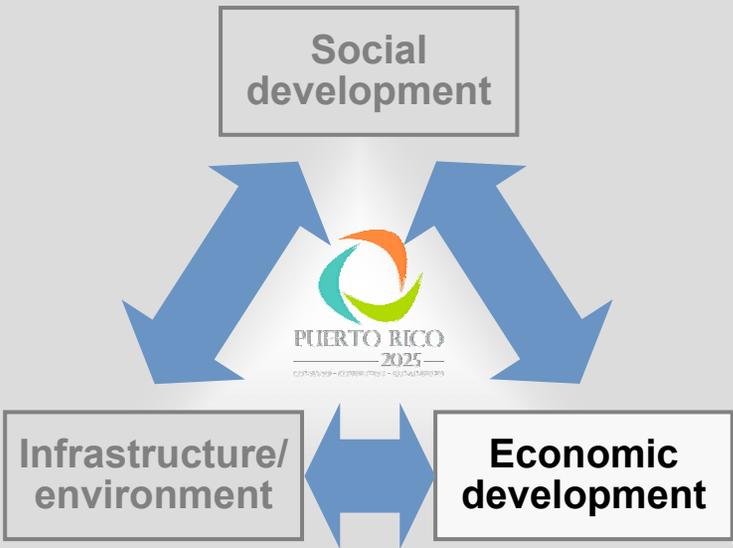
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- Executive summary

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 - Infrastructure and environmental development

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 - List of panel members
 - List of reference studies on Puerto Rico





Overall economic development



Basic products and manufacturing



High-tech/future sectors



Financial/professional services



Local services



Small business and VC

Main conclusions: Economic development

- Puerto Rico's economy has a strong endowment of human capital and high technology firms – the legacy of dramatic economic development and rising standards of living over the past 50 years
- However, slowing rates of economic growth and persistently high unemployment rates suggest that Puerto Rico's sources of competitive economic advantage have run dry and that the existing economic development model is in need of change
- Among key issues are the economy's heavy reliance on government consumption and personal spending, which act as key drivers of economic performance
- Puerto Rico's export-oriented multinationals are not well-linked to the domestic economy, with locally owned firms small in scale and involved in exports only to a very limited extent
- Looking forward, Puerto Rico needs to boost levels of risk capital funding for new business ideas and improve levels of innovation, including patents and new discoveries

Overview of Puerto Rico's overall economic development

Strengths

- Puerto Rico boasts the largest income per capita in Latin America
- Stability in the macroeconomic, legal and regulatory environment is a fundamental asset
- The economy is characterized by high levels of openness to trade and investment
- Puerto Rico plays host to a strong base of multinationals engaged in high technology manufacturing and export
- Puerto Rico's accumulated human capital is among the strongest in Latin America and the Caribbean
- The physical infrastructure in Puerto Rico is also among the best in the region

Weaknesses

- Low economic growth has inhibited income convergence
- In this context, unemployment and labor force participation have remained at unsatisfactory levels
- While improving, poverty rates and income inequality have also remained stubbornly high
- Government employment and participation in the economy are high by international standards, placing a heavy burden on the private sector
- The economy benefits from exceptional personal spending, a share of it from non-productive sources of income
- Federal transfers raise personal consumption, helping to explain Puerto Rico's negative savings rate
- Informal economy plays a significant role in Puerto Rico, although the full extent is not well known
- There is a concern that the tax regime distorts economic activity and is not evenly distributed among the society
- Promotion and incentives focus on large multinationals that contribute the least to income and employment
- Local enterprise is characterized by small scale, limited productivity growth and low export participation
- Lack of investment in local enterprise has limited Puerto Rico's capacity for technological innovation

Opportunities

- With proper cultivation, links between foreign-owned multinationals and local firms can be strengthened
- High value added manufacturing based on research and development can play an increasing role
- Puerto Rican companies should be encouraged and supported in exporting – particularly to the growing Hispanic market in the United States
- The financial and professional services sector offers export opportunities for Puerto Rico's existing firms

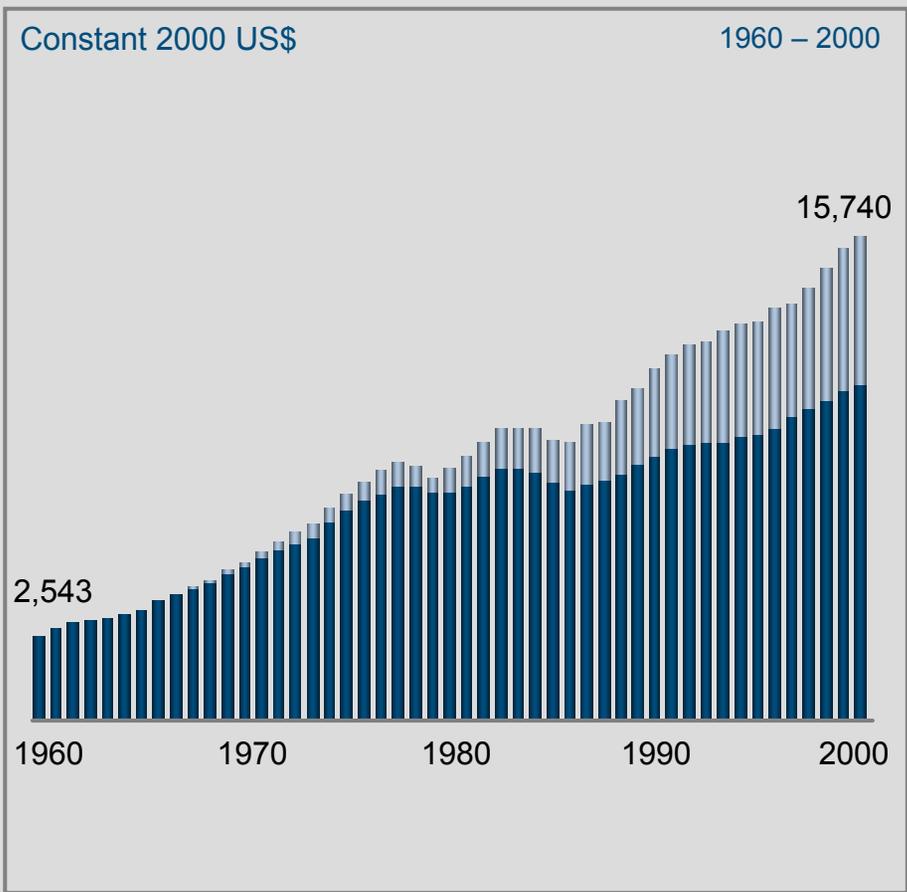
Threats

- Loss of competitive advantage in existing areas of economic activity as the proliferation of free trade agreements intensifies competition worldwide
- Overdependence on the United States and possibility of reduction in transfers and other support
- Lack of economic diversification and reliance on
- Growing fiscal deficit hidden in government accounts
- Lack of research and development, perhaps resulting in loss of the next generation of advanced industries to other, more competitive locations

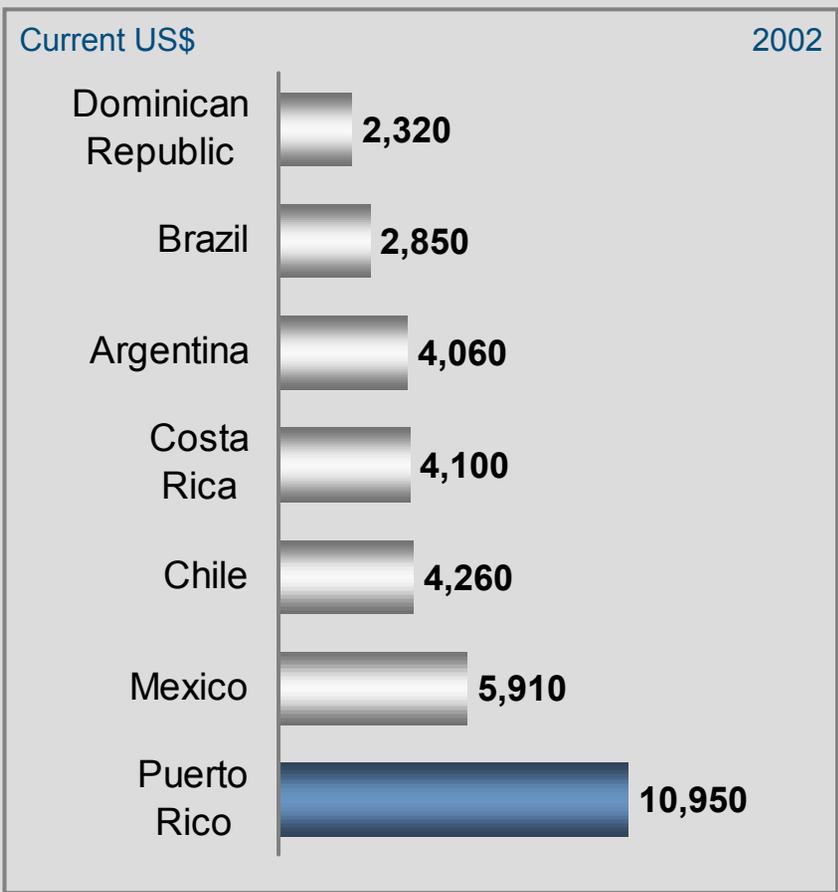
Puerto Rico boosts the largest income per capita in Latin America



Growth of per capita gross product
GDP and GNP per capita



Comparisons from Latin America
GNP per capita



Source: World Bank; International Monetary Fund, International Financial Statistics; Planning Board; Human Development Report 2003; A.T. Kearney analysis

Stability in the macroeconomic, legal and regulatory environment is a fundamental asset

	STRENGTHS

- Puerto Rico perceived as a “safe haven” in a period of rising global political and security risks
 - Strong democratic institutions, with long history of peaceful political transitions
 - Society characterized by civil obedience and social order
 - Well-established tradition of rule by law

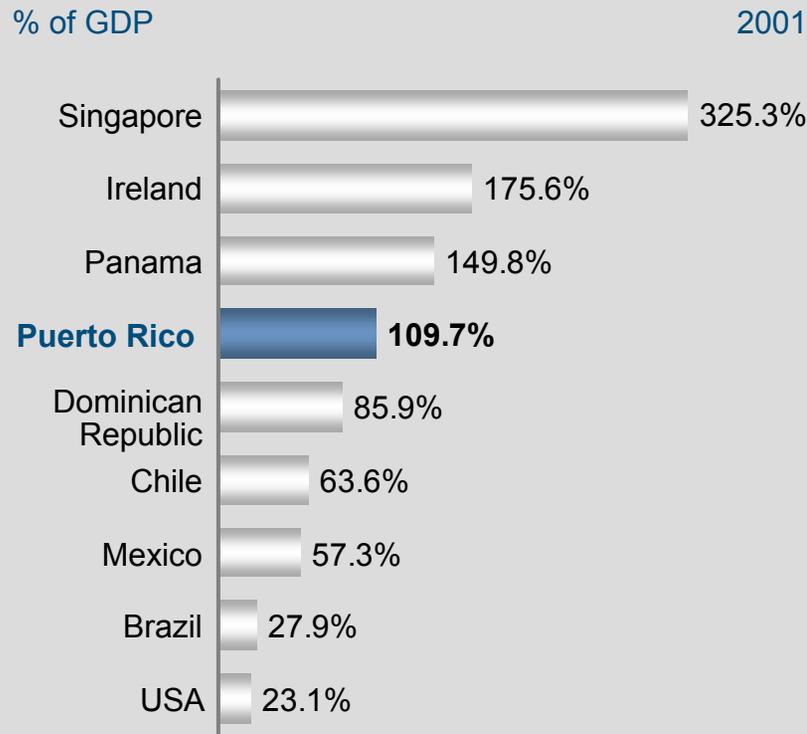
- Inclusion within the United States legal and regulatory framework brings critical advantages for international investors and local entrepreneurs alike
 - Unlimited access to the dynamic U.S. market for goods and services
 - Reduced transaction costs for meeting legal and regulatory requirements
 - Elimination of currency and debt risk
 - Unparalleled protection for intellectual property rights
 - Special regulatory inclusion, including FDA’s “GMP” standards

The economy is characterized by high levels of openness to trade and investment

STRENGTHS

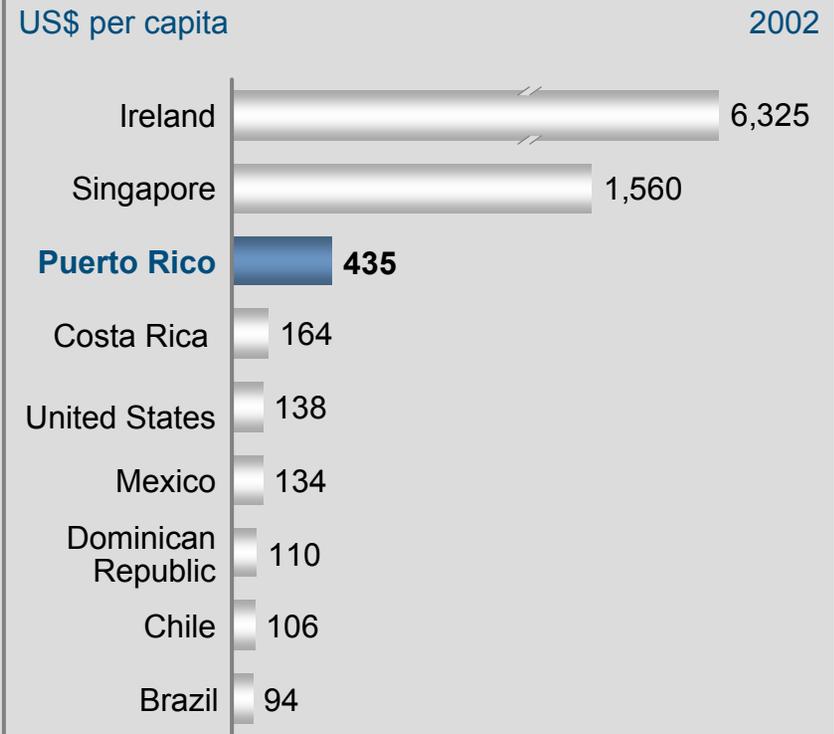
Openness to trade

Exports and imports as a share of GDP



Inward direct investment

Direct investment per capita



Note: Direct investment to Puerto Rico includes investment from US sources.

Source: International Monetary Fund, International Financial Statistics; UNCTAD; Planning Board, Statistical Appendix; PRIDCO; A.T. Kearney analysis

Puerto Rico plays host to a strong base of multinationals engaged in high technology manufacturing and export

Pharmaceuticals

Share of global exports



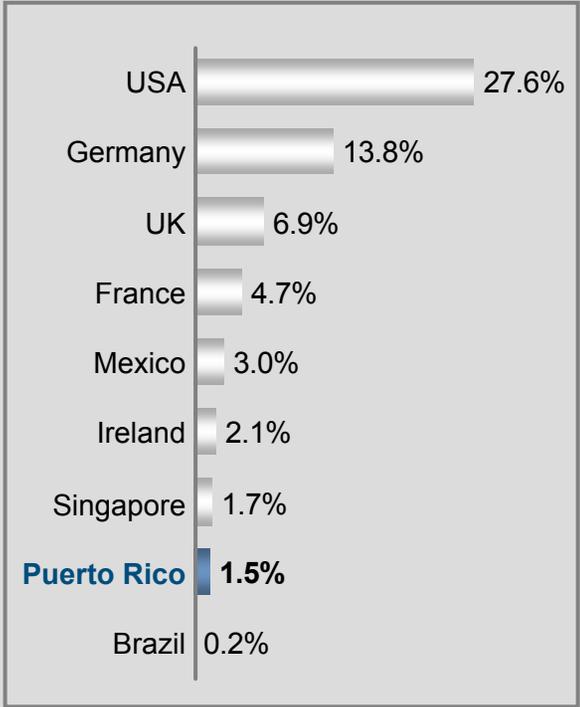
Computer hardware

Share of global exports



Scientific instruments

Share of global exports

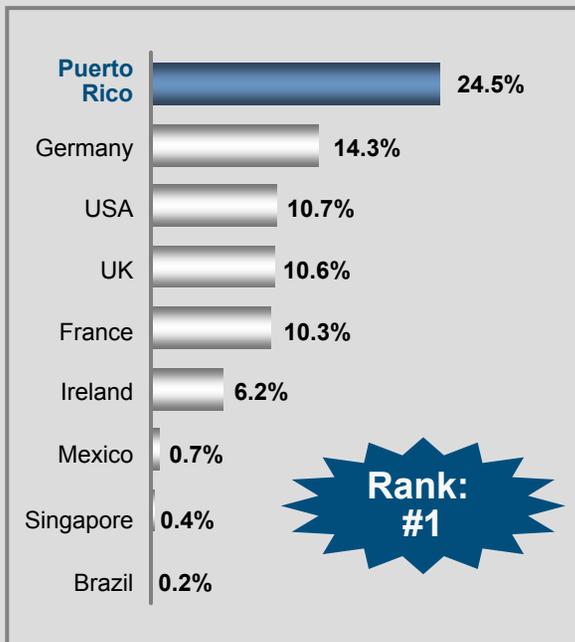


Puerto Rico is the world's largest pharmaceutical, 10th largest scientific and medical instrument and 18th largest computer parts exporter

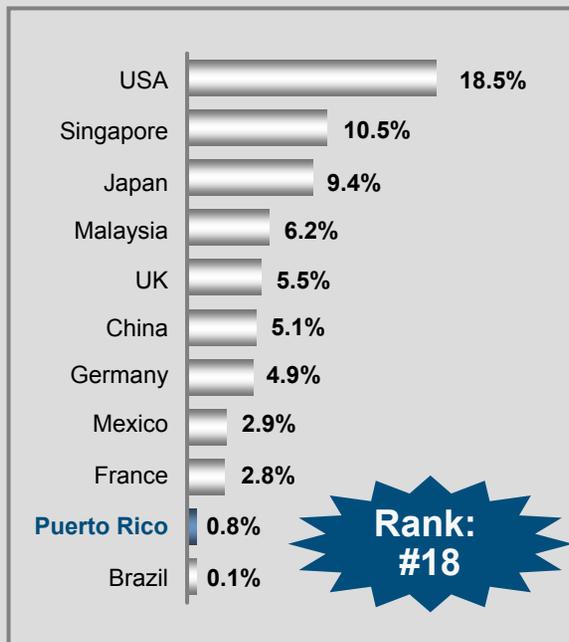
Source: Epsicom Pharmaceutical Markets Factbook 2003, United Nations Statistical Department; Organization of Economic Cooperation and Development; Planning Board, Statistical Appendix; A.T. Kearney analysis

Puerto Rico plays host to a strong base of multinationals engaged in high technology manufacturing and export

Pharmaceuticals Share of global exports



Computer Hardware Share of global exports



Scientific instruments Share of global exports



Puerto Rico ranks 15th in the world in terms of exports per capita and exports as a share of GDP

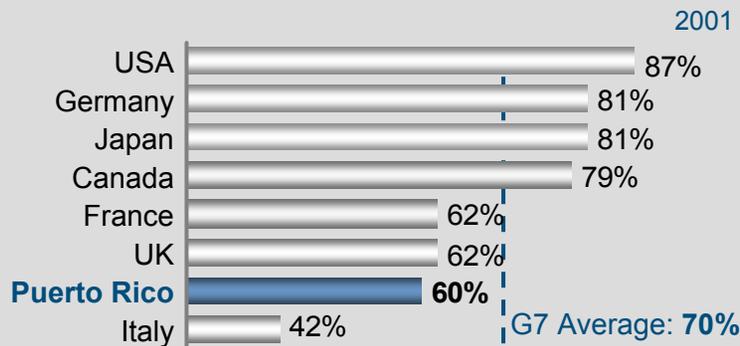
Source: Epsicom Pharmaceutical Markets Factbook 2003, United Nations Statistical Department; Organization of Economic Cooperation and Development; Planning Board, Statistical Appendix; A.T. Kearney analysis

Puerto Rico's accumulated human capital is among the strongest in Latin America and the Caribbean

STRENGTHS

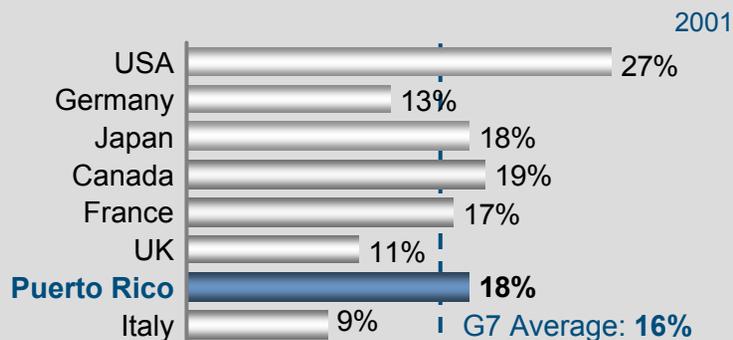
Secondary education

% of population 25 years and over



University education

% of population 25 years and over



Human capital endowment

- Levels of education **approximate OECD levels** – and are substantially higher than those in other regions of Latin America
- Some 11,000 active **lawyers**, 10,500 professional **engineers**, 8,000 **doctors**, and 4,000 **CPAs** are trained to minimum US standards
- Nearly **three-quarters of the senior and middle managers** at multinational companies are local residents – a cadre well versed in the standards needed to compete internationally
- Among the **largest concentrations of certified financial analysts and investment brokers** in the US is located in Puerto Rico
- Puerto Rico ranks **9th in engineering graduates** in the USA, and UPR Mayagüez ranks among the top twenty US engineering schools
- Puerto Rico's universities award 4,500 advanced degrees annually

The physical infrastructure in Puerto Rico is also among the best in the region



- While facing challenges, Puerto Rico has physical infrastructure that provides competitive advantages over many other countries

- Port of San Juan
 - Busiest container port in the Caribbean

- Luis Munoz Marin Airport
 - 29th busiest cargo airport in the US (2002)
 - Largest air cargo and passenger handling facility in Central America region

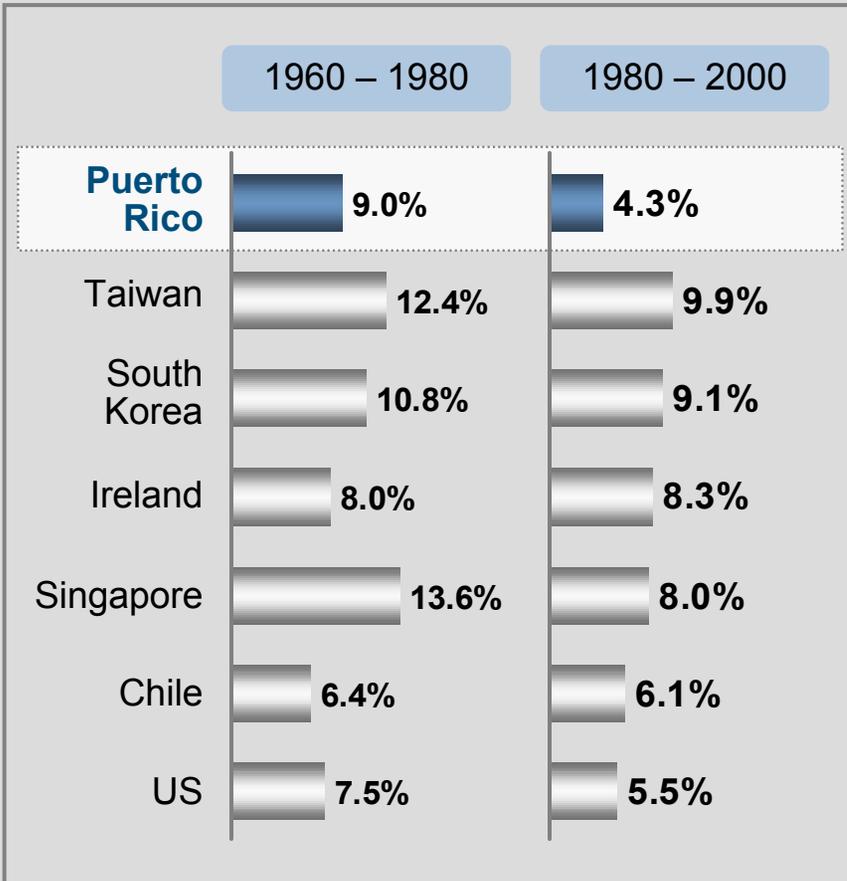
- Telecommunications
 - 6th highest internet penetration in Latin America and the Caribbean
 - 10th highest cell phone penetration in Latin America and the Caribbean

Low economic growth has inhibited income convergence



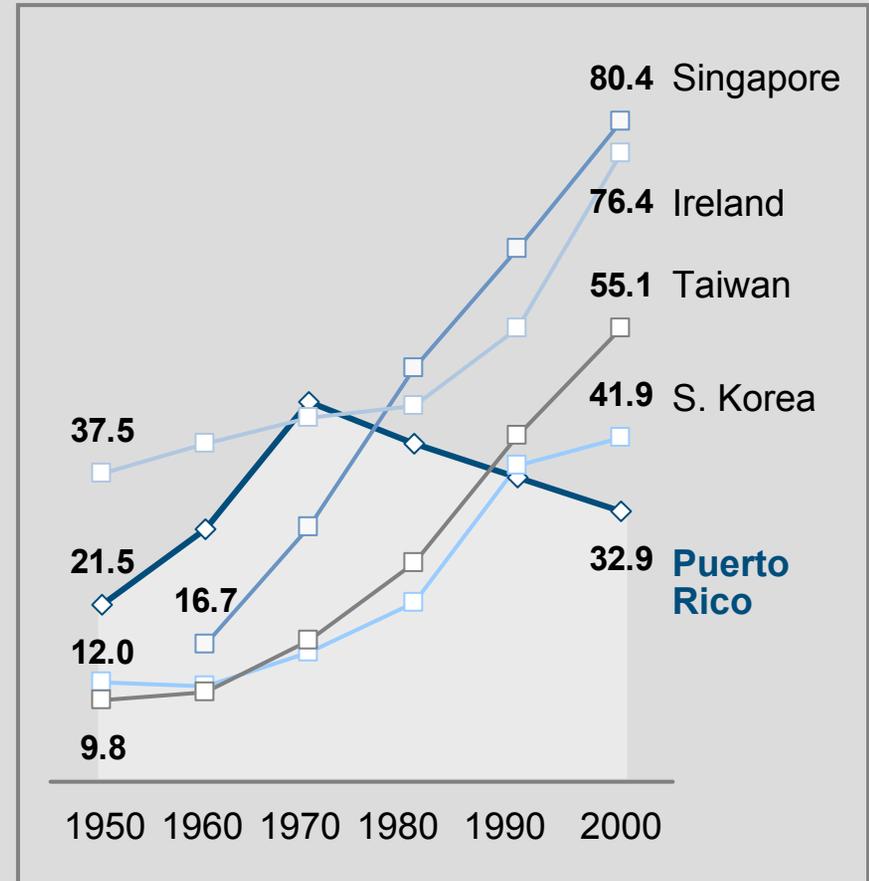
Slowing growth of per capita income

Real PPP-adjusted GDP per capita



Income convergence

GDP per Capita as a % of US levels



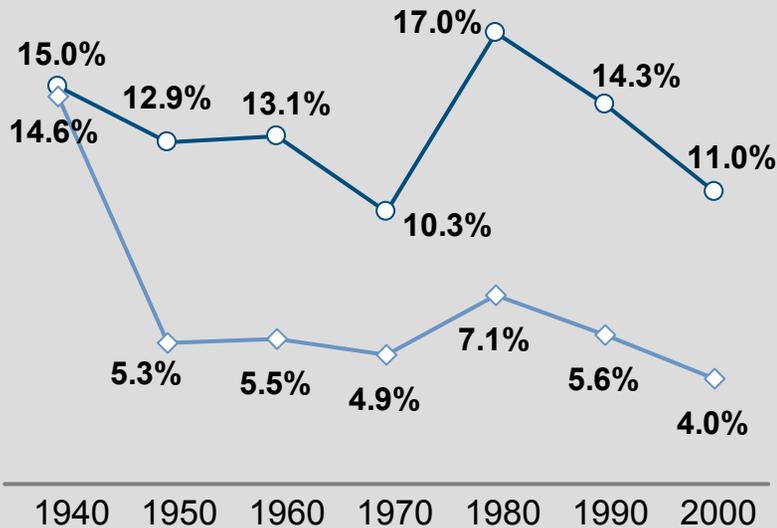
Source: Penn World Tables 6.1, Alan Heston and Robert Summers; World Bank, World Development Indicators 2002; A.T. Kearney analysis

In this context, unemployment and labor force participation have remained at unsatisfactory levels

	WEAKNESSES

Unemployment rates

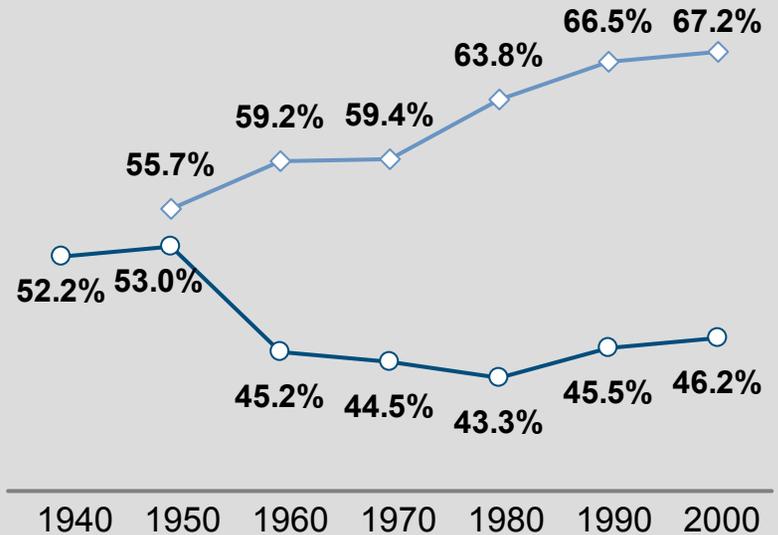
% of labor force 1940-2000



—○— Puerto Rico —◇— United States

Work force participation rates

Labor force 1940-2000



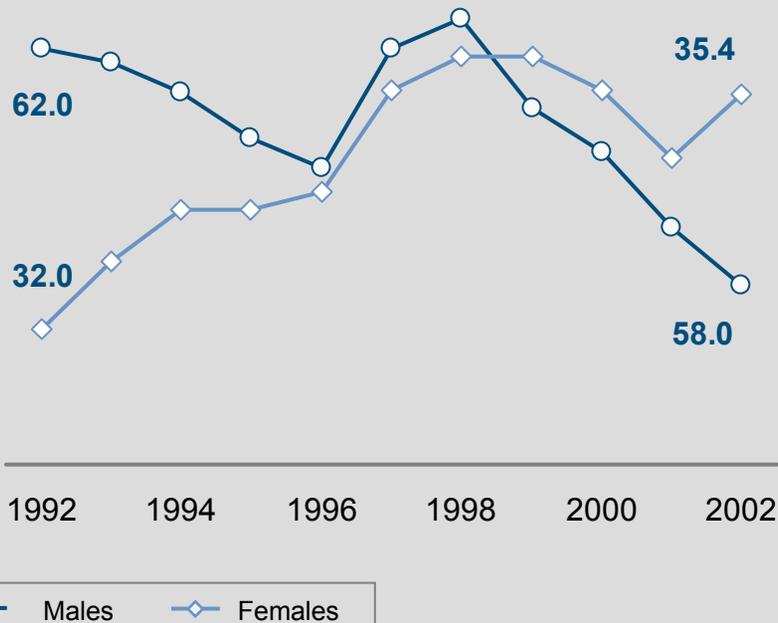
—○— Puerto Rico —◇— United States

Source: Planning Board, Statistical Appendix; U.S. Census Bureau; U.S. Department of Labor; "Puerto Rico: Negotiating Development and Change", James L. Dietz; analisis A.T. Kearney

Changing patterns of participation have seen women enter the workforce in larger numbers as more men exit

Labor participation rates by gender

% of labor force 1992-2002



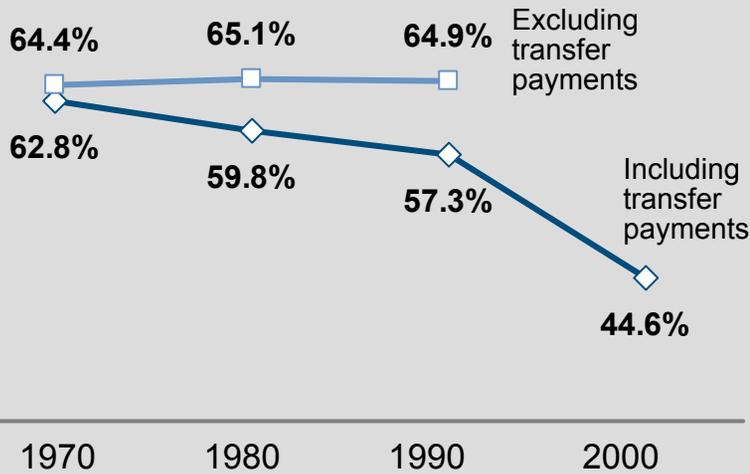
Diverging genders

- Female workforce participation rates have climbed 3 points since 1992, while male rates have dropped 4 points
- Unemployment rates are higher among men (12.1%) than among women (7.1%)
- Nearly 70 percent of the work force at some high tech plants is female, because women are perceived to have greater dexterity
- Female enrollment in universities surpasses male enrollment by 50 percent, and female enrollment at some is 75 percent of the total
- Child illiteracy rates are also higher for men
- Emerging social patterns mimic inner cities, with male crime rates growing while women hold jobs and head families

While improving, poverty rates and income inequality have also remained stubbornly high

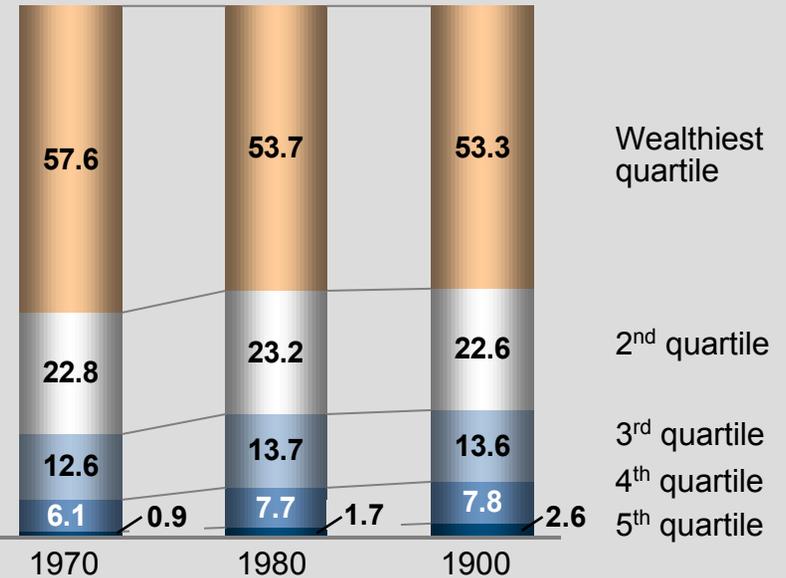
Poverty rates

Families 1970-2000



Distribution of income

Ingreso total 1970-2000

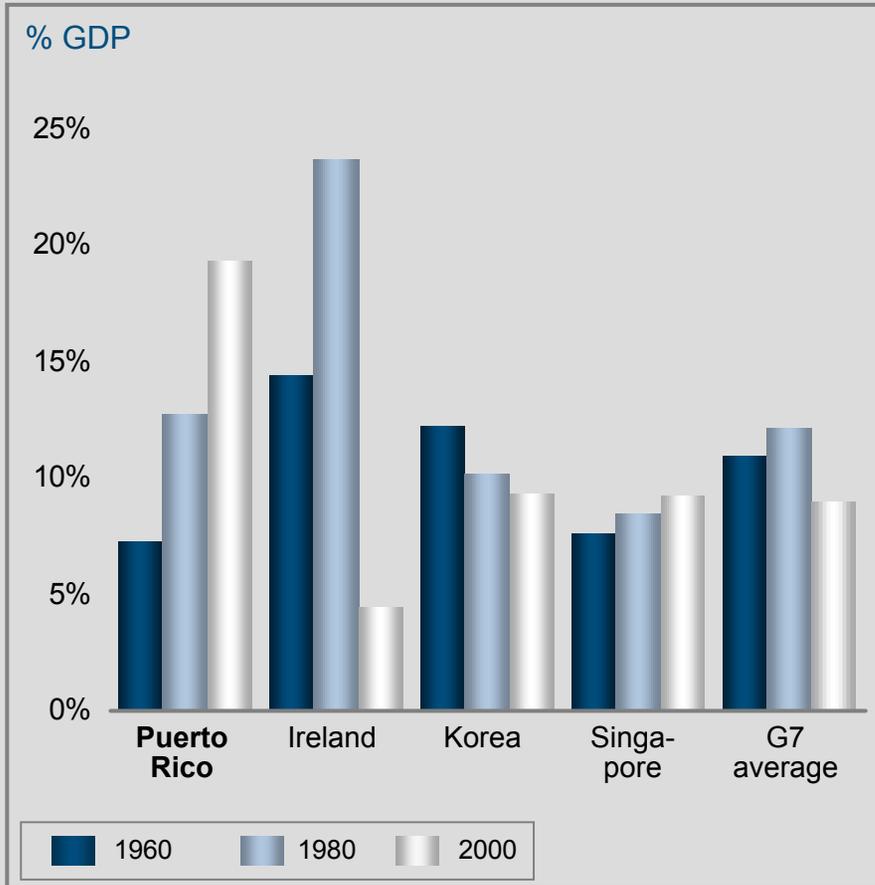


Source: "Island Paradox", Francisco L. Rivera-Batiz and Carlos E. Santiago; "Puerto Rico: Negotiating Development and Change", James L. Dietz; "Poverty and Income Inequality in Puerto Rico, 1970-1990", Orlando Sotomayor; A.T. Kearney analysis

Government employment and participation in the economy are high by international standards, placing a heavy burden on the private sector

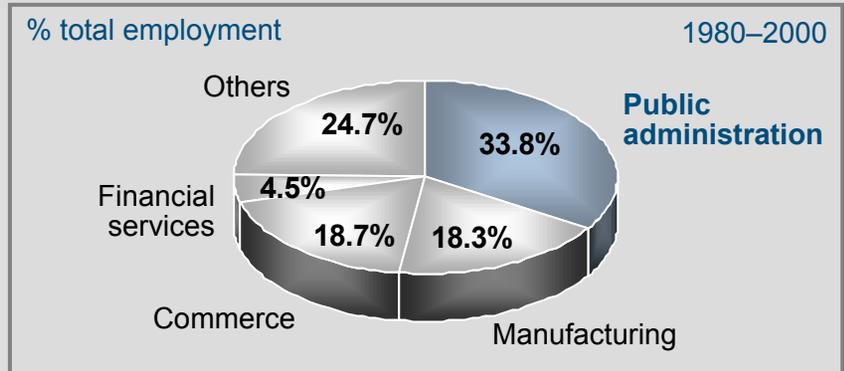
Government consumption

As a share of economic output



Government employment

Puerto Rico 20-year average



Government employment

Contemporary international comparisons



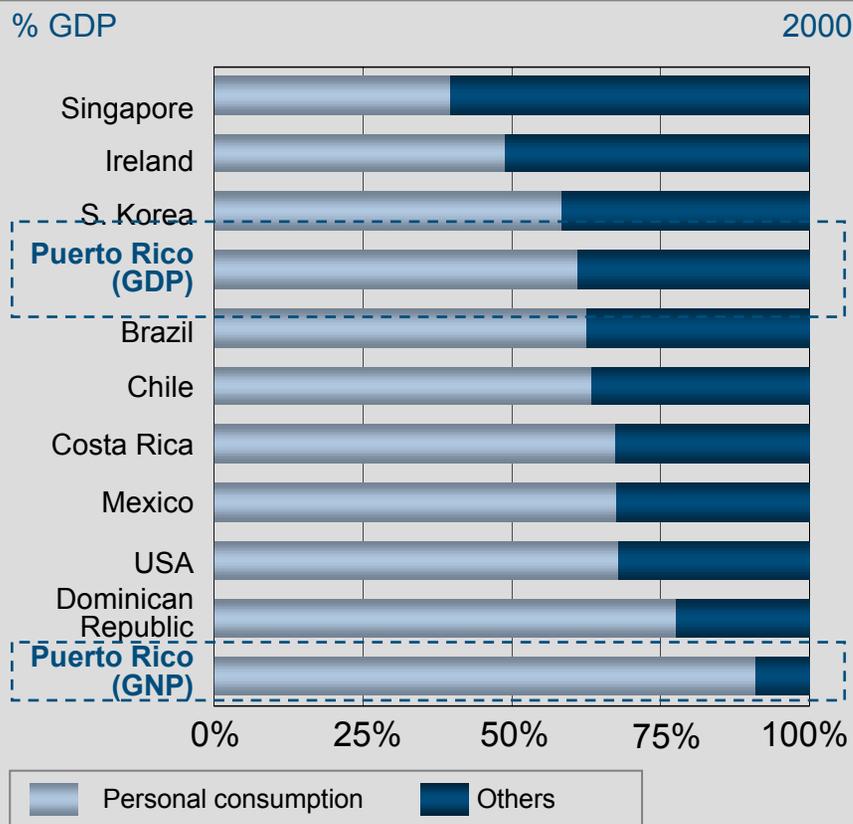
Note: Government consumption calculated based on adjusted figures from Penn World Tables. Other data sources show slightly different levels.
 Source: Penn World Tables 6.1, Alan Heston and Robert Summers; Department of Labor, Establishment Survey; OECD; A.T. Kearney analysis

High personal spending rates drive Puerto Rico's economy – but they depend on federal transfers and the underground economy

WEAKNESSES

Personal consumption

Share of gross domestic product



Additional sources of personal income

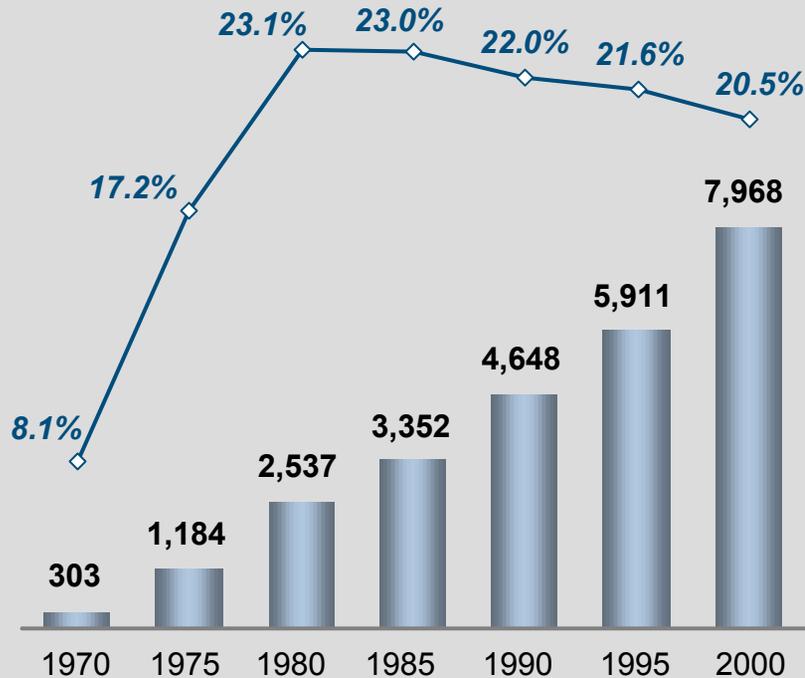
- Income from paychecks and other production activities is only 68% of total personal income
- Government transfer payments and the informal economy significantly boost personal income – and therefore personal consumption
- Federal transfers account for more than 20% of personal income
- Most transfers payments are earned benefits from Social Security and Medicare – but their share of personal income is twice as high as in the United States
- The legal “gray market” informal economy was estimated at \$ 3.7 billion over a decade ago
- Drug trade and other illegal activities are also estimated at \$ 4 billion to \$ 16 billion per year

Federal transfers raise personal consumption, helping to explain Puerto Rico's negative savings rate

Federal transfers

Share of personal income

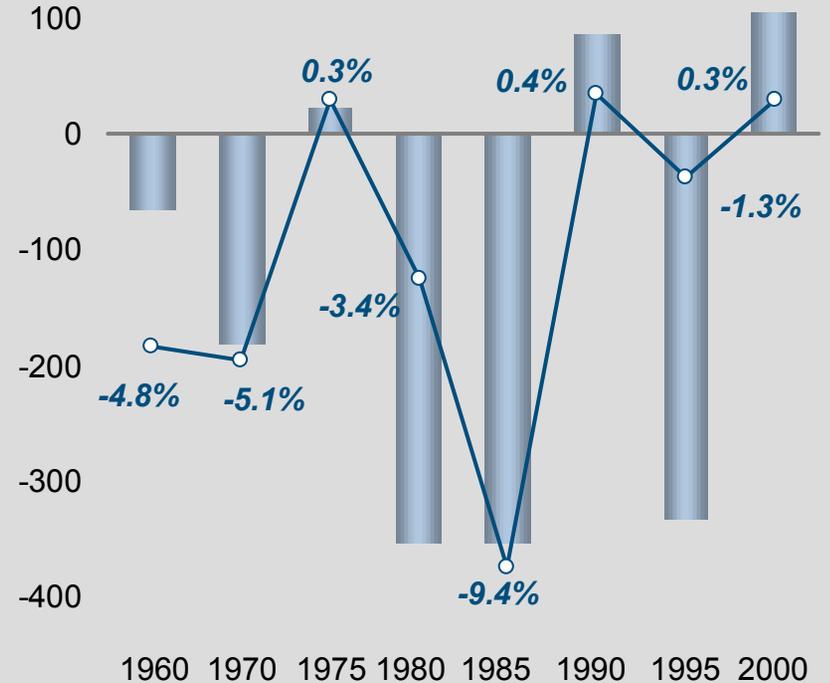
US\$ millions 1970-2000



Negative domestic savings rates

Disposable income – personal consumption

US\$ millions 1960-2000



Source: Planning Board, Statistical Appendix; "Puerto Rico: Negotiating Development and Change", James L. Dietz; "Running with the Tigers," John Stewart; A.T. Kearney analysis

The informal economy plays a significant role in Puerto Rico, although the full extent is not known

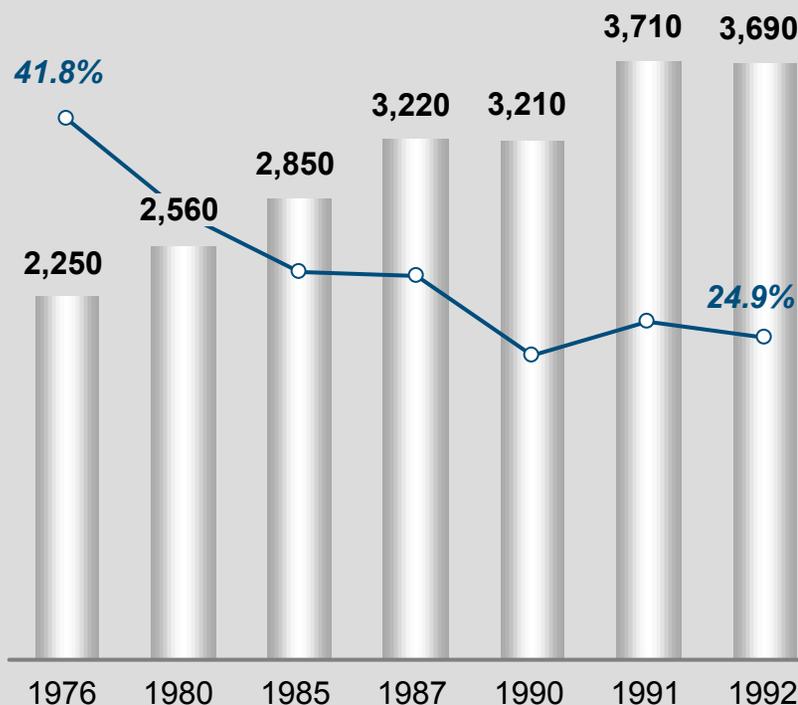
WEAKNESSES

Size of the informal economy

Share of personal income

US\$ millions

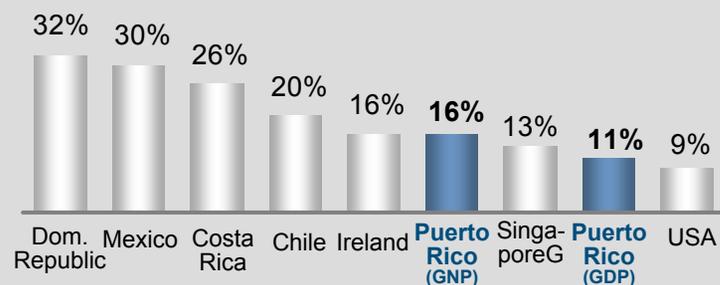
1976–1992



International comparisons

% GDP

2000



Indications from the informal economy

- A large informal economy suggests that regulations on small business are too high, forcing many into non-compliance
- There are many entrepreneurs in the informal economy, but they lack access to the capital needed to grow their businesses
- With 25% of personal income not declared, the informal economy cuts tax collection

Note: Estimates for the size of the informal economy as a share of GDP and GNP are based on 1992 figures, as shown at left
 Source: World Bank, Doing Business database; A.T. Kearney analysis

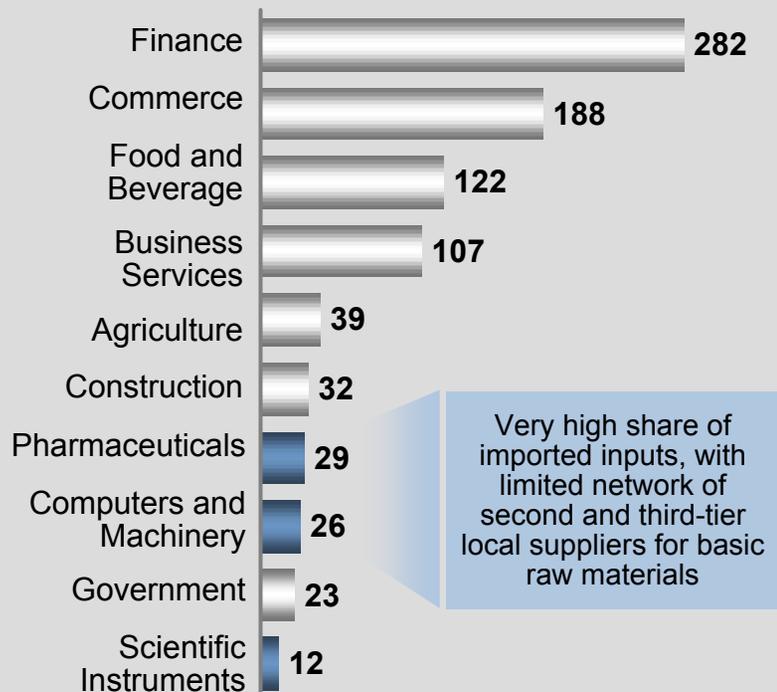
Promotion and incentives focus on large multinationals that contribute the least to income and employment

WEAKNESSES

Supplemental income generated

For every \$1 million rise in GDP

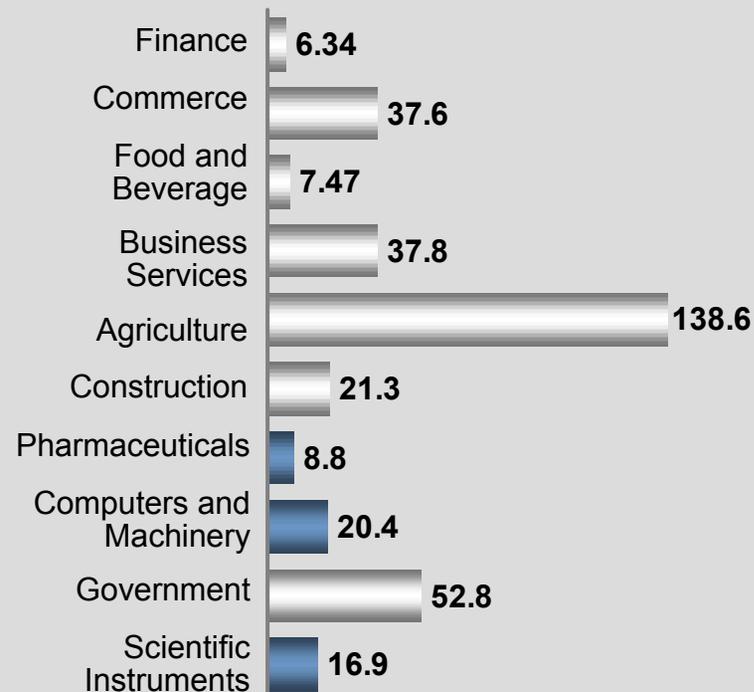
US\$ thousands



Number of new jobs created

For every \$1 million rise in GDP

Jobs generated



Note: Data based on 1992 input-output tables, the most recent available
 Source: James Dietz, based on analysis by Dr. Angel Ruiz, Interamerican University

Local enterprise is characterized by small scale, limited productivity growth and low export participation

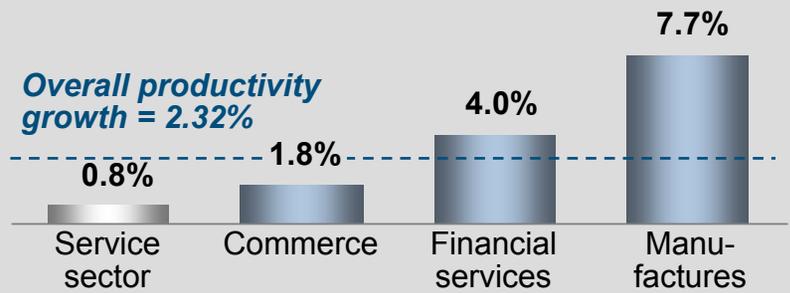
Payroll establishments by employment size

2001



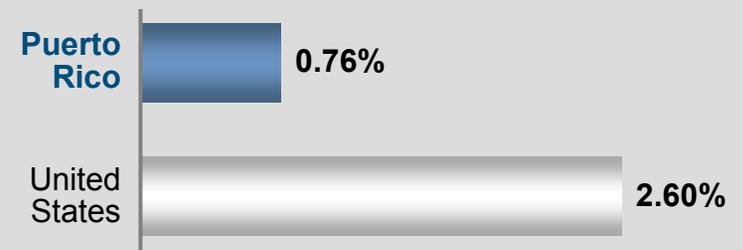
Growth of labor productivity

1990–2002



Small businesses engaged in exports as a share of total firms

1992–2000

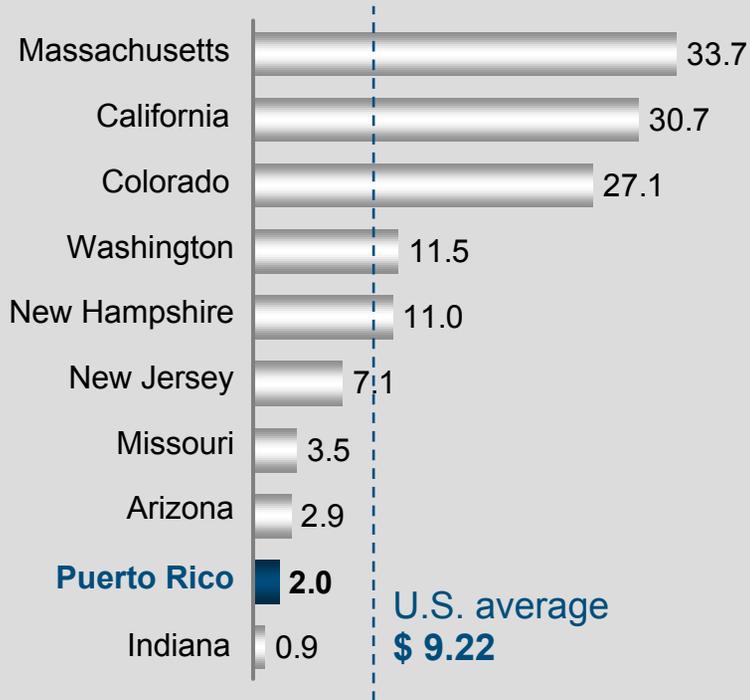


Source: U.S. Census Bureau, County Business Patterns (2003); Angel Ruiz; Planning Board, Statistical Appendix; U.S. Small Business Administration; analisis A.T. Kearney

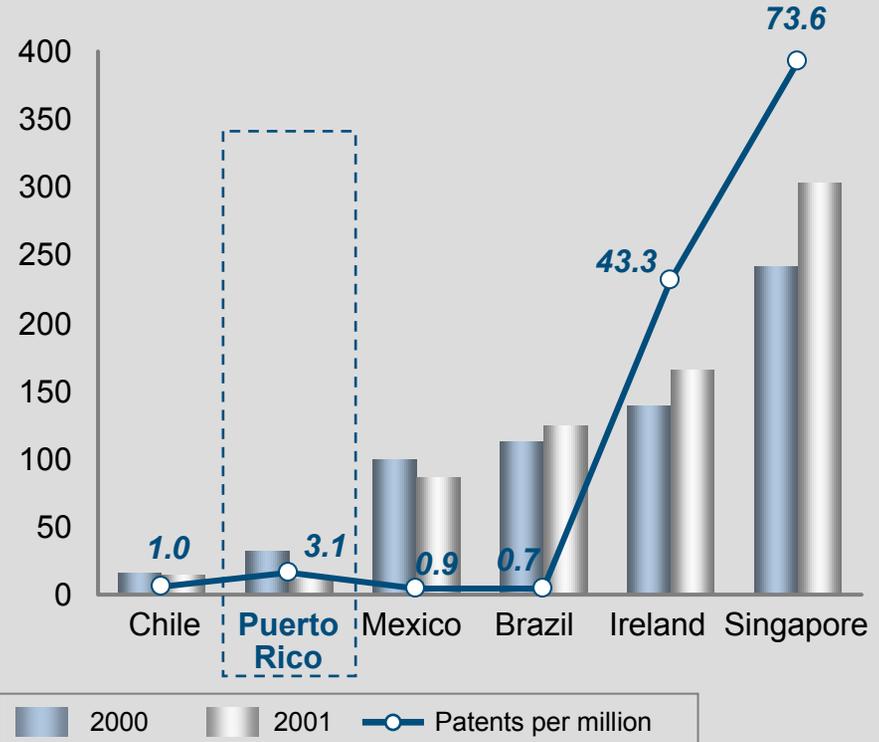
Lack of investment in local enterprise has limited Puerto Rico's capacity for technological innovation



Venture capital investment
per \$ 1,000 of gross product



Patents granted
per million residents

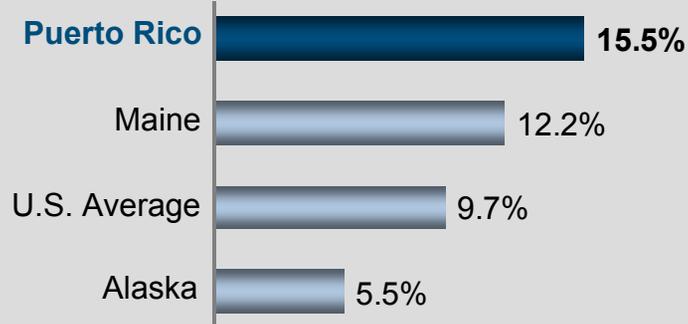


Source: Guayacan Fund annual reports; Technology Administration, State Science and Technology Indicators; U.S. Patent and Trademark Office; A.T. Kearney analysis

Tax burden is heavy levels

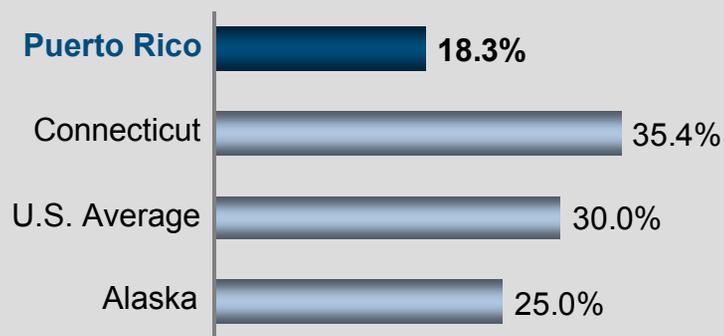
State and Local Tax Burden

% of personal income 2002



Federal, State, and Local Tax Burden

% of personal income 2002



Taxation levels

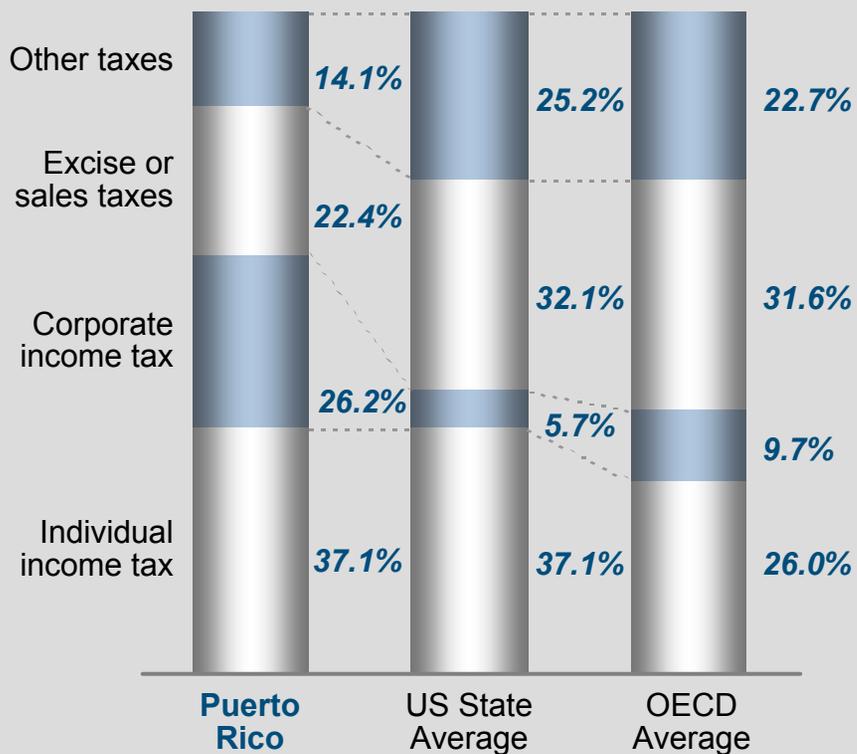
- Compared to U.S. states, residents of Puerto Rico pay significantly more for public services from their government
- Puerto Ricans pay an average of \$ 1,710 per person in taxes – more than residents of 16 U.S. states
- Corporate tax rates are low, meaning higher relative tax rates for individuals
- However, when the burden of federal taxes is included, Puerto Rico has the lowest tax of all U.S. states
- The Commonwealth tax burden has grown less than 3 percent in over the past decade – below the growth rate for personal income and lower than tax growth rates in the U.S.
- Actual tax burden may be lower, as tourists and visitors bear an important share through hotel taxes and fees

Note: Calculations for Puerto Rico's combined federal, state and local tax burden include transfers to federal government but not other taxes.
 Source: Tax Foundation, "Special Report: State Tax Collections and Rates"; Federation of Tax Administrators; A.T. Kearney analysis

Dependency on taxes – particularly corporate taxes – as a source of revenue is high by international standards

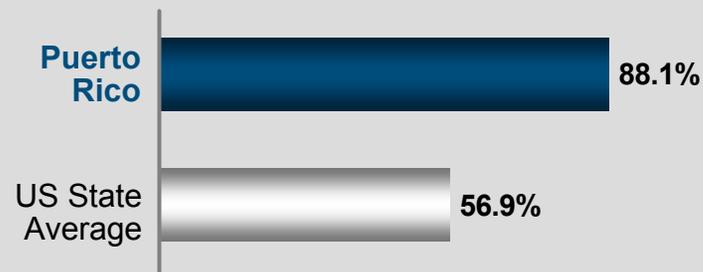
Breakdown of commonwealth taxes

% of personal income 2002



Share of revenue from taxes

% of total revenues 2002



Heavy tax dependency

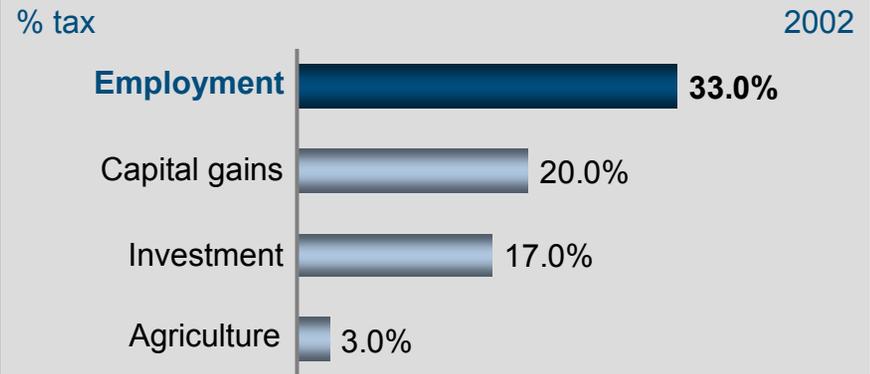
- Taxes account for nearly 90 percent of Puerto Rico’s net recurrent revenues – not including \$ 3.8 billion in federal grants
- Corporate taxes account for a disproportionate share of total tax revenues, compared to other international jurisdictions
- Puerto Rico earns comparatively little revenue from taxes on motor fuel, fees for licenses and other potential sources of revenue

There is concern that the tax regime distorts economic activity and is not evenly distributed among the population

Cumbersome taxation system

- Current system inefficient to administer, not equitable and difficult to understand
- Largest share of taxes come from individuals – but generous tax shelters mean heaviest tax burden falls on middle-income taxpayers
- Use of “arbitrio general” excise tax complicates imports and magnifies cost through the production chain – as much as 17 percent by some estimate
- Inequitable tax rates for earned income inhibit the creation of high paying jobs
- Revenue and inventory taxes at municipal level are a major headache to small businesses
- Taxation system designed to generate revenue for government, rather than to shape incentives that encourage development

Tax rates by type of activity



Market distortions from taxes

- High rates on earned income and low rates on agriculture encourages high income taxpayers to become “farmers”
- Five different types of companies covered in tax codes – with different rates for each
- Heavy tax incentives for sugar, coffee – both of which have negative value added
- Four separate laws give tax breaks on rental homes

Note: Corporate tax includes tollgate taxes, other taxes include property taxes, licensing fees, inheritance taxes and taxes withheld to nonresidents
 Source: Planning Board, Statistical Appendix; OECD, OECD in Numbers

Rising inflation rates also raise costs and undermine Puerto Rico's international cost competitiveness

Inflation rates climbing

(% growth, 1982 – 2002)



Other Weaknesses

- Loss of comparative advantage across a range of critical cost factors, including labor, land, electricity and shipping costs
 - Average labor costs lower than OECD average, but higher than average for all US markets overseas – and seven times more than those in Mexico
 - Electricity rates 50 percent higher than Singapore and Ireland, double those in the USA
 - Sea shipping costs 24 percent higher than Dominican Republic, 64 percent higher than Mexico
- “Brain drain” of the many of Puerto Rico’s most talented and creative minds
 - U.S. citizenship makes it easy for “best and brightest” to emigrate and work overseas
 - Among those searching for work abroad are many highly trained scientists and engineers
- Lack of sufficient scale among local businesses limits their ability to engage in international competition
 - Fewer than ten companies have revenues about \$ 250 million per year
 - Three-fifths of all businesses in Puerto Rico are self-employed, and 86 percent of the remainder have fewer than 20 employees

Grow local exports, foster stronger linkages with the local economy, develop R&D capabilities and move into higher value-added niches

- With proper support and incentives, Puerto Rico's locally owned firms can enter export markets where they enjoy competitive advantages
 - Estimates suggest that locally owned firms currently account for 3 percent of exports
 - Local firms are already competitive in some food products, plastics and rubber goods
- Puerto Rico can concentrate on offering high value added services to surrounding areas of Latin America and the Caribbean, much as Miami has done
 - Significant advantage in financial services should be exploited, along with competitive professional services industry including architecture, engineering, and construction
 - Medical, education and "lifestyle" services offer areas for future growth
- Clinical design, product design and research and development activities offer a major area for growth in Puerto Rico, which until now has been largely focused on manufacturing
 - Products related to pharmaceuticals and medicine are key immediate targets
- Efforts can be made to provide stronger linkages between multinational firms and the domestic economy, with strong benefits for local companies

Increasing competition and over-regulation threaten ability to move up the value chain

THREATS

Increasing competition

- Expanding free-trade agreements provide more countries with access to global markets and undercut the advantage of Puerto Rico's access to the US market
- Low-cost economies are actively competing to gain share in industries where Puerto Rico is losing competitiveness (textiles, apparel, electronics assembly) and in industries where it has new opportunities (biotech, financial services)

Limited focus on emerging sectors

- Increasingly aggressive competitor strategies to attract and nurture "next generation" industrial sectors
- Institutional constraints limit similar long-term planning and pro-active targeting in Puerto Rico
- Lack of required funding in research and development, facilities and infrastructure required to compete with leaders in high technology fields

***Increasing
pressure to
remain viable***

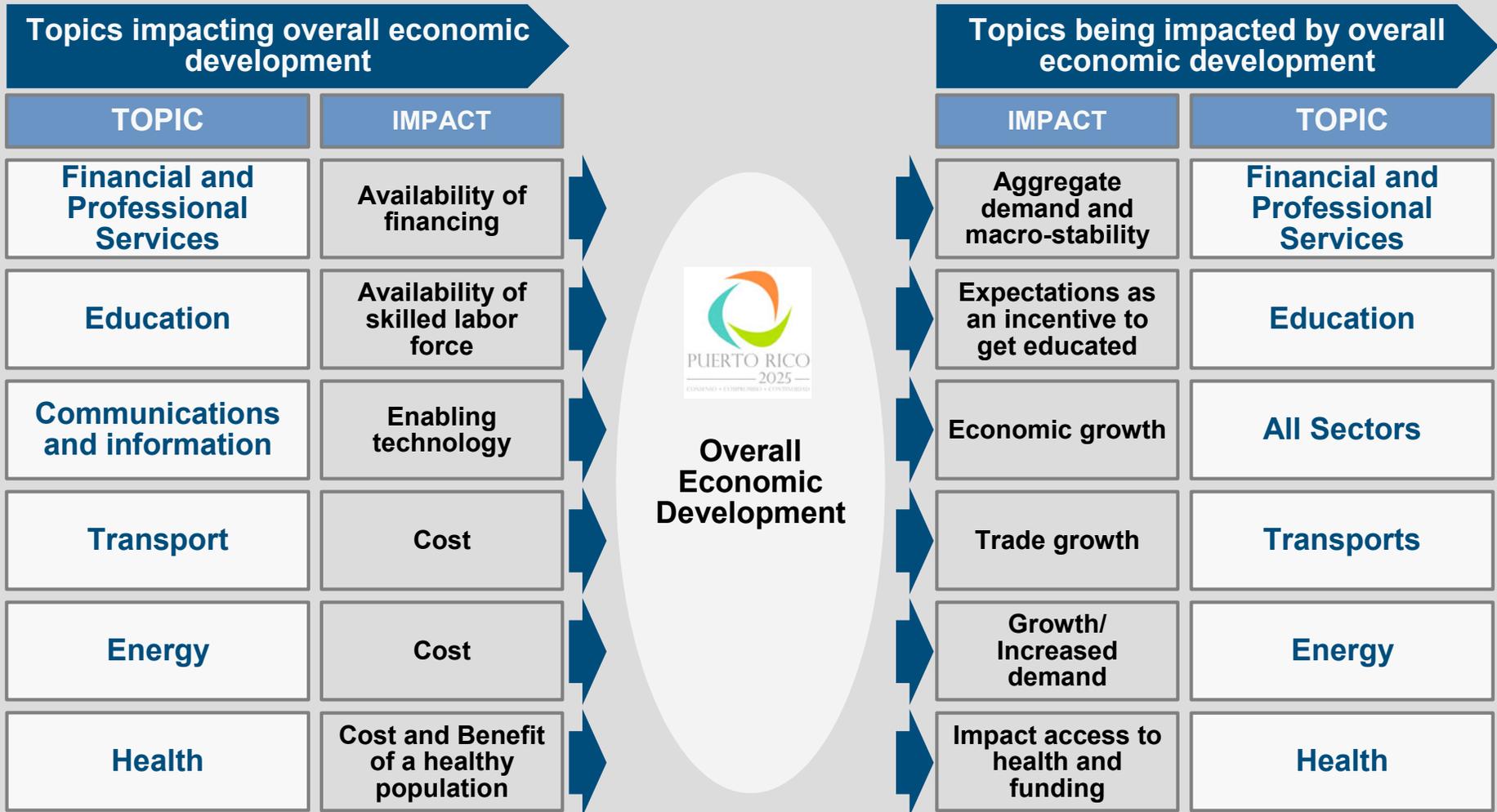
Competitive disadvantages

- High labor costs relative to emerging competitors
- Utilities and infrastructure have high cost and low reliability, and transport and logistics are more costly than elsewhere
- Education system not producing right talent mix or level

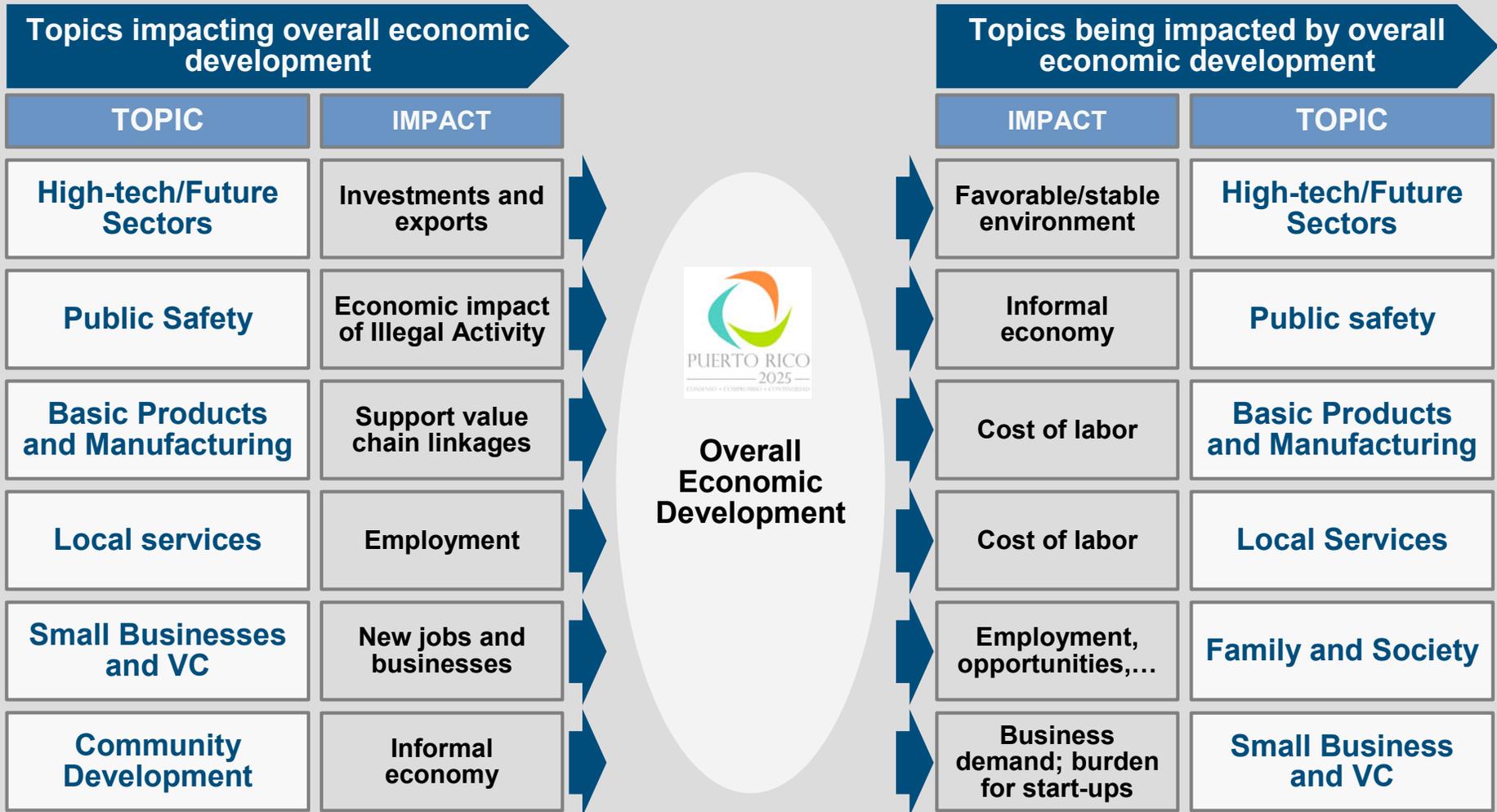
Overregulation

- Permitting and approval process is burdensome
- Size of government stifles private entrepreneurship, distorts the market and inhibits take-off development

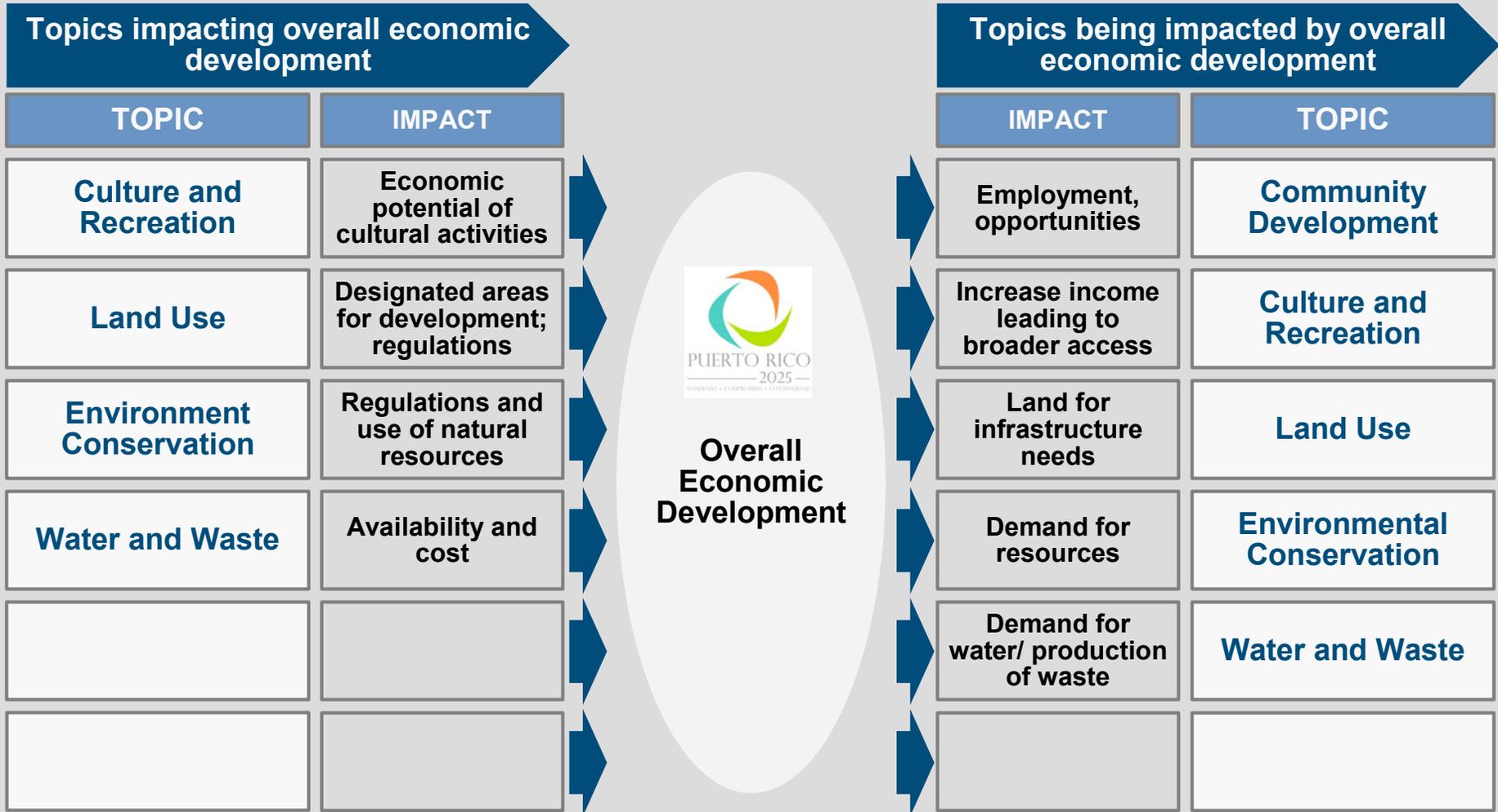
Overall economic development linkages



Overall economic development linkages (cont.)

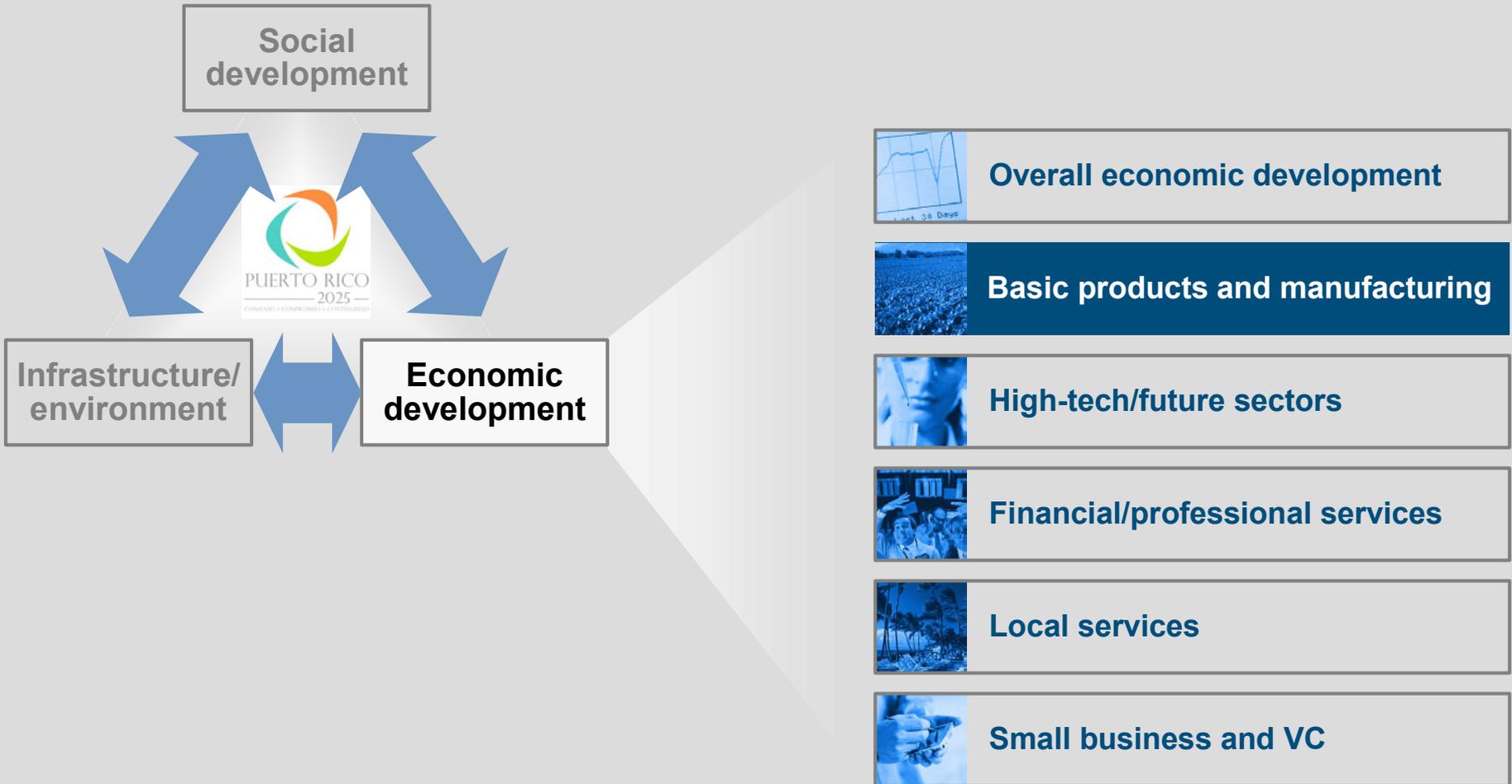


Overall economic development linkages (cont.)



Key questions going forward

- What must be done to **1) maintain** current economic strengths and **2) grow** the economy further?
- **What must be done to protect key competitive advantages and maintain economic strengths?**
 - Which other locations offer the greatest competitive threats? What are their competitive advantages?
 - What must be done to reduce dependency on local government and federal government transfers?
 - What must be done to streamline regulation, increase productivity and reduce costs (labor, utilities, etc), and create a tax system that provides incentives for productive economic activities?
 - What must be done to tap the informal economy, and bring informal economy entrepreneurs into the formal economy?
 - What must be done to strengthen the education system, improve practical training and skills, and enhance the entrepreneurial mindset?
- **What can be done to leverage existing strengths and further increase economic growth?**
 - What can be done to strengthen existing clusters in competitive industries, including pharmaceuticals, computer hardware, and medical instruments? How can Puerto Rico increase investment in targeted sectors? How can domestic firms be better linked to mostly foreign-owned multinational firms?
 - What can be done to increase research and development in cutting-edge areas of high technology and high-end manufacturing niches? How can Puerto Rico improve its capacity for innovation?
 - What can be done to expand export markets, particularly in the United States and the Caribbean?
 - What can be done to expand investment in locally owned firms and provide a greater range of support for their growth and development?

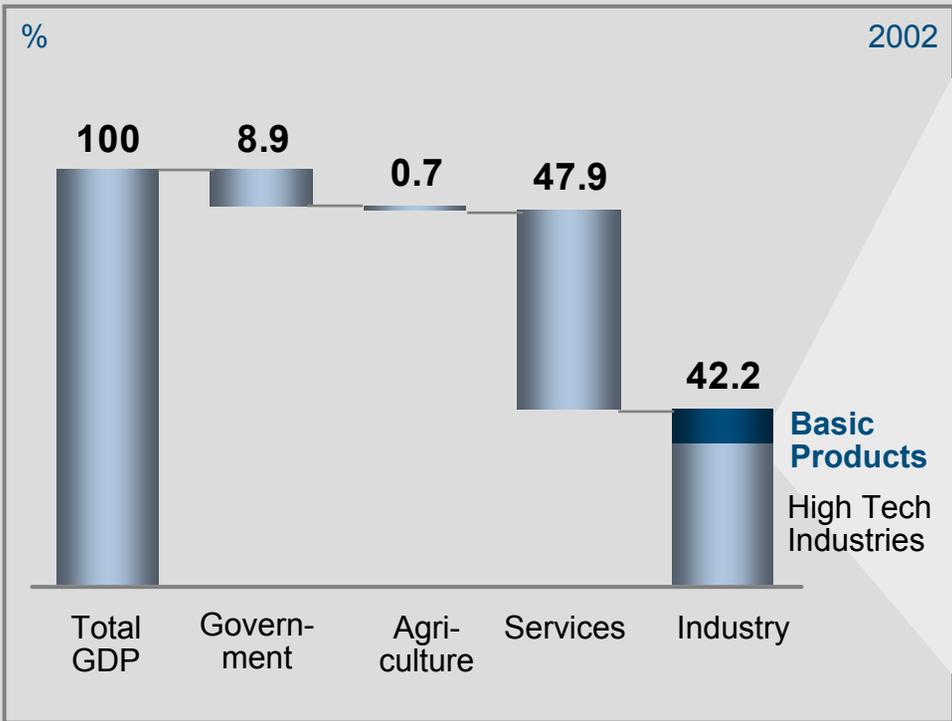


Main conclusions: Basic products and manufacturing

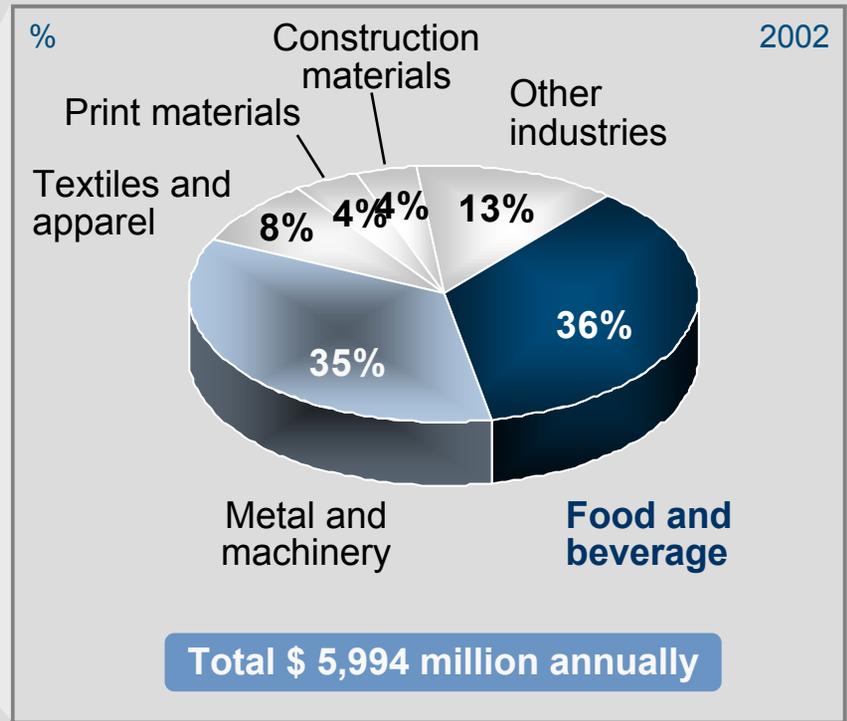
- Puerto Rico has a solid tradition in basic manufacturing, with a handful of firms in food products, rubber and plastics, construction materials and other sectors able to compete successfully on international markets
- However, basic input costs render these sectors largely uncompetitive, and many have seen markets eroded by competitive imports and declining exports
- Most firms in the basic manufacturing sector are extremely small by international standards, and have little ability to focus on international markets
- With the right support, Puerto Rico's basic manufacturers have opportunities to grow by tapping into international retail markets and substituting heavy imports of consumer goods

Basic manufactures are a small but important component of Puerto Rico's total economic output...

Gross domestic product shares



Breakdown of basic manufacturing in Puerto Rico

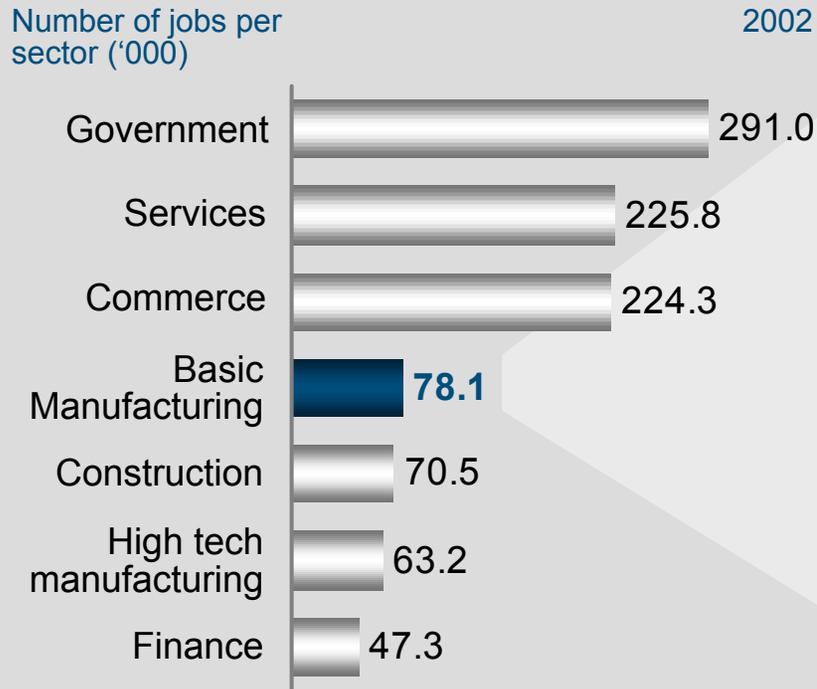


Note: Basic manufacturing includes food and beverage, tobacco, textile and apparel, leather, paper and wood products, print materials, plastics and rubber, metal and machinery industries.

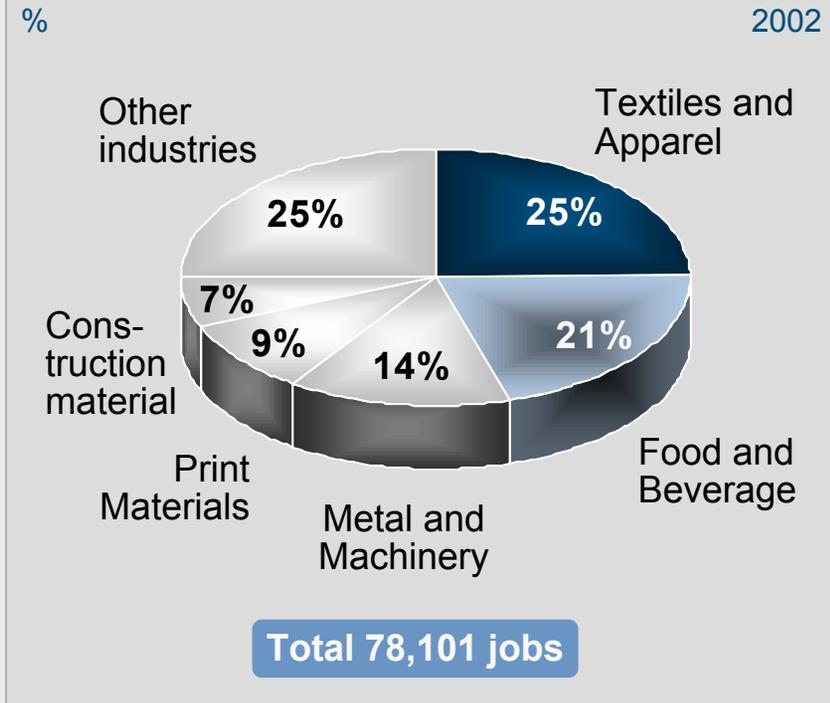
Source: Planning Board, Statistical Appendix

...and provide 8 percent of total employment in Puerto Rico

Top employment sectors in Puerto Rico



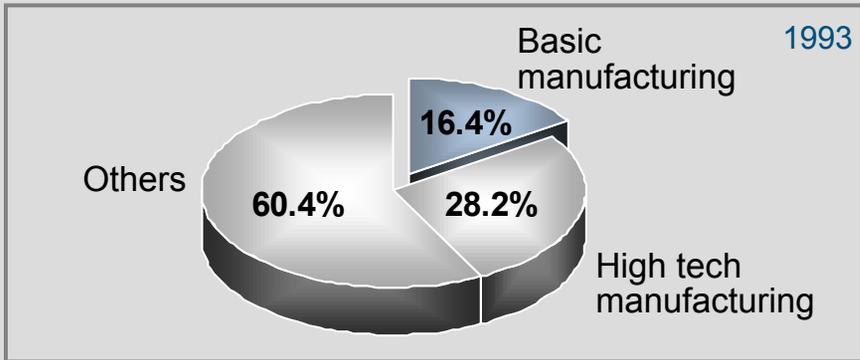
Distribution of employment by sector



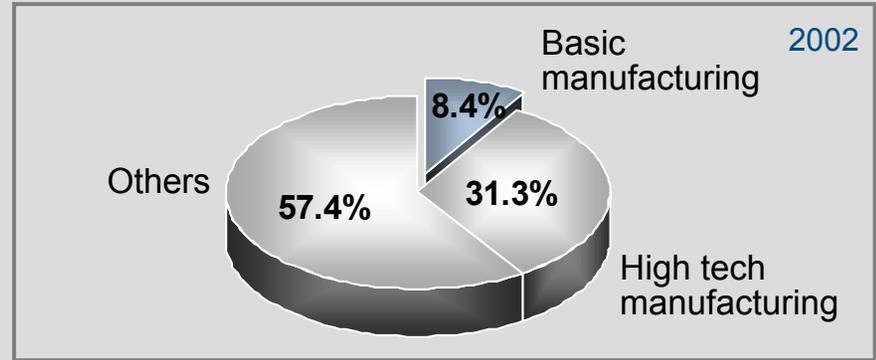
Basic manufacturing sectors employ more people in Puerto Rico than do all high technology manufacturing sectors combined

Over the past decade, negative real growth has undermined the importance of basic manufacturing to the economy

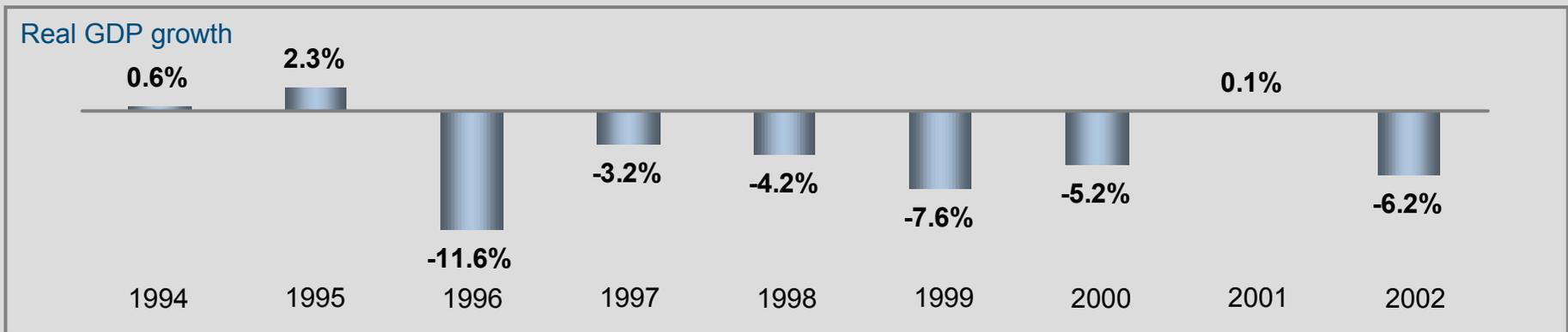
Basic manufacturing
Share of economic activity



Basic manufacturing
Share of economic activity



Growth of basic manufacturing sectors

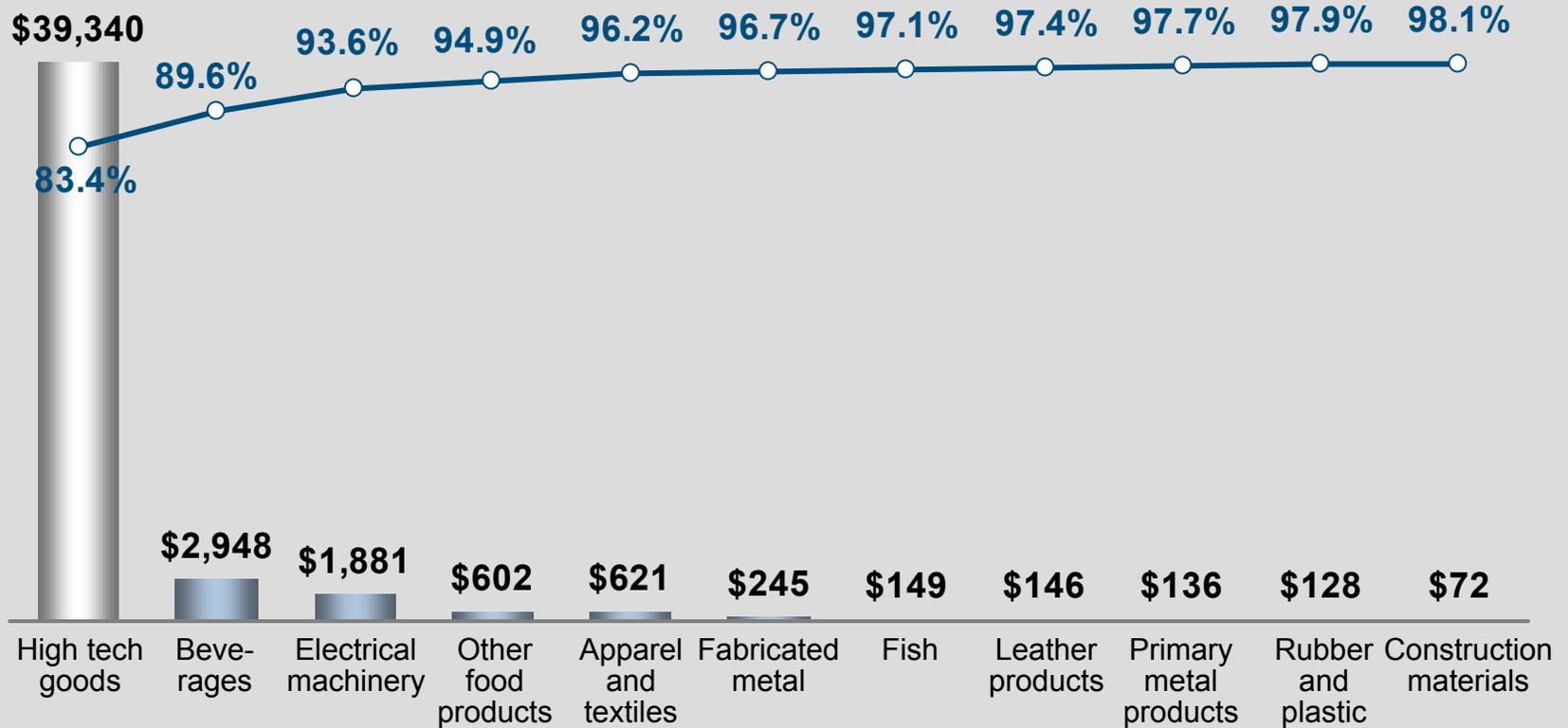


Source: Planning Board, Statistical Appendix; A.T. Kearney analysis

Basic manufactures account for a very small share of Puerto Rico's total exports of manufactured goods

Exports of high technology and basic manufactured goods

As a share of Puerto Rico's total exports (US\$ millions, 2002)



Overview of Puerto Rico's basic manufacturing industries

Strengths

- Puerto Rico has the most developed basic products industry in the Caribbean Basin region, with a number of experienced companies and management skills
- Despite high costs and other challenges, several local firms compete successfully in international markets

Weaknesses

- Puerto Rico's high wage structure creates a competitive disadvantage in labor intensive industries
- High prices for electricity and natural gas also add to the costs shouldered by Puerto Rico's basic manufacturers
- More than half of total output is exported, but sectors with the highest export orientation have seen output fall sharply
- Puerto Rico's competitive trade position has eroded over the past decade in all basic manufacturing areas
- The small scale of Puerto Rico's basic manufacturing firms also represents a challenge to competitiveness

Opportunities

- Puerto Rico's heavy reliance on imports creates opportunities for import substitution, strengthening the linkages in the local economy
- Beginning with food products, a number of key intermediate and consumer goods could be produced locally
- Government procurement of locally made products could greatly expand the market for basic goods
- Though limited, further developing Basic Manufacturing might have positive impacts on growth and employment

Threats

- Lack of international expansion capabilities could limit size and scope of basic manufacturing firms, allowing little room for added productivity and economies of scale
- Growing international competition will intensify cost pressures on Puerto Rican firms, which must become more productive or move into higher value added activities

Despite high costs and other challenges, several local firms compete successfully in international markets

STRENGTHS

Stand-alone exporters

- World-class wine and spirits company **Bacardi** generates \$3.2 billion annually — most from its Puerto Rican rums
- In total, Puerto Rico makes nearly 75 percent of all rums sold in the United States
- Local division of leading US Hispanic foods manufacturer **Goya** accounts for nearly 10 percent of company's annual \$750 million revenue

Suppliers to foreign manufacturers

- **Campofresco**, a local juice maker, has grown through contracts with Proctor & Gamble and McDonald's
- Injection molding firm **Nypro** is a key supplier to Hewlett-Packard and has competed for business throughout Latin America
- The **Flexible Packaging Group** provides one-stop packaging for clients in the high tech manufacturing industries

Partners with multinational retailers

- Ponce's **Industrias Vasallo** contracted with K-Mart and Wal-Mart to sell household plastic goods throughout Mexico and the USA
- **Pan American Grain** won a Wal-Mart contract to export rice to Florida stores
- Local paint producer **Lanco** is now selling its products in Miami Home Depot stores



GOYA



Other strengths

	STRENGTHS

- Puerto Rico has the most developed basic manufacturing sector in the Caribbean, giving it an advantage over other countries in the region
 - Limited regional exports in high quality construction materials, rubber and plastic goods, and processed foodstuffs

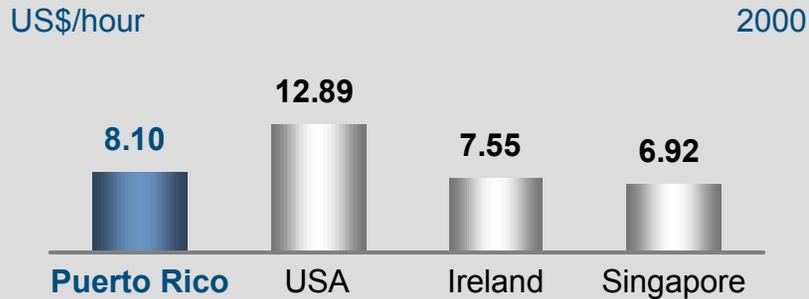
- Puerto Rico's basic manufacturing sector includes firms with a relatively long history and rich experience in management
 - Many companies are run by graduates of US business and professional schools, bringing talented management and an increasingly international perspective

- Puerto Rico has a large base of multinational manufacturing firms and retail giants, both offering good prospects for local firms to expand sales into the international marketplace

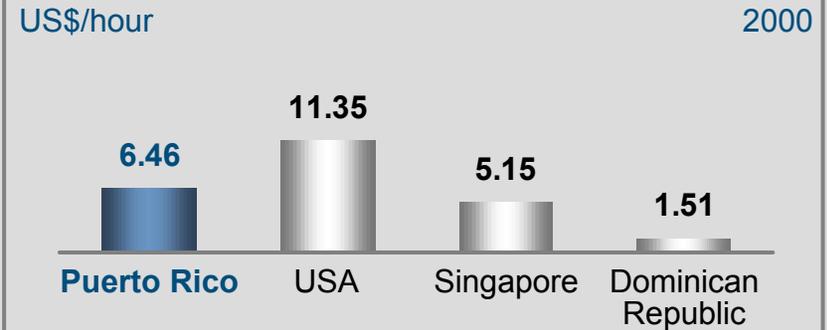
Puerto Rico's high wage structure creates a competitive disadvantage in labor intensive industries



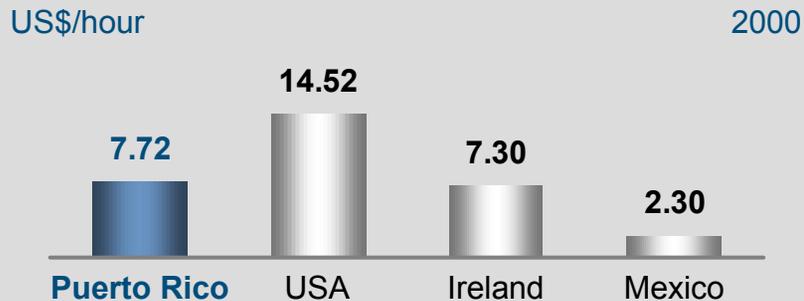
Food products



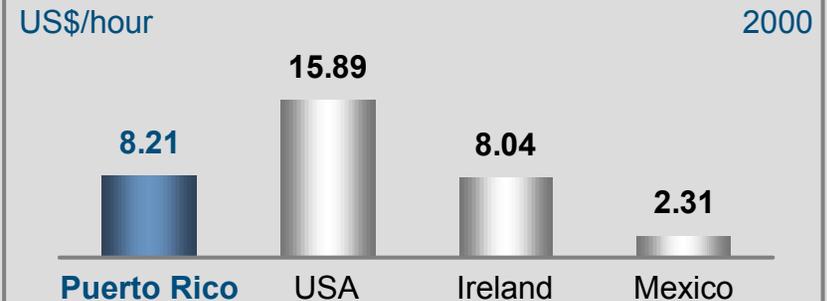
Textiles and apparel



Metal fabrication



Machinery



Sources: International Labour Organization, LABORSTA database

High prices for electricity and natural gas also add to the costs shouldered by Puerto Rico's basic manufacturers

WEAKNESSES

Electricity prices

For industrial consumers

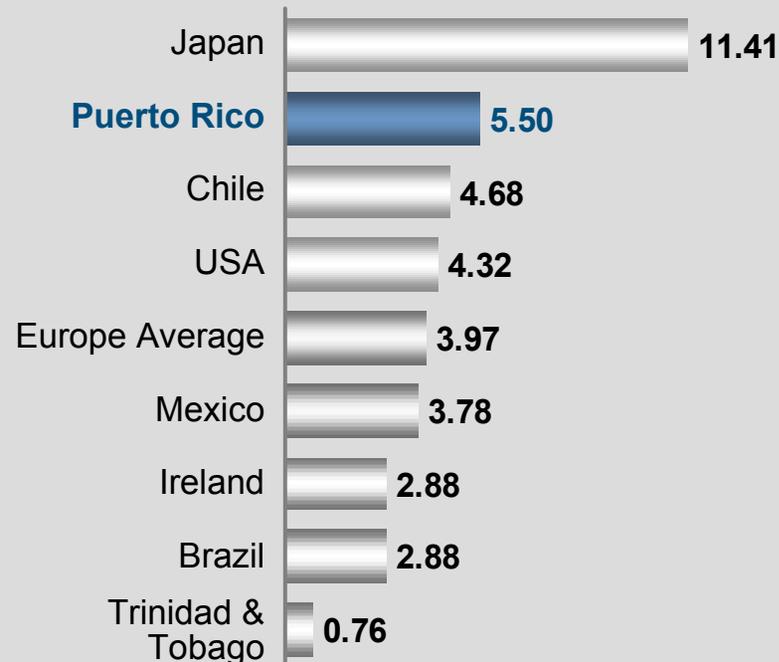
US\$/kWh 2000-2001



Natural gas prices

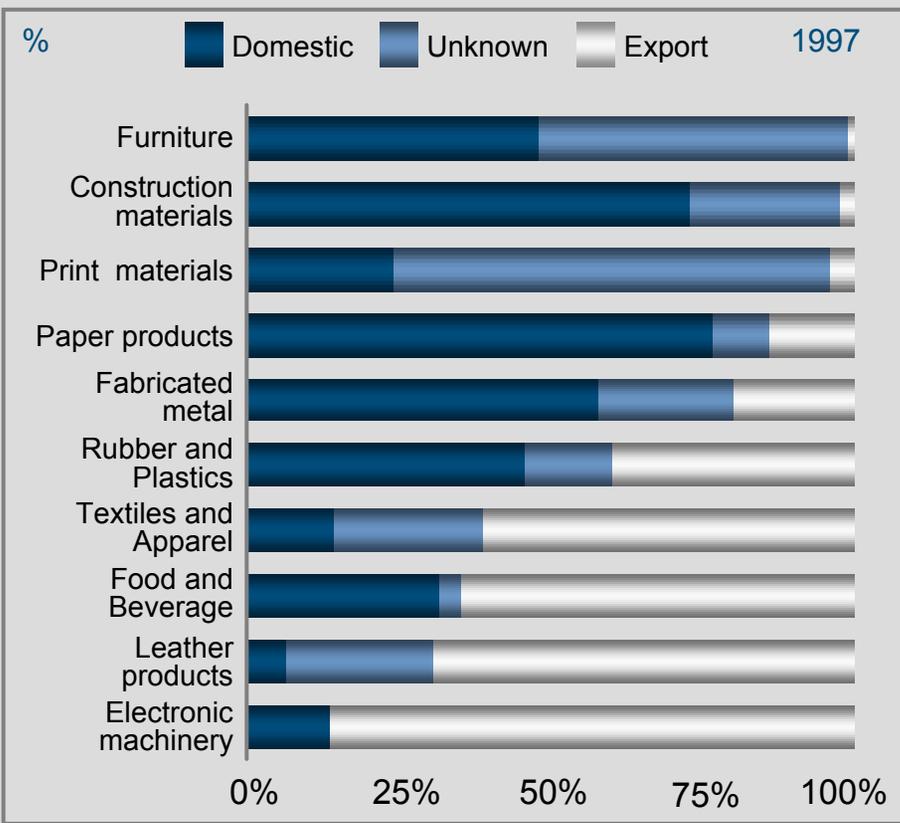
For industrial consumers

US\$/BTU 2000-2002

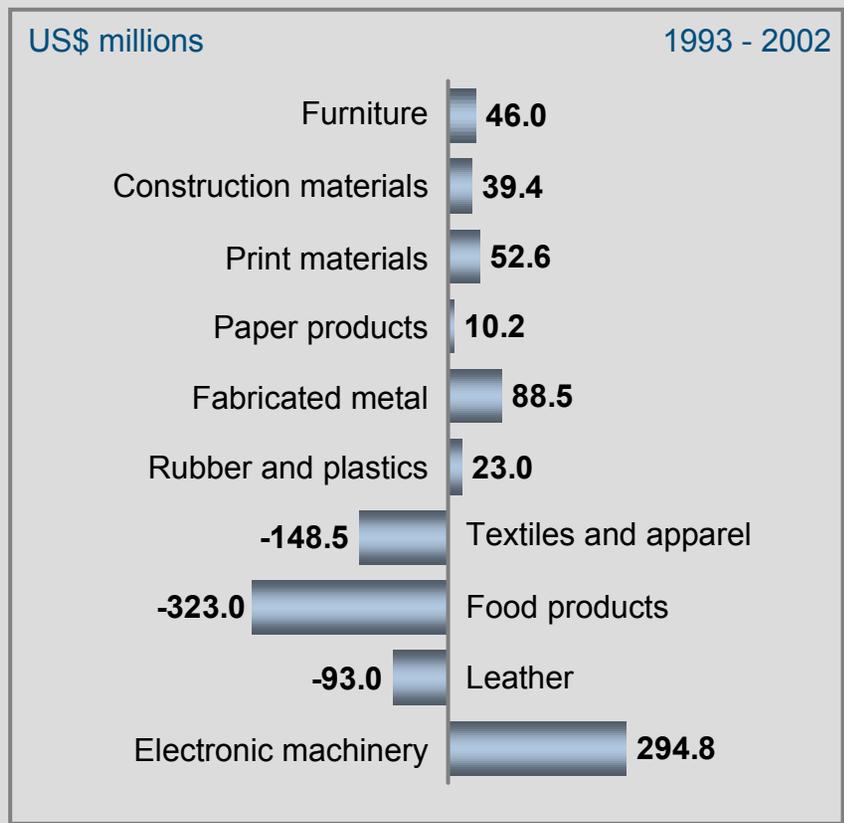


More than half of total output is exported, but sectors with the highest export orientation have seen output fall sharply

Destination markets for manufactured goods



Change in economic output for basic manufactured goods



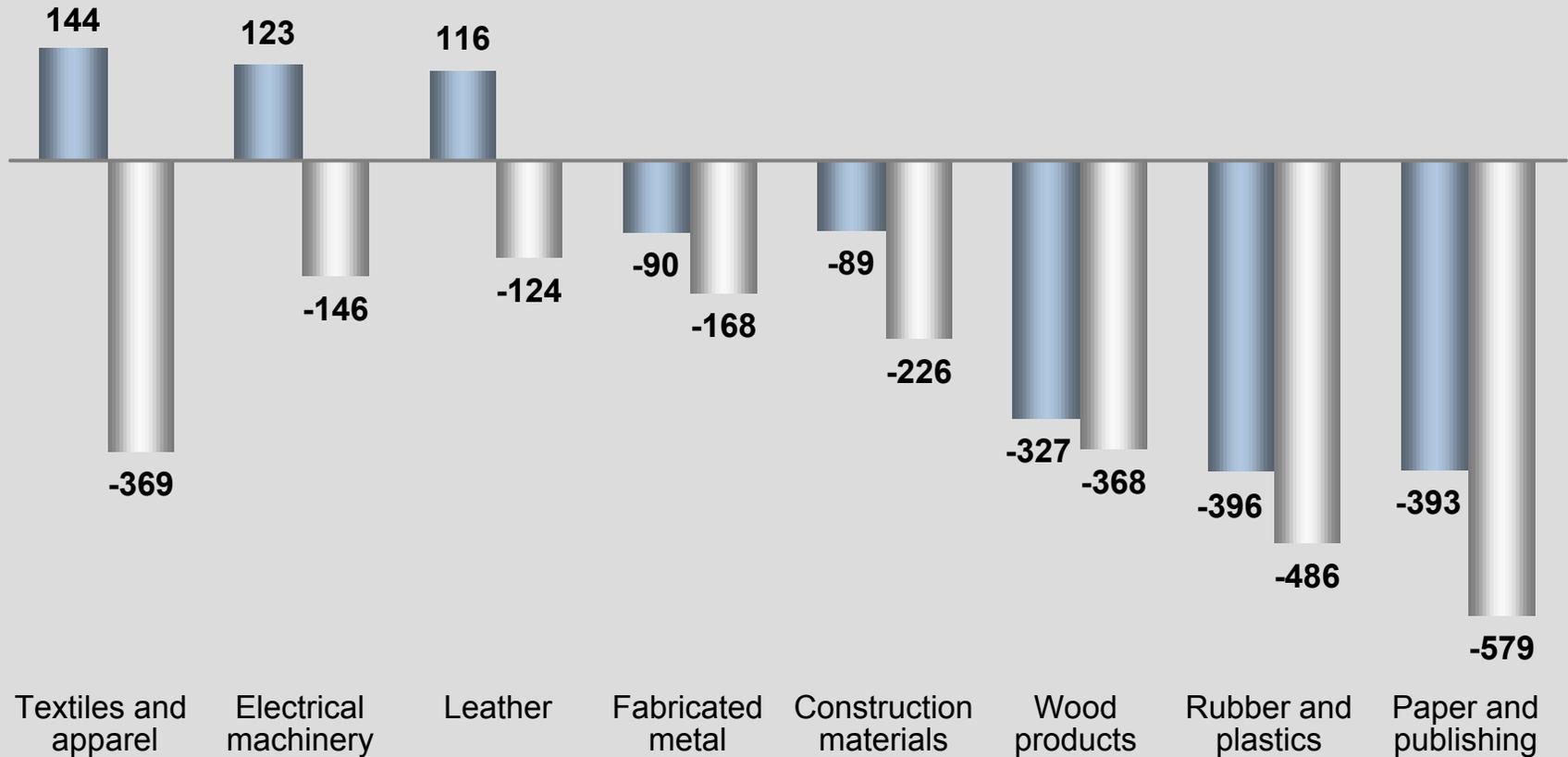
Sources: US Census Bureau, 1997 Economic Census of Outlying Areas: Manufacturing; Planning Board, Economic Report to the Governor 2002

Puerto Rico's competitive trade position has eroded over the past decade in all basic manufacturing areas



Balance of trade in basic manufactured goods

US\$ Millions



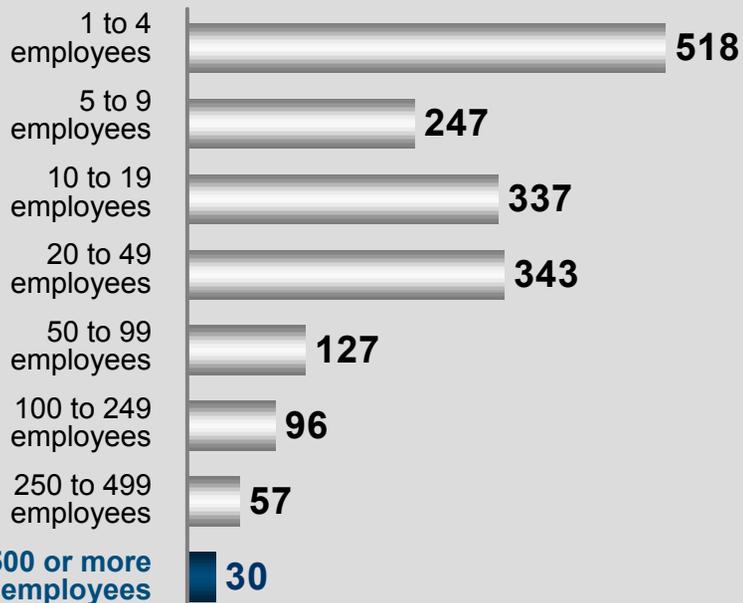
Sources: Planning Board, Economic Report to the Governor 2002

Puerto Rico's basic manufacturing sector is also dominated by firms of extremely small scale



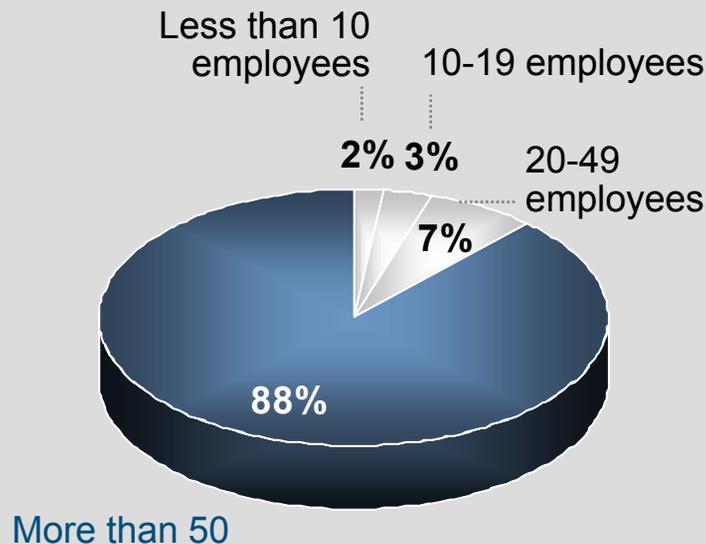
Small size of Puerto Rico's basic product companies

Number of companies by employment size 1997



Limited sales for the smallest basic manufacturing firms

% total sales 1997



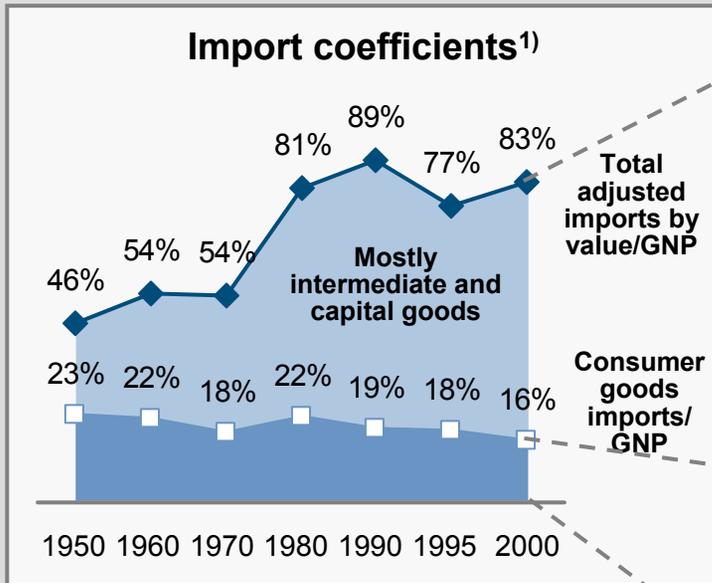
Most basic manufacturing firms have few employees and small sales volume

Sources: US Census Bureau, 1997 Economic Census of Outlying Areas: Manufacturing

Other weaknesses

- Many local basic manufacturing firms are of very small scale, hampering their ability to gain scale and expand internationally
- Basic manufacturing firms lack adequate access to financial support from local banks and government institutions
- Support and promotion from government institutions and public corporations has been inconsistent and insufficient
 - Frequent changes in policy focus and emphasis
 - Inadequate support in the areas of international market research and overseas expansion
- Lack of strong global market awareness and export orientation among business leaders

Puerto Rico's heavy reliance on imports creates opportunities for import substitution, strengthening the linkages in the local economy



Capital and intermediate goods

- Account for the bulk of goods imported into Puerto Rico
- Most used by foreign subsidiaries and multinationals in high technology industries
- Examples range from raw textiles for apparel industry to raw chemicals in pharmaceuticals

Consumer goods

- Consumer goods imports total nearly \$ 6.0 billion in 2000 – \$1.5 billion of durable and \$4.5 billion of nondurable products
- Nondurables such as food products, apparel, paper and chemicals account for 75 percent of the total – and 98 percent of Puerto Rico's total nondurable consumption

Note: 1) Measure of share of total income spent on imports
 Source: "Puerto Rico – Negotiating Development and Change", James L. Dietz

Beginning with food products, a number of key intermediate and consumer goods could be produced locally

Puerto Rico's trade balance in food products



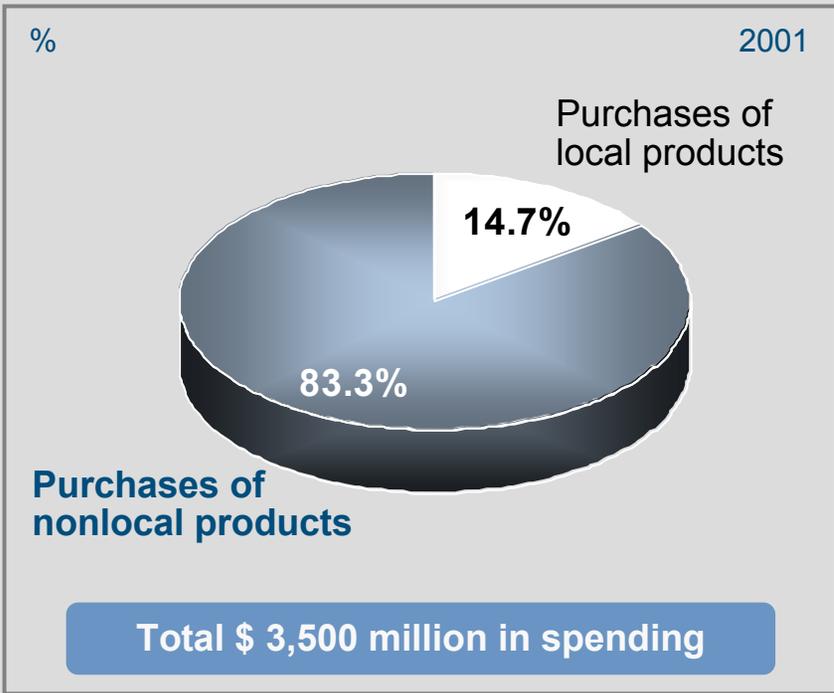
Other goods with high potential for local production

- Some import substitution already observed in such aging industries as paper products, print materials, furniture and wood products, textiles and apparel, and primary metals
- Room for expanded import substitution in areas with high local value added – including food processing and marketing, rubber and tires, and chemicals
- Better linkages between existing industries and multinational investors through development of advanced plastics and paper packaging
- Import substitution through low-cost loans, tax and fee exemptions, training assistance, help with technology acquisitions and so on

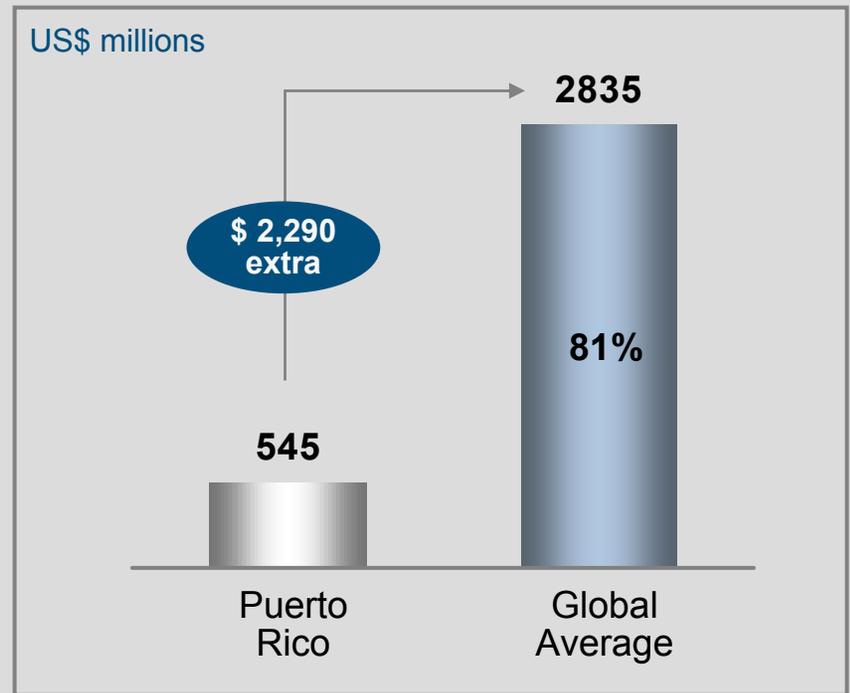
Government procurement of locally made products could greatly expand the market for basic goods



Puerto Rico's public procurement of local basic manufactures



Government procurement benchmarks

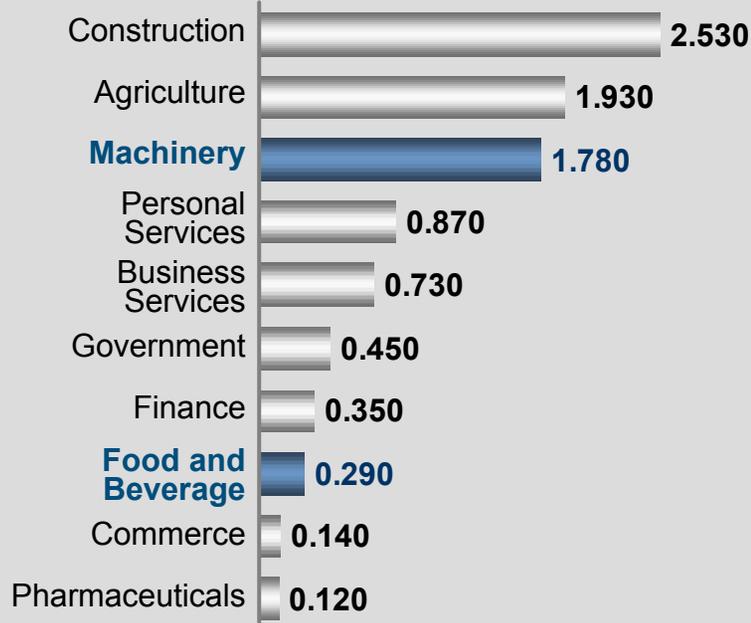


Source: Puerto Rico Manufacturers Association; Oxford Analytica; Canadian Council on Competitiveness

Though impacts are limited, further developing Basic Manufacturing might improve growth and employment

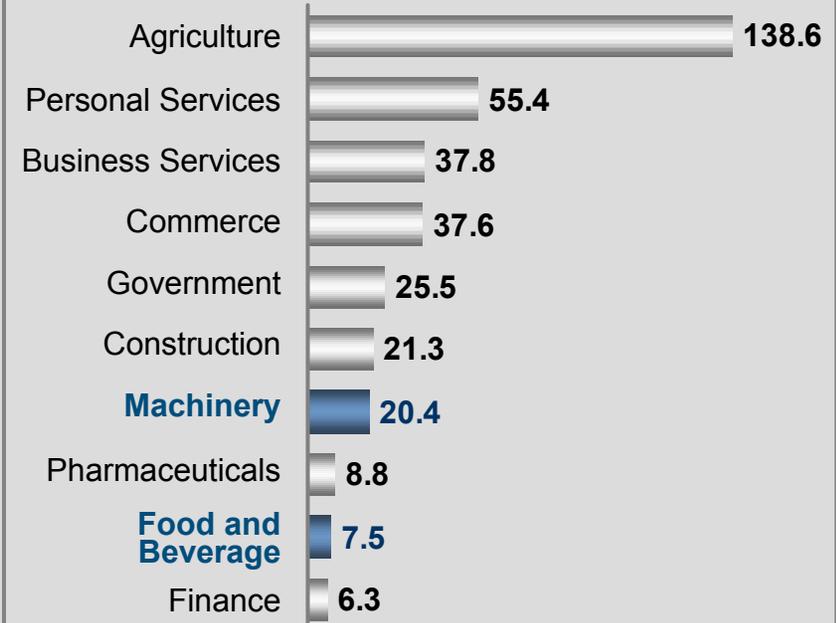
Additional income generated from each dollar of industry income

US\$



Additional employment from each \$ 1 million growth in economy

Jobs



Increasing competition and low barriers-to-exit threaten ability to maintain market-share and operational viability

THREATS

Increasing competition

- Proliferation of free trade agreements raises the number of international competitors with comparable capabilities
- Many countries competing internationally for low-skilled, labor-intensive manufacturing including apparel, food and beverage, and plastics and rubber goods (e.g. China, India)

Value chain stagnation

- Increasing sophistication in related fields such as plastics packaging requires higher skill base and greater commitment to research
- Small scale, lack of financial resources inhibit efforts to link basic manufacturers to input and intermediary goods needed by multinationals

***Increasing
pressure to remain
viable***

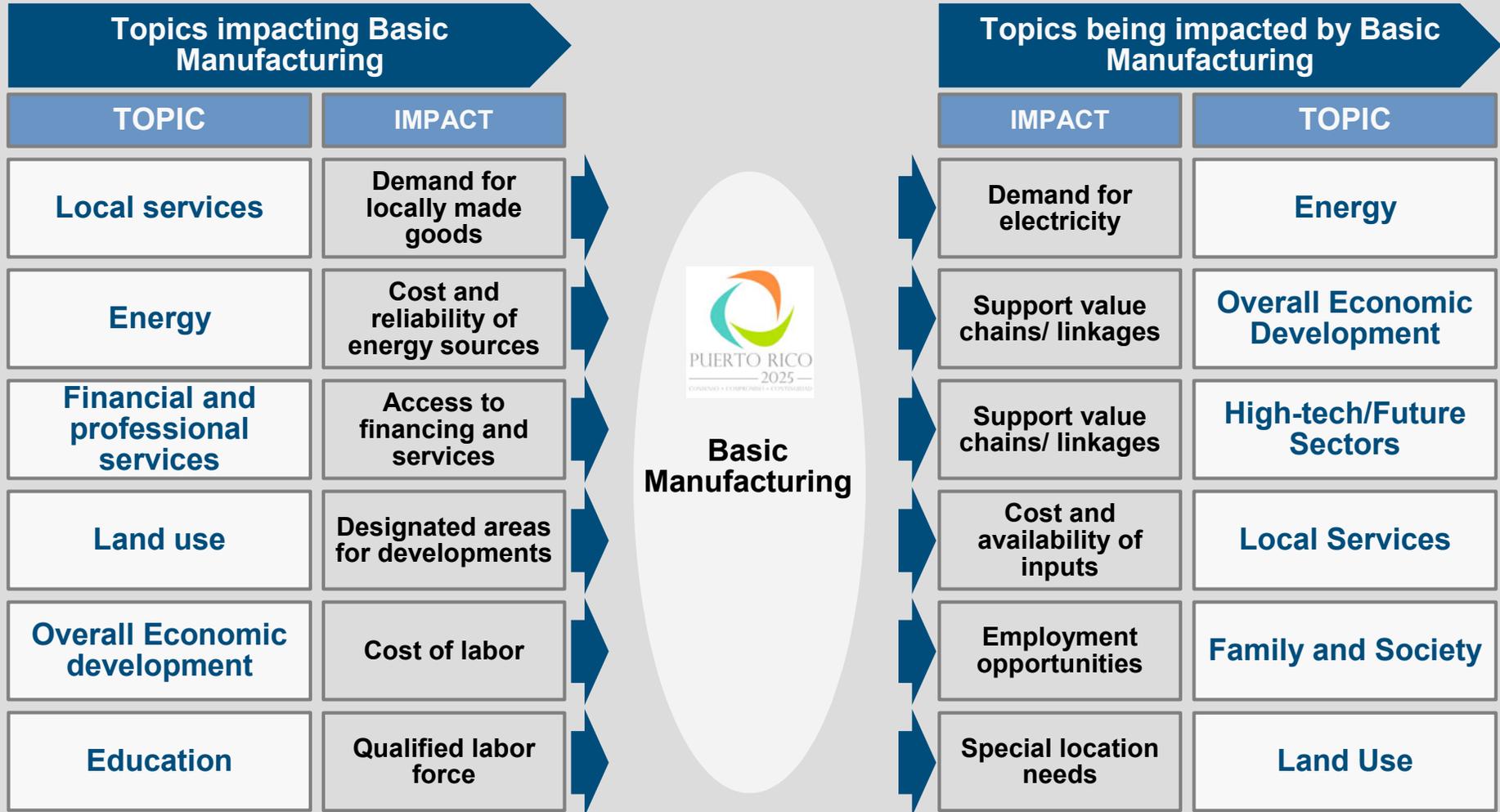
Competitive disadvantages

- High costs for labor and benefits relative to emerging competitors in Latin America, Asia and Africa
- High costs and low reliability of energy infrastructure
- Heavy shipping and logistics costs relative to other places

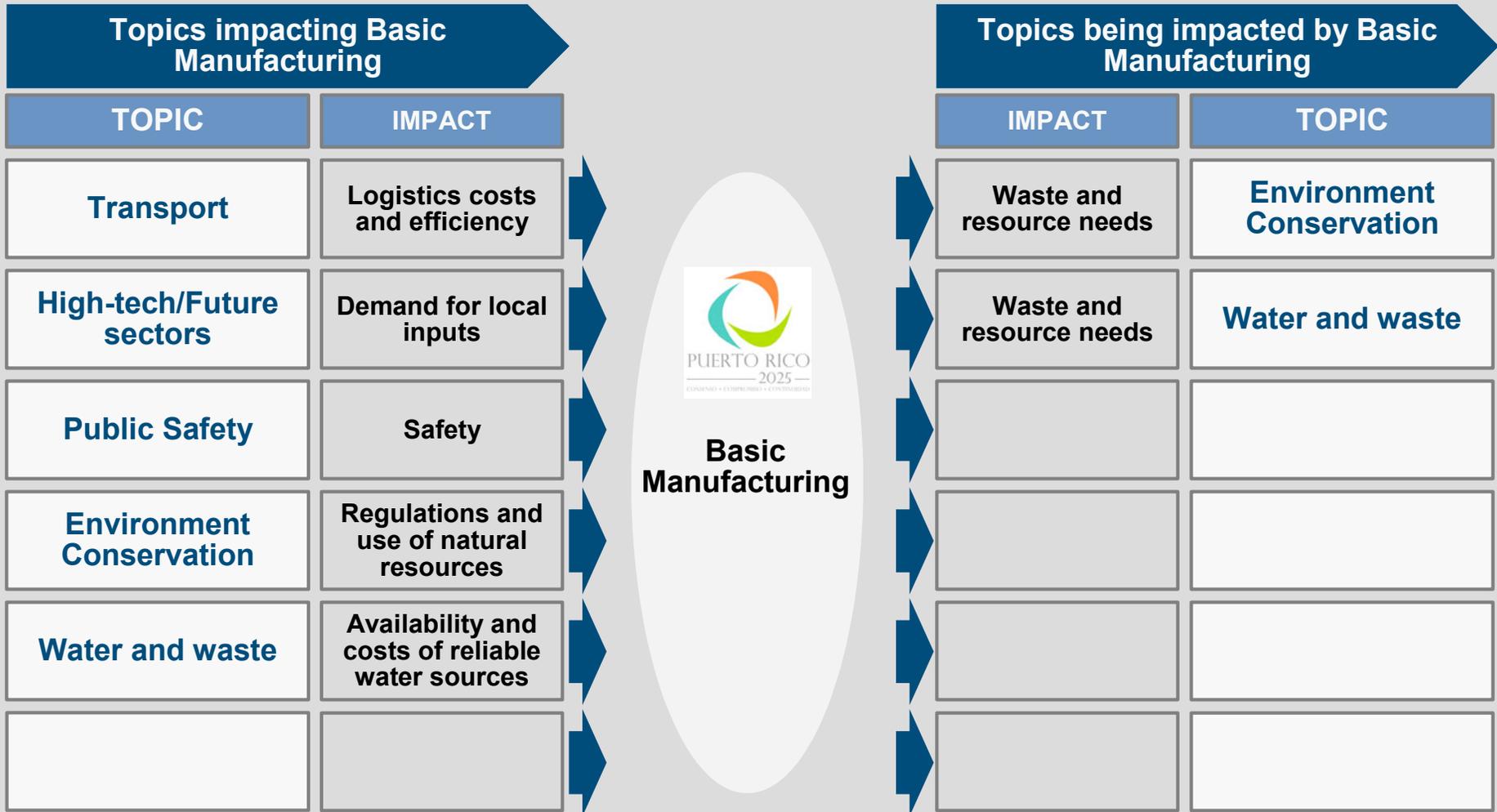
Lack of incentives

- Instead of providing strategic market intelligence and giving incentives for international expansion, government policy may protect or discourage local industry

The basic manufacturing sector linkages



The basic manufacturing sector linkages (cont.)

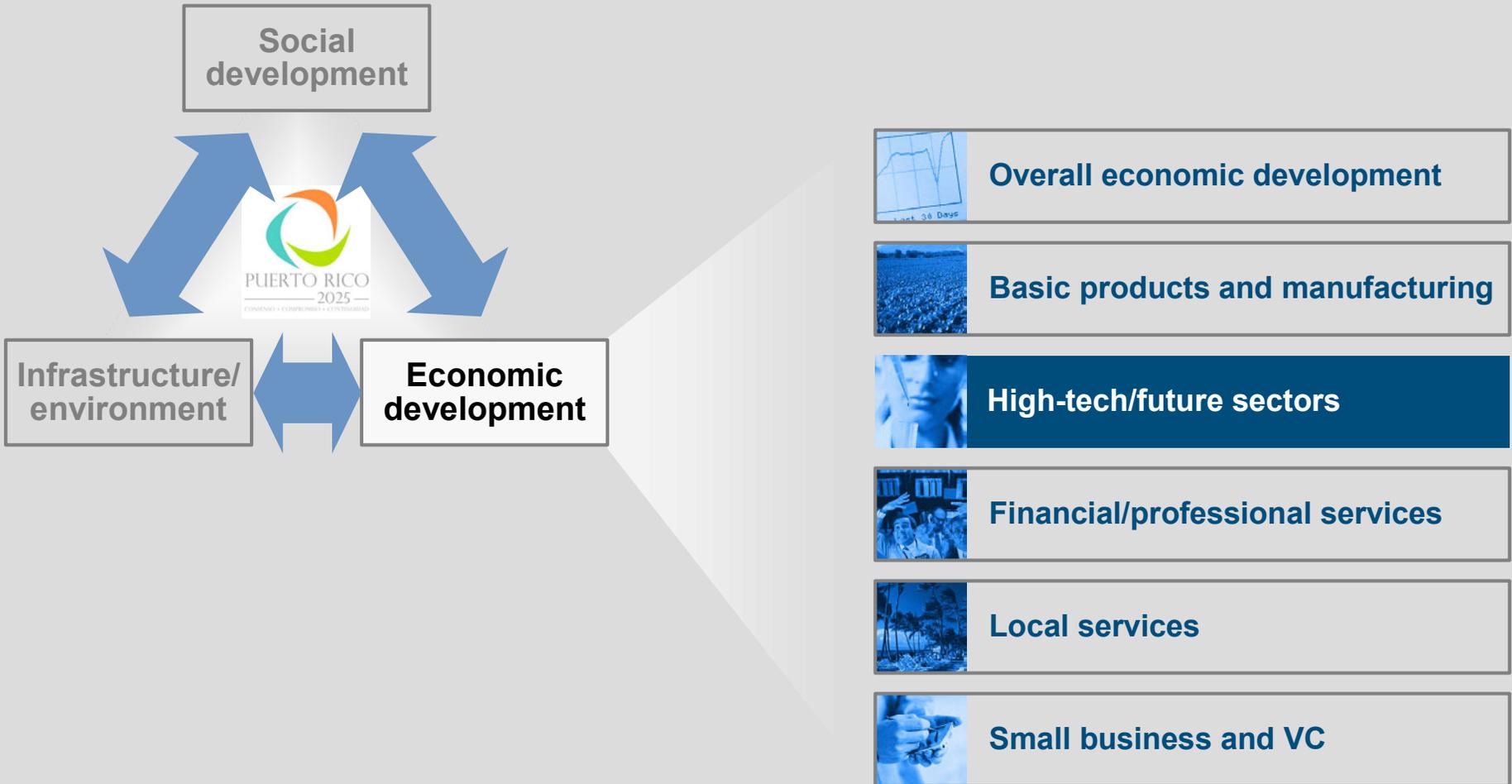


Key questions going forward

- What must be done to **1) maintain** and **2) expand** the fundamental role of the basic manufacturing sector as the primary creators of wealth in the Puerto Rican economy?

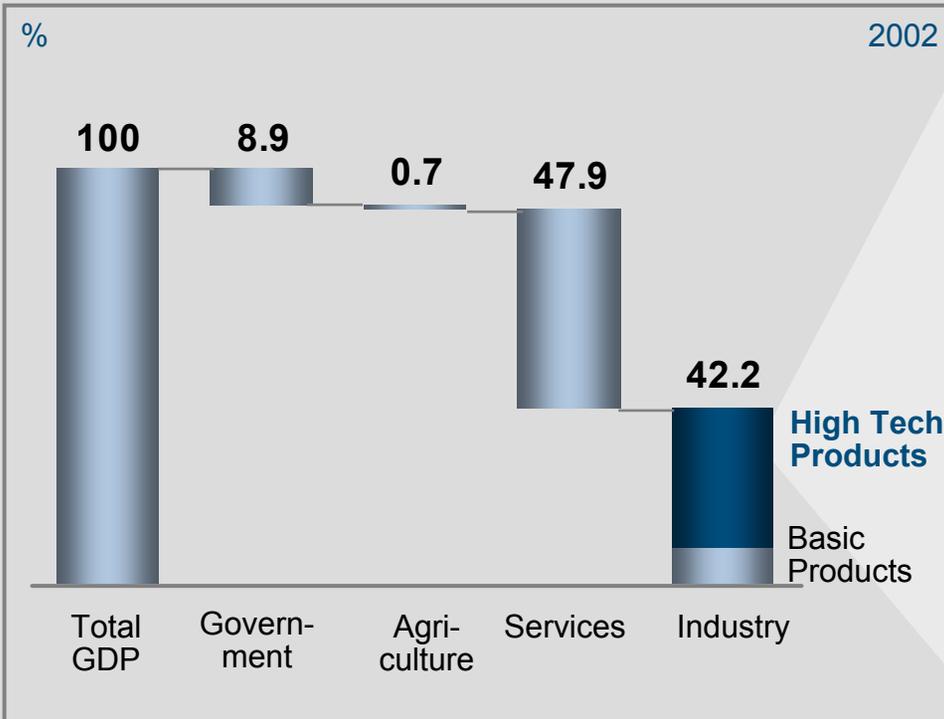
- **What must be done to maintain these sectors at their current level and prevent further erosion of key competitive advantages?**
 - Which other locations offer the greatest threats? What are their competitive advantages?
 - What must be done to increase productivity and reduce costs, especially for utilities?
 - What can be done to streamline and reduce regulation and compliance costs?
 - What must be done to maintain and improve worker skill-levels?

- **What can be done to leverage existing strengths and further increase the impact of these sectors?**
 - What can be done to strengthen linkages between Puerto Rico's basic manufacturing firms and high technology firms? What opportunities exist for local firms to supply key inputs and provide a domestic source of supplies?
 - What can be done to increase research and development in fields related to basic manufacturing, such as advanced packaging? What can be done to identify and exploit high end niche markets?
 - What can be done to enhance size and scale of existing firms in basic manufacturing industries?
 - What can be done to expand export markets, particularly in the United States and the Caribbean?
 - What can be done to expand the pool of local entrepreneurs with new business ideas?

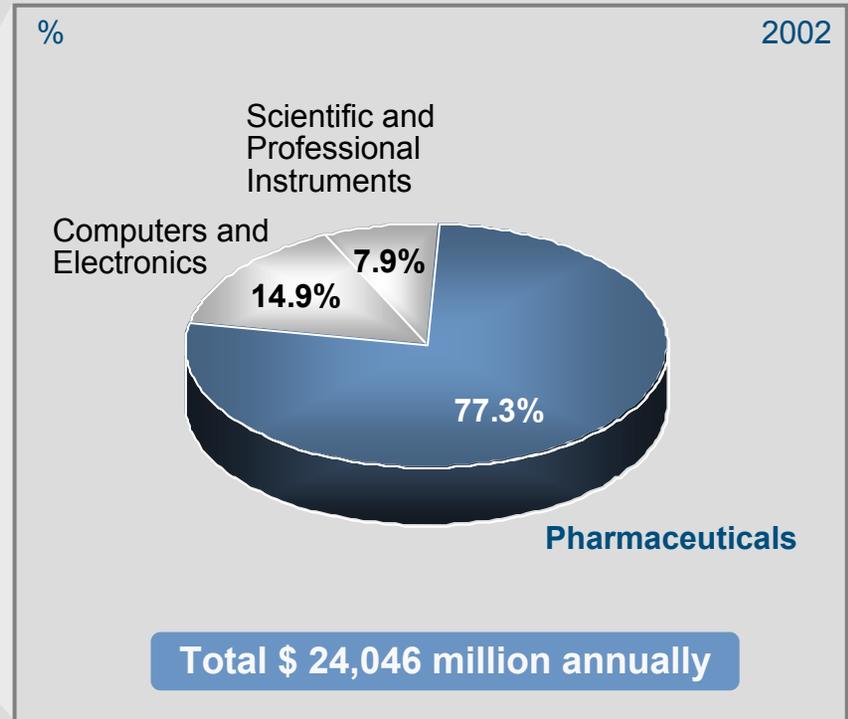


High technology manufacturing makes a major contribution to Puerto Rico's overall economy

Gross domestic product shares



Breakdown of high technology manufacturing in Puerto Rico



Note: Basic manufacturing includes food and beverage, tobacco, textile and apparel, leather, paper and wood products, print materials, plastics and rubber, metal and machinery industries.

Source: Planning Board, Statistical Appendix

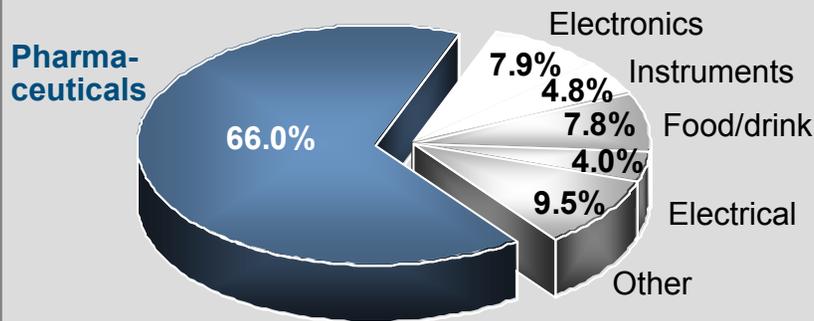
High technology manufacturing makes a major contribution to Puerto Rico's overall economy...

Critical share of total exports

Share of total exports

Percent share

2002



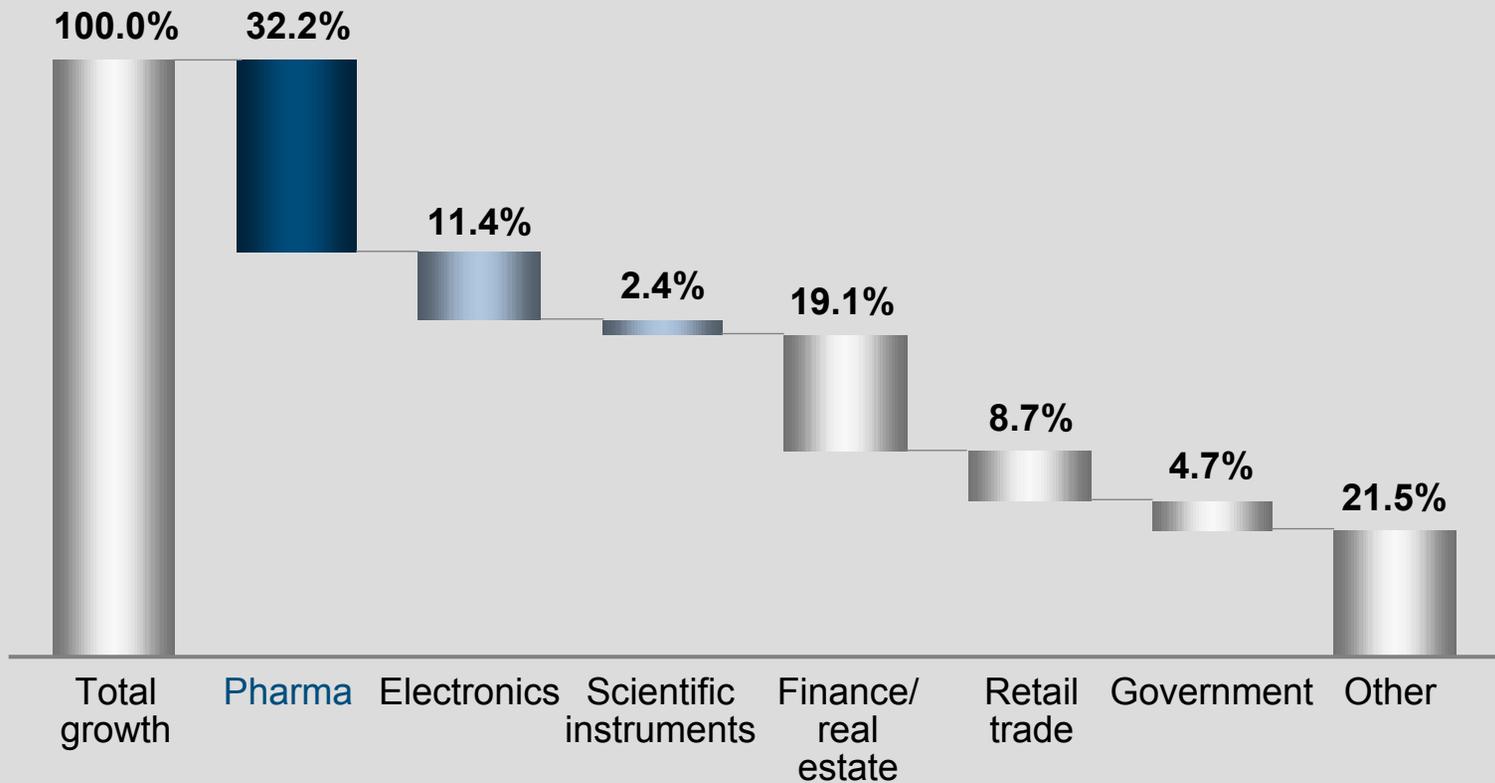
Total 78.7% of exports

Increasingly important export sector

- High technology exports together accounted for nearly \$37.2 billion in exports in 2002 – or 78.7 percent of all exports from Puerto Rico
- Pharmaceutical sector makes and ships 36 of the top 200 selling drugs worldwide, and its total exports are growing twice as fast as the the average growth rate for manufacturing overall
- Pharmaceutical sales not strongly affected by export market business cycles, thus providing a critical buffer against external shocks
- Exports not well diversified – with pharma by itself surpassing all other exports since 1999

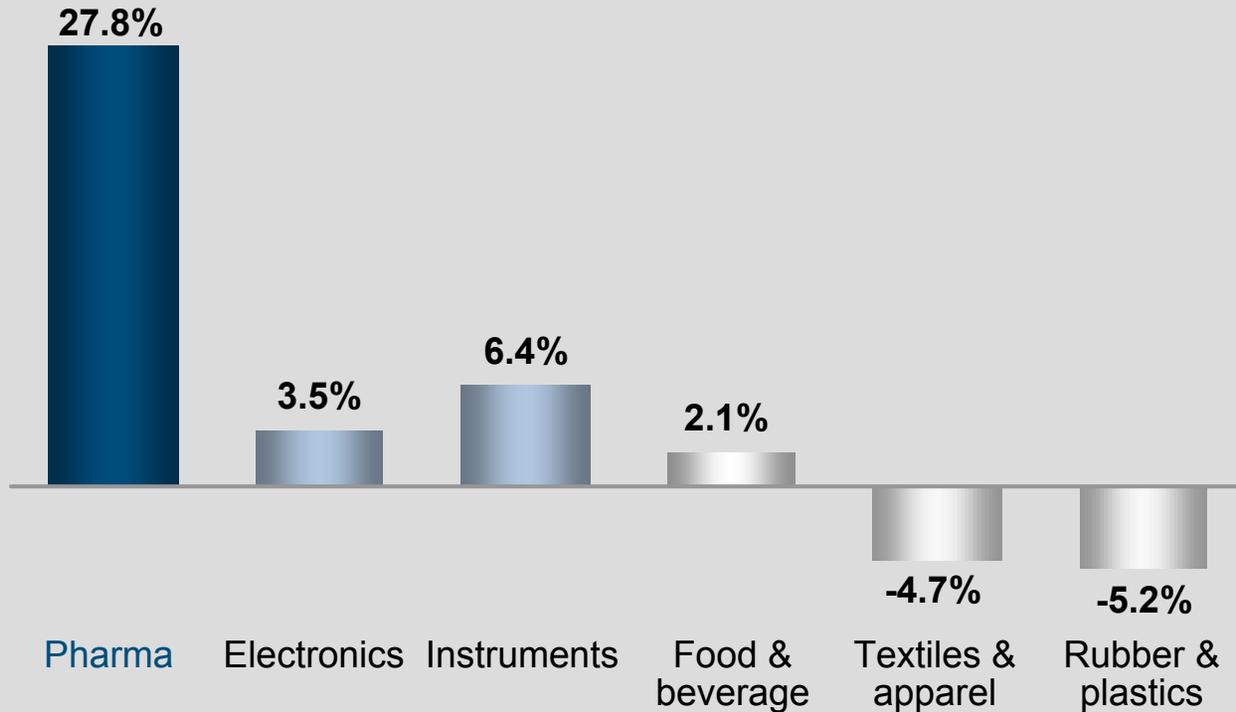
... accounting for a large share of total economic growth

Strong contributor to GDP growth Share of total GDP growth — 1997-2002



Moreover, Puerto Rico's sustainable growth in exports has also been fueled by the high technology sector

Strong contributor to export growth
Average annual Percent growth rate — 1997-2002



Overview of Puerto Rico's high technology sector

Strengths

- Labor productivity has seen rapid growth throughout Puerto Rico's high technology industries
- Puerto Rico's expanding share of pharmaceuticals world exports is a key indicator of the cluster's global competitiveness
- Electronics and scientific instruments are also relatively well positioned in global export markets
- Despite the phasing out of Section 936, pharmaceutical investments have risen sharply as a signal of the sector's inherent competitiveness

Weaknesses

- Puerto Rico's high technology firms face high costs relative to many potential competing locations
- High technology industries in Puerto Rico have lower than desirable linkages with the rest of the domestic economy
- In this context, few jobs have been created in this sector, despite its strong growth in the last years
- Puerto Rico investments in R&D are low compared to other locations, with only a small share of resources allocated to high tech sectors

Opportunities

- Expand exports to the Caribbean, Latin America and areas other than the United States
- Attract more second- and third-tier suppliers to strengthen existing clusters
- Grow more locally owned firms as service providers, suppliers and contract manufacturers
- Boost local research and development capabilities
- Set foundation for growth in emerging fields, including biotech and nanotech

Threats

- Intense competition from sophisticated competitors, such as Florida, for position in emerging fields
- Growth of low-cost competitors throughout Latin America and abroad
- Limitations in critical infrastructure related to trade
- Slow development of "technology corridors" and other elements of clusters
- Lack of local supply-base and R&D creates low barriers to exit

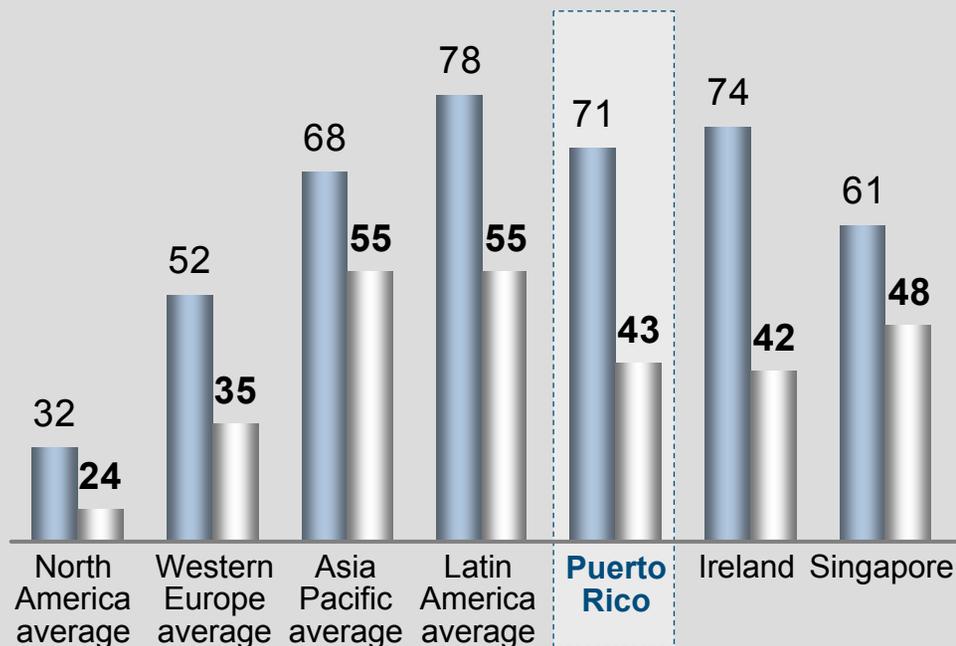
Puerto Rico has a strong regulatory and legal environment for knowledge-intensive high technology production

STRENGTHS

Rates of computer software piracy Worldwide averages

% pirated software

2000 – 2002



Strong legal and regulatory advantages

- Legal and regulatory environment based on US intellectual property rights standards – best in world
- Intellectual property protection is a key non-financial incentive for pharmaceutical production and computer hardware sectors
- Software piracy rates lowest in Latin America – and lower than Singapore, Korea, Spain or Italy
- Streamlined access to FDA drug approvals, Good Manufacturing Process (GMP) designations
 - GMP designation can take 6-8 years and cost \$800 million

Note: Piracy rate calculated as the share of pirated software in total software installed in each location

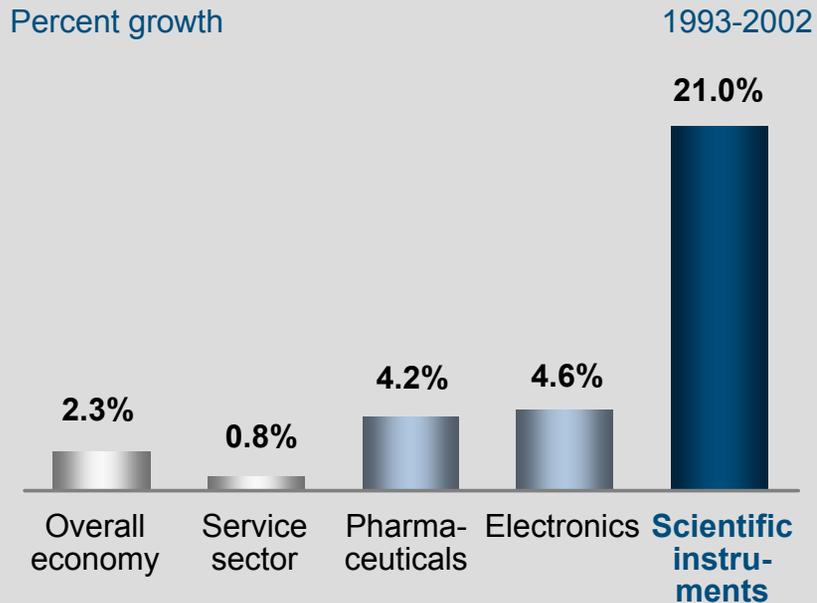
Source: Business Software Alliance, Piracy Study 59

Labor productivity has seen rapid growth throughout Puerto Rico's high technology industries



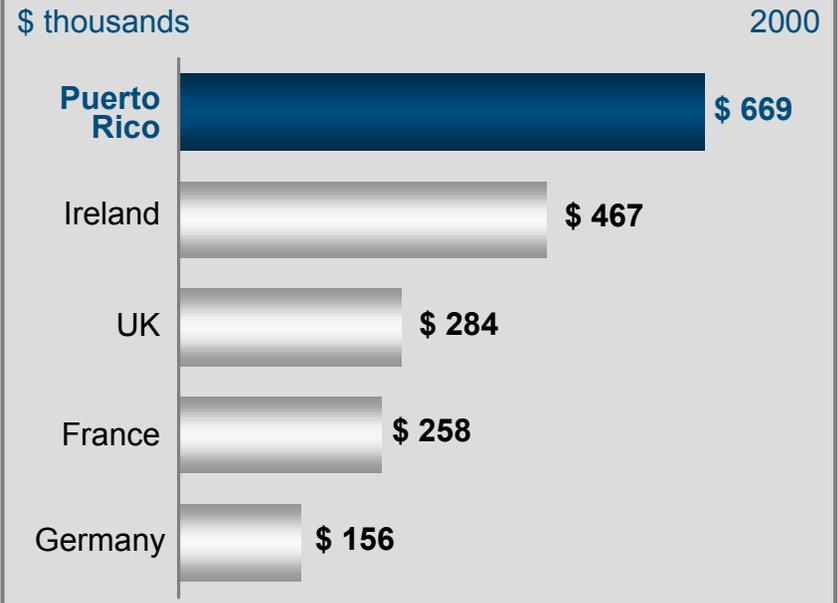
Labor productivity growth

Output per employee



Competitive labor product

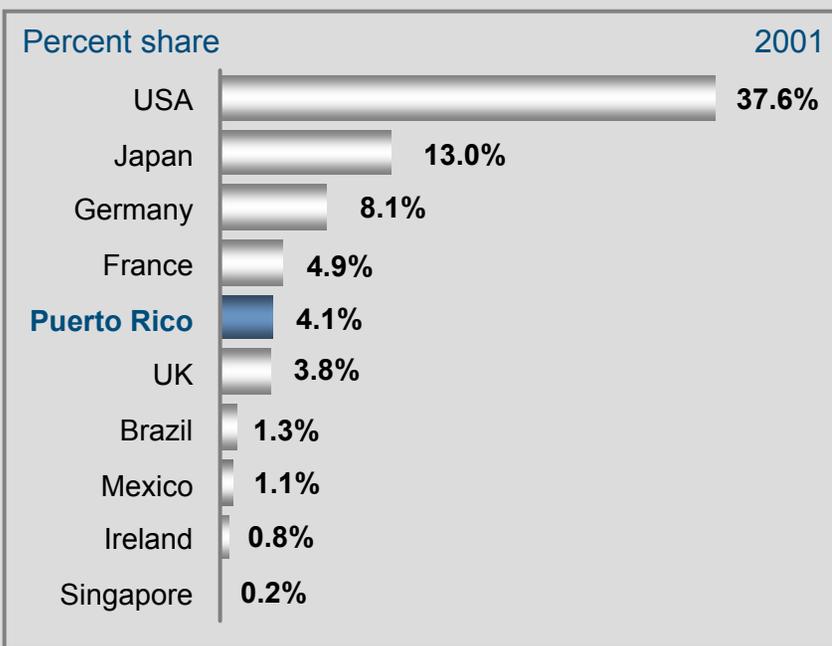
Pharmaceuticals output per employee



Puerto Rico's expanding share of pharmaceuticals world exports is a key indicator of the cluster's global competitiveness

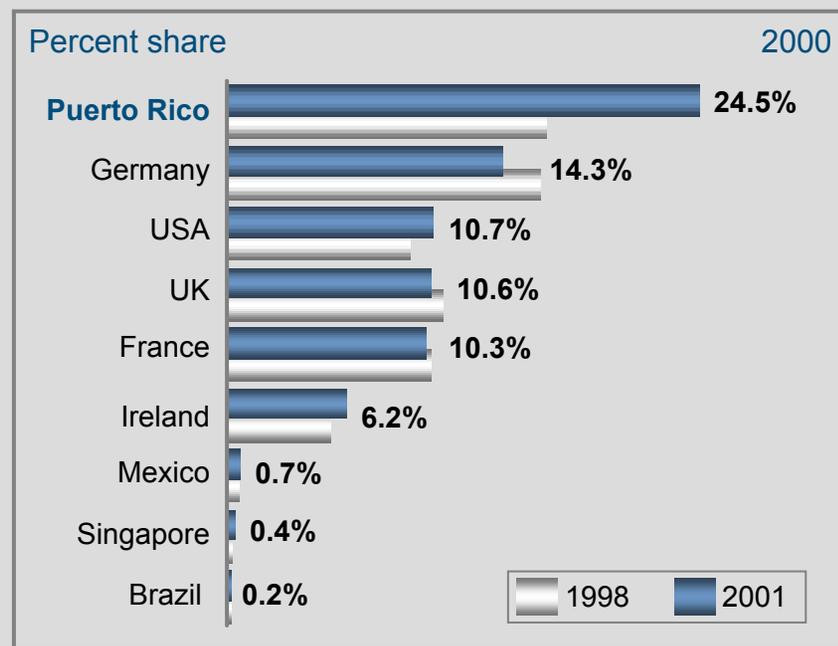


Share of total global production Pharmaceuticals



Source: Epsicom Pharmaceutical Markets Fact Book, 2003; A.T. Kearney analysis

Share of total global exports Pharmaceuticals



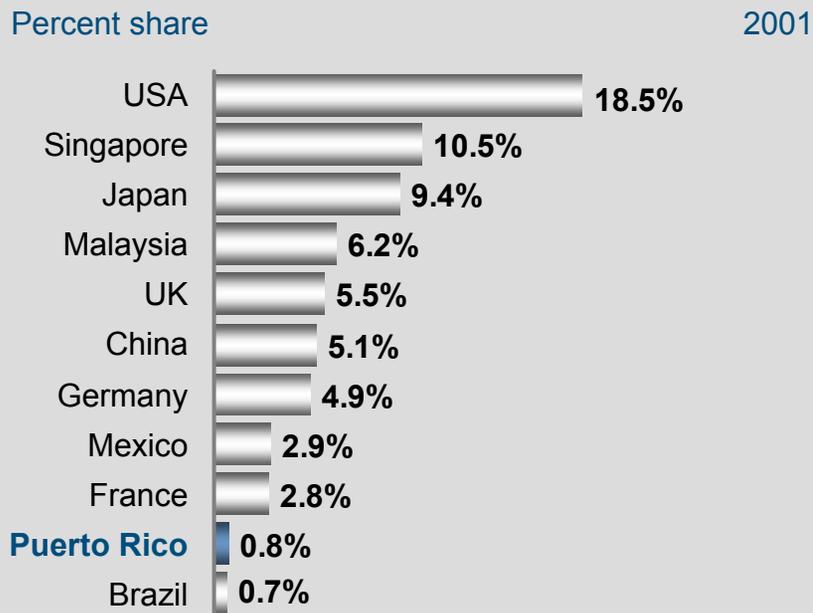
Source: Planning Board; United Nations Statistics Department; A.T. Kearney analysis

Puerto Rico ranks as the world's fifth largest producer of pharmaceutical products and the world's largest exporter

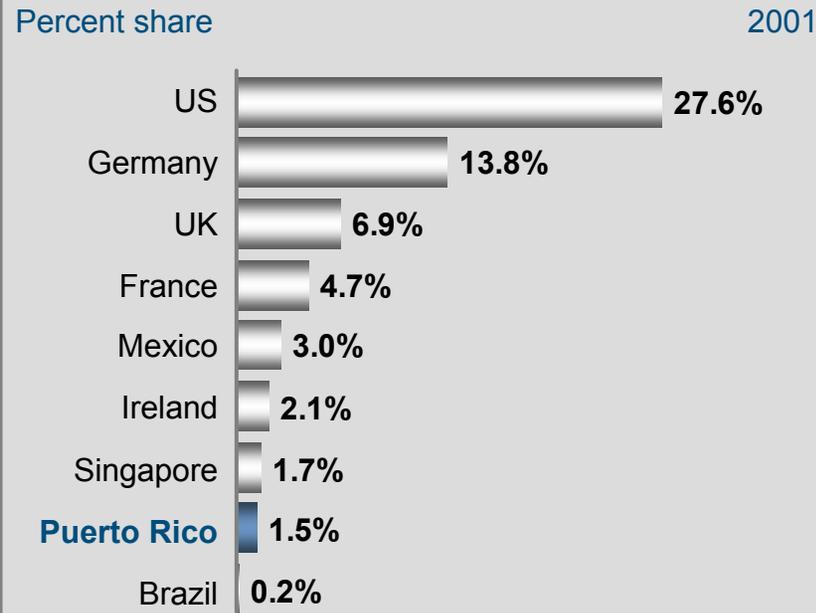
Electronics and scientific instruments are also relatively well positioned in global export markets

STRENGTHS

Share of total global exports Computer hardware



Share of total global exports Scientific and medical instruments



Puerto Rico ranks as the world's 10th largest exporter of scientific and medical instruments and 18th largest exporter of computer parts

Despite the phasing out of Section 936, pharmaceutical investments have risen sharply as a signal of the sector's inherent competitiveness

STRENGTHS

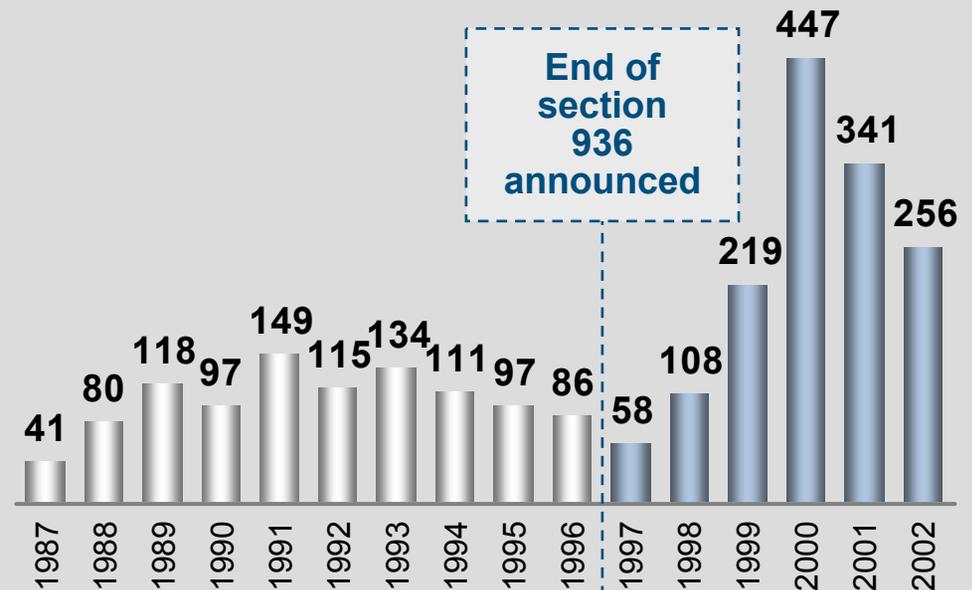
Cluster inherent competitiveness strengths

- Huge accumulated base of investments in physical plants and supporting infrastructure
- Highly skilled labor force appropriate to the needs of high technology industries – accumulated experience totaling 415,000 person-years in pharmaceuticals, 323,800 person-years in electronics and 125,900 person-years in electronics
- Advanced skills in Good Manufacturing Process (GMP) certification, Lyophilization, validation standards, clean room operation, and other important skills
- Qualified pool of managerial talent, with roughly 75 percent of management positions now held by local residents
- Benefits from belonging to the U.S. regulatory regime, with strong intellectual property protection and expedited regulatory approval, including FDA and GMP certification

Investment in the pharmaceutical sector

US\$ Millions

1987-2002

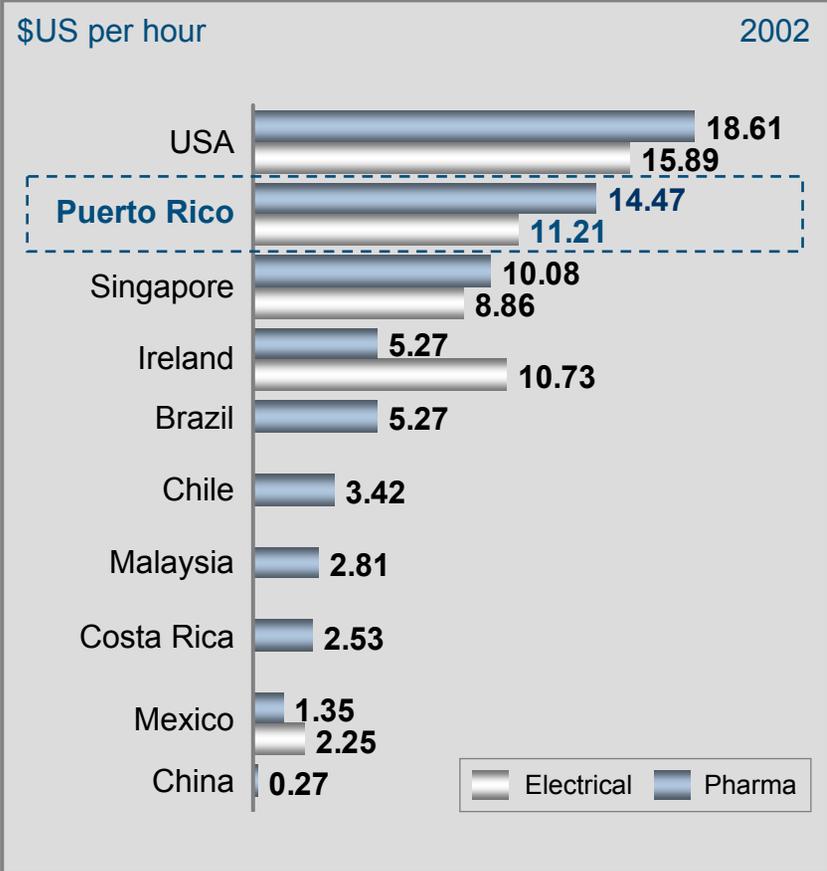


The announced phase-out of Section 936 has accelerated planned investments to capture remaining tax benefits

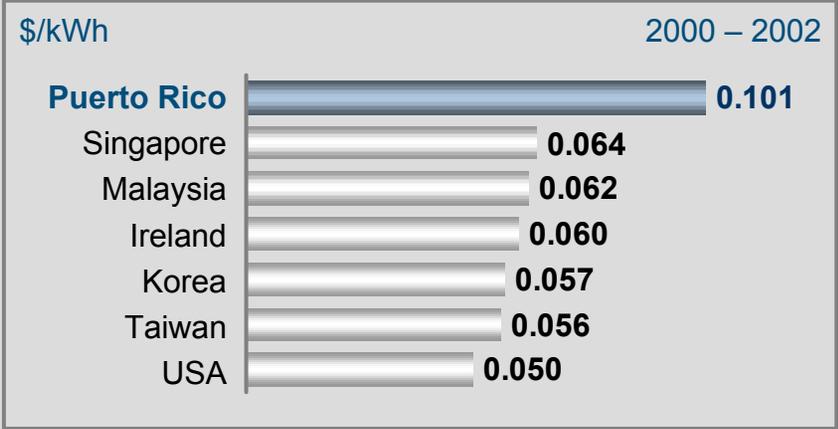
Puerto Rico's high technology firms face high costs relative to many potential competing locations



Higher than average wages



Uncompetitive electricity costs



- Other factors leading to higher operating costs include:
- The need for back-up utilities systems due to unreliability of local providers
 - Lack of local facilities for hazardous waste disposal (requiring shipment off-island)
 - Inefficiencies in logistics
 - Permitting process for site approval and plant expansion – Puerto Rico may take 6 months, where Ireland averages one week and Singapore often approves within a single day

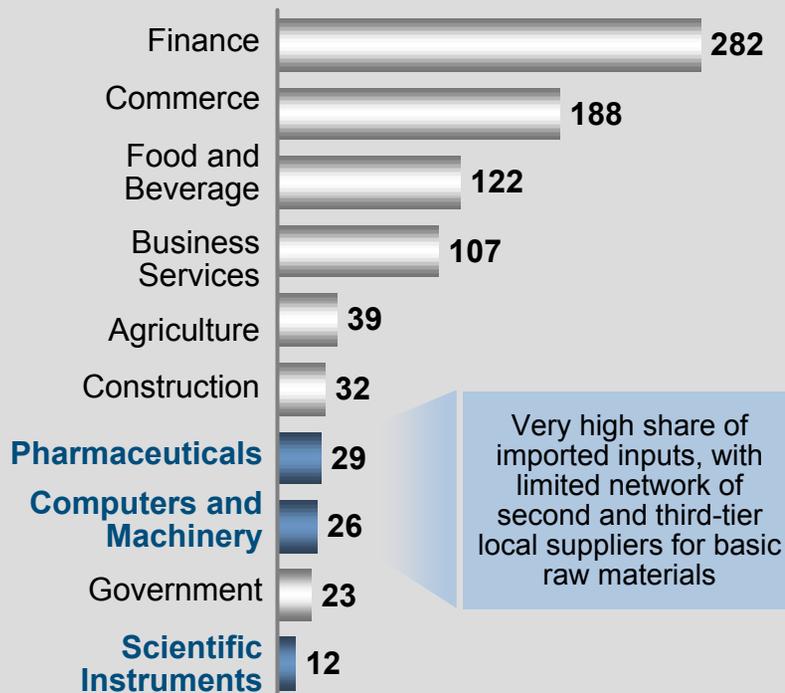
Note: Wages based on information reported for 2002 or latest year available.
 Source: International Labour Organization, LABORSTA database; H. Calero Consulting; Estudios Tecnicos; A.T. Kearney

High technology industries in Puerto Rico have lower than desirable linkages with the rest of the domestic economy

Supplemental income generated

– For every \$1 million rise in GDP –

US\$ thousands

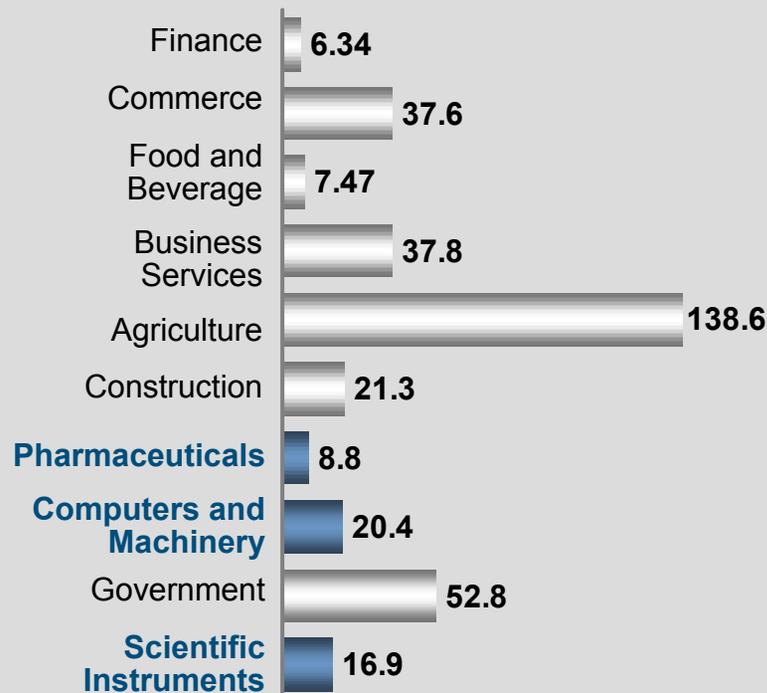


Very high share of imported inputs, with limited network of second and third-tier local suppliers for basic raw materials

Number of new jobs created

– For every \$1 million rise in GDP –

Jobs generated



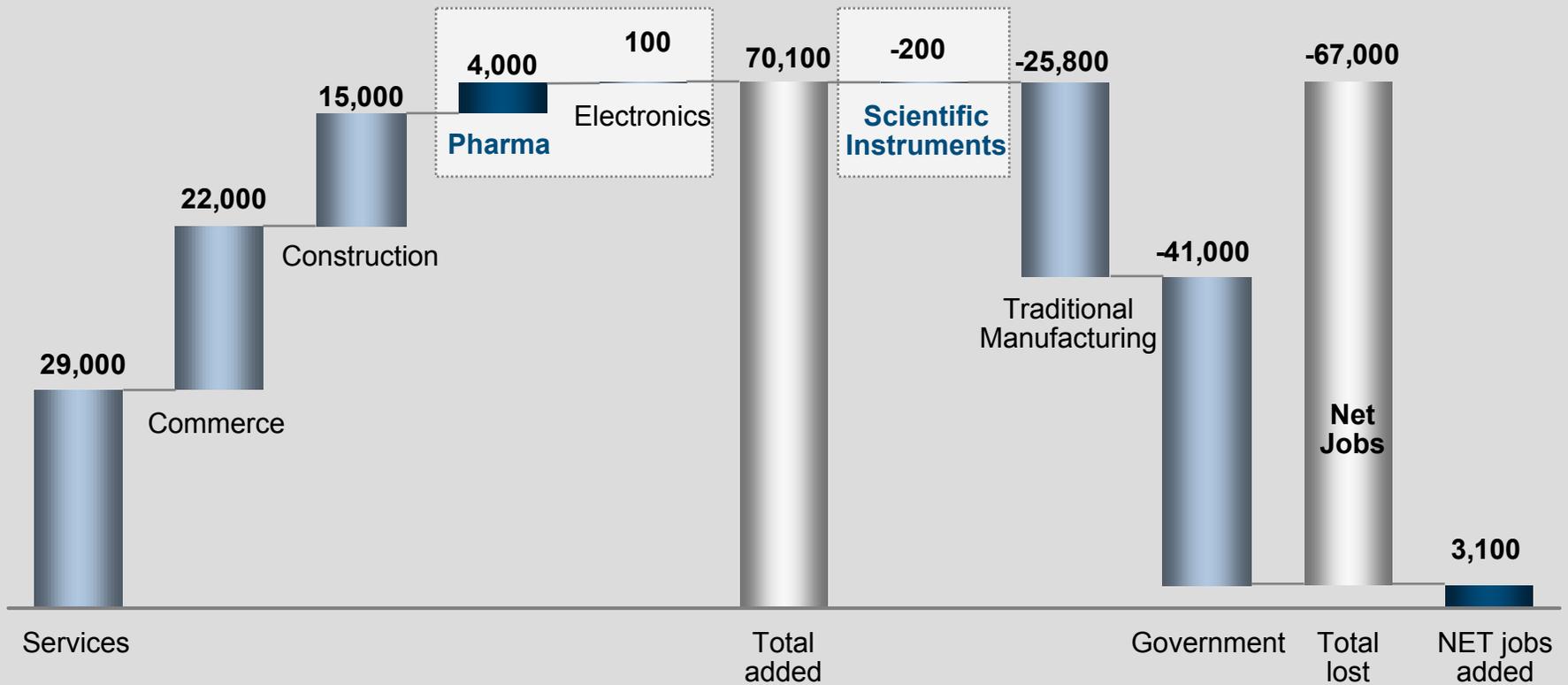
Note: Data based on 1992 input-output tables, the most recent available
 Source: James Dietz, based on analysis by Dr. Angel Ruiz, Interamerican University

In this context, few jobs have been created in this sector, despite its strong growth in the last years



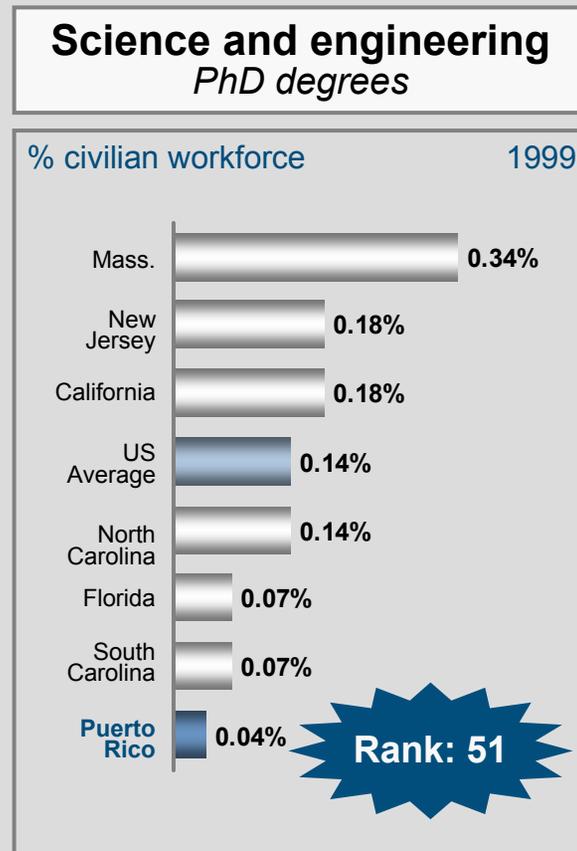
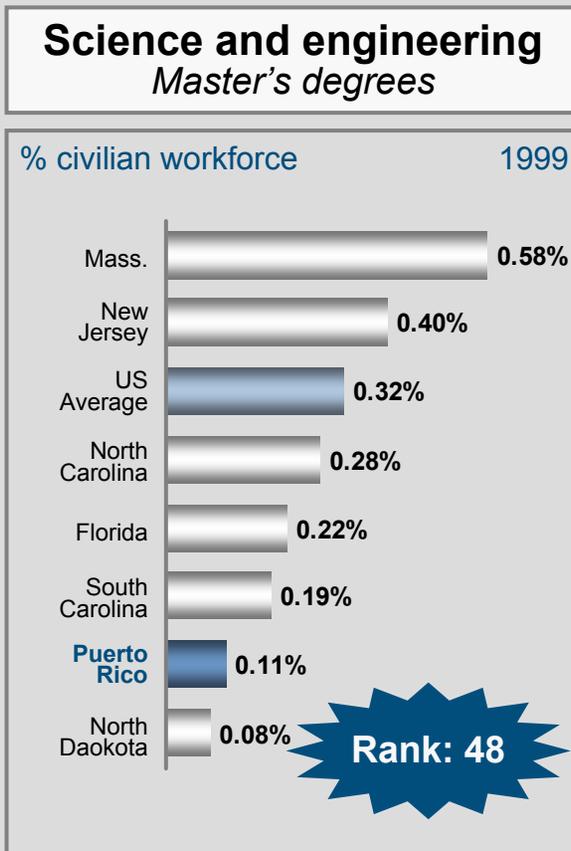
Few new jobs in high tech industries

Number of jobs created and lost — 1997-2002



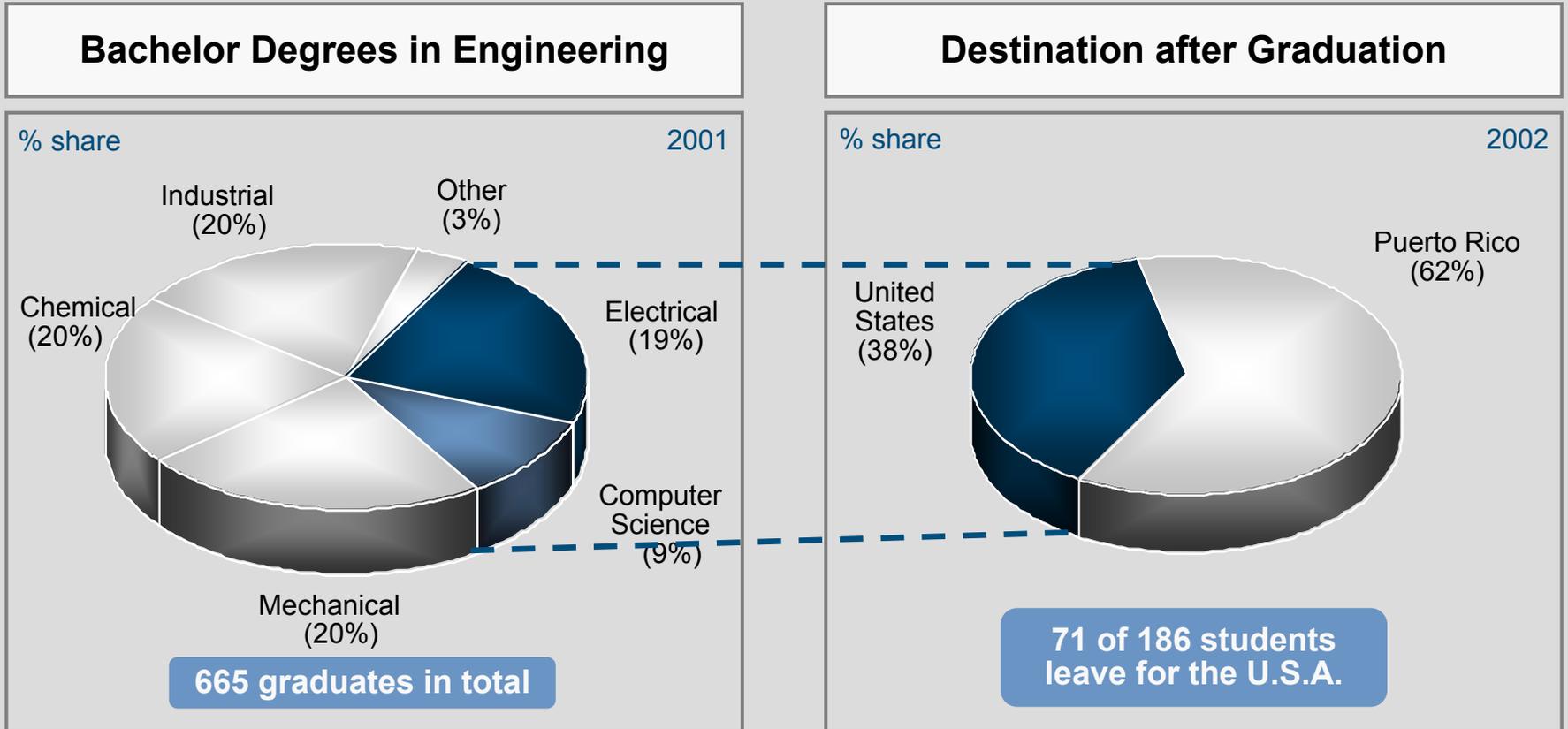
Source: Department of Labor, Establishment Survey; A.T. Kearney analysis

Despite a strong educational base, Puerto Rico's workforce is not well educated for science and engineering fields



Note: Puerto Rico's rank based on a comparison with the 50 U.S. states and does not include the District of Columbia or other jurisdictions.
 Source: U.S. Department of Commerce, Technology Administration, State Science and Technology Indicators, Second Edition; A.T. Kearney analysis

“Brain drain” deprives Puerto Rico of some of its best talent in some advanced high technology fields

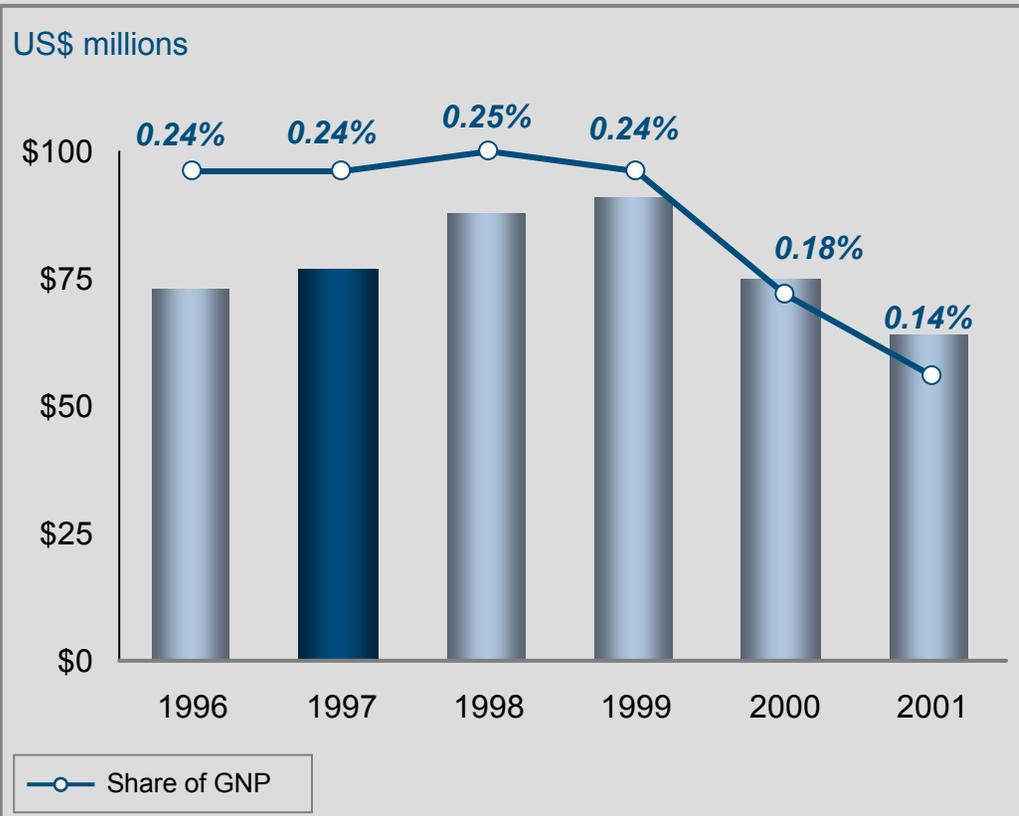


Note: Information derived from a random survey of graduating students in electrical engineering and computer science, using UPR Mayaguez as the benchmark for other institutions in Puerto Rico

Source: McKinsey, Communications, Information and Technology Report

By some accounts, research and development spending in Puerto Rico has declined over the past several years

Total research and development spending in Puerto Rico



Recent Trends in R&D in Puerto Rico

- Federal funds for research and development (R&D) at academic institutions dropped from \$ 81 million in 1998 to \$ 52.9 million in 2001
- R&D funding at private institutions doubled between 1998 and 2001
- Strong push to develop alternate funding at University of Puerto Rico (UPR), including a \$ 40 million, five-year Centennial Fund to support biomolecular and cancer research
- In 2002, University of Puerto Rico won a 5-year, \$ 24 million grant from the National Institutes for Health to fund biotech research
- Some recent growth in R&D funding from private sector, non-profit, and municipal government sources

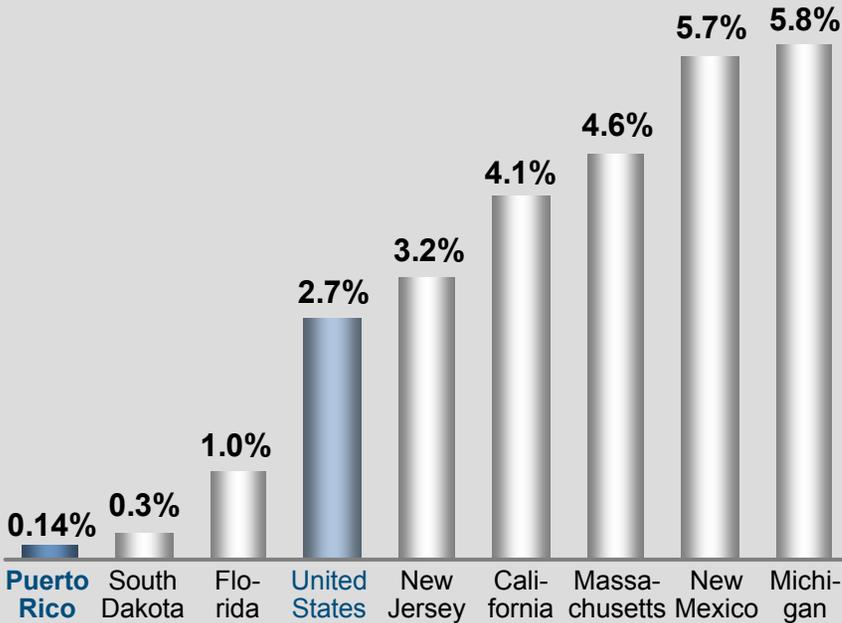
Note: Data calculated from National Science Foundation estimates of total research and development spending within local academic institutions, government and industry, which may differ significantly from federal research and development obligations. The total may also not fully reflect private sector, institutional and Commonwealth support for University of Puerto Rico (estimated at \$20 million in FY 2002) or the industry disbursements from PRIDCO's Office of Science and Technology (estimated at \$10 million in FY 2002).

Source: National Science Foundation, WebCASPAR database; A.T. Kearney analysis

Investments in research and development remain very low compared to U.S. states and other countries

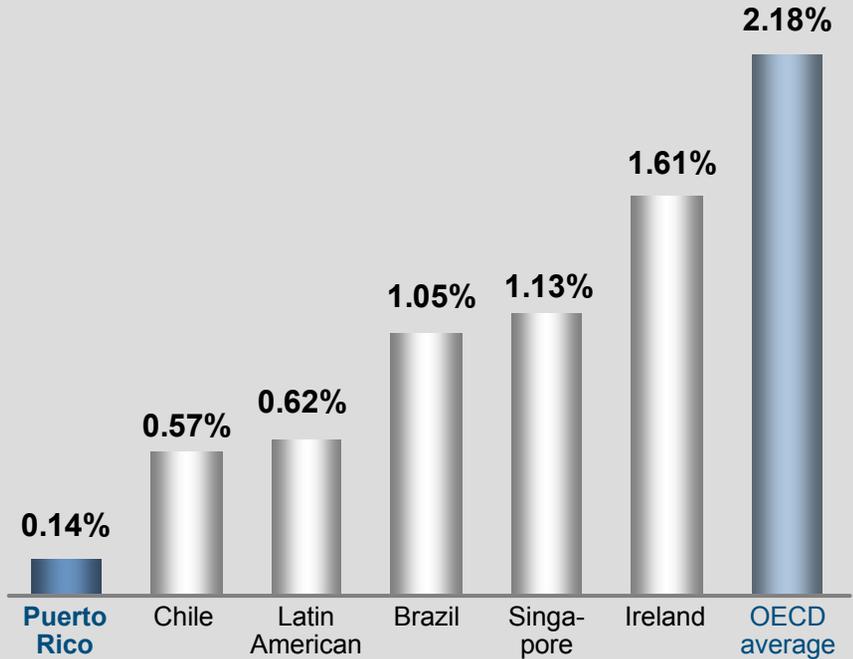
Research and development spending
Compared to U.S. States

% of GSP (GNP) 2000



Research and development spending
Compared to countries

% of GDP (GNP) 1998-2001



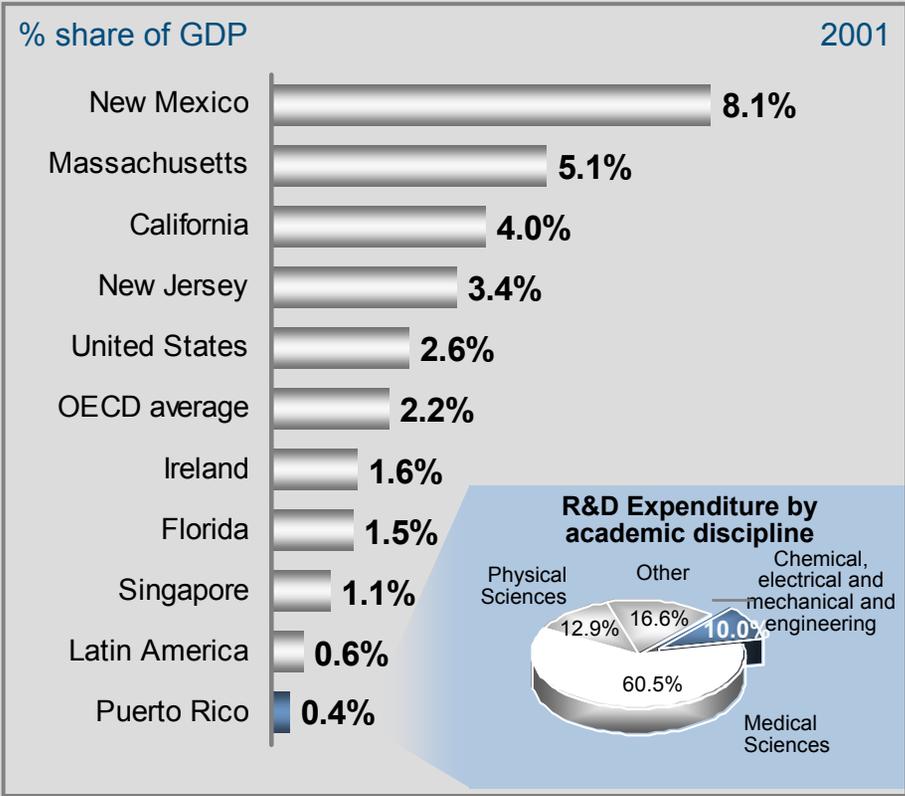
Note: Data for Puerto Rico and U.S. states based on National Science Foundation estimates of total research and development spending by state. The data for Puerto Rico are presented as a share of GNP, while other state totals are as a share of GSP.

Source: PRIDCO Office of Science and Technology; National Science Foundation; Red Iberoamericana de Ciencia y Tecnologia; John Stewart, "Running with the Tigers"

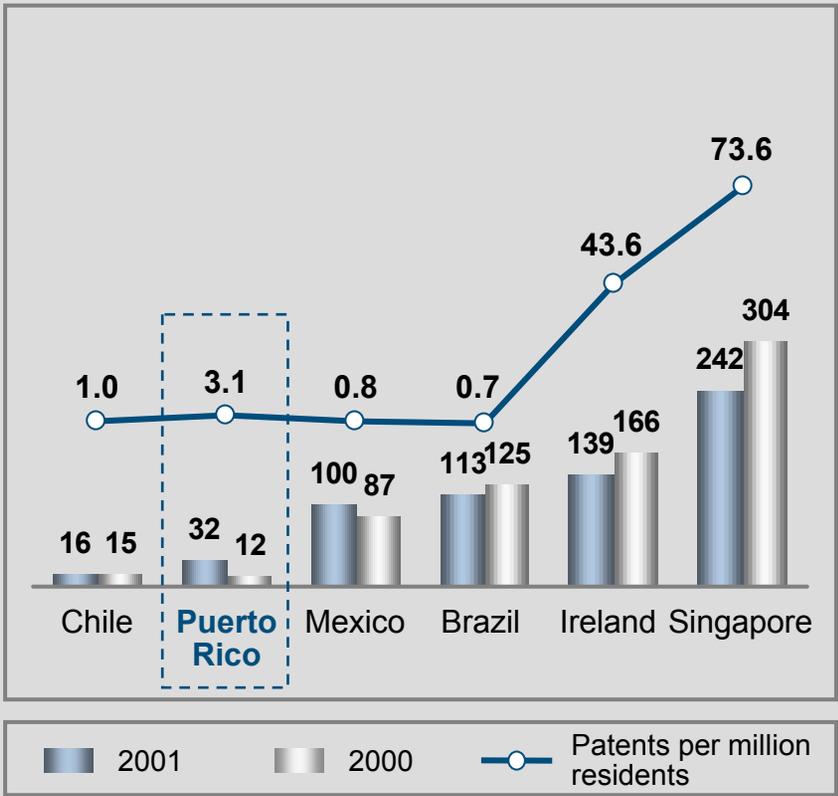
Puerto Rico investments in R&D are low compared to other locations, with only a small share of resources allocated to high tech sectors

WEAKNESSES

Research and development expenditures



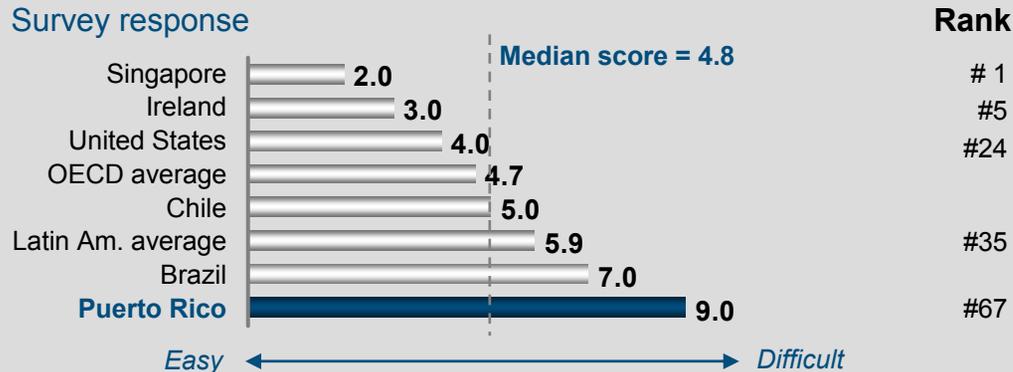
Patents granted



Note: Puerto Rico data is for 1998; all others for 2001
 Source: PRIDCO Office of Science and Technology; National Science Foundation; Red Iberoamericana de Ciencia y Tecnologia; John Stewart, "Running with the Tigers", United States Patent and Trademark Office; A.T. Kearney analysis

A complicated permitting process delays investment and places a heavy burden on high technology companies

Permits required to start business

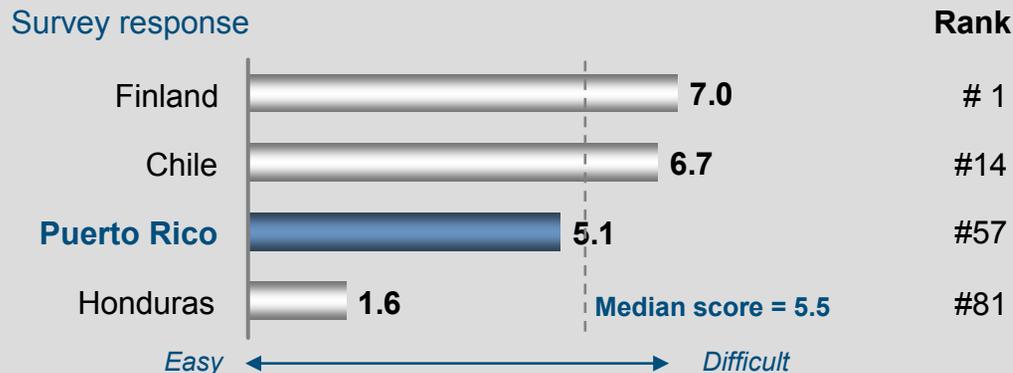


Permit process

- Burdensome permitting process blamed for delays in expanding existing plants and loss of some foreign investment
- Permits to expand manufacturing plants and existing stores can take up to 6-12 months – compared to 7 days in Ireland or 1 day in Singapore
- Until recently, construction permits required 9 separate filings for 9 government agencies
- Legal challenges after permit approval cause further delays, raising cost of financing and creating extra risks for banks, developers
- Among major projects delayed by challenges to permits are expansion at the Caribe Hilton, condo projects in Ocean Park and Isla Verde
- Value of total construction permits reached \$ 3,040 million in 2001 – nearly two-thirds from the private sector

Ease of obtaining a new telephone line

Survey responses

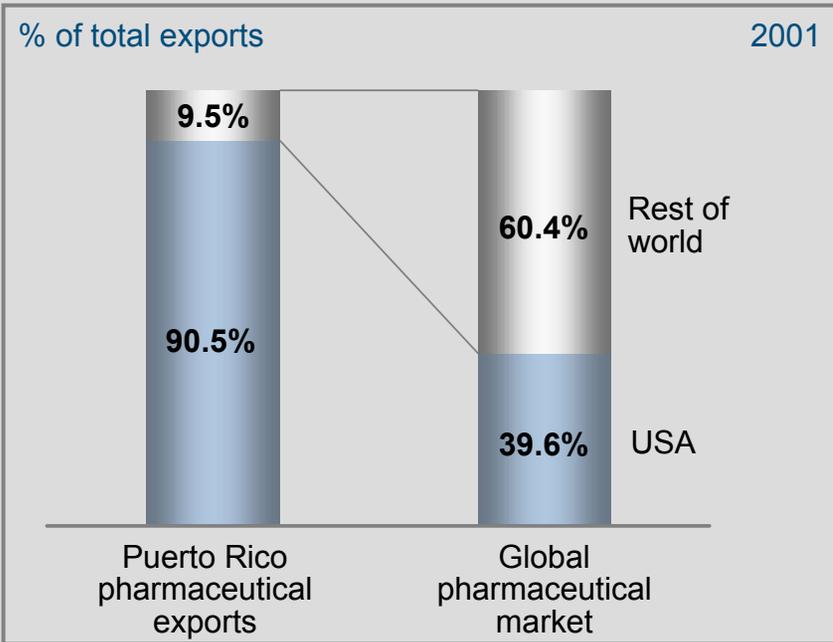


Source: World Economic Forum, “Global Competitiveness Report 2002”; PROCOMP, Preliminary Competitiveness Analysis for Puerto Rico, 2002; A.T. Kearney analysis

Puerto Rico still has plenty of opportunity to tap new markets and attract additional firms

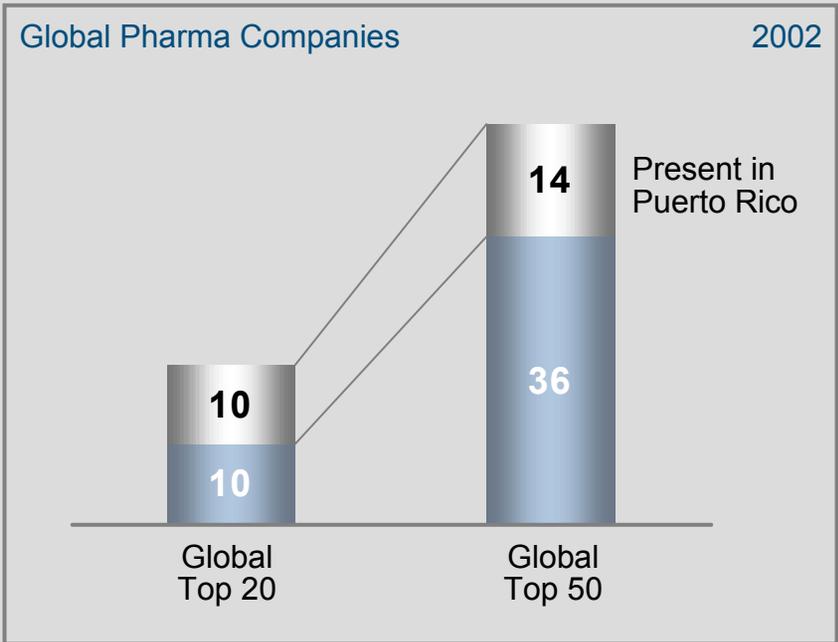


Breakdown of Puerto Rico's Pharmaceutical Exports



Potential to expand export markets...

Number of Pharmaceutical Firms Operating in Puerto Rico

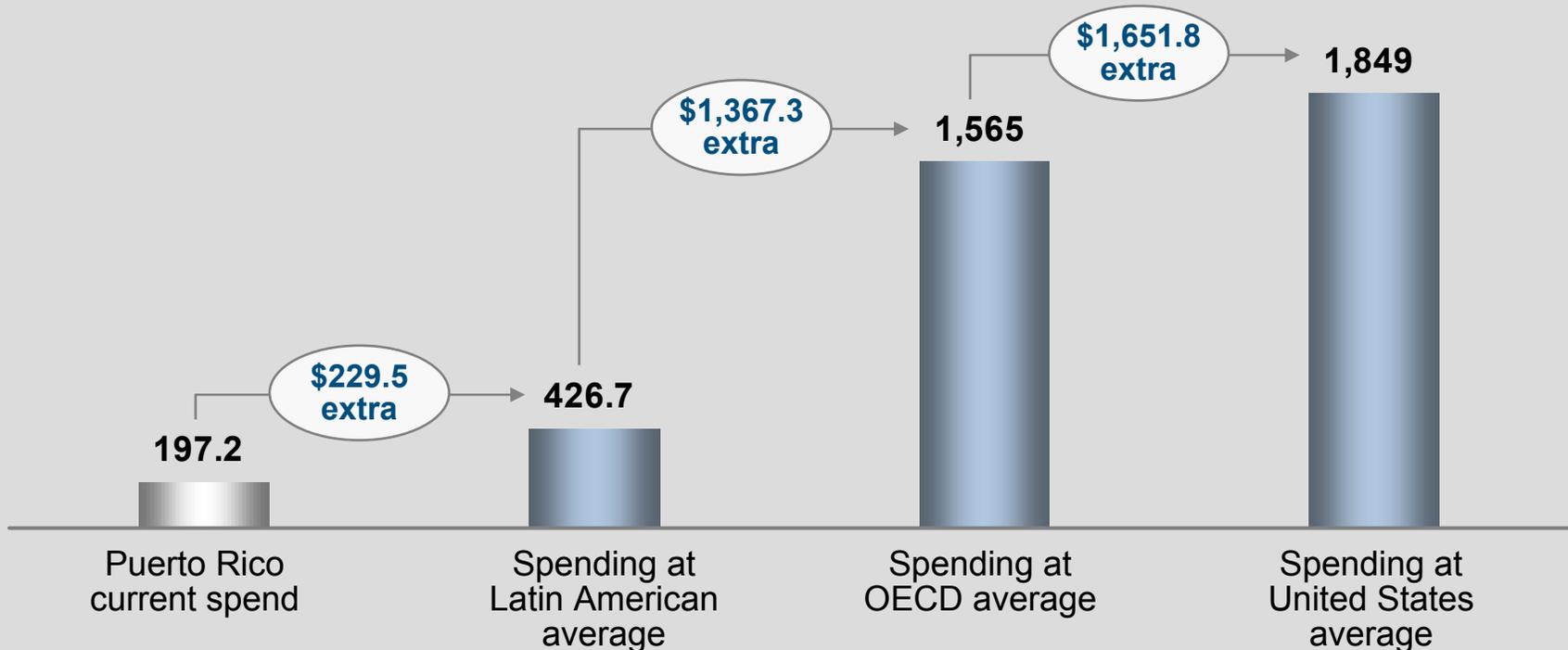


...and attract a larger share of pharmaceutical players

Source: PRIDCO, Department of Economics; Epsicom World Pharmaceuticals Fact Book 2003; Pharmaceuticals Executive Survey 2003; A.T. Kearney analysis

To conduct R&D at world class levels, Puerto Rico must increase investment significantly

Additional investment required to reach R&D benchmarks US\$ millions — 2002



Note: Puerto Rico data is for 1998; all others for 2001

Source: Pridco Office of Science and Technology; National Science Foundation; Red Iberoamericano de Ciencia y Tecnologia

Increasing competition and low barriers-to-exit threaten ability to maintain growth and market-share

THREATS

Increasing competition

- Expanding free-trade agreements (WTO, TRIPS, FTAA, CAFTA, etc.) provide more countries with access to global markets
- Many low-cost economies actively competing to attract pharmaceutical and high-technology FDI and capture growing share of high tech exports to the US (e.g. Mexico, Brazil, Costa Rica, India, China, South East Asia)

Limited focus on emerging sectors

- Accelerating technology replacement cycle (IT, communications, life sciences, materials, etc.)
- Increasingly aggressive competitor strategies to attract and nurture emerging sectors, even pre-commercialization
- Institutional constraints limit similar long-term planning, pro-active targeting of emerging sectors by Puerto Rican agencies

Increasing pressure to maintain growth and share

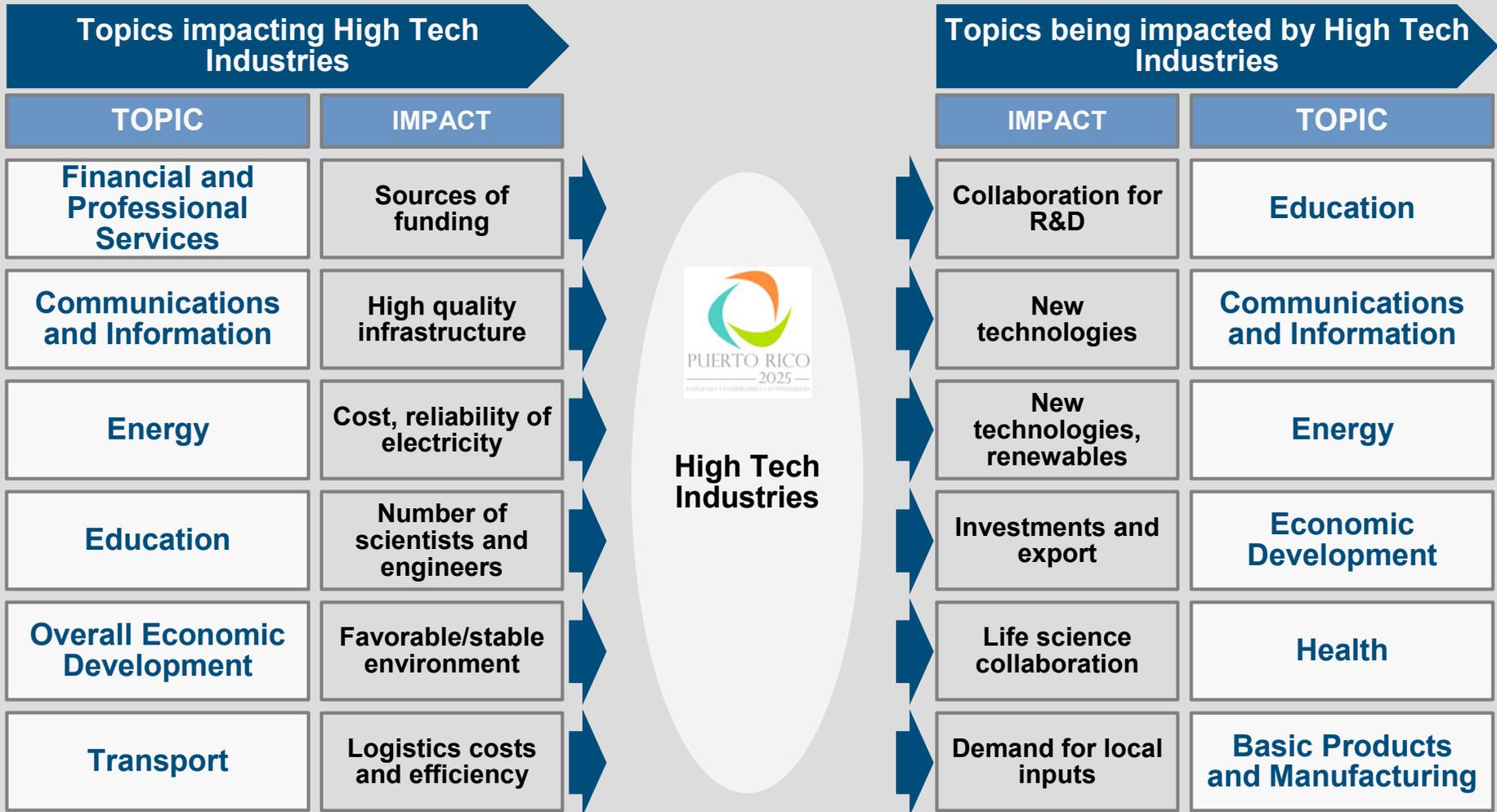
Competitive disadvantages

- High labor costs relative to emerging competitors
- Utilities/infrastructure: high cost and low reliability
- Location and logistics costs
- Government permitting and approval process

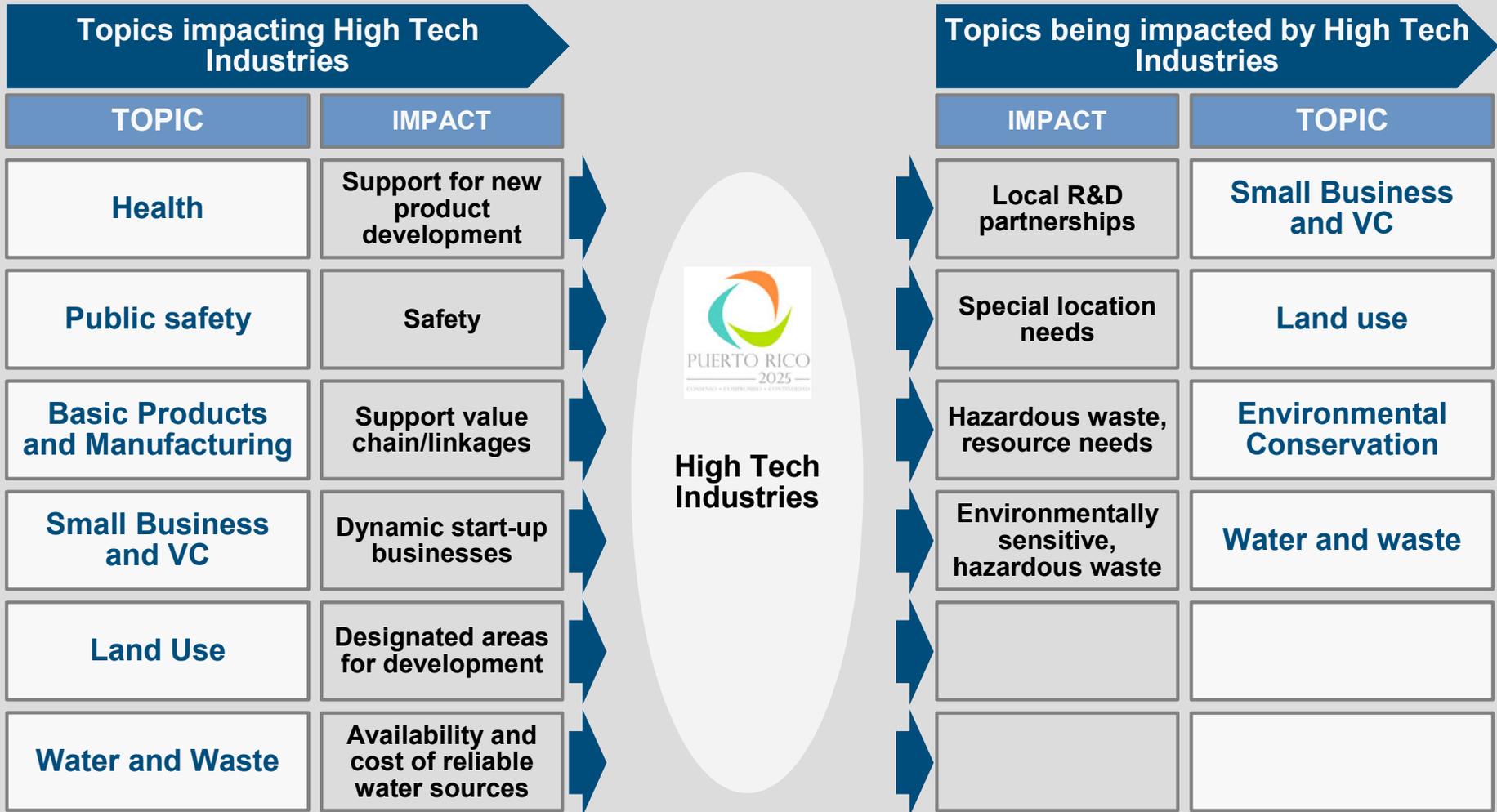
Low barriers to exit

- Few unique R&D skills or facilities
- Limited linkages to local economy
- Few “uniquely qualified” local suppliers

The high technology sector linkages



The high technology sector linkages (cont.)

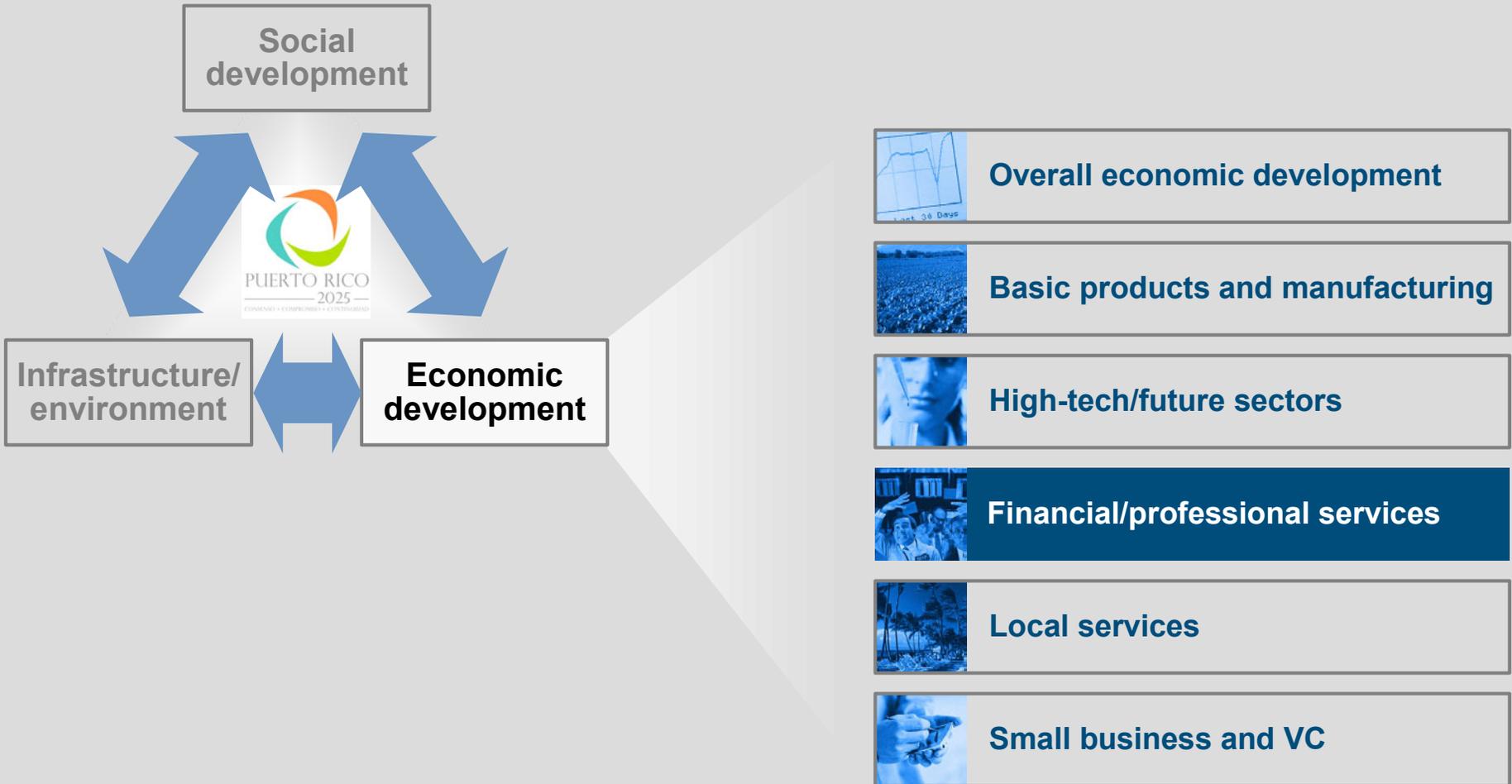


Key questions going forward

- What must be done to **1) maintain** and **2) expand** the role of the high technology sectors as the primary creators of wealth in the Puerto Rican economy?

- **What must be done to maintain these sectors at their current level and prevent key investors departing to other locations?**
 - Which other locations offer the greatest competitive threats?
 - What are the primary reasons why international firms continue to invest in Puerto Rico?
 - What are Puerto Rico's major weaknesses or competitive disadvantages as a location?
 - What must be done to increase productivity and reduce costs (labor, utilities, regulation, etc.)?
 - What must be done to maintain and improve skill-levels?

- **What can be done to leverage existing strengths and further increase the impact of these sectors?**
 - What can be done to strengthen the linkages between the high technology sector and the rest of the economy? What opportunities exist to reduce imports of inputs and source domestically?
 - What can be done to create and foster more locally-owned high-tech entrepreneurs and suppliers?
 - What can be done to increase local research and development? How can local universities and other education institutions participate in this process?
 - What can be done to attract new categories of investors (e.g. non-US or non-Fortune 500 investors)?
 - What must be done to ensure Puerto Rico remains competitive in emerging technology sectors (e.g. biotechnology, nanotechnology, mobile devices, etc.)?

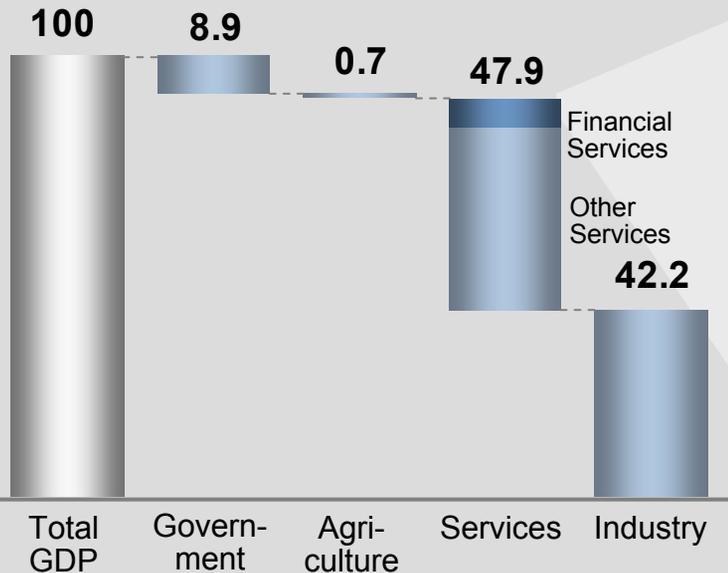


Main conclusions: Financial and professional services

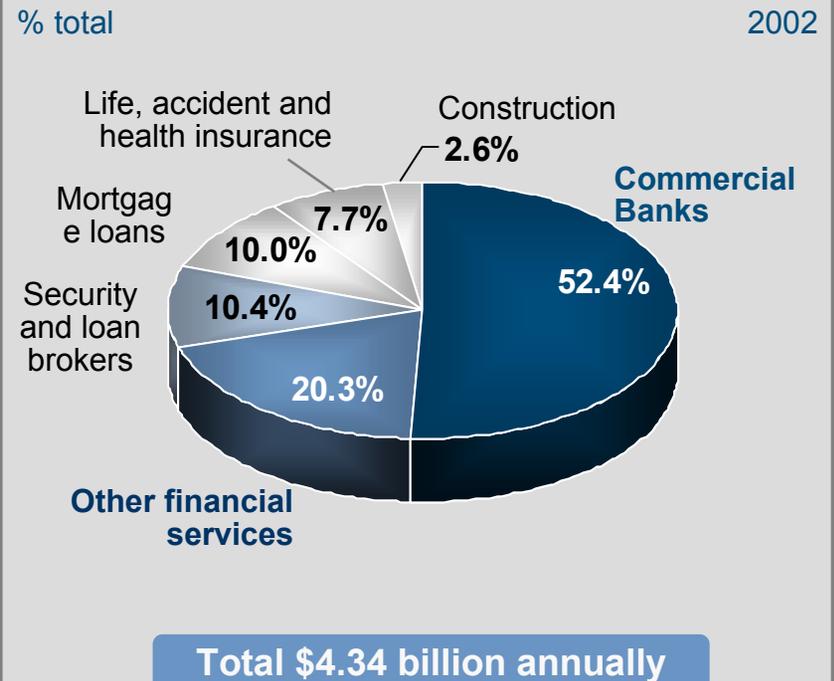
- Following decades of investment by multinational firms, Puerto Rico has an exceptionally capable financial and professional services sector accustomed to delivering work at global standards
- Puerto Rico's banking sector is particularly competitive, with growing domestic market share and higher profits and returns than most banks in the United States
- A large number of professional graduates make Puerto Rico's professional services sector ripe for further development – although infrastructure limitations and the small size of firms pose major challenges
- With consolidation and support for international expansion, Puerto Rico can take advantage of major opportunities to export financial and professional services – particularly serving the Hispanic market in the United States

Financial services constitute a small but important sector of Puerto Rico's overall economic output

Gross Domestic Product Shares



Financial and insurance sector income by sector



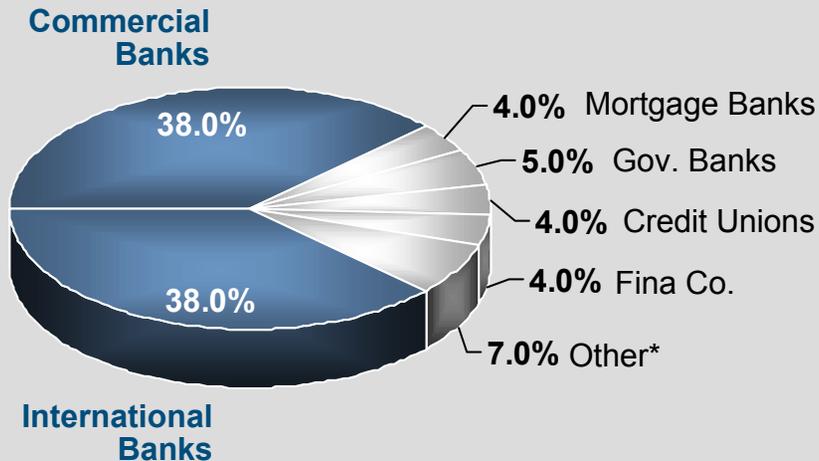
Note: Other financial services include installment sales, credit agencies, credit unions, savings banks
 Source: Planning Board, Statistical Appendix; A.T. Kearney analysis

Within the banking sector, assets are evenly divided between commercial and international banks

Total assets in the financial sector

Percent share

2002



Commercial banks and international banking entities

- Total assets in the financial system reached \$ 137.8 billion in 2002 – divided between the commercial banks, cooperatives, consumer loan services and brokers
- Eleven commercial banks include eight local institutions and three money center banks, with combined assets of \$ 52.5 billion
- International banking entities are subsidiaries that can capture and hold deposits to be reimbursed overseas
- Brokerage accounts for 5 percent of assets — in contrast to 16 percent in Singapore
- Insurance accounts for 4% or \$ 4.3 billion

Investment management services are rapidly growing, with estimated US\$ 30 billion in Puerto Rican assets that can be invested

Overview of Puerto Rico's financial services sector

Strengths

- A sophisticated financial sector labor force gives Puerto Rico a comparative advantage
- Puerto Rico's banking sector has a highly developed technological infrastructure that helps reduce costs
- On average, Puerto Rico's banks outperform mainland banks across a range of performance indicators
- Signals of competitiveness include:
 - In recent years, Puerto Rico's banks have grown assets aggressively despite the loss of Section 936 funds
 - Locally owned banks have also gained market share in Puerto Rico at the expense of international competitors
 - Local firms have undertaken successful international expansions into North American and Caribbean markets

Weaknesses

- Banks have adopted aggressive postures, with high loan ratios and heavy exposure to real estate
- At the same time, the quality of loans remains a concern
- Lack of domestic savings forces banks to rely on higher cost options to fuel growth
- Small capitalization and flight of capital out of Puerto Rico signal potential competitive disadvantages

Opportunities

- Hispanic niches in the US.
- Caribbean and Latin American markets for services
- Retirement funds which are currently invested abroad
- Remaining room for local growth
- Regional stock market and diversification of financial instruments

Threats

- Intense competition internationally
- Lack of coordination between government and local businesses.
- Lack of long-term visioning for economic development policies.
- Government as the primary buyer of investment services

A sophisticated financial sector labor force gives Puerto Rico a comparative advantage

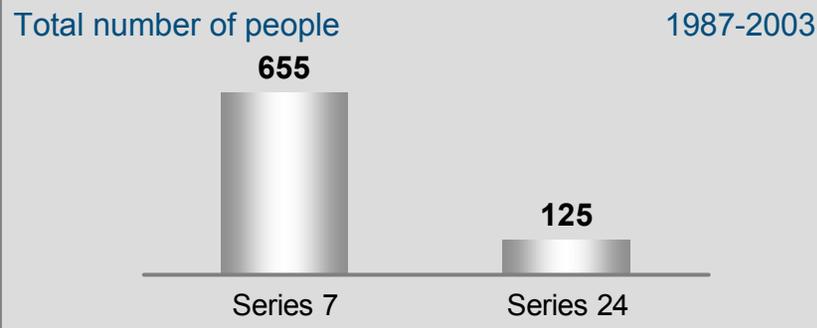


Strong human capital endowment

- Among the highest concentrations of financial service professionals in the United States at average monthly wages lower than those in the United States and other banking centers
- Nearly 17,500 people currently employed in commercial banking sector – with a total of 47,000 in financial services sector overall
- A banking sector that employs one-third more people than Miami and four times more than Panama
- 243,000 accumulated person-years of experience
- Critical mass of Series 7, Certified Financial Analyst (CFA), and Securities Investment Management Analyst (SIMA) recipients
- Only Hispanic-owned investment consultant firm in the US

Series 7 and Series 24 recipients

– Puerto Rico totals –



Banking sector employment

– Share of total employment –



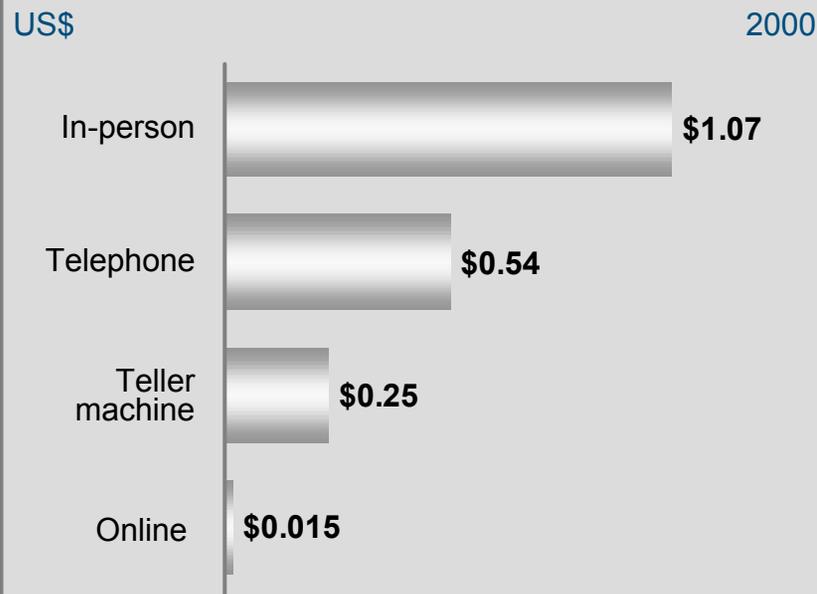
Note: Calculations for Series 7 and Series 24 calculations based on number of successful test takers between 1987 and 2003
 Source: Central Statistics Office, Ireland; Department of Statistics, Singapore; Planning Board, Puerto Rico; A.T. Kearney analysis

Puerto Rico's banking sector has a highly developed technological infrastructure that helps reduce costs

STRENGTHS

Cost savings from technology

Cost per transaction



Banking with technology

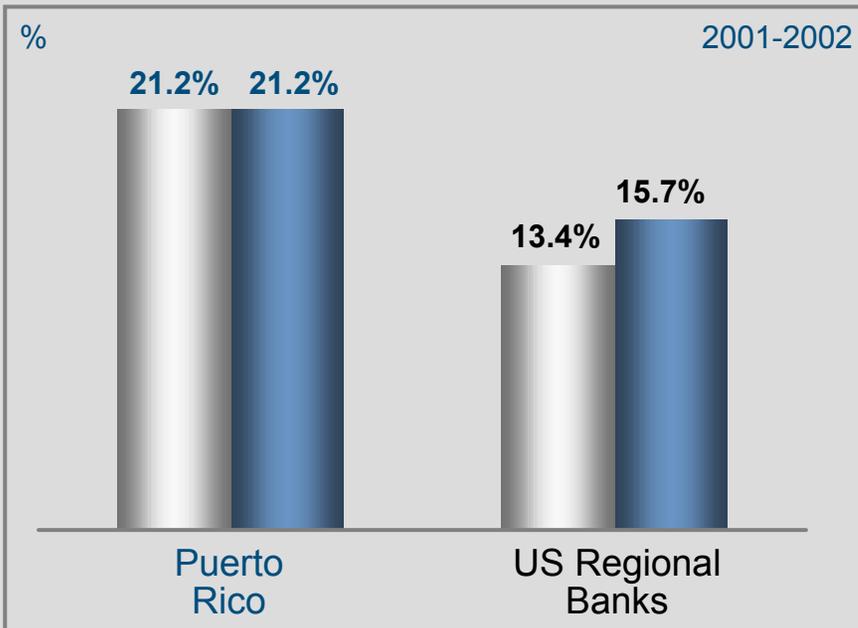
- Puerto Rico has nearly 1,000 automated teller machines and 34,000 point-of-service machines in retail outlets
- At Banco Popular, 76 percent of transactions are made by electronic means — up from only 24 percent in 1980
- By November 2000, there were 12 million transactions totaling \$ 5.7 billion on teller machines and 424,000 automated debits per year
- Transactions per machine in Puerto Rico continue to rise, while US figures show a slow decline as more machines are added

On average, Puerto Rico's banks outperform mainland banks across a range of performance indicators



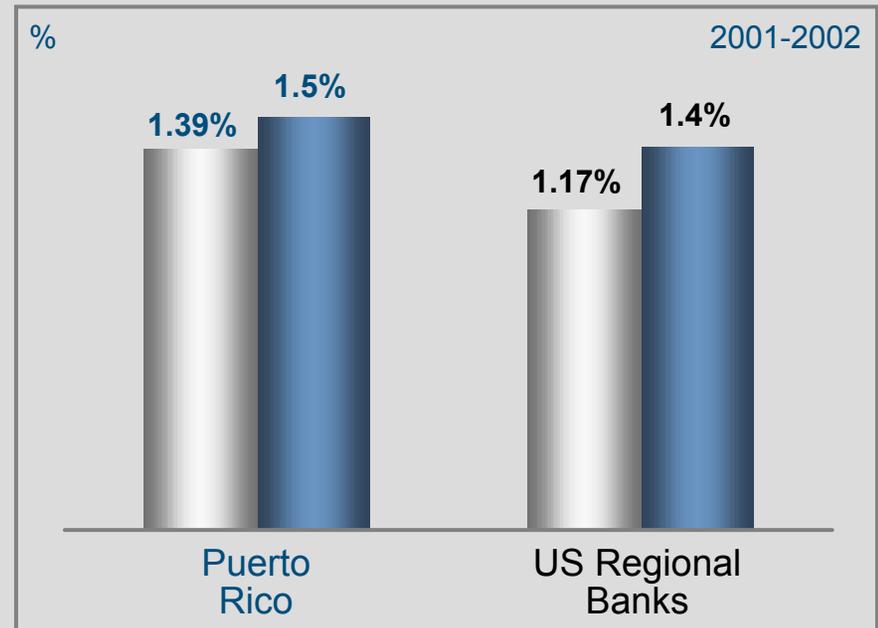
Return on common equity

Puerto Rico and US banks



Return on assets

Puerto Rico and US banks



Note: By comparison, return on equity for Bank of New York was 26.08%, FleetBoston's 22.49% and Citigroup 21.97% in 2002
 Source: Brean Murray Research, 2003; ABA Banking Online

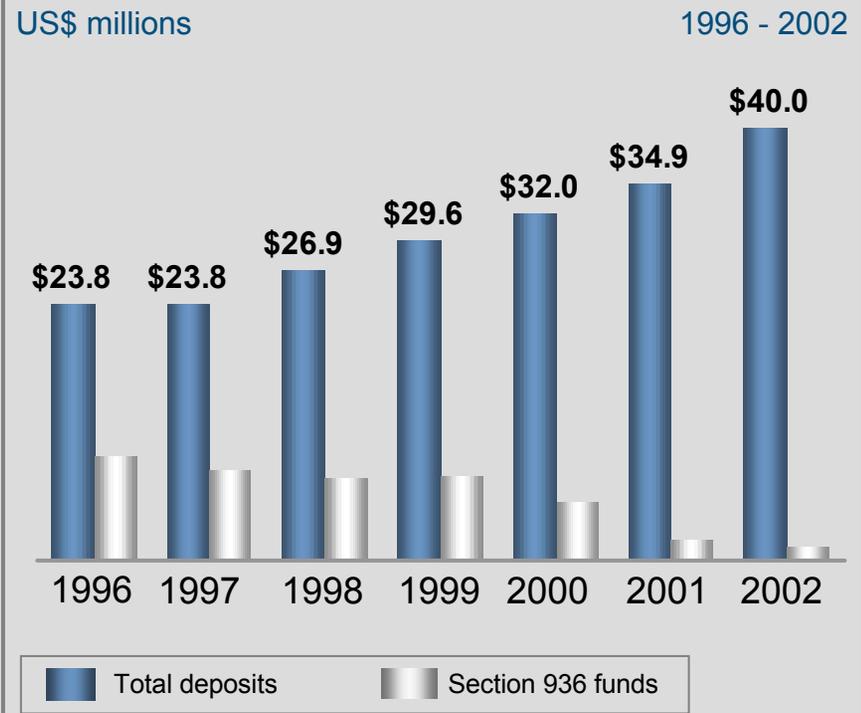
In recent years, Puerto Rico's banks have grown assets aggressively despite the loss of Section 936 funds

STRENGTHS

Booming banking industry

- The share of Section 936 funds from multi-national firms has plummeted from 40% of total deposits in 1996 to only 3% today
- Government deposits have also been on the decline in recent years
- Growth in demand deposits from individuals and local corporations have helped fill the gap in bank deposits
- Individual retirement account (IRA) funds and brokered accounts are also on the rise, as banks move aggressively to build new sources of income

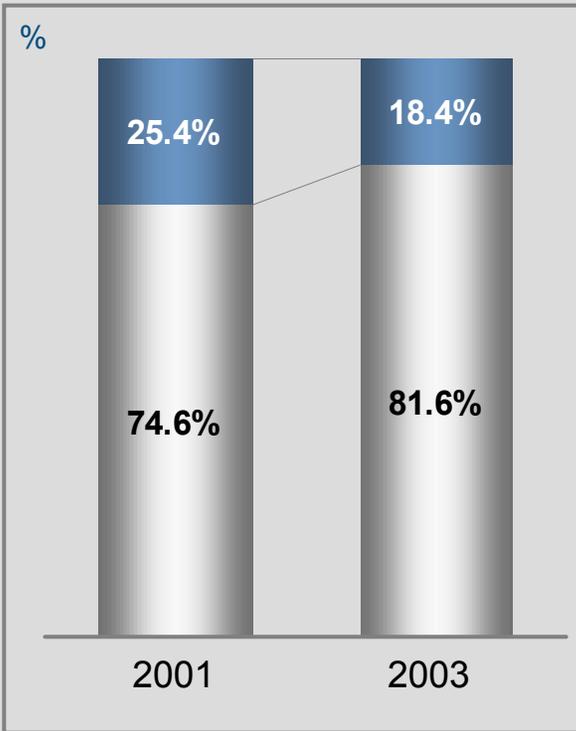
Total deposits and 936 funds



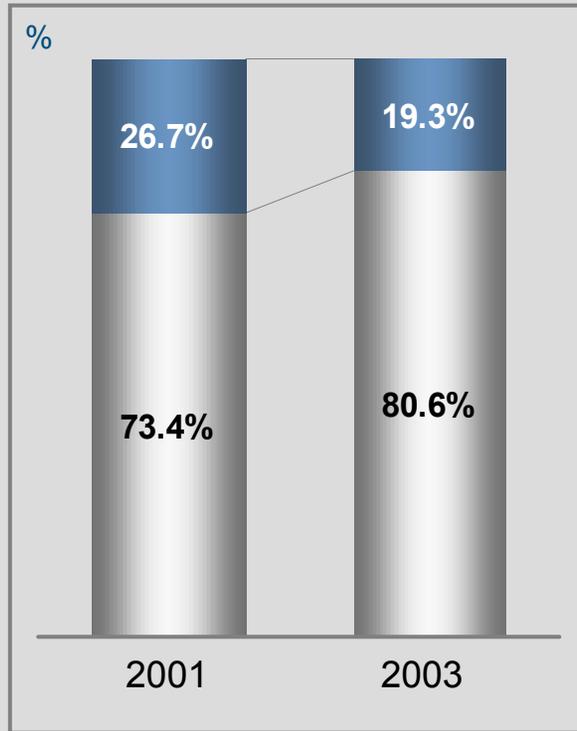
Note: By comparison, return on equity for Bank of New York was 26.08%, FleetBoston's 22.49% and Citigroup 21.97% in 2002
 Source: Brean Murray Research, 2003; ABA Banking Online

Locally owned banks have also gained market share in Puerto Rico at the expense of international competitors

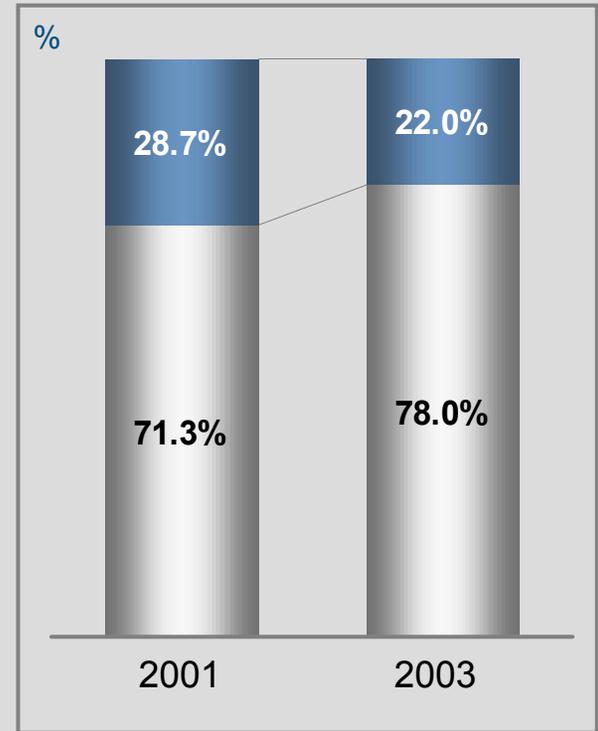
Total assets



Total deposits



Total loans



Local banks International banks

Source: Brean Murray Research, 2003; ABA Banking Online

Local firms have undertaken successful international expansions into North American and Caribbean markets



Banco Popular

- Opened its first US branch in New York in 1962, and began aggressive expansion in 1995
- Banco Popular North America now includes 96 branches in the states where Hispanics are most concentrated
- 30 percent of its revenues and 40 percent of its loans come from outside Puerto Rico
- Also holds 62 percent of credit card market in the Caribbean

Doral Bank

- Expanding in New York, with 10 branches and plans to be in all five boroughs by 2005
- Overseas branches add only 4% to profits, but expected to grow 20% in five years
- Targeting chronically underserved US minority markets
- Rated among the best banks in the United States for return on equity, profits and stock valuation by US Banker

R & G Financial

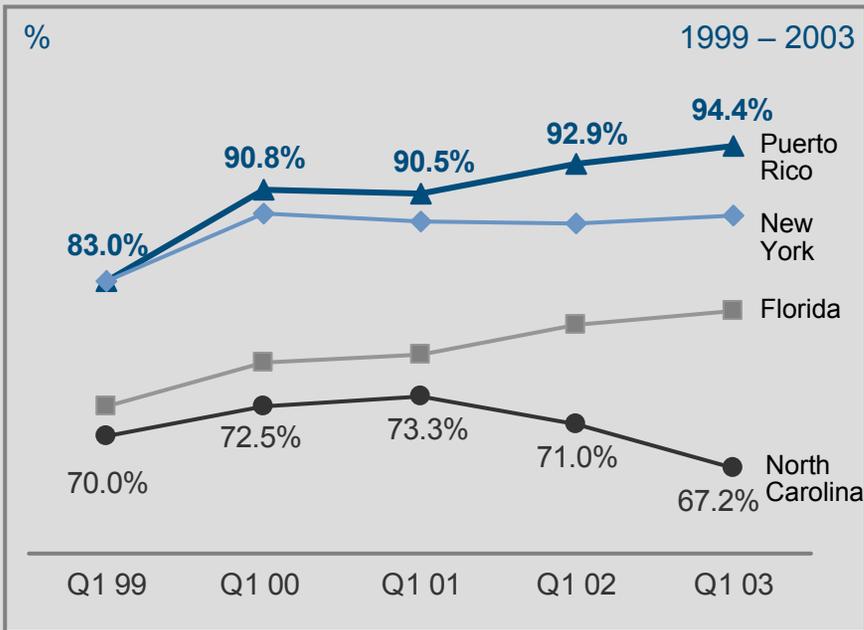
- Second largest mortgage bank in Puerto Rico
- Seeks to reproduce its own mortgage and commercial banking model throughout US market
- Raised \$40 million through IPO in 1996 and has used cash for expansions
- Recent acquisition in South Florida, adding 15 branches and \$807 million in assets

Banks have adopted aggressive postures, with high loan ratios and heavy exposure to real estate



High loan-to-deposit ratio

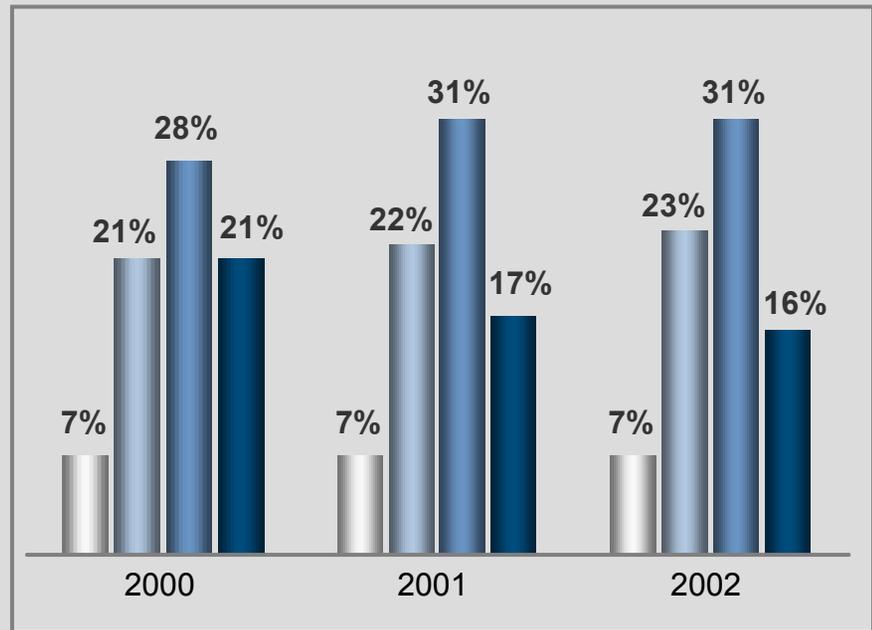
– Median level –



Puerto Rico's loan-to-deposit ratio is the highest among US banks

Share of Loan Portfolio

– Shares per product –



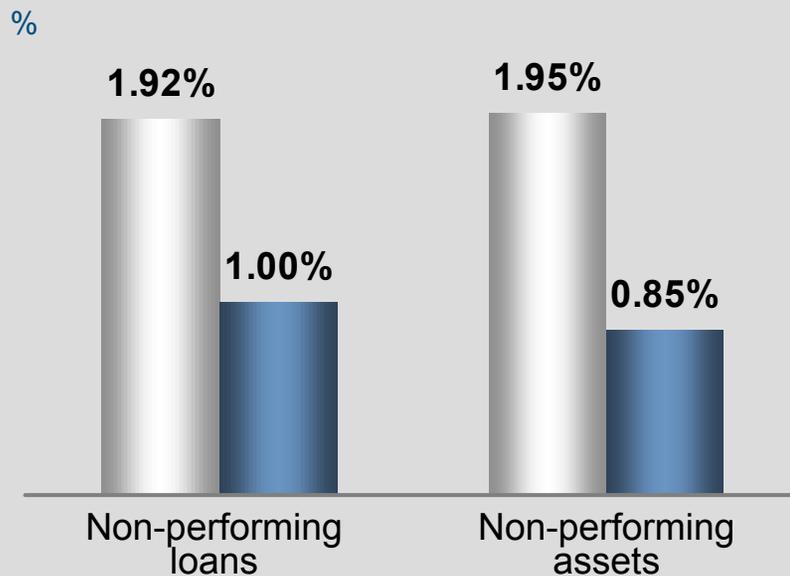
Construction
 Mortgage
 Commercial Industrial
 Consumption

At the same time, the quality of loans remains a concern

WEAKNESSES

Non-performing loans and assets

Puerto Rico and US banks



■ Puerto Rico ■ United States

Loans

- Exposure to traditionally higher risk loans increased throughout the 1990s economic expansion
- 60 percent of local banks had “high” levels of exposure — compared to only 50 percent in the United States
- Ratings agencies view Puerto Rican banks as stable because most consumer loans are backed by appreciating real estate
- Risk levels are also moderating as Puerto Rico’s banks expand in overseas markets — mostly in the United States

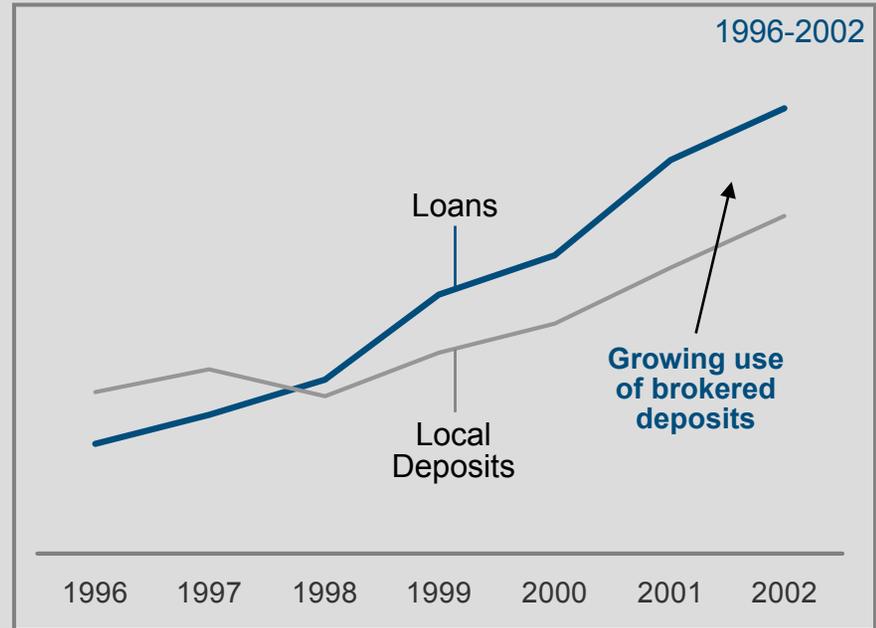
Lack of domestic savings forces banks to rely on higher cost options to fuel growth

	WEAKNESSES

Personal Savings rate
Puerto Rico's economy



Total Loans and Local Deposits
Excluding 936 and brokered funds



Small capitalization and flight of capital out of Puerto Rico signal potential competitive disadvantages

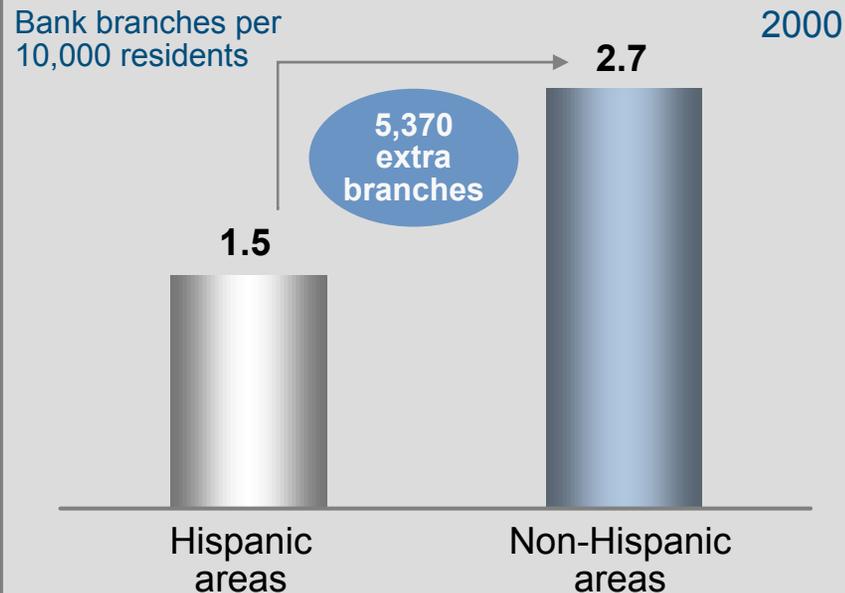
- Small scale of local banks makes them possible targets for corporate takeovers – particularly as services to Hispanic clients gain importance
 - Average market capitalization of local banks is \$ 1.9 billion, less than half the size of a “peer group” of regional US banks and considerably smaller than US banking leaders
 - Pending change of leadership raises risk, as current leaders in banking sector prepare for retirement
- Large shares of investment assets flow overseas and are not managed locally
 - Bankers Association estimates that up to \$ 17 billion in retirement funds are managed outside Puerto Rico and that total overseas assets are growing by \$ 1 billion per year
 - Other estimates suggest up to \$ 25 billion dollars of Puerto Rican assets are managed overseas
- Lack of international mindset among Puerto Rican banking sector leaders

The Hispanic “niche” in the United States offers a significant opportunity for growth

Growing Hispanic market in the United States

- Latest census shows that Hispanic population has reached 35.8 million people and is now growing at 9.8 percent per year — compared to 2.2 percent for the population overall
- Hispanic spend \$24 billion on goods and services in 2002
- By 2020, one-fifth of the US population will be Hispanic (not including the population of Puerto Rico)
- Hispanic communities are not well served by existing banks — with only 1.2 bank branches per 10,000 people in Hispanic areas and 2.7 branches in non-Hispanic areas areas

Improving Hispanic banking services



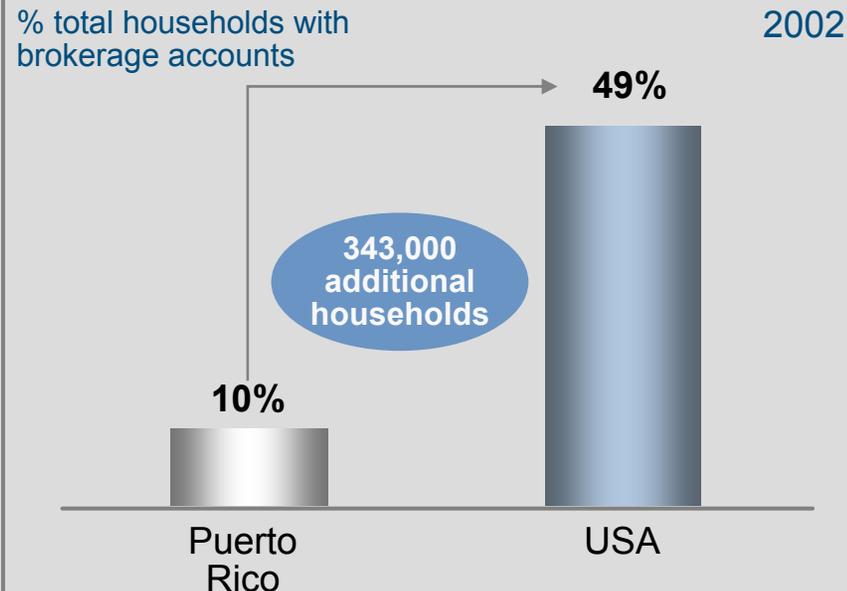
Investment services for local residents could also be raised with a significant impact on local brokerage firms

OPPORTUNITIES

Local brokerage market

- Current estimates show that 35,000 to 70,000 households in Puerto Rico have stock market investments — from 5 to 10% of the population
- The number of brokerage accounts is growing, driven in large part by the trend toward self-managed retirement accounts
- By contrast, 49 percent of US households have stock and mutual fund investments
- Expansion of brokerage services to US levels would produce an extra 343,000 customers — with millions of dollars of new investments

Boosting local investment services



Increasing competition and lack of diversification threaten ability to maintain growth

THREATS

Increasing Competition

- Competition from diversified financial services giants raises pressure for larger scale and more offerings
- Intense focus on Hispanic market could make small Puerto Rican banks takeover targets for larger banks
- Increasing cost of technology required to satisfy rising consumer demands

Lack of Diversification

- Heavy reliance on real estate loans could become a liability if housing market cools and defaults rise
- Relatively low share of managed assets, insurance and financial conglomerations
- Despite some changes, continued focus on the local market

***Increasing
pressure to maintain
growth and share***

Competitive Disadvantages

- Monetary policies are set by the US Federal Reserve, with little thought about consequences for Puerto Rico
- Lack of sufficient low cost local funds forces reliance on higher cost funds, perhaps undercutting profits

Lack of consistent policy and incentives

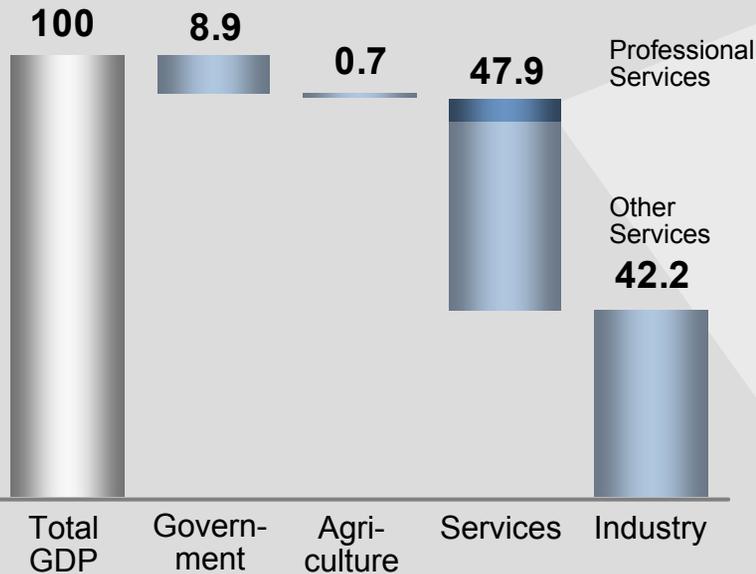
- Failure of government to develop local firms by allowing management of government pension funds and assets
- Lack of focus on service sector development
- Uncertain long-term vision for economic development

Despite financial services, other professional services were also analyzed

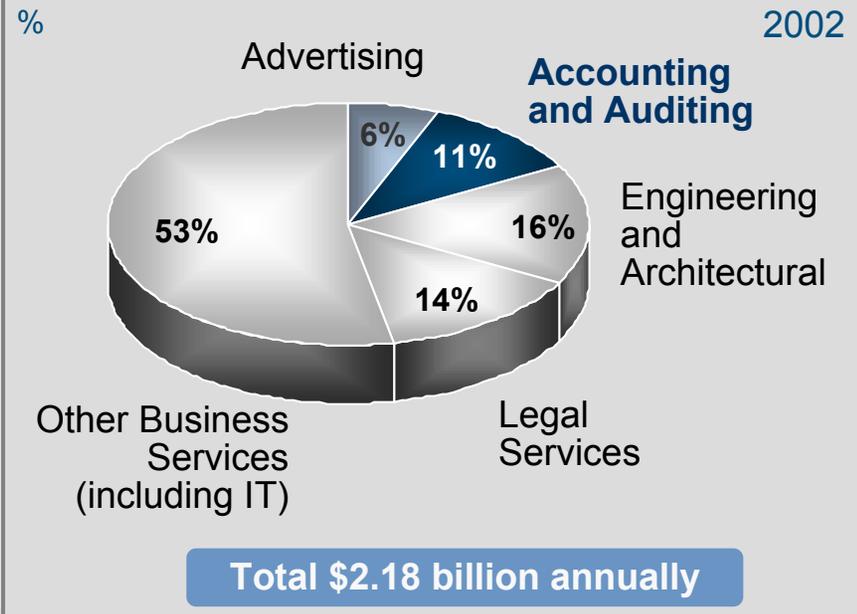
- **Professional Services** are essentially knowledge-based services where the primary service delivered is in the form of human information, knowledge, intelligence, etc.
- With the general shift from manufacturing to services and the potential to provide these services remotely via IT and communications technology, these sectors are experiencing **rapid growth** globally
- Most commonly exported professional services in the last years has been **technology services**, with the worldwide growth in offshore jobs expected to reach at least 1,100,000 positions by 2005
- India, a **leading provider**, brought in \$6.3 billion in 2000-2001 in services exports. GE Capital (12,000 employees), Oracle (4,000) and HP (1,200) have already moved call center, back office processing, customer support and accounting facilities to India.
- Most significant growth is expected in **high skilled services**, including financial analysis, regulatory reporting, accounting and graphic design
- Today, around **500,000 U.S. jobs** have moved overseas in the areas of life sciences, legal services, business operations, architecture, etc. By 2015, this number is expected to reach 3.5 million

Professional Services is currently still a small area of Puerto Rico's economy ...

Gross Domestic Product Shares

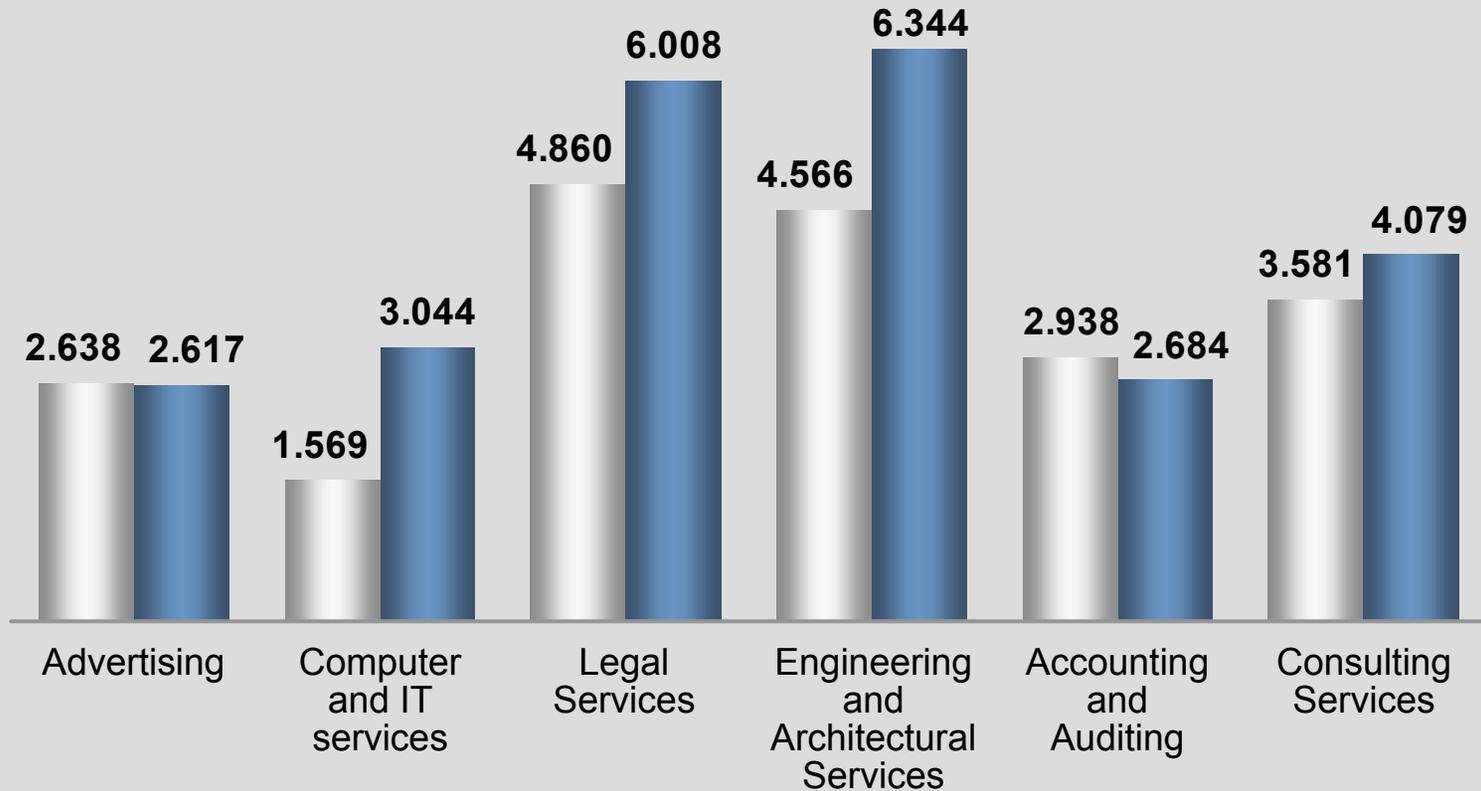


Breakdown of Professional Services in Puerto Rico



... however, the sector is on an upward trajectory

Evolution in the Number of Employees



Overview of Puerto Rico's professional services industries

Strengths

- In relative terms, Puerto Rico invests more in education than most OECD countries, having a high level of education attainment
- Puerto Rico graduates a significant group of specialized professionals
- Puerto Rico's existing infrastructure favors the island over its competitors in certain areas

Weaknesses

- Although it fares well compared to its immediate neighbors, Puerto Rico's connectivity rate and high utility costs put it at a disadvantage globally
- Puerto Rico is already facing tough competition from its neighbors who are able to provide customer support services at a cheaper cost
- The small scale of Puerto Rico's professional services firms represents a challenge to competitiveness

Opportunities

- Sharing the legal and security structure of the United States, Puerto Rico provides a stable environment for businesses
- Puerto Rico can distinguish itself as a high-value added remote services center — there are already examples of highly successful international firms, for example building on an already-existing and strong medicine sector, Puerto Rico could become a remote diagnostic and CRM center
- Both in Latin America and the US, the potential customer base is very big

Threats

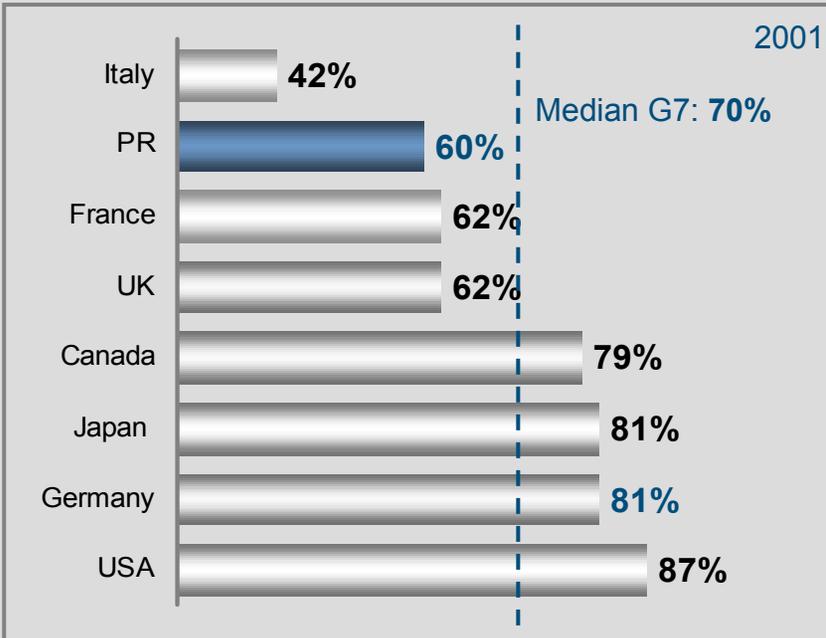
- International competition is already tough, with Miami a recognized hub for multinational professional firms and Mexico and other neighbors carving their market share
- The size of local firms will restrict their international exposure and competitiveness

...having a high level of education attainment

STRENGTHS

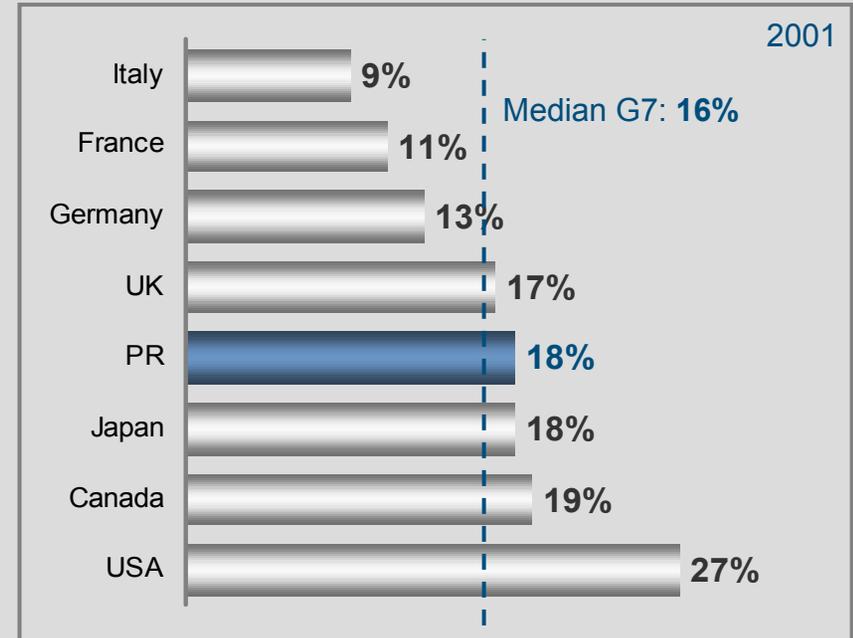
Population with secondary education

% of population older than 25



% Population with tertiary education

% of population older than 25



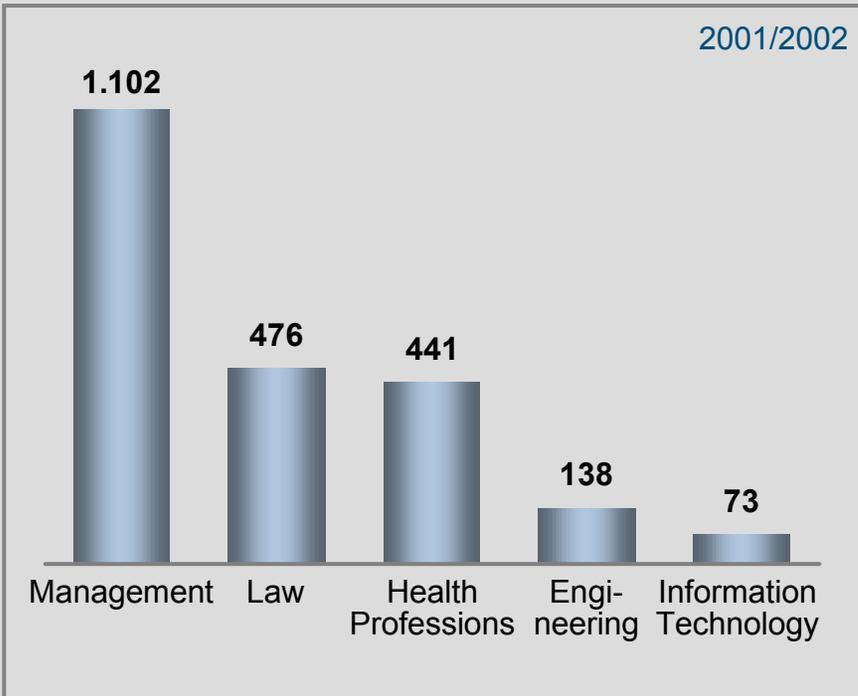
Those Puerto Rican students who complete secondary education are more likely to go on to university compared to their European counterparts, who also continue technical and vocational studies

Puerto Rico graduates a significant group of specialized professionals



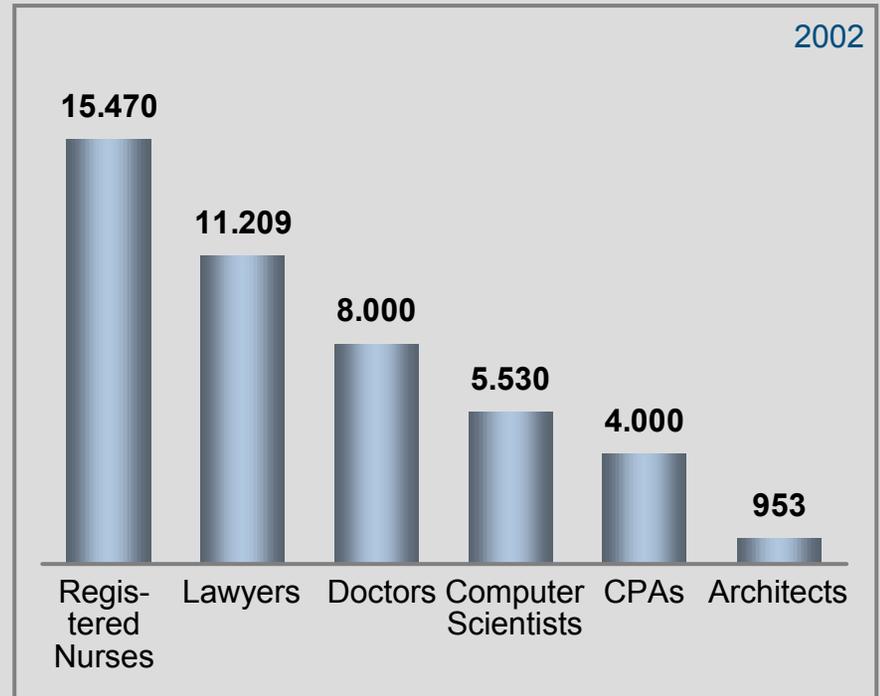
Number of professional graduate degrees granted in Puerto Rico

2001/2002



Number of active professionals in Puerto Rico

2002



Puerto Rico has the advanced telecom networks needed to compete for offshoring activities

STRENGTHS

Cost of a Telephone Call

US\$/per 3 minute call

1998



Advanced telecommunication infrastructure network

- Low cost telecommunication connections to main customer markets in North America
- Solid communication links to important global markets via high capacity undersea fiber optic cables and satellite connections to US, Europe and South America
- Island-wide self-healing fiber-optic network with 100% digital switching and fast speed voice, video and data for advanced IT work
- Dense reliable telecom network supporting over 2,000,000 fixed phones, cellular lines and beepers – a strong backbone for call center and service center
- Puerto Rico Electric Company is one of the largest utility companies in the world, with 27,000 miles of distribution lines

A number of local service firms already compete successfully in international markets

STRENGTHS

Information technology

Microjuris.com

- Founded in 1989 to provide legal research information to Spanish language areas
- Now has 20,000 customers
- Competes with Lexis-Nexis and Westlaw throughout Latin America and Spain

Advertising

McCann-Erickson PR

- McCann-Erickson Puerto Rico ranks No. 4 in billings, revenue, and results in the advertising firm's Latin America region, which comprises 74 companies
- The Puerto Rican subsidiary of the global advertising firm received a coveted award at the 2002 Cannes International Festival

Legal services

McConnell Valdes

- McConnell Valdes is the largest Hispanic-owned law firm in the world, servicing clients in United States common law and Spanish civil law
- Membership and leadership roles in several international law organizations allow for global reach

Engineering and architectural services

CSA

- CSA has over 400 employees in 48 technical and scientific specialties, providing services in a wide range of areas
- It conducts business for local and international clients, including Philadelphia Eagles Stadium, American Airlines Terminal at Miami Airport, Port of the Americas, University of Delaware, among others

Engineering and architectural services

CMA

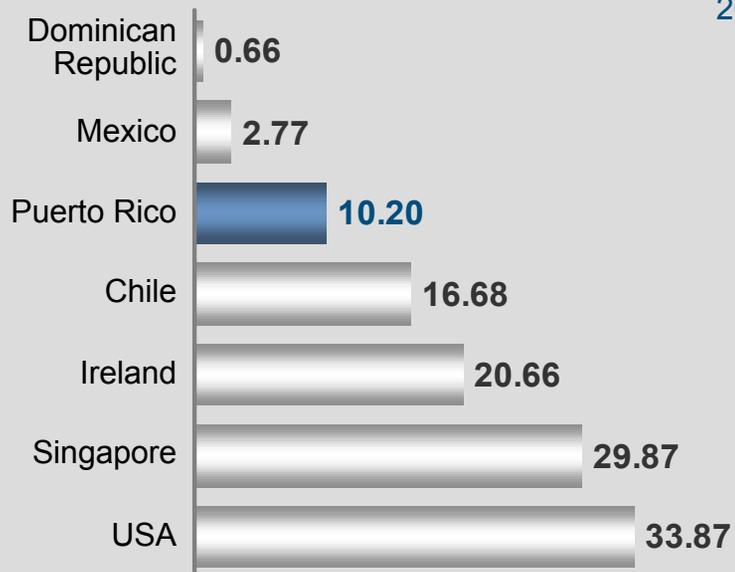
- One of the top 500 design firms in the US, with 130 employees servicing the Latin American, Caribbean and the North American market

Although it fares well compared to its immediate neighbors, Puerto Rico's connectivity rate and high utility costs put it at a disadvantage globally

WEAKNESSES

Percentage of Internet users (% of total population)

2000



Puerto Rico's low share of Internet users suggests a relatively small labor force of Internet-ready professionals

Electricity prices For industrial consumers

2000 - 2001



High electricity prices raise costs for technology-intensive firms, including call centers and IT offshoring

Puerto Rico is already facing tough competition from its neighbors who are able to provide customer support services at a cheaper cost



Labor Cost Hourly Wage



Number of Call Center Seats



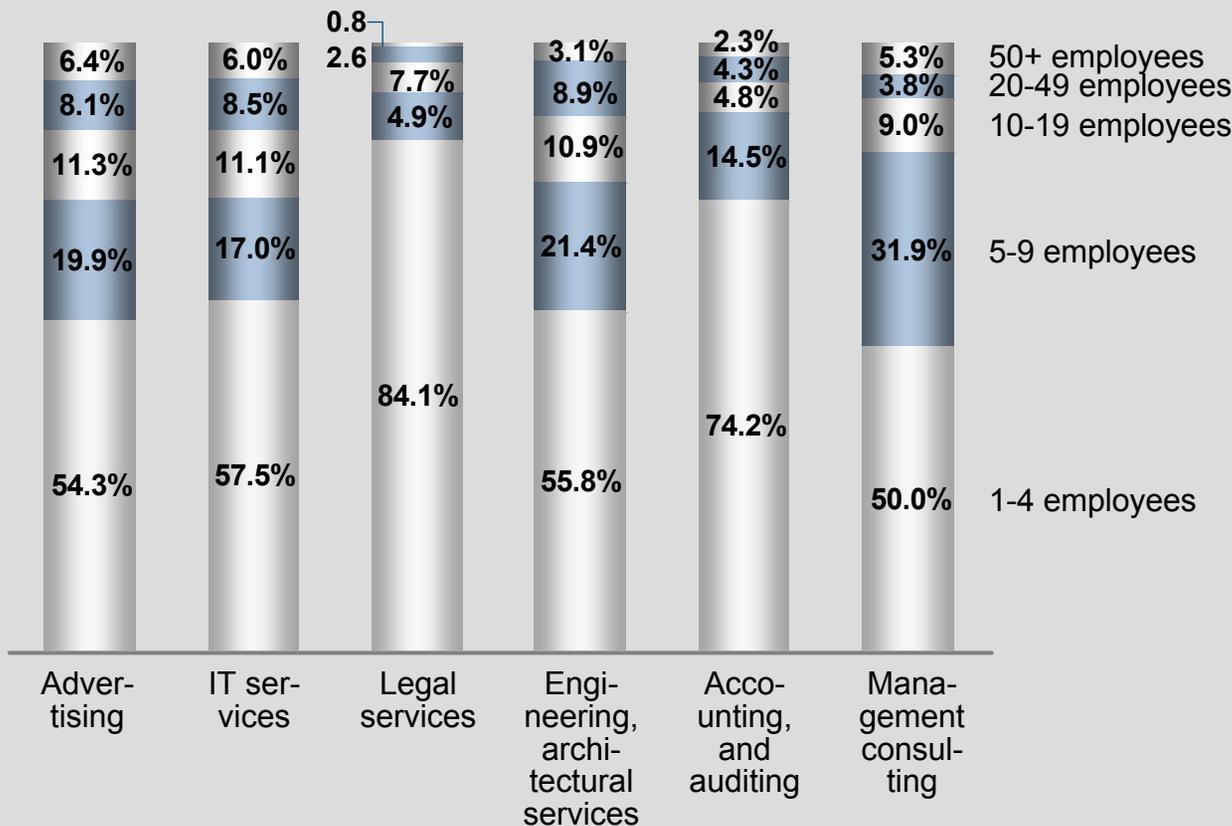
Small scale among professional services firms impedes ability to compete in international markets



Employment size of professional service firms

% total

2001



Scale and competitiveness

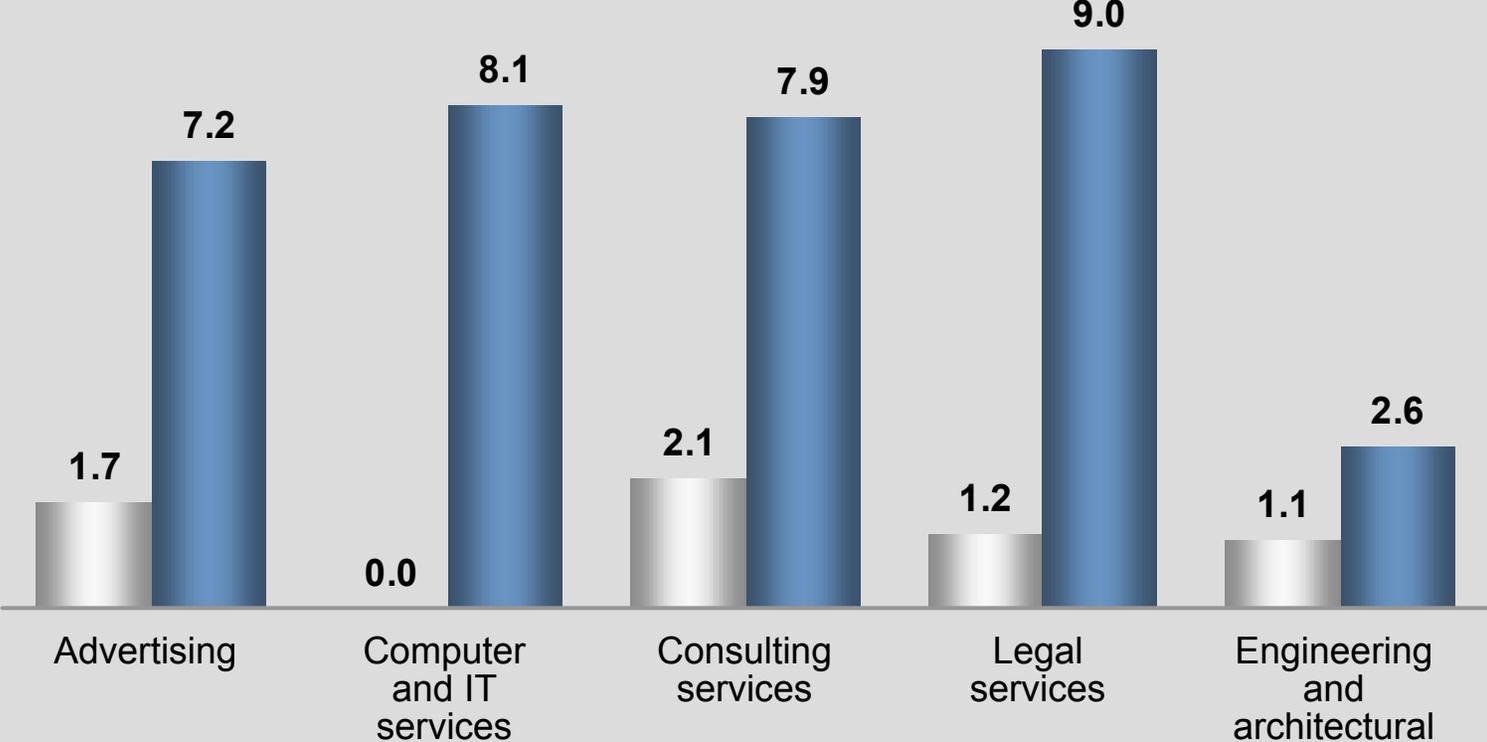
- Puerto Rico has only a handful of firms with 50 employees or more across all professional services categories
- In most cases, only larger firms are able compete for overseas contracts that require broad capabilities and knowledge of foreign markets
- Larger scale also needed to service multiple clients and mitigate risk from exposure outside home market
- Puerto Rico firms occasionally selected as subcontractors – but rarely as lead firms

Sources: US Census Bureau, 2001 County Business Patterns

U.S. imports of Professional Services from Latin American companies has increased but still has room to grow

Share of service imports from Latin America

% total 2001



■ Latin America 1989 ■ Latin America 1998

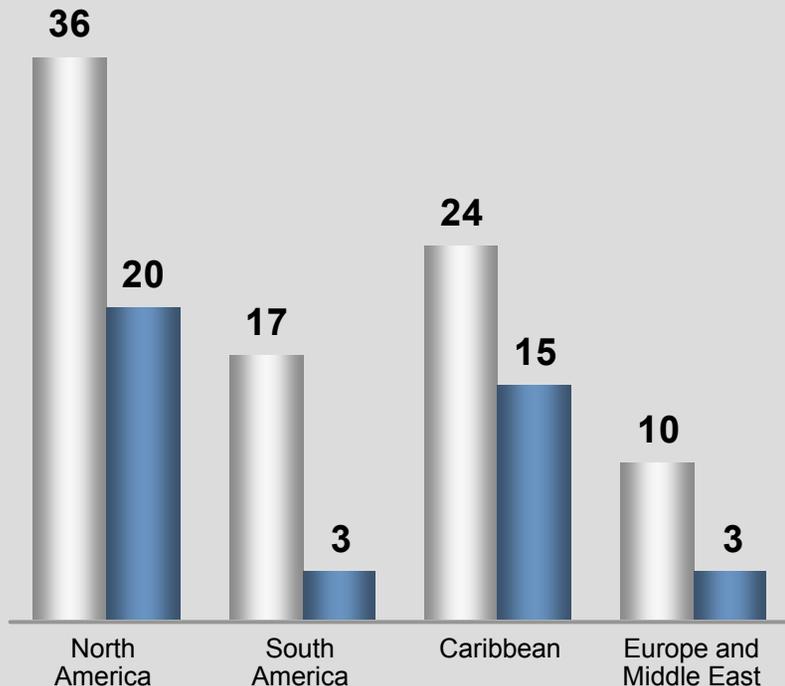
Source: Kiel Institute of World Economics, U.S. Department of Commerce

Established “hubs” such as Miami pose challenges for Puerto Rico’s efforts to attract professionals

THREATS

Cities with non-stop flights

Number of cities 2002



Miami
 San Juan

Transportation hubs and professional services industries

- Ease of transportation access makes certain areas preferred locations for business activity – including Miami for Latin America and the Caribbean
- International professional services are highly mobile, with frequent long-distance travel for engagements and client meetings
- Despite growth in offshore and remote work, face-to-face business important – thus global transport and communication links critical to service sector hubs
- To compete, Puerto Rico must improve links with the region and the world
- Highly skilled professionals also attracted to cities with young, well-educated populations, high quality of life and entertainment options

Increasing competition and some structural issues hinder Puerto Rico's potential in this sector

THREATS

Increasing Competition

- With Miami nearly dominating the scene as the Latin American hub for companies, several of Puerto Rico's neighbors are gearing up as exporters of professional services
- Many countries such as the Cayman Islands, Jamaica, Panama, the Dominican Republic, all offer free zone or tax free "business park" type of locations, which may also attract professional services companies. Outsourcers such as Infotel are already operating in DR

Infrastructure

- The reliability and cost of some utilities are obstacles to Puerto Rico's global competitiveness
- Travel to and from Puerto Rico is still not very easy for several international travelers

Limitations to become a global competitor

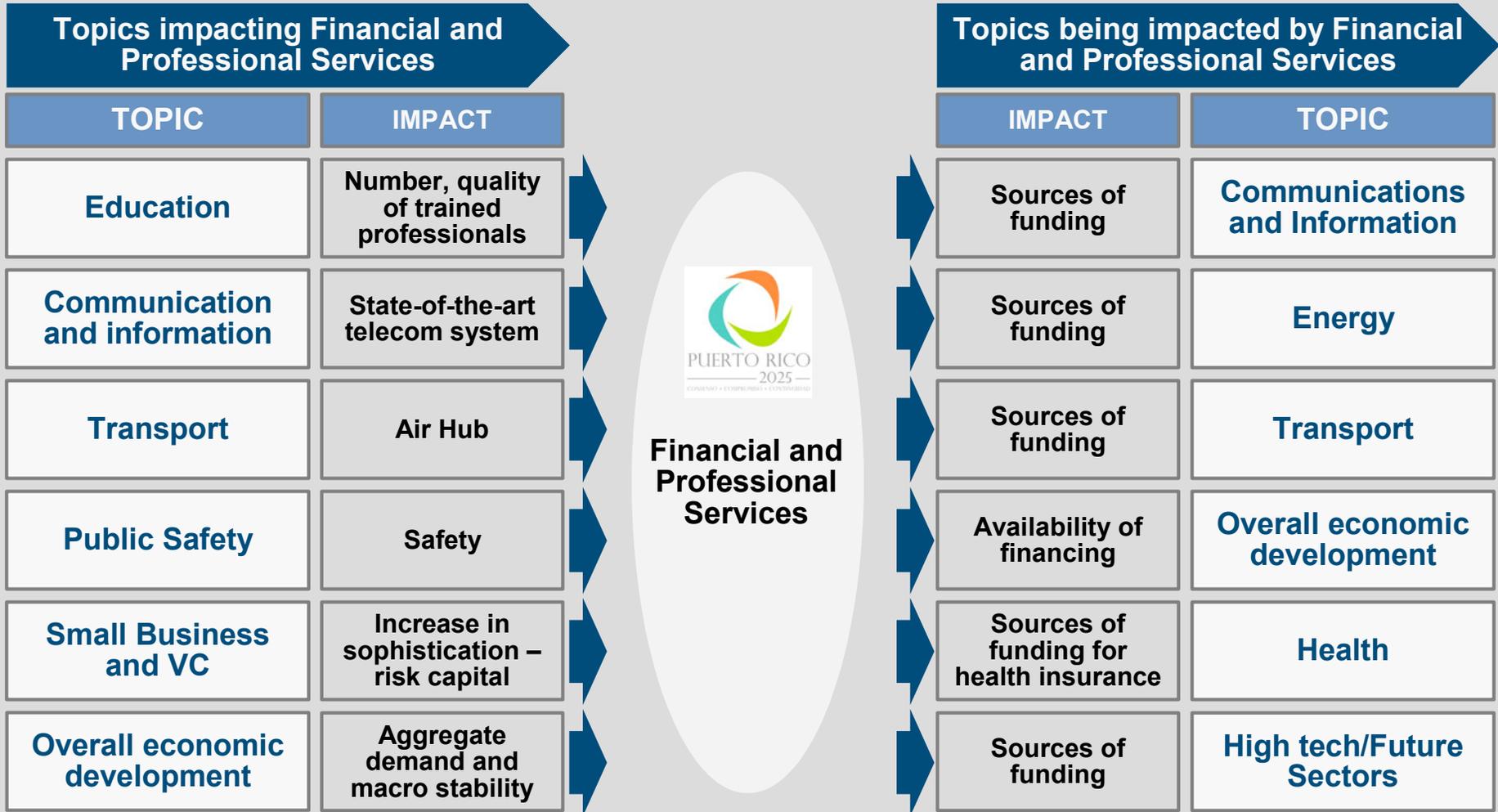
Make up of the Labor Force

- Puerto Rico still registers high costs for labor and benefits relative to emerging competitors in Latin America, Asia and Africa
- At the same time, it still lacks the sound labor force to be competitive in the high value added services

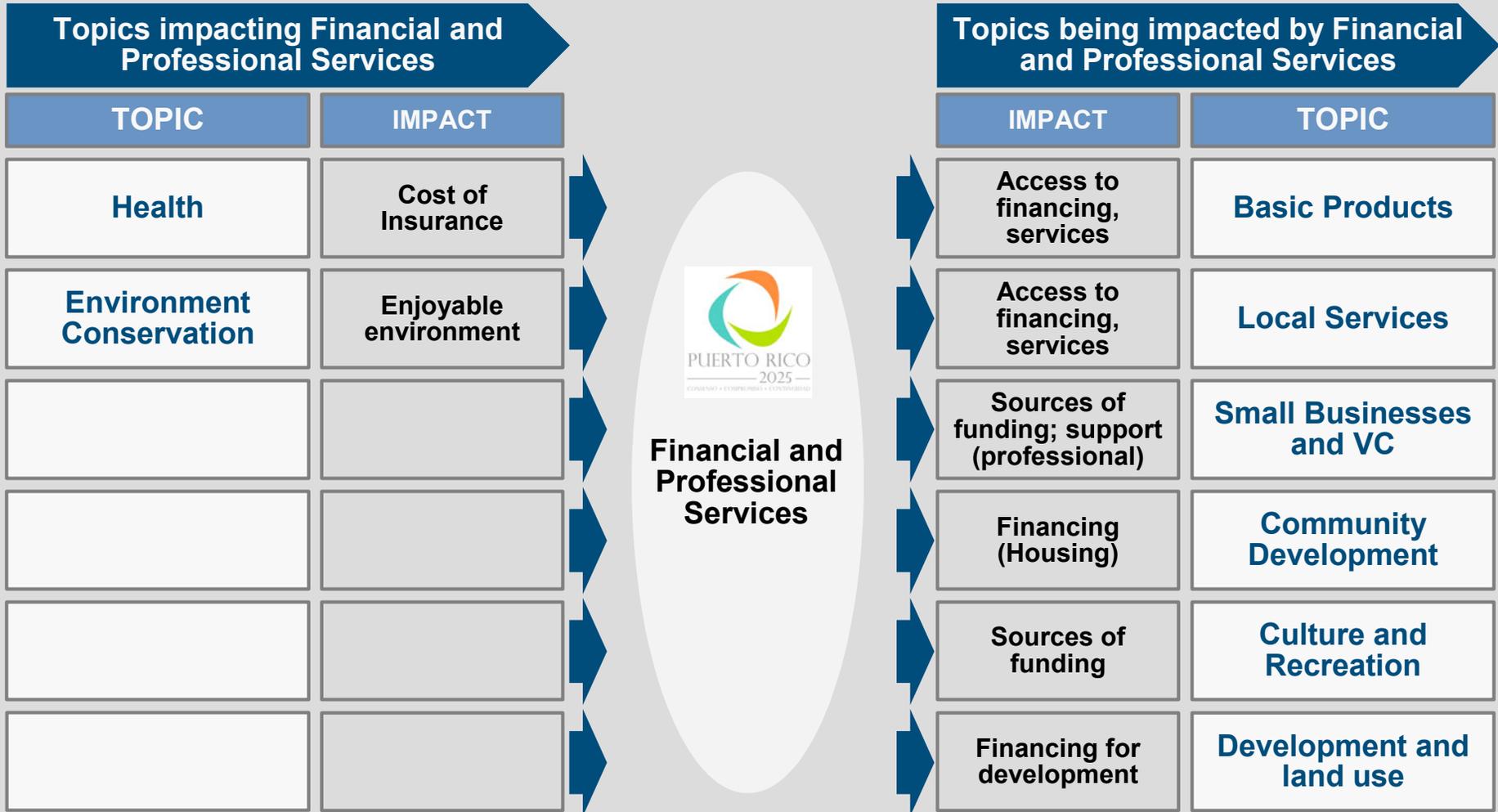
Lack of consistent policy and incentives

- Instead of providing strategic market intelligence and giving incentives for international expansion, inconsistent government policy may discourage local industry
- The incentives given have heavily focused on manufacturing and not professional services

The financial and professional services linkages



The financial and professional services linkages (cont.)

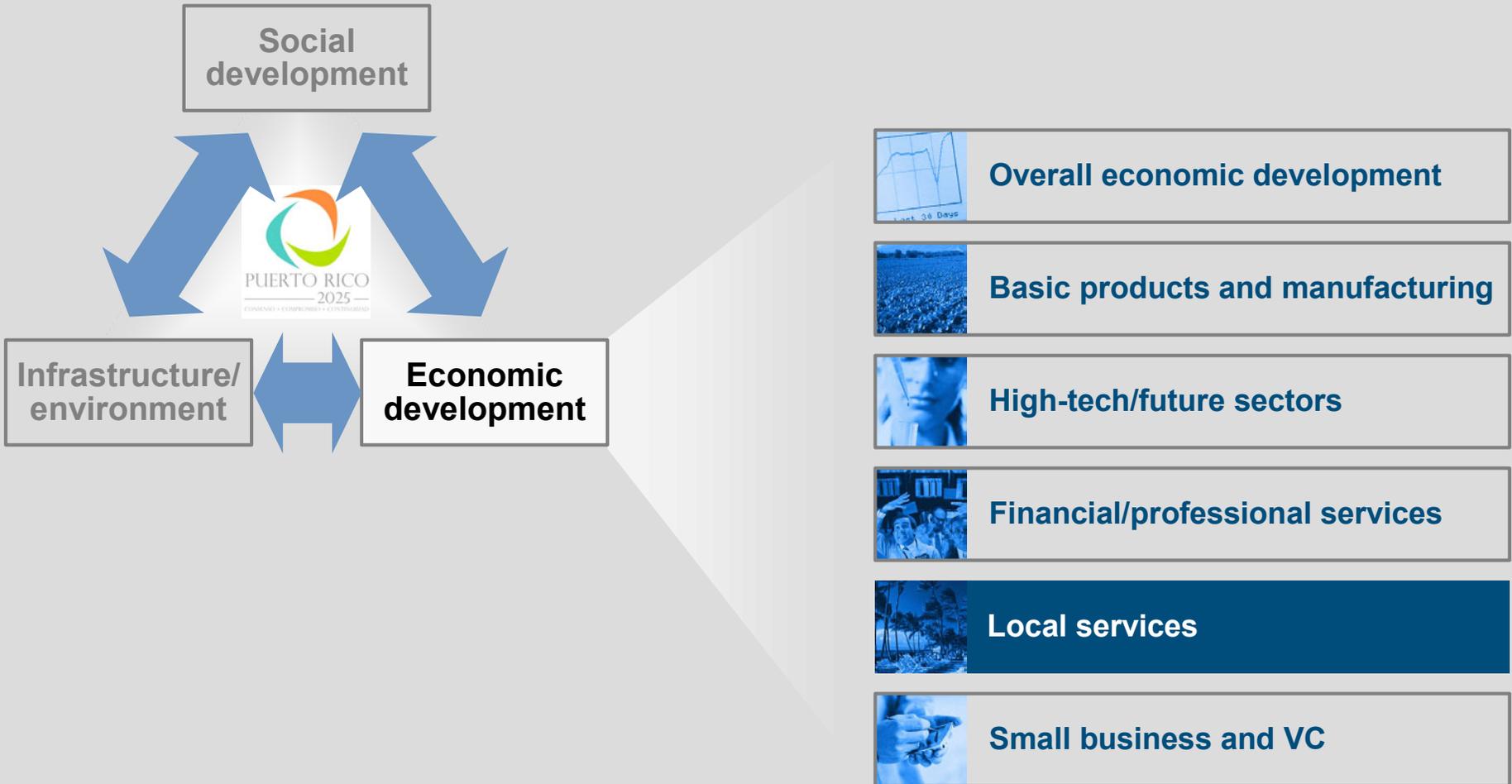


Key questions going forward

- What must be done to **1) maintain** the important economic contributions and **2) expand** the potential of the financial and professional services sectors as future growth engines of the Puerto Rican economy?

- **What must be done to maintain the strengths of these high-performing sectors?**
 - Which other locations offer the greatest threats? What do they offer that Puerto Rico lacks?
 - What must be done to maintain and improve worker skill-levels? What can be done to stem the “brain drain” of professionals to other locations?
 - What can be done to raise domestic sources of capital and enhance loan opportunities outside the construction and real estate markets?
 - What can be done to streamline regulation and use tax incentives to develop brokerage markets?
 - What can be done to improve “quality of life” considerations for highly mobile professionals?

- **What can be done to leverage existing strengths and further increase the impact of these sectors?**
 - What changes can be undertaken to position Puerto Rico as a center for international banking, headquarters services, and associated professional services?
 - What can be done to increase access to financing, encourage growth and enhance both the size and scale of existing firms, particularly in the professional services?
 - What can be done to encourage and facilitate expansion into overseas markets, particularly Hispanic markets in the United States and markets throughout the Caribbean?
 - What can be done to increase the size and scale of domestically owned firms?

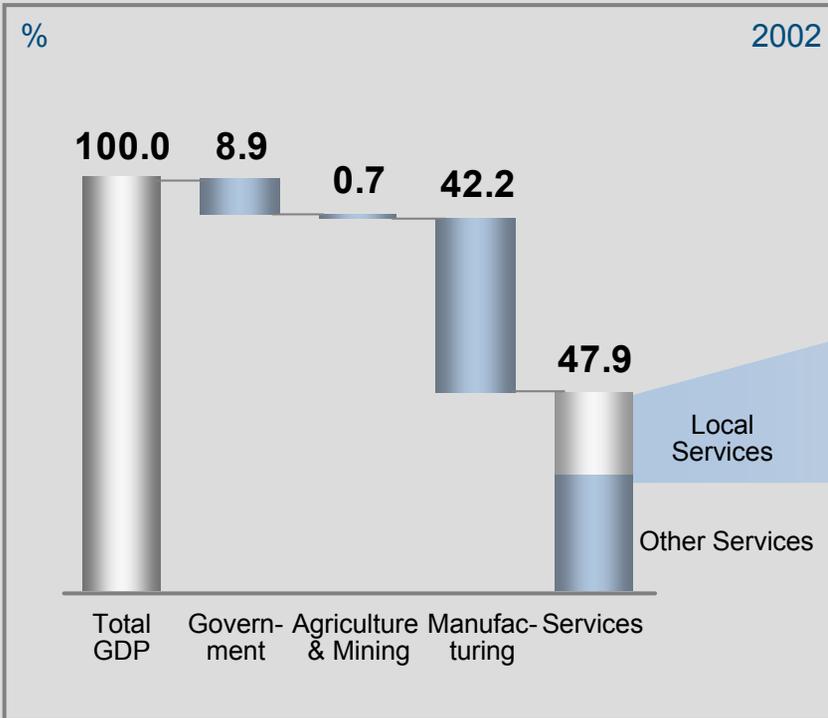


Main conclusions: Local services

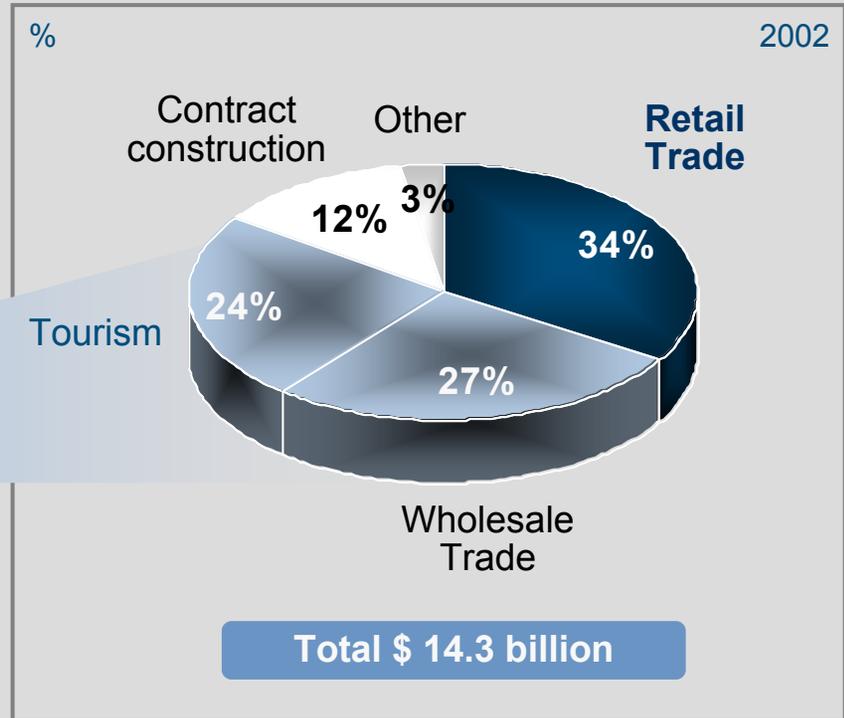
- Puerto Rico is the leading tourism destination in the Caribbean, with an advantageous share of business and leisure travelers, a strong supporting infrastructure for air and sea transport, and a good endowment of natural, cultural and historical attractions
- However, tourism has been a consistent disappointment, a small and declining economic contribution overall combining with uncompetitive costs and low spending per visitor – and dynamic competitors gaining market share
- Driven by high levels of personal spending, productivity in Puerto Rico’s retail sector is extremely high by international standards – yet outlets remain extremely fragmented at a time of growing competition from international “megastore” retailers
- A stronger brand image, a focus on higher-end business tourism, and tighter linkages between the retail and tourism sectors offer the best way to boost the performance of Puerto Rico’s local services sector in coming years

Tourism, retail and construction are the most important local services in Puerto Rico

Breakdown of Puerto Rico's GDP (or GNP)



Local Services Breakdown



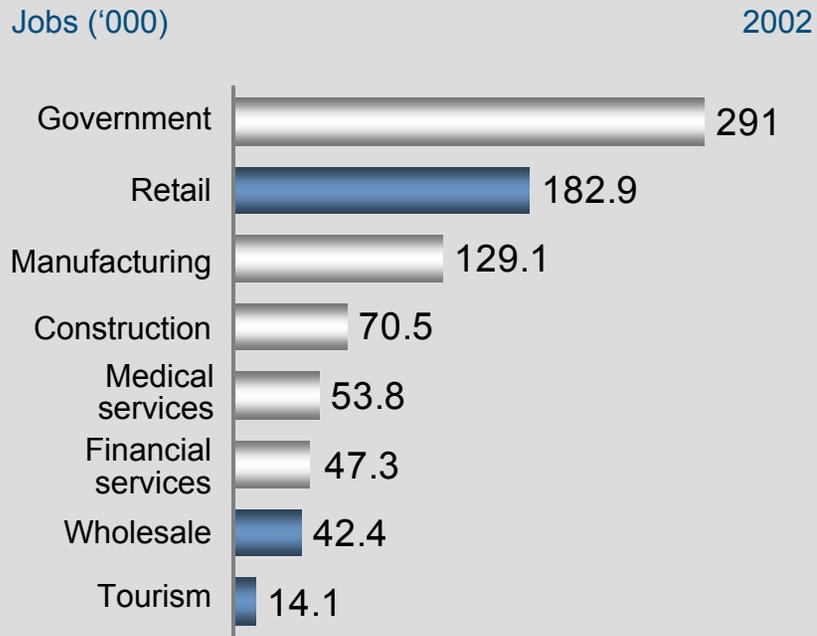
The construction segment will be analyzed in detail in the land use consultative panel

Note: Puerto Rico's planning board tracks tourism only as the contribution of hotels to the economy. Estimates of the "travel and tourism industry" from the World Travel and Tourism Council were used to calculate the direct contribution of the entire sector to Puerto Rico's gross domestic product.

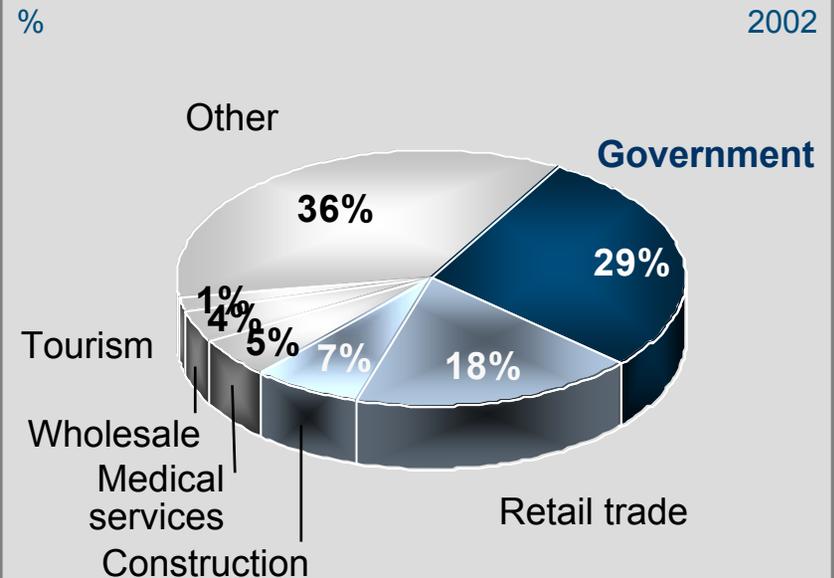
Source: Planning Board, Economic Report to the Governor 2002; World Travel and Tourism Council; A.T. Kearney analysis

These sectors are major employers, accounting for almost 25 percent of total jobs in the island

Top employment sectors in Puerto Rico



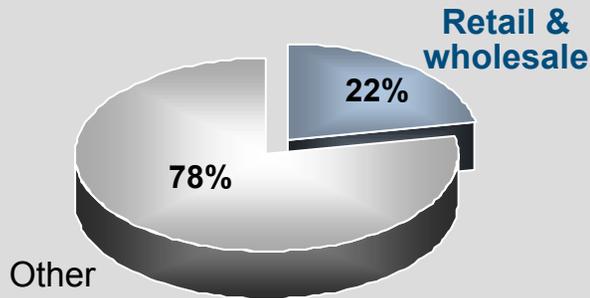
Distribution of employment by sector



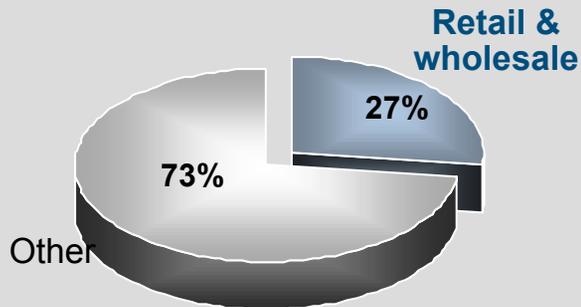
Services are the fastest growing segment of the job market – with construction and retail among the fastest growing sectors

Growing retail and wholesale sectors account for an important share of economic activity and jobs

**Share of GDP
retail & wholesale (2002)**



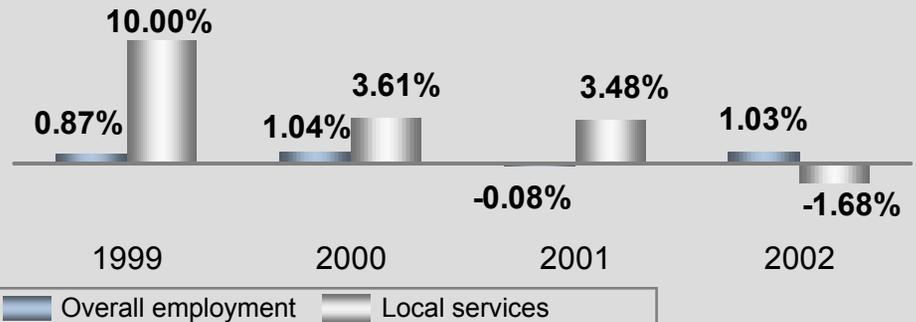
**Share of employment
in retail & wholesale (2002)**



Growth rates



Growth rates of employment



Overview of Puerto Rico's tourism sector

Strengths

- Puerto Rico's location in the Caribbean makes it a year round tourism destination near the US and Europe
- Puerto Rico has a better overall infrastructure and endowment of attractions when compared to the rest of Caribbean
- Besides being a major cruise hub for the region, strong air transportation links support tourism and position Puerto Rico as a gateway to the Caribbean
- Puerto Rico enjoys a stable mix of visitors, with a strong business segment lowering vulnerability to market shifts

Opportunities

- A better branding strategy and focus could leverage Puerto Rico as an attractive location beyond its high dependency on US travelers
- A focused value proposition based on Puerto Rico's potential competitive advantages could boost the number of visitors, as in Singapore

Weaknesses

- However, Puerto Rico's average length stay is low with a large share of visitors staying outside the hotel system
- Moreover, factor costs in Puerto Rico are high when compared to other sun and sand destinations
- Puerto Rico also lacks the differentiation in services and attractions to successfully position itself in the higher end tourism destinations
- In this context, tourism in Puerto Rico presents several signals of decreasing competitiveness, losing market share to other Caribbean destinations

Threats

- Intense competition from Florida for high-end lifestyle based tourism and from the Dominican Republic and others for traditional low-cost tourism
- Possible end to Cuba travel ban could alter dynamics of Caribbean tourism market

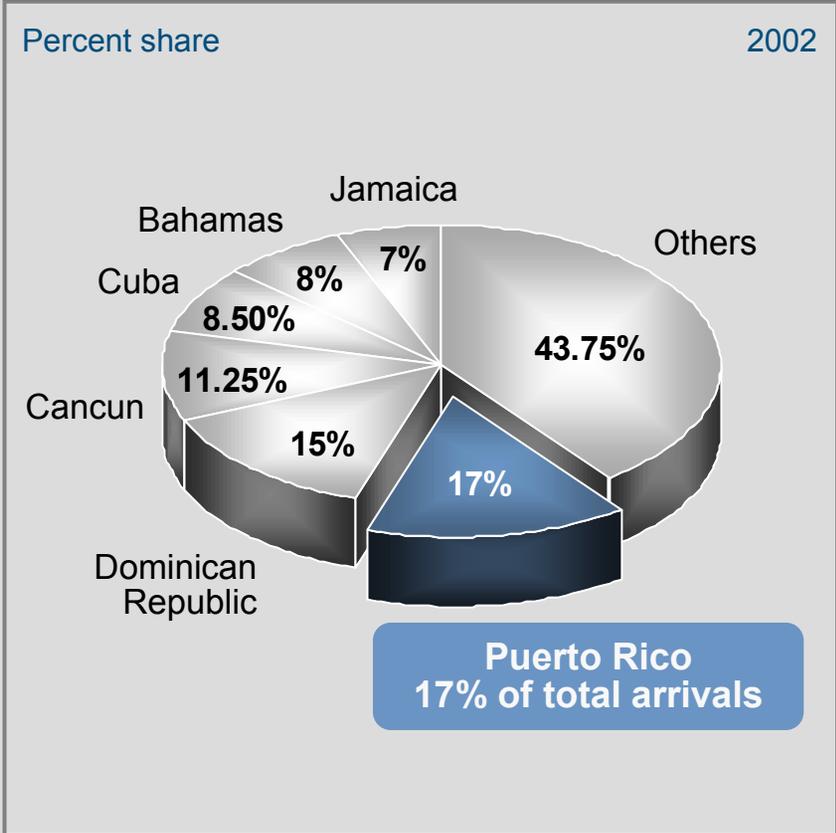
Puerto Rico is the leading tourism destination in the Caribbean, with an advantageous location near the US and Europe

Geographical Location



- Natural destination in the Caribbean for US travellers
- Puerto Rico serves as a tourism and transportation center for the Caribbean
- No recognizable winter makes the Caribbean a year round tourism destination

Overnight visitors to the top Caribbean destinations

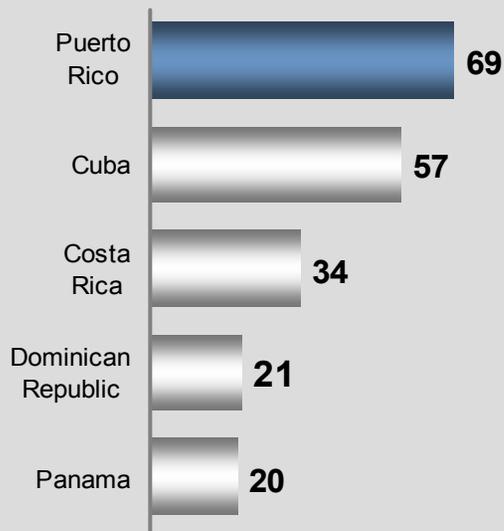


Puerto Rico has a highly competitive endowment of attractions compared to the rest of Caribbean



Strong cultural heritage endowment

Number of museums 2003



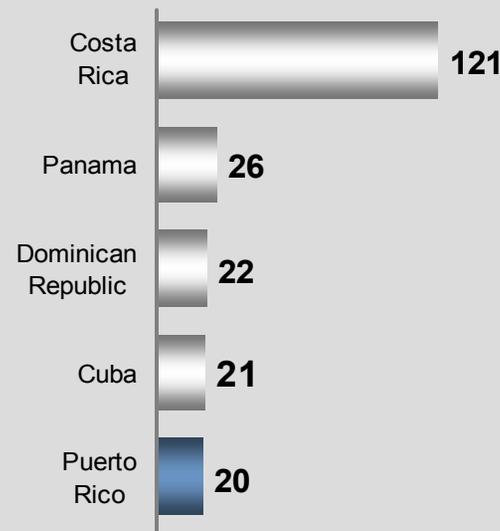
Puerto Rico has the strongest appeal for cultural tourism in the Caribbean

Other tourism assets

- Old San Juan and other heritage town centers rank among the Caribbean’s most recognized cultural landmarks
- El Yunque is the only tropical forest within the US Forest Service system
- Puerto Rico will soon have the largest and most modern convention center in the Caribbean region
- Puerto Rico offers the most vibrant nightlife in the Caribbean, with 92 bars and nightclubs
- 18 golf courses are available for tourists and visitors in Puerto Rico
- Around the island are 14 full-service casinos for slots and gambling

Modest eco-tourism appeal

Number of museums 2003

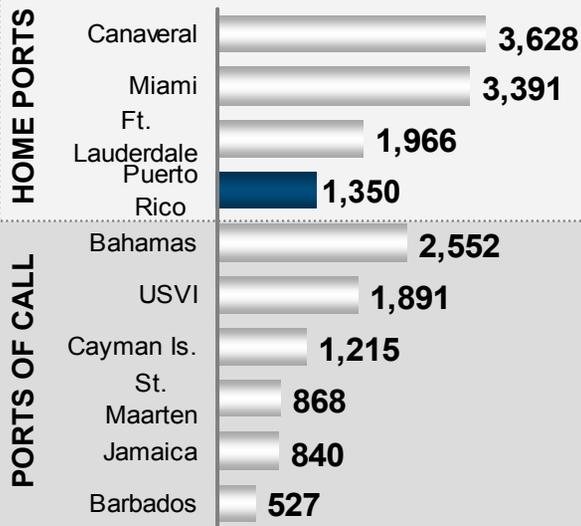


Costa Rica is the premier eco-tourism site, but Puerto Rico compares well with others

Besides being a major cruise hub for the region, strong air transportation links support tourism and position Puerto Rico as a gateway to the Caribbean

Key Cruise Hub...

Number of passengers 2001

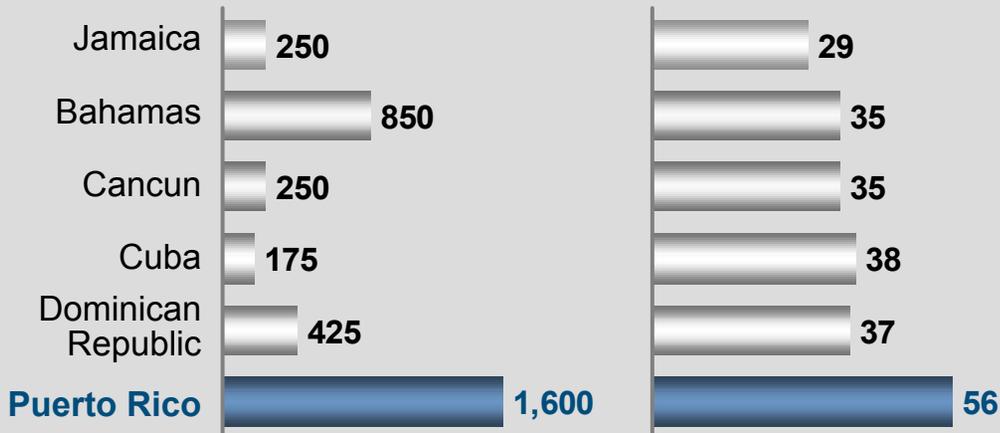


Puerto Rico is the 4th largest home port and 5th largest port of call

...and a Leading Air Gateway to the Caribbean

Number of flights per week – 2002

International airports served – 2002



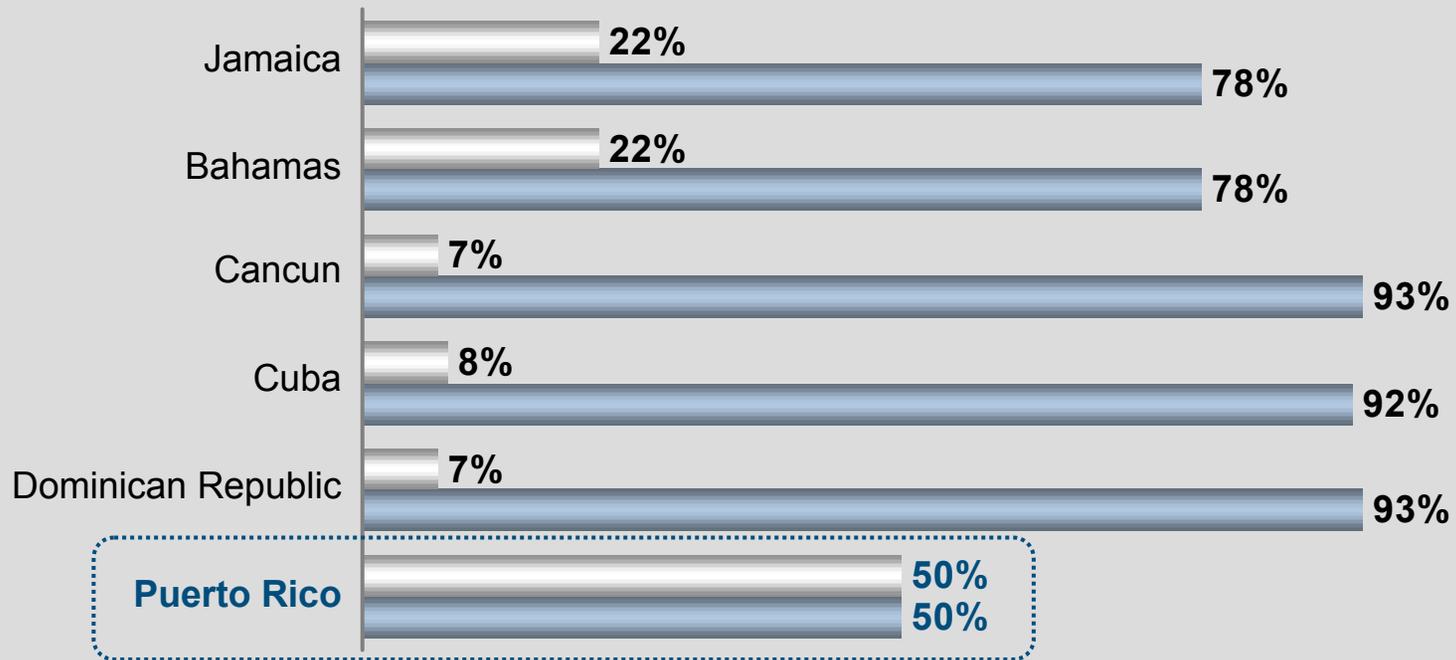
Puerto Rico holds 44% market share of all flights to the Caribbean

Puerto Rico has direct access to 56 air destinations

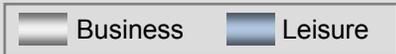
Puerto Rico enjoys a stable mix of visitors, with a strong business segment lowering vulnerability to market shifts



Percent of leisure and business visitors – 2002



50% of leisure and business visitors

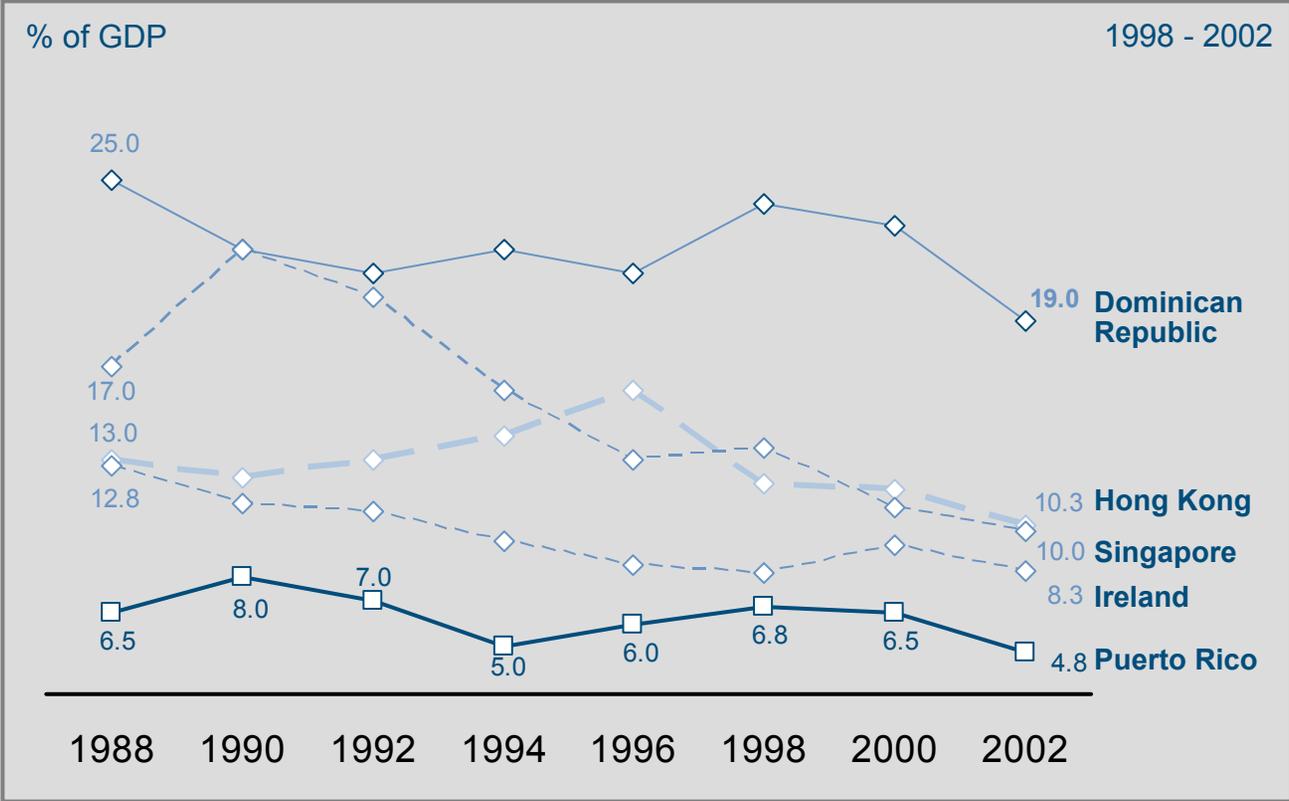


Source: Entrevistas; A.T. Kearney analysis

Tourism plays a small and declining role in Puerto Rico's economy compared to other countries



Retail sales as a share of GDP

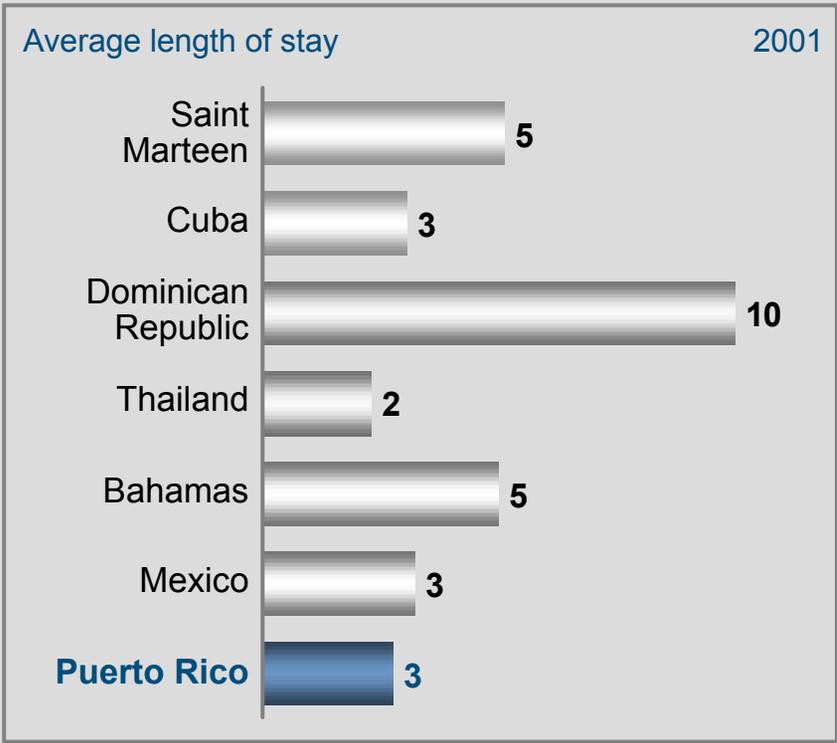


Note: Figures represent impact of the “travel and tourism economy,” including estimated direct and indirect impact, on gross domestic product.
 Source: World Travel and Tourism Council

The average length of stay is low with a large share of visitors staying outside the hotel system

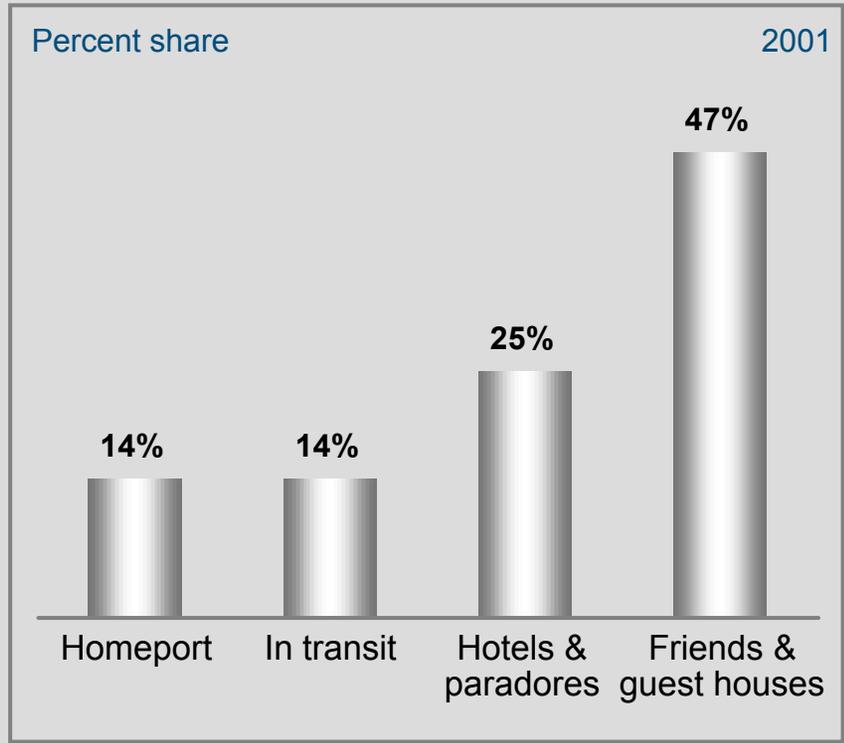
WEAKNESSES

Average length of stay



Source: WTO; A.T. Kearney analysis

Visitors to Puerto Rico



Source: Intervistas; A.T. Kearney analysis

Large numbers of cruise passengers in transit and business visitors account for shorter length of average stay in Puerto Rico

Moreover, factor costs in Puerto Rico are high when compared to other tropical destinations

WEAKNESSES

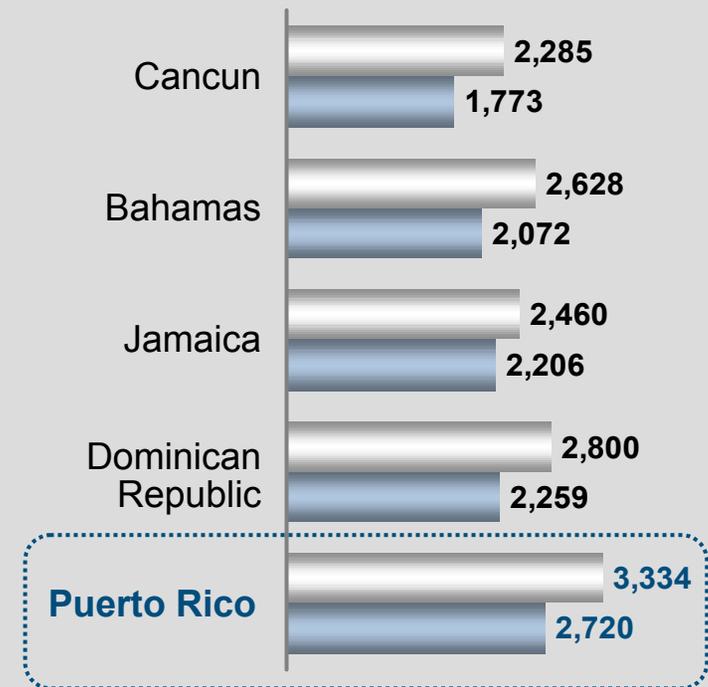
High factor costs

- Lack of airline competition also leads to high travel prices to and from Puerto Rico
- Inflexible labor rules limit part-time work and result in high staff levels at many properties
- Complicated permit process creates delays and opens door to legal challenges – raising financing costs for developers
- Imported materials more costly because of high transport fees, and excise taxes push prices up by as much as 17 percent
- Private lenders tend to view tourism projects as risky and are reluctant to lend, except to established properties
- Government loan guarantees have dried up since Tourism Development Fund bankrupt in 2001

Rates for One Week at a 4-Star Property

\$US

2001



From Los Angeles

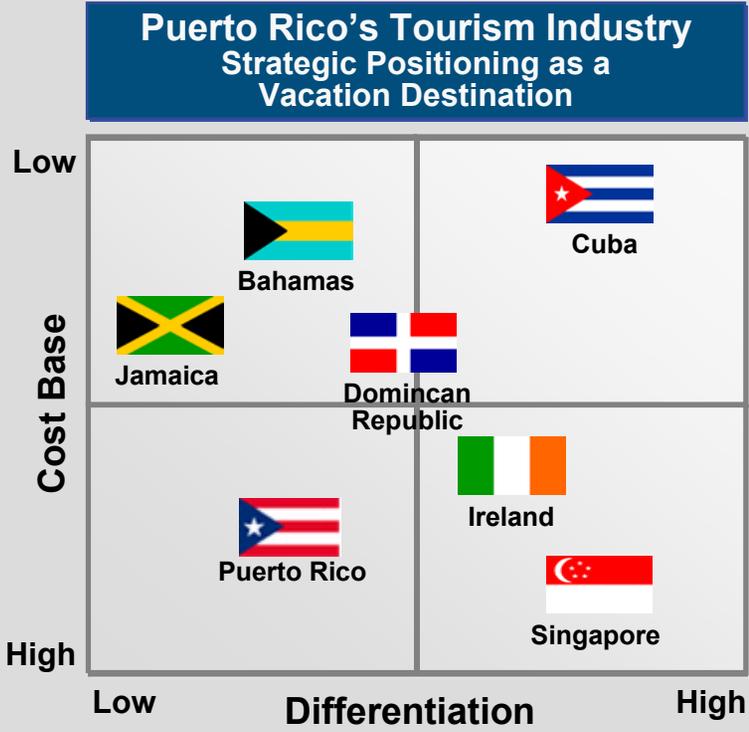


From New York

Puerto Rico also lacks the differentiation in services and attractions to successfully position itself in the higher end tourism destinations

WEAKNESSES

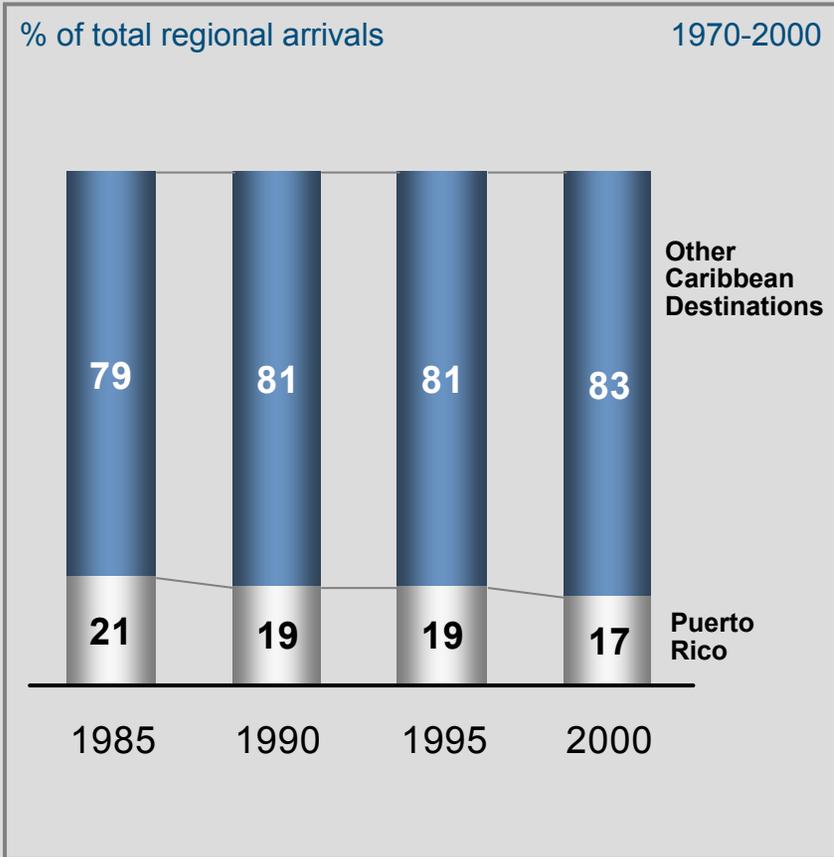
- KEY DETERMINANTS**
- Labor cost
 - Infrastructure cost
 - Productivity levels
 - Taxes/Fees



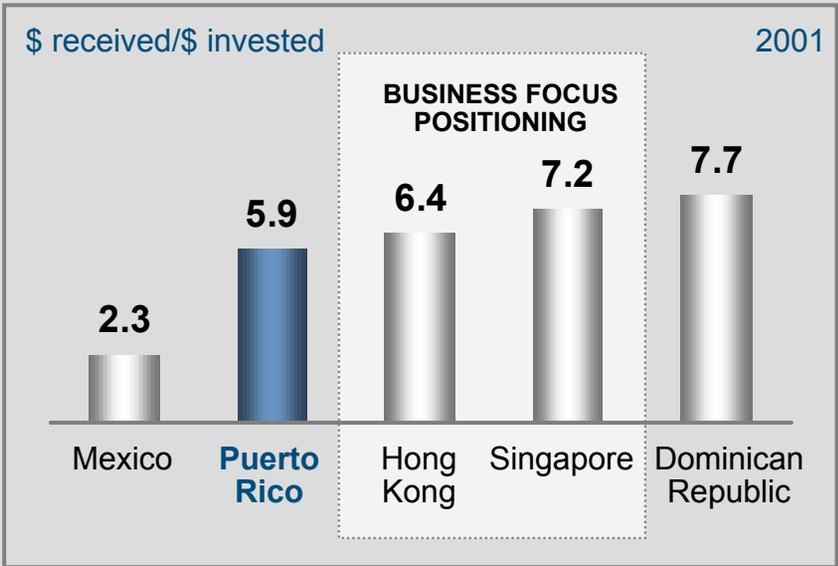
- KEY DETERMINANTS**
- Natural beauty
 - Infrastructure quality
 - Sophistication of properties
 - Service oriented culture
 - Spoken English
 - Entertainment options/uniqueness

In this context, tourism in Puerto Rico presents several signals of decreasing competitiveness, losing market share to other Caribbean destinations

Caribbean Tourism
Puerto Rico Market Share vs. Other Caribbean Destinations



Return on Tourism Investment
Ratio of International Receipts per Visitor and Government Spending per Visitor

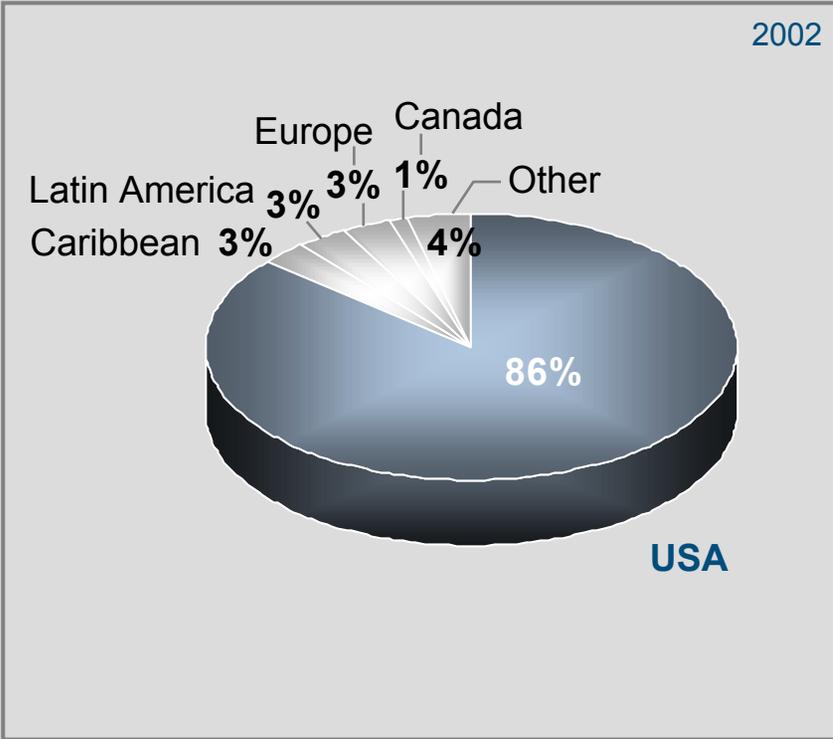


- Other Signals:**
- Lower attractiveness for new investments in tourism infra-structure
 - Stagnant availability of hotel rooms
 - Limited employment growth
 - Investments cancelled, Hotels closing down

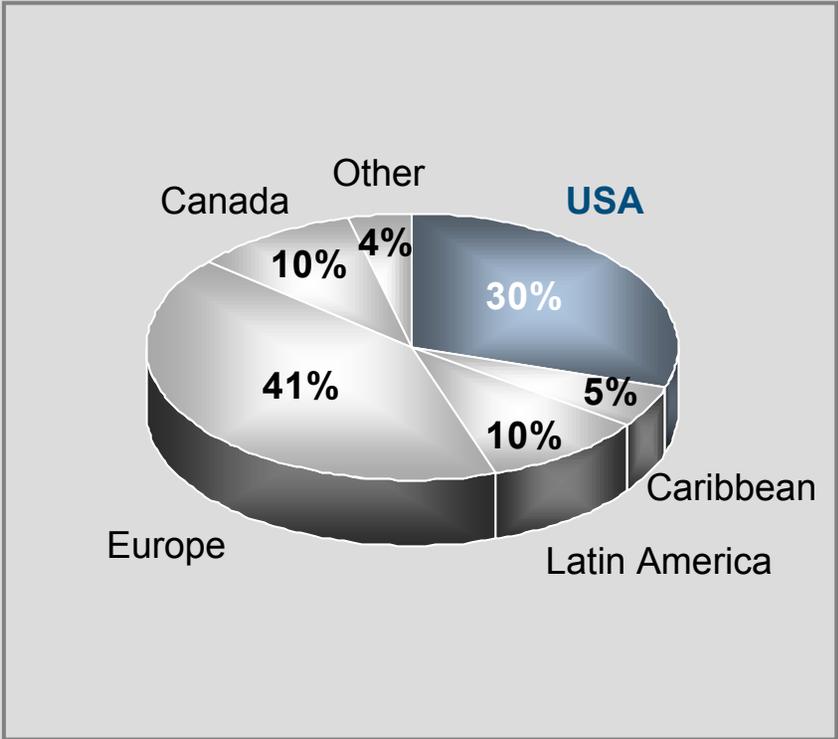
Sources: WTTC; A.T. Kearney analysis

A better branding strategy and focus could leverage Puerto Rico as an attractive location beyond its high dependency on US travelers

Origin of travelers visiting Puerto Rico



Origin of travelers visiting the Dominican Republic

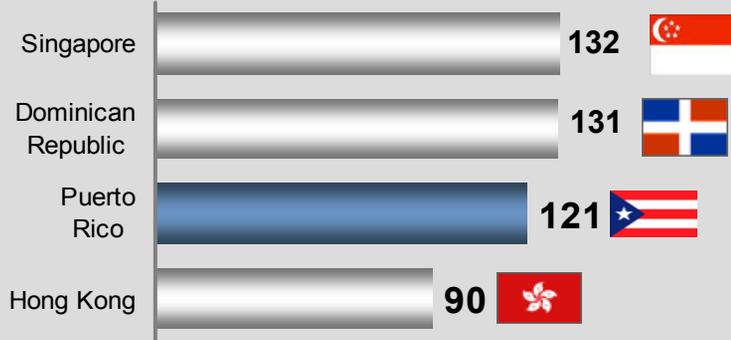


Source: WTO; A.T. Kearney analysis

A focused value proposition based on Puerto Rico's potential competitive advantages could boost the number of visitors, as in Singapore

Tourism spending and arrivals

US\$/tourist arrival 2002



Number of tourist arrivals 2002



Singapore

- Began developing infrastructure for business tourism in 1984 with convention center and 2002 with new airport
- Ranked as Asia's top convention city for past 19 years
- "GlobalMeet" campaign includes convention center, Singapore Airlines, 46 major hotels and travel firms, and offers incentives for organizations confirming events
- Comprehensive "Tourism 21" plan includes six elements – from reformulating product to need for new space

Hong Kong

- Airport served by 70 scheduled airlines, with more than 4,100 flights each week to 140 destinations worldwide
- Has expanded air travel by lowering landing fees 15% and offering 50% fee rebates for all new destinations
- New travel legislation tightens licensing of travel agents in an effort to improve service quality for tourists
- Simultaneous effort to develop high-end entertainment tourism through development of Disneyland, wildlife and bird sanctuary, and cable car access to Great Buddha

Source: Singapore Tourism Board; Hong Kong Tourism Board

Increasing competition and focused strategy by competitors can undermine Puerto Rico's share in the Caribbean

THREATS

Increasing competition

- Continued pressure from other destinations in Florida (specializing in high end) and the Caribbean could make it difficult for Puerto Rico to diversify its market, expand offerings and attract new tourists
- Opening of Cuba could alter the dynamics of tourism in the Caribbean region

Limited focus

- Branding and promotion efforts lack a clear focus
- Heavy reliance on US as main source market leaves Puerto Rico vulnerable to changes in US economy

Increasing pressure to maintain growth and share

Competitive disadvantages

- High cost factors and lack of differentiation in tourism
- Widespread perceptions of poor customer service
- Persistent crime and other factors deter visitors

Low barriers to exit

- Limited air transport network and other advantages
- Strong tourism incentives offered in other markets, helping offset cost of resort development
- Asset base highly depreciated

Overview of Puerto Rico's retail and wholesale sector

Strengths

- Puerto Rico commercial sector benefits from high levels of personal spending compared to other countries
- Retail productivity in Puerto Rico is relatively high by international standards

Weaknesses

- The retail sector is fragmented, with small players struggling to compete against large multinationals
- Despite being relatively high, the retail productivity in Puerto Rico is experiencing a decline
- Wholesale is highly fragmented and with low levels of productivity compared to other US states

Opportunities

- Puerto Rico can leverage its better infrastructure in the region and its logistics businesses to become the distribution hub for the region
- Gains of scale and efficiency should be targeted through domestic consolidation and expansion of retail and wholesale activities in the Caribbean
- Promotion of Puerto Rico as a top destination for retail shopping would create stronger linkages between the retail and tourism sectors

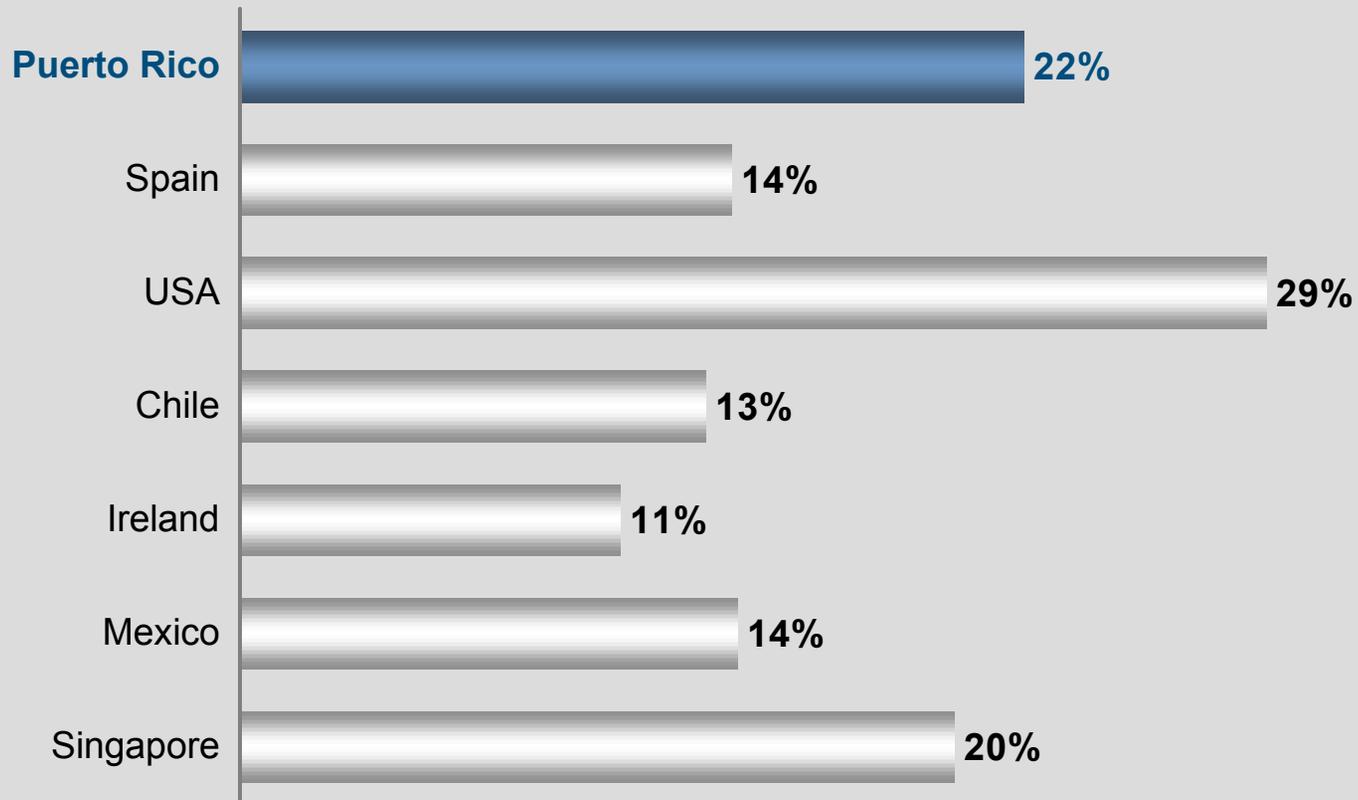
Threats

- Growing cost-based competition from well-organized multinational retailers and wholesalers could undercut Puerto Rico firms
- Limitations in critical infrastructure related to trade

Puerto Rico's commercial sector benefits from high levels of personal spending compared to other countries



Retail sales as a share of GDP

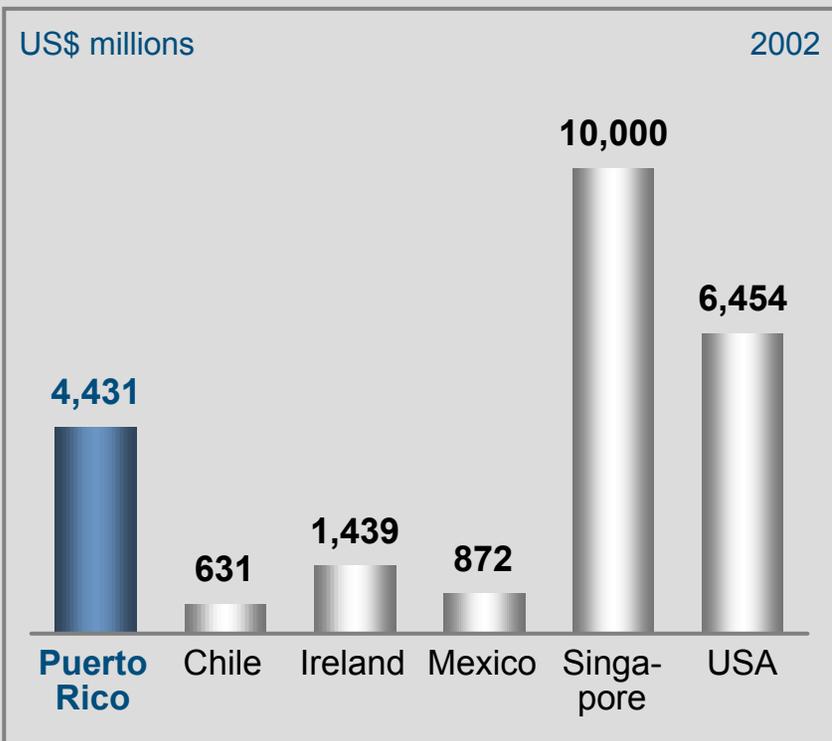


Source: Euromonitor; Commerce department; A.T. Kearney analysis

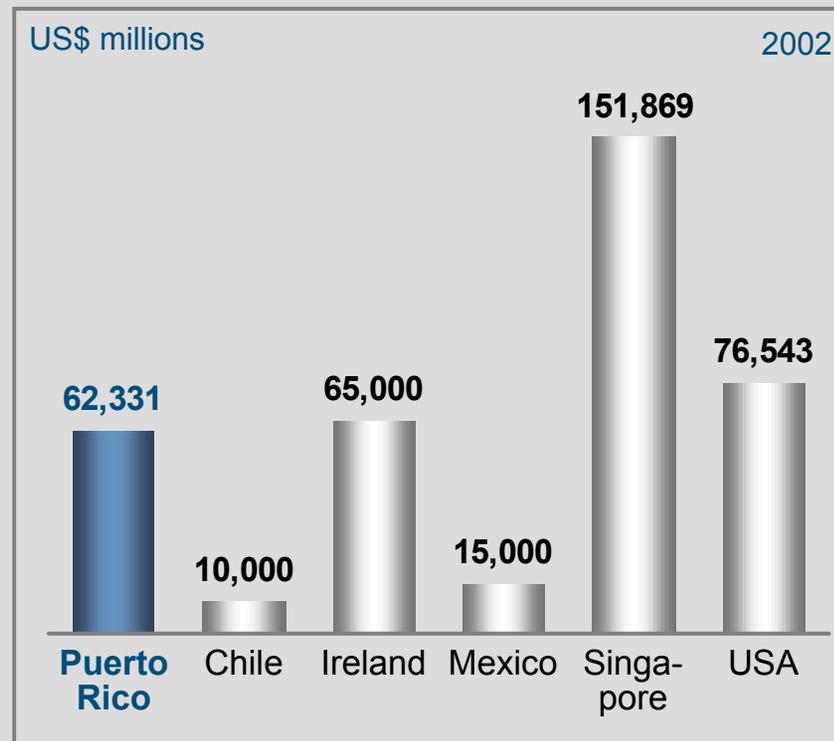
Puerto Rico's labor productivity in the retail sector is relatively high by international standards



Sales per square meter



Sales per employee



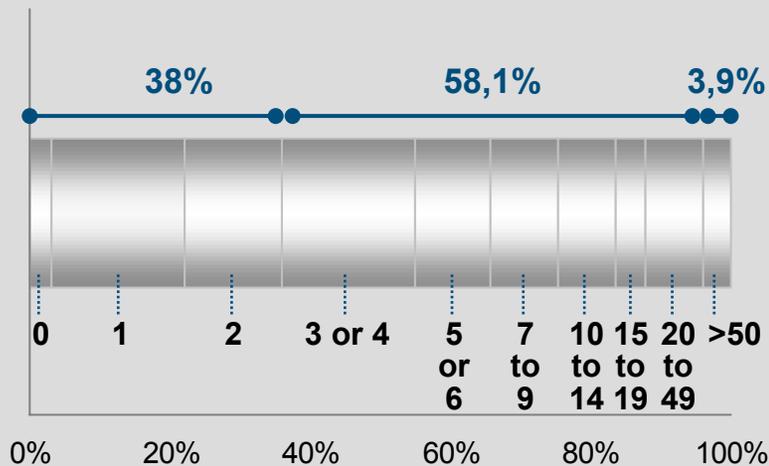
Puerto Rico's retail sector is considered among the best in quality assessment compared to regional competitors such as St. Thomas, St. Marteen, Cayman Islands, Bahamas, Jamaica and Margarita

Source: Euromonitor; A.T. Kearney analysis

The retail sector is fragmented, with small players struggling to compete against large multinationals

WEAKNESSES

Type of retail establishment
Share of employees



Establishments from none to 2 employees represent 38% of the market

Share of sales by type of establishment

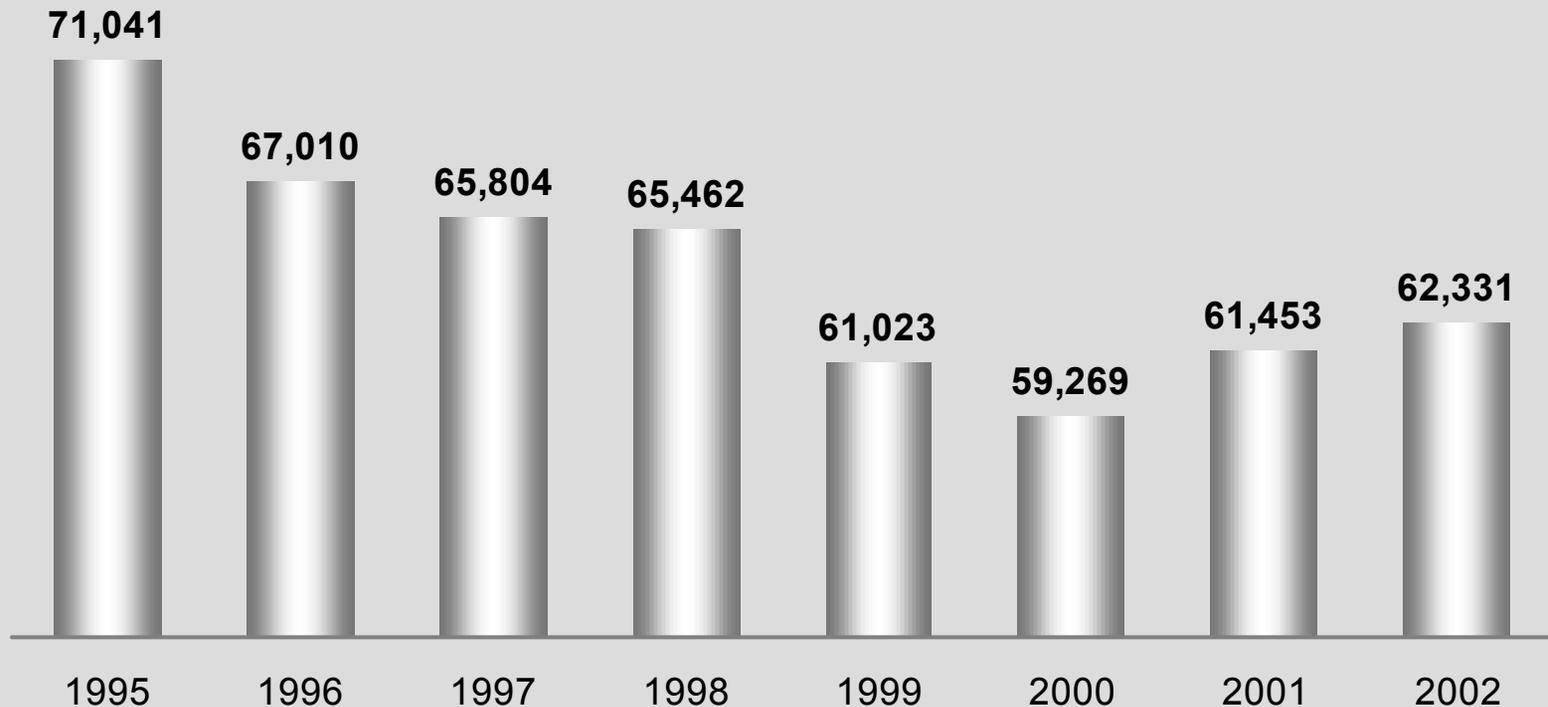


The largest retailers concentrate 40% of market sales

Despite being relatively high, labor productivity in the retail sector has undergone a decline

WEAKNESSES

Retail sales per employee



Available data shows employment growth outpacing sales growth throughout retail sector

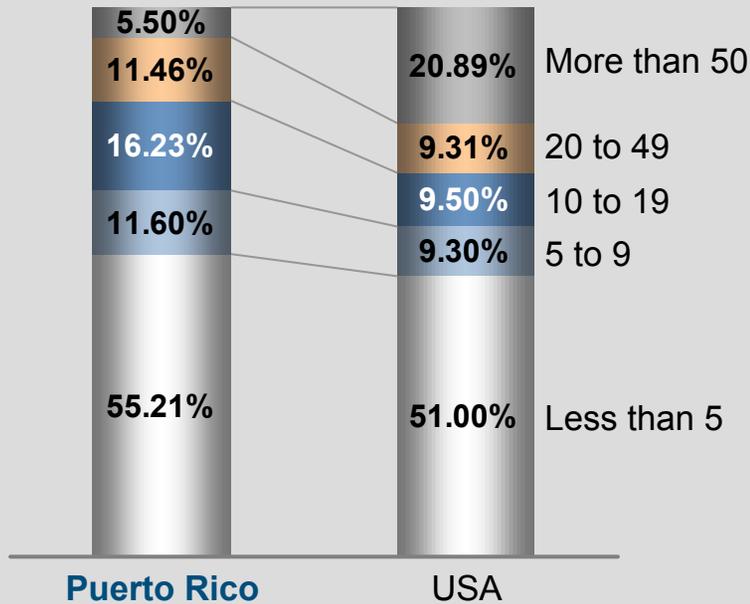
Source: Establishment Survey; A.T. Kearney analysis

Wholesale is highly fragmented and with low per store sales volume compared to other US states



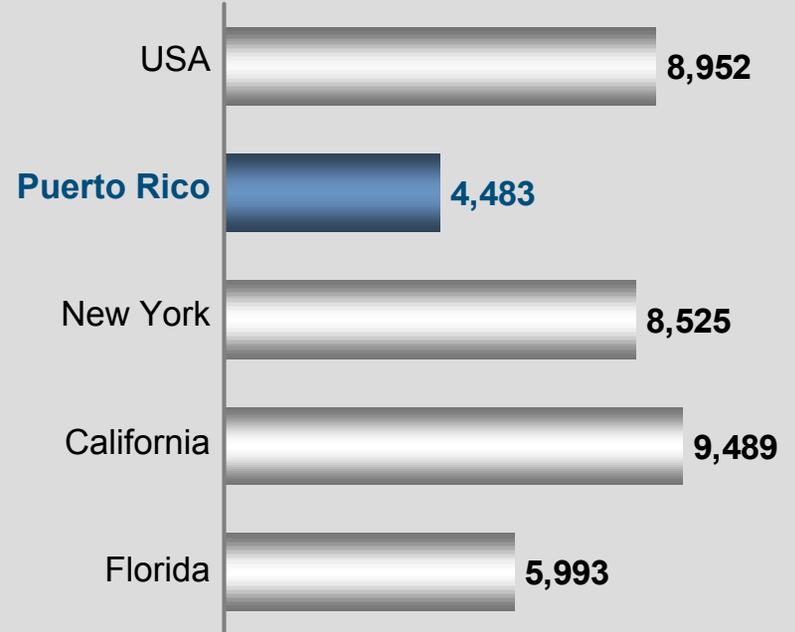
Size of establishment

Number of employees 1997



Sales per establishment

US\$ thousands 1997



Increasing consolidation in the retail and wholesale industry could undercut Puerto Rico firms

THREATS

Increasing competition

- Increasingly competition from diversified multinationals will raise pressure for productivity and efficiency – especially in wholesale sector
- More efficient and productive sites in retail and wholesale can increase price competitiveness of competitors
- Limited access to financing may limit consolidation in the local industry

Limited focus

- Protected niches, with sole emphasis on local market
- Lack of interest in overseas expansion into US and the Caribbean as means of growing revenues and scale
- Few local brands to provide differentiation to local wholesalers and retailers

***Increasing
pressure to maintain
growth and share***

Competitive disadvantages

- Fragmentation in retail and wholesale sectors
- High labor, land and other input costs
- Declining productivity growth in retail sector

Excessive regulation

- Lack of robust competition in retail sector because of “need” based regulation can weaken sector
- Excise tax system multiplies prices on consumer goods and other imports – by as much as 17 percent
- Cumbersome permitting process

The local services sector linkages



The local services sector linkages (cont.)

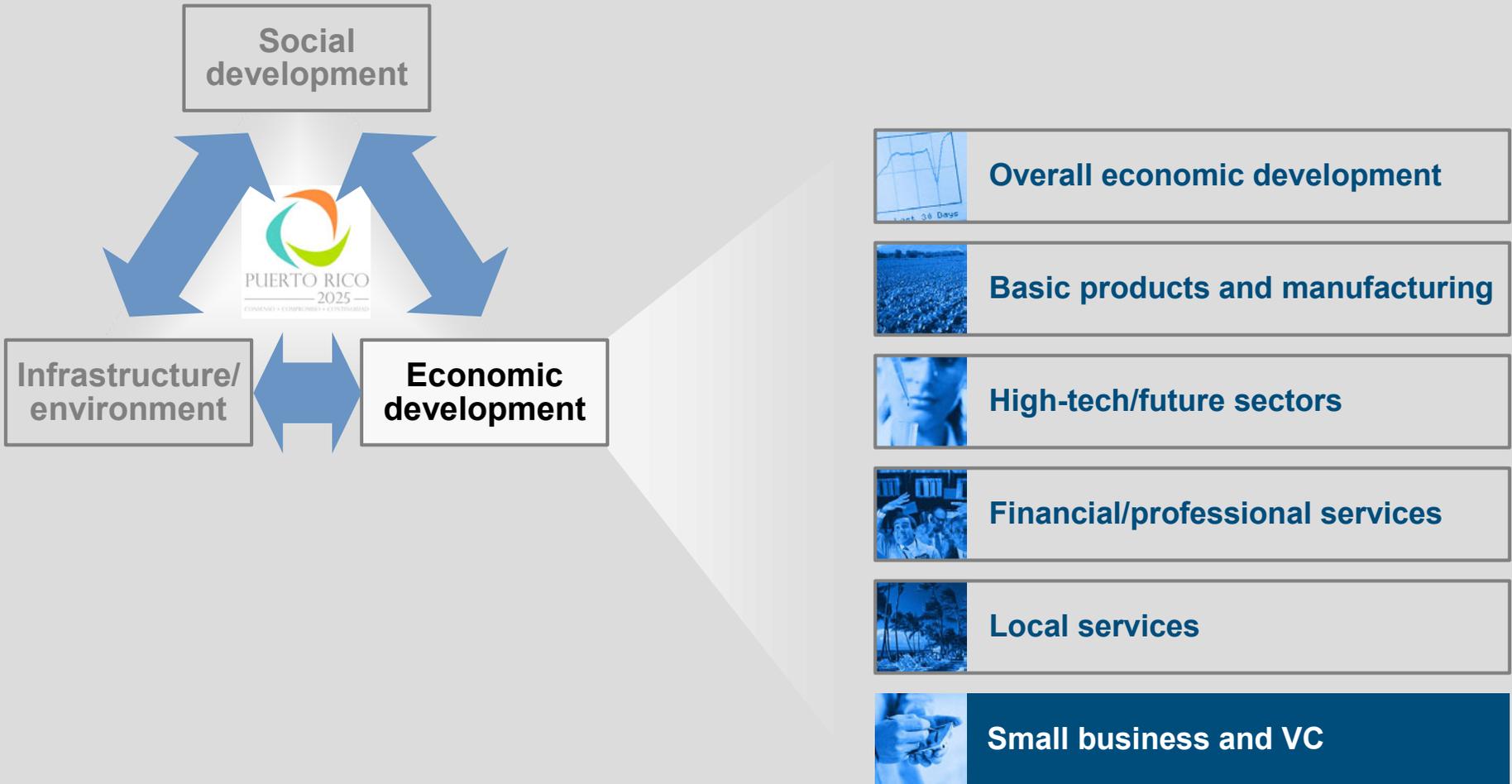


Key questions going forward

- What must be done to **1) maintain** and **2) expand** the contributions of the local services sector to Puerto Rico's economy?

- **What must be done to maintain the strengths of the local services sector?**
 - Which other locations in the region offer the greatest threats?
 - What can be done to streamline permitting regulations and stimulate competition? Can excise taxes be reduced to lower retail prices on consumer goods?
 - What can be done to improve per visitor spending levels? What would encourage longer stays by transit and cruise ship passengers?
 - How can labor markets be made more flexible and productive? How can customer service levels be improved?

- **What can be done to leverage existing strengths and further increase the impact of these sectors?**
 - What can be done to strengthen linkages between tourism and retail? How can Puerto Rico transform itself into a shopping destination of choice for people throughout the Caribbean and Latin America?
 - What can be done to differentiate Puerto Rico and attract high-end tourism? What new facilities are needed?
 - What can be done to encourage and support expansion into the US Hispanic and Caribbean markets by local retailers? What kind of support can government provide?



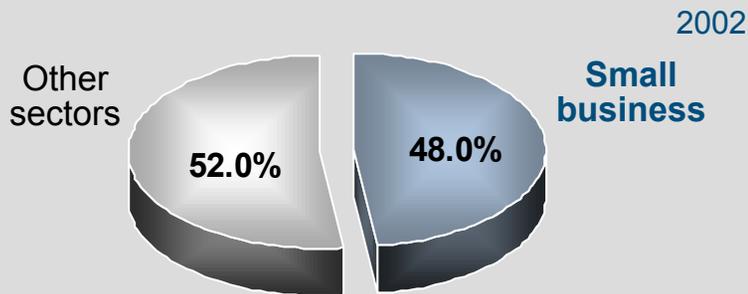
Main conclusions: Small business and venture capital

- Puerto Rico boasts a remarkably robust small business sector accounting for more than half of total economic output and two-thirds of new jobs
- Despite a handful of “success stories,” high costs and heavy regulation inhibit small business growth – and most small businesses remain small and domestically focused, with low levels of technological sophistication
- Compared to many other locations, Puerto Rico has little venture capital available to fund start-up firms, particularly in the early stages
- With stronger financial support and better information resources, small businesses could be a stronger engine for exports and economic growth

Puerto Rico's small business sector makes major contributions to economic output and employment

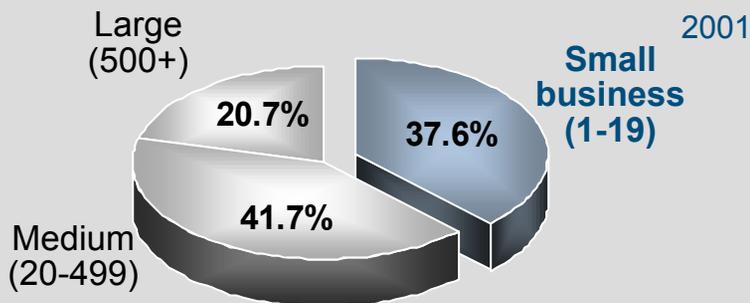
Gross domestic product

By size of business



Total private sector employment

By size of business

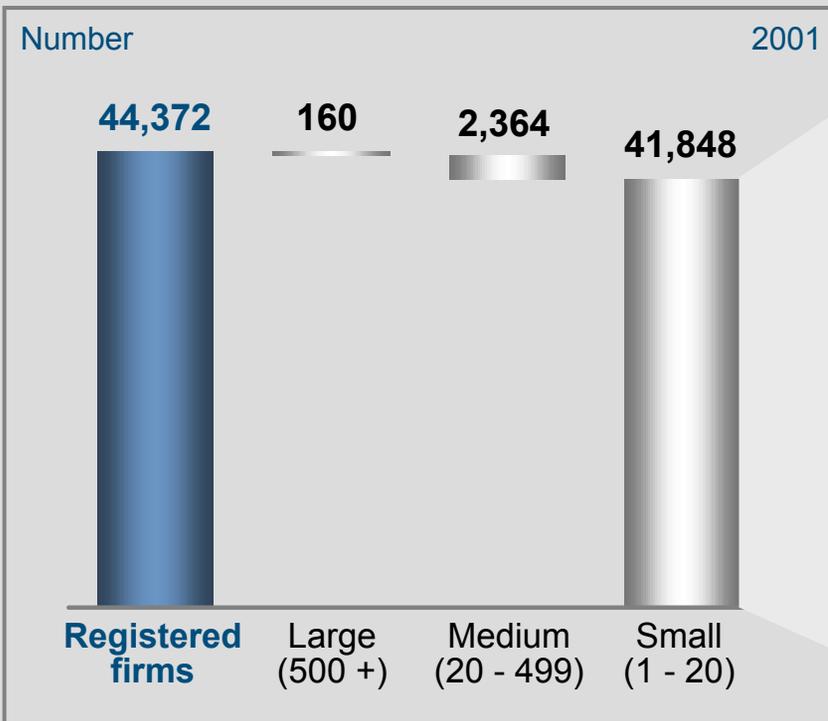


Economic contributions from small business

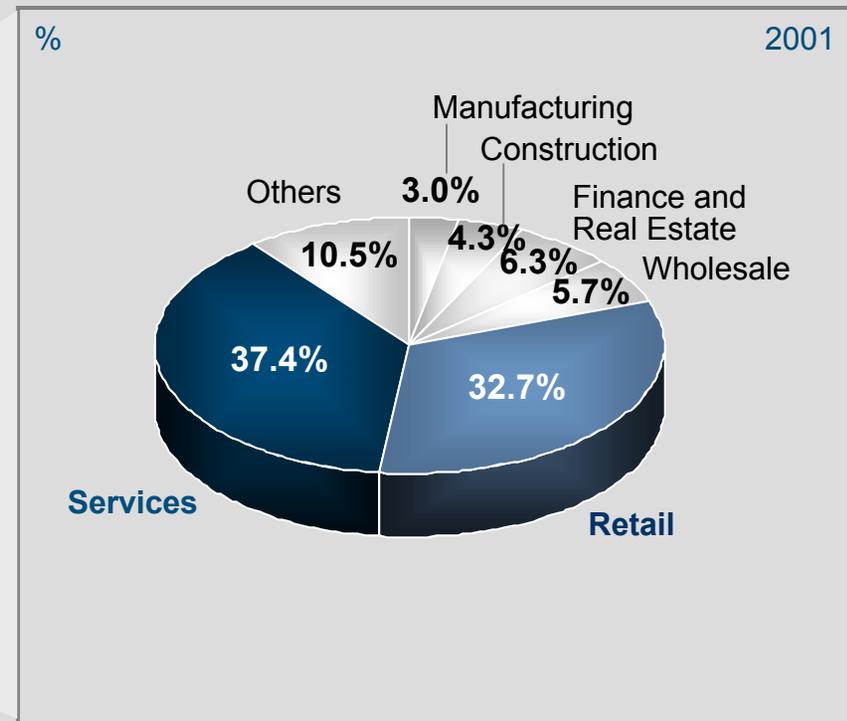
- Small businesses generate an estimated 63 percent of all new jobs in Puerto Rico
- Small businesses create and sustain more jobs than the entire manufacturing sector in Puerto Rico
- Small businesses dominate the retail and wholesale sectors, where jobs are growing 5 percent faster than in the economy as a whole
- 90 to 95 percent of municipal “patent” taxes are paid by small businesses

Small businesses constitute the majority of Puerto Rican firms, with particular strength in commerce and services

Number of registered businesses
By employment size



Breakdown of small business sector
By number of firms



Note: Small business includes all business establishments with fewer than 20 employees, excluding self-employed individuals.
Source: U.S. Census Bureau, County Business Patterns: Puerto Rico (2001); A.T. Kearney analysis

Overview of Puerto Rico's small business and venture capital sectors

Strengths

- Puerto Rico offers a relatively favorable environment for small business creation
- Puerto Rico has a legacy of successful small firms — many supported by the venture capital sector

Weaknesses

- Despite a growing trend, the small business sector still creates few businesses if compared to other markets
- Traditional businesses dominate, with little activity in new inventions or advanced technologies
- Small businesses primarily serve the local market and do not engage in significant export activity
- Venture capital funding for new business creation is also extremely limited in Puerto Rico
- The cost of compliance with administrative and regulatory requirements is high, especially for small businesses
- Small businesses in Puerto Rico fail at a higher rate than their counterparts in the United States
- Other issues negatively impact the whole cycle of new business creation

Opportunities

- With proper support, the small business sector could grow into an engine for exports from Puerto Rico
- With a stronger focus on basic research at academic research, spin-off companies in cutting edge fields can be created in greater numbers
- Development of a stronger venture market can help build stronger bridges between available capital and good business ideas, raising the number, quality and competitiveness of small businesses

Threats

- Small businesses suffer from excessive “red tape” and high costs for regulatory compliance, preventing them many from growing into competitive medium and large sized firms
- Low returns on venture capital investments make it increasingly difficult to attract foreign funds – or keep local funds from flowing into investments elsewhere
- Lack of strong entrepreneurs and a “brain drain” of the best talent out of Puerto Rico

Puerto Rico has a legacy of successful small firms — many supported by the venture capital sector

STRENGTHS

Carla's Sweets

- Started in a kitchen, with a \$ 2,000 loan for professional baking equipment
- Now has 75 employees that make 18 products for some 400 establishments
- Plans to export to the USA

Empresas Cordero Badillo

- Opened as a single store with \$ 3,000 cash and a \$ 2,000 loan
- Sales now exceed \$ 50 million per year, with 400 employees
- Competes directly with multi-national food retailers that are entering Puerto Rico

Centennial

- Among largest independent wireless providers in the Caribbean and USA
- 882,000 users in Dominican Republic, Jamaica, Puerto Rico and US Virgin Islands
- Early Blackstone investment

Triple-S Insurance

- Created in 1959 by group of doctors determined to improve quality of medical service
- Now Puerto Rico's leader in health insurance with 13,000 doctors and one million subscribers
- Puerto Rico's 2nd largest firm

Wendco

- Became 3rd largest fast food chain in Puerto Rico shortly after opening in 1979
- Sells 40 percent more per unit than similar stores in USA
- Reported 20 percent growth in profits to \$ 51 million in 2000

Microjuris.com

- Founded in 1989 to provide legal research information to Spanish language areas
- Now has 20,000 customers
- Competes with Lexis-Nexis and Westlaw throughout Latin America, Iberia

Other strengths

	STRENGTHS

- Puerto Rico is a consumption-friendly environment characterized by high levels of personal spending – much of it within the small business sector

- Strong tax incentives help to promote venture capital and private equity activities that create and sustain new businesses
 - Investment Capital Fund Act of 1996 allows tax credits of 25 percent in investment funds
 - Past efforts to create large single-purpose investment funds

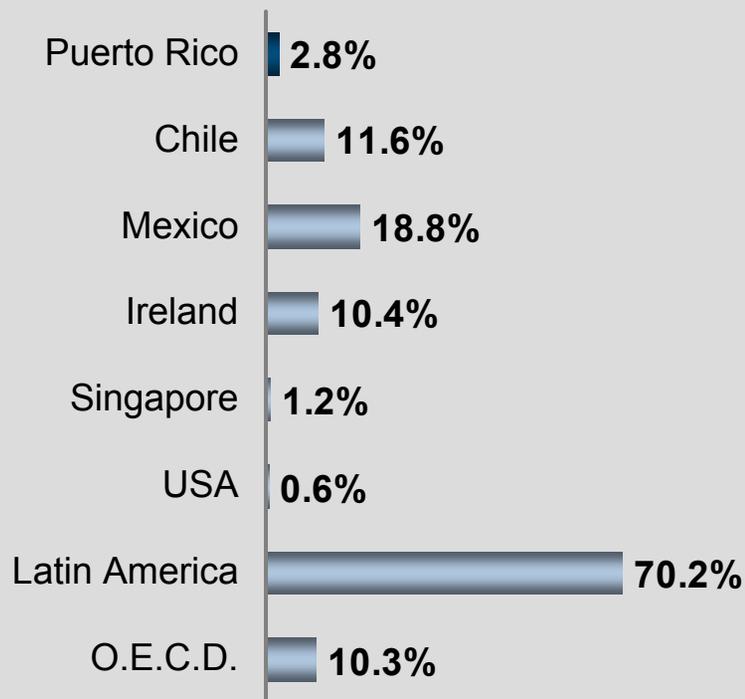
- The local office of the U.S. Small Business Administration provides consistent financial support that helps to overcome difficult local financing conditions
 - Ranks second in the value of loans and third in number of loans extended among all “small market” states

Costs for setting up a new small business are lower in Puerto Rico than elsewhere, but ...

STRENGTHS

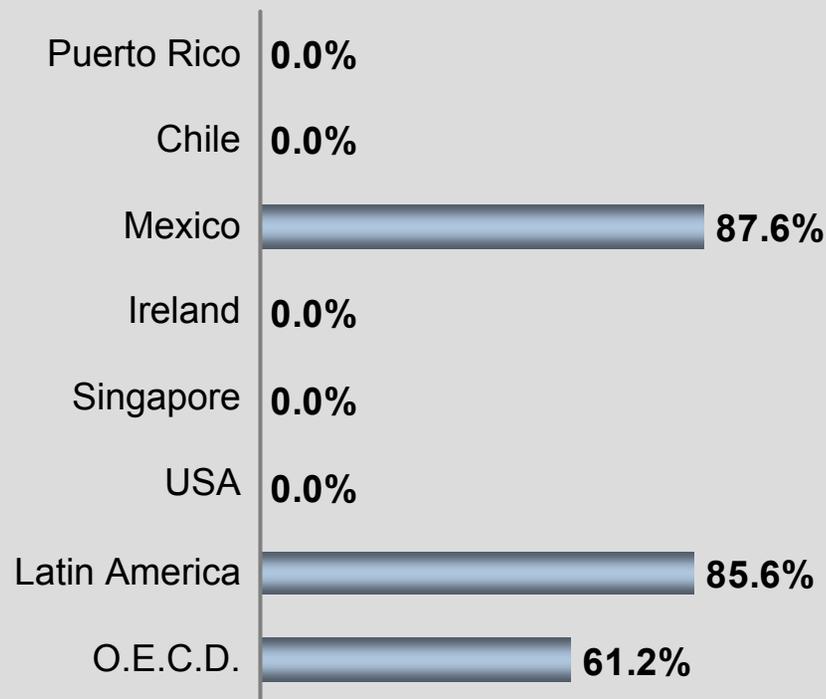
Cost of bureaucratic procedures to register a new business

Share of per capita income



Minimum capital required to establish new business

Share of per capita income



... business people complain that bureaucratic “red tape” makes creating and running businesses hard



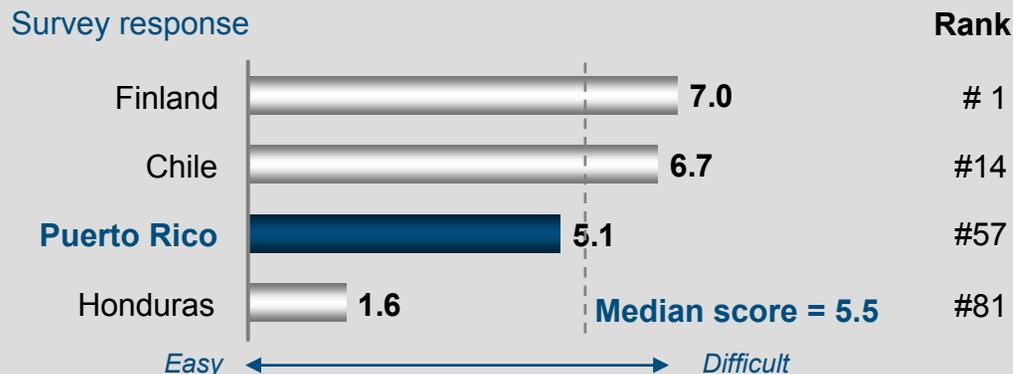
Ease of starting a new business *Survey responses*



Permit process

- Burdensome permitting process blamed for delays in hotel expansion, caution among retailers, and loss of foreign investment
- Permits to expand manufacturing plants and existing stores take 6-12 months – compared to 7 days in Ireland or 1 day in Singapore
- Until 2001, construction permits required nine separate filings for nine government agencies
- Legal challenges after permit approval cause further delays, raising cost of financing and creating extra risks for banks, developers
- Among major projects delayed by challenges to permits are expansion at the Caribe Hilton, condo projects in Ocean Park and Isla Verde
- Value of total construction permits reached \$3,040 million in 2001 – nearly two-thirds from the private sector

Ease of obtaining a new telephone line *Survey responses*



Source: World Bank, “Doing Business” (2001); PROCOMP, Preliminary Competitiveness Analysis for Puerto Rico, 2002

Despite a growing trend, the small business sector still creates few businesses if compared to other markets

WEAKNESSES

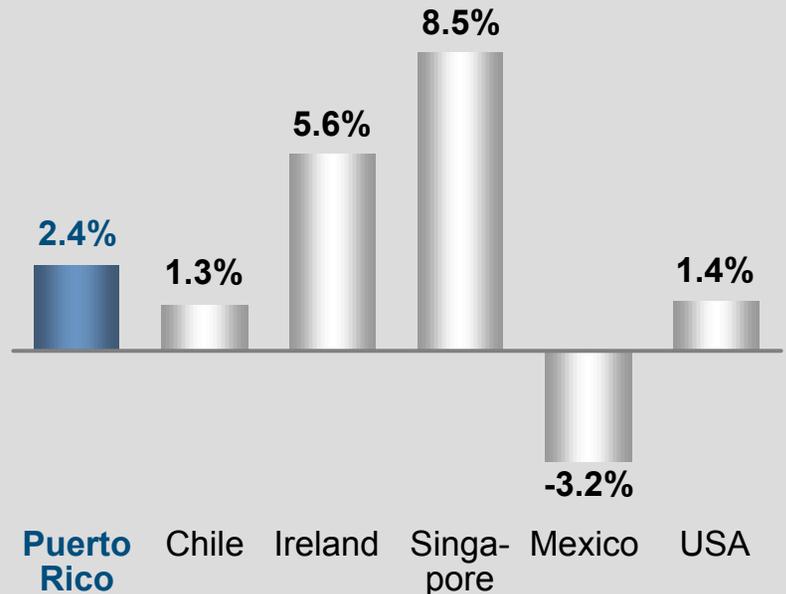
Number of new businesses created

Annual average number 1998-2002



Rate of new business creation

% 1998-2002



Source: Corporación de Fomento a la Producción (CORFO), Chile; Secretaria de Economía, Mexico; Department of Enterprise, Trade and Employment, Ireland; Department of Statistics, Singapore; U.S. Census Bureau, County Business Patterns

Traditional businesses dominate, with little activity in new inventions or advanced technologies

WEAKNESSES

A traditional small business sector

- Nearly 38 percent of local businesses are small retail and wholesale sector firms, which invest little in innovation or cutting edge technologies
- Over 34 percent of Puerto Rico's businesses and 7 percent of all jobs are small service firms — including beauty shops, laundries, pest control services, and automobile repair
- Fewer than 15 percent of all businesses in Puerto Rico use computers for accounting, payroll and inventory
- Only 17 percent of small businesses report having access to the Internet
- US small businesses create 13 to 14 times more patents per employee than large firms — but no record exists of patents granted to small firms in Puerto Rico

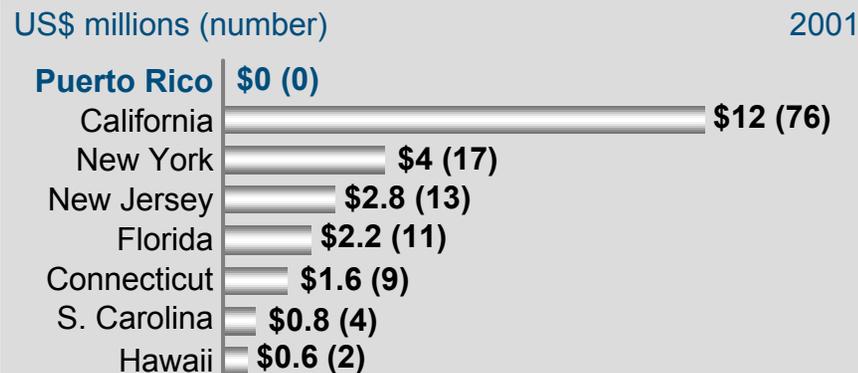
Innovation Award Technology grants

– Small Business Administration –



Technology transfer program grants

– Small Business Administration –



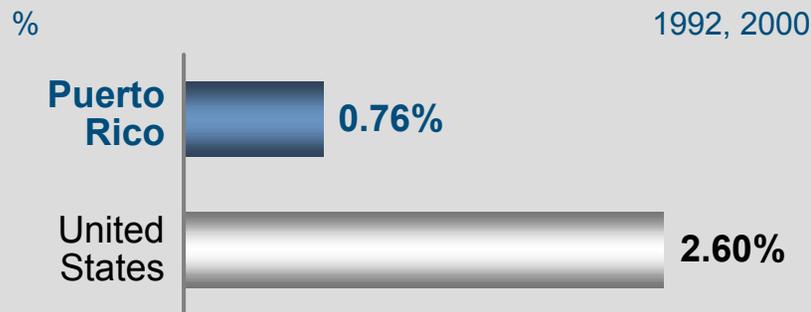
Source: U.S. Small Business Administration (2001)

Small businesses primarily serve the local market and do not engage in significant export activity

WEAKNESSES

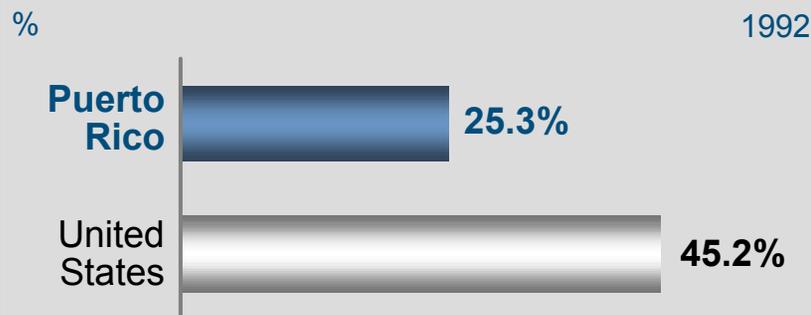
Small businesses engaged in exports

– As a share of total firms –



Small businesses in exports

– as a share of all exporting firms –



Gross domestic product

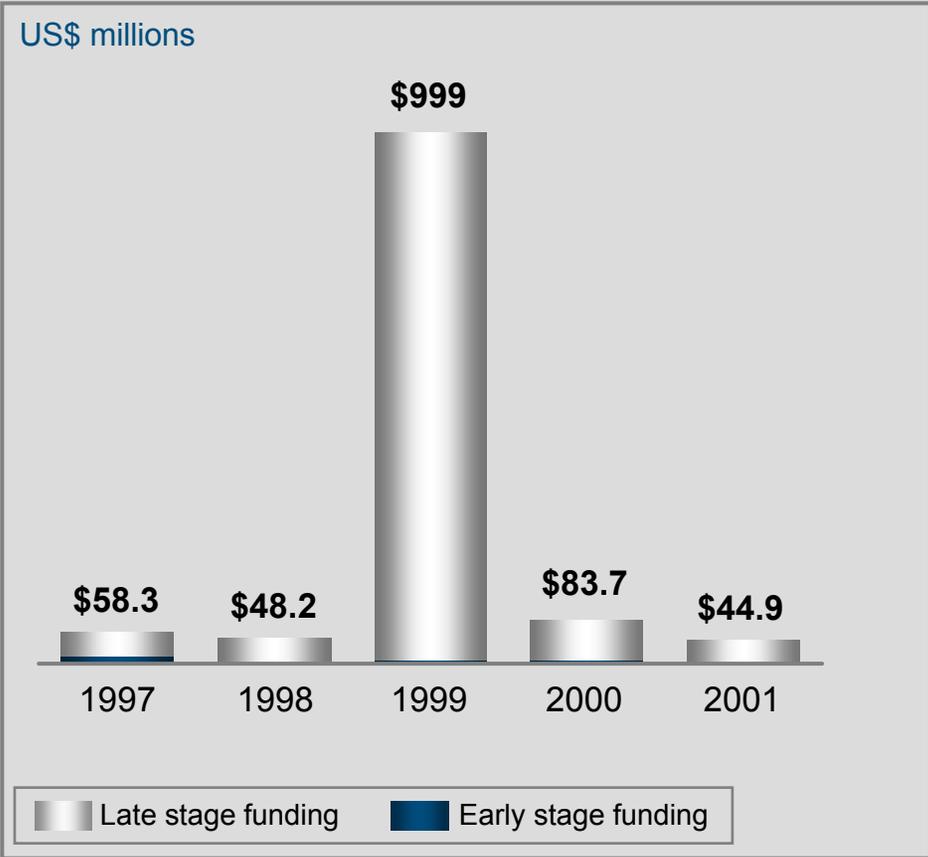
– By size of business –

- Puerto Rico's Small Business Administration provided only \$ 2.1 million in export assistance for 10 projects in 2002 (of 800 total projects)
- Puerto Rico's Small Business Development Center estimates that 37 percent of its clients have exportable goods, but only 13 percent engage in export activities
- In other countries, most exports are generated in manufacturing — a sector in Puerto Rico with few small firms
- In the United States, small firms represent 45.2 percent of the number of exporting firms and 29.5 percent of total goods exports

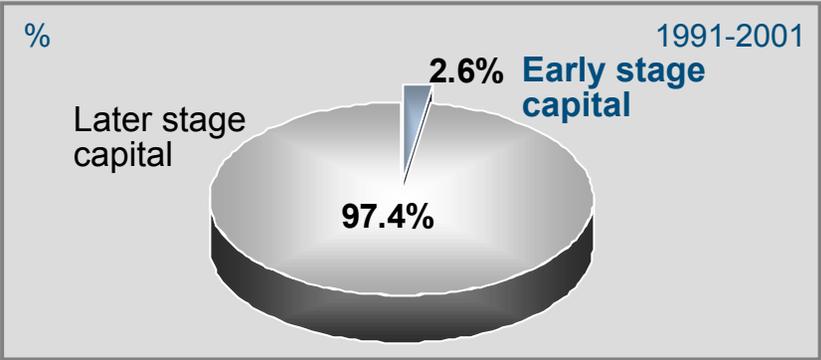
Venture capital funding for new business creation is also extremely limited in Puerto Rico



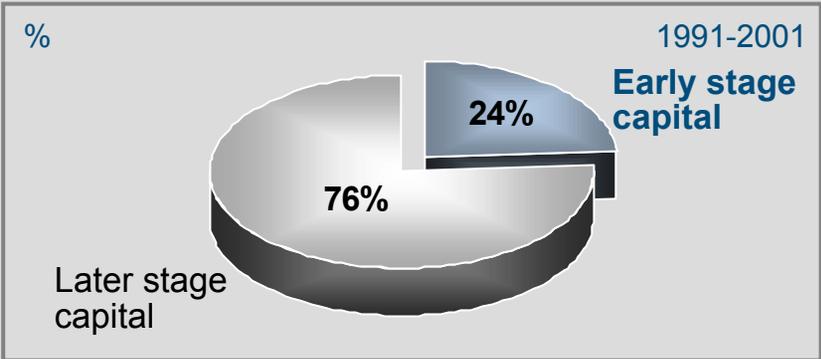
Venture capital funding in Puerto Rico



Venture capital funding in Puerto Rico
By funding stage



Venture capital funding in the USA
By funding stage



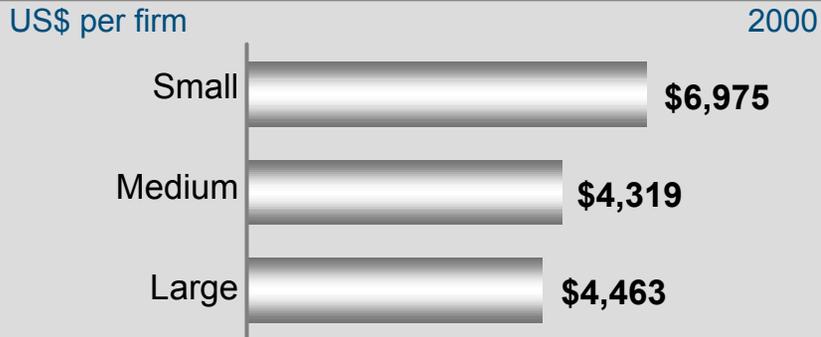
Note: Early stage funding includes seed money and start-up funds; late stage funding includes expansion, buyouts and turnarounds.
Source: Annual Report, Guayacan Fund; Venture Capital Network; A.T. Kearney analysis

The cost of compliance with administrative and regulatory requirements is high, especially for small businesses

WEAKNESSES

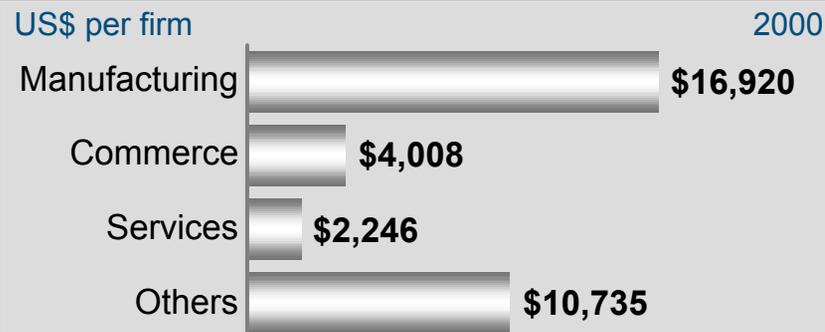
Regulatory compliance costs

For all US businesses by size



Regulatory compliance costs

For all US businesses by sector



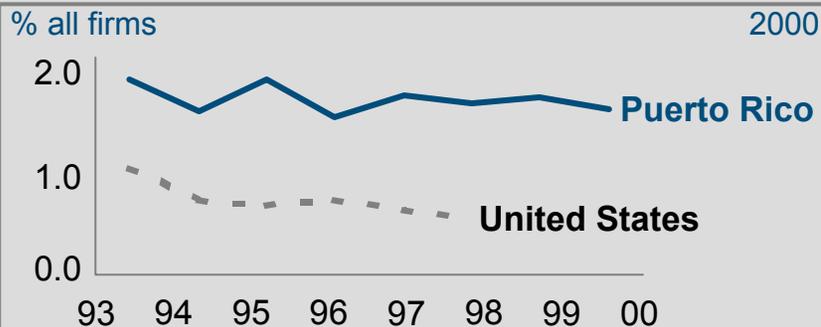
Explaining high compliance costs

- Costs to businesses of complying with myriad complex regulations is fully half as large as the federal tax burden
- Small businesses shoulder a cost burden 55 to 60 percent higher per employee than large firms
- Cost disadvantage for small businesses driven by environmental regulations and paperwork related to taxes
- Costs such as general workplace regulations on safety and behavior are balanced evenly among firms
- Manufacturing sector is burdened with steep environmental compliance costs
- Helps to explain small business concentration in commerce and service sectors

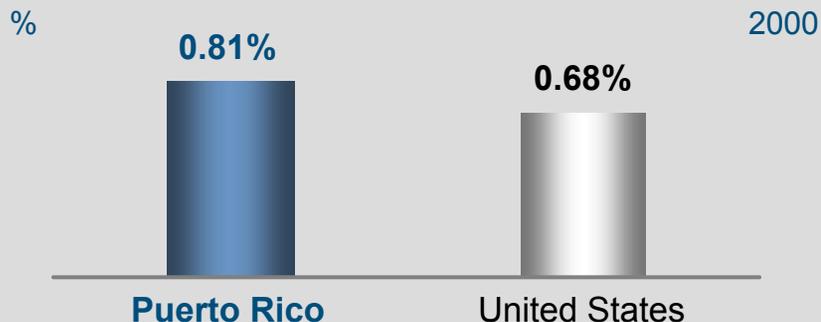
Small businesses in Puerto Rico fail at a higher rate than their counterparts in the United States

WEAKNESSES

Small business bankruptcy rates



Small business success ratio (creation rate – bankruptcy rate)



Reversing a history of issues in public financing

- Starting in 1985, the Economic Development Bank (EDB) created to recycle Section 936 funds into small business development loans
- Abundant funding and generous risk outlook led to poor loan quality and delinquency rates as high as 44.8 percent by 2002
- Nearly 4,000 small business loans totaling \$ 60 million were written off EDB books after 1993
- Slow response – often 4 months for approval – impeded cooperation with private banks
- Since 2001, concerted action has trimmed bad loans to 25.8 percent of portfolio – and raised loan servicing response time to 1-3 weeks
- In the past year, the EDB has introduced new products and raised total loans 170 percent

Other issues negatively impact the whole cycle of new business creation

WEAKNESSES

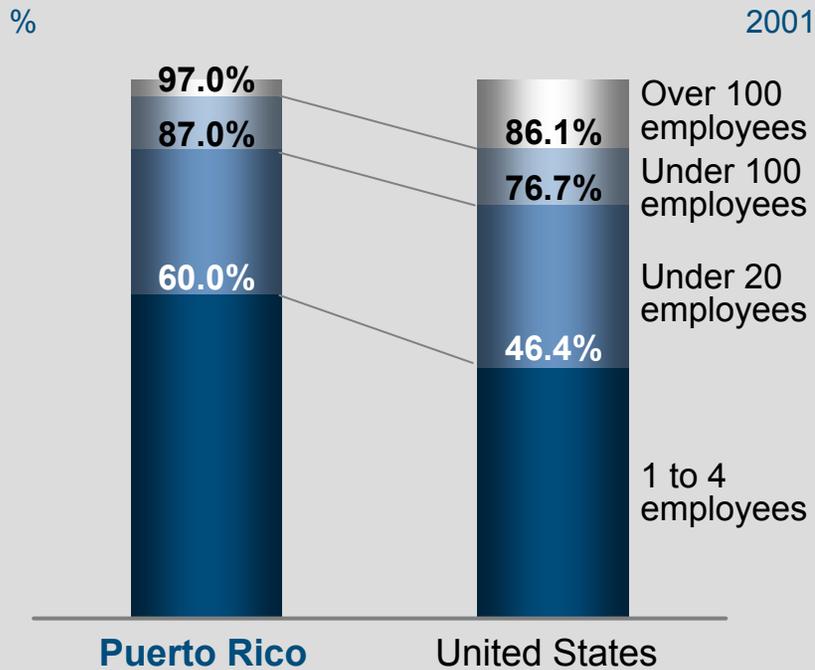
- Government regulation and “red tape” severely complicate the process of running and expanding small and medium sized businesses
- Low levels of lending from local financial institutions
- Venture capital funds must focus on managing and building new firms and reap lower returns on average, making it difficult to attract funding from sources outside Puerto Rico
 - Average returns for local funds are 8 to 9 percent, compared to 10 to 15 percent in the United States
- “Brain drain” attracts best and brightest venture capitalists to other countries, where potential financial rewards are much higher
 - Capacity for training local talent is severely restricted by lack of learning opportunities
 - Venture specialists are a critical missing component between huge sources of local funds and substantial entrepreneurial opportunities in Puerto Rico
- Absence of a local capital market complicates “exit strategies” for venture capital firms, raising their commitment and lengthening the maturation of their investments

Puerto Rico's small business sector is characterized by comparatively small scale

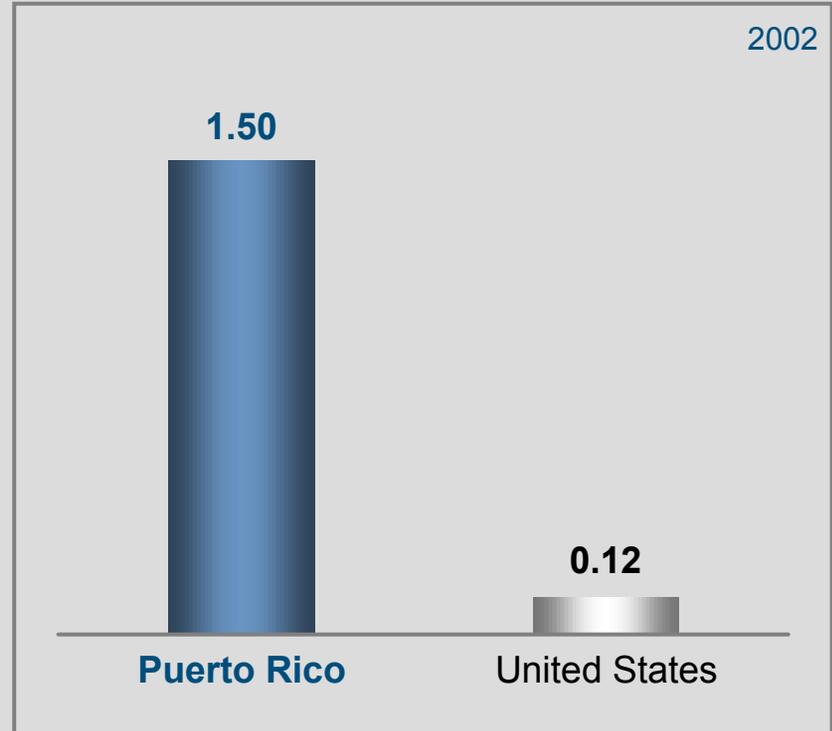


Payroll establishments

– By employment size –



Ratio of self-employed persons to total payroll establishments

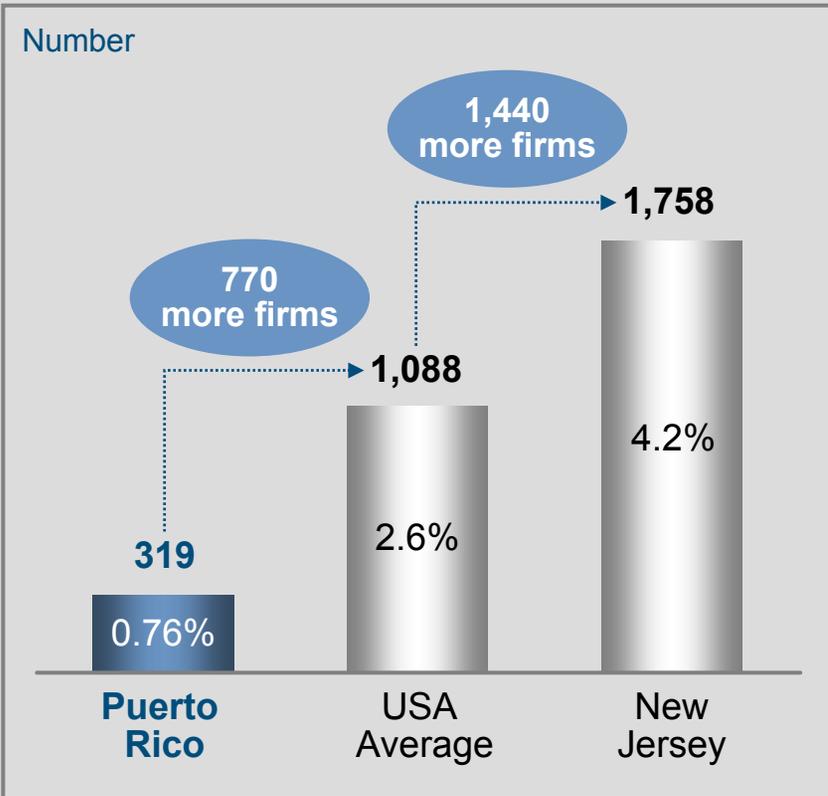


Average annual sales for small businesses in Puerto Rico are only \$ 303,600 – compared to \$1,900,000 in the United States

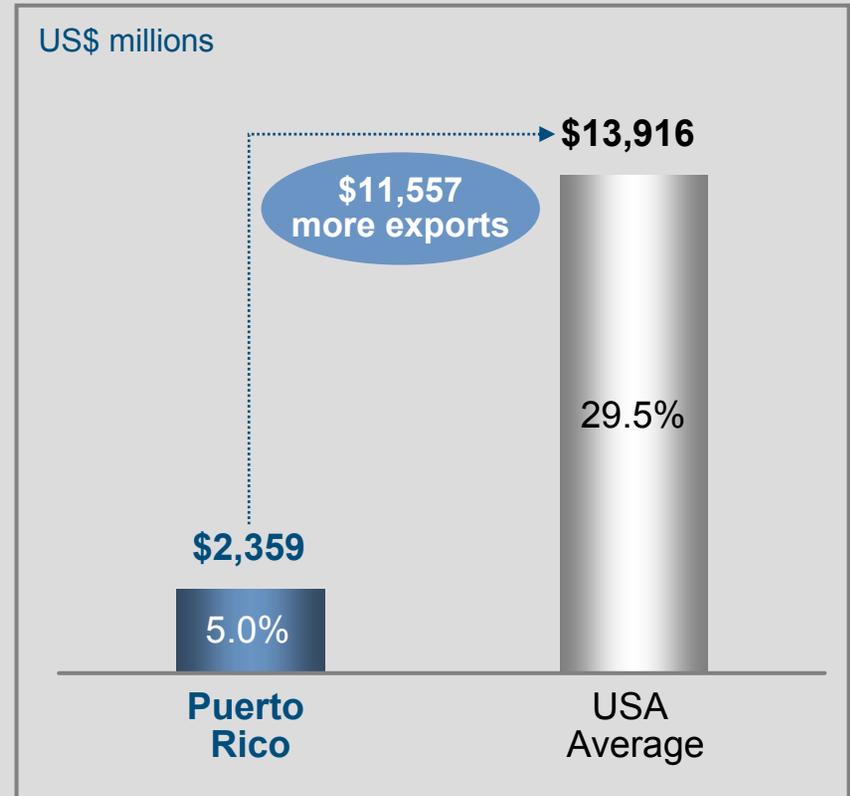
Source: U.S. Census Bureau, County Business Patterns (2001); Commerce Development Administration

There is substantial room to grow the number of small business exporters and the value of exports

Number of small business exporters
As a share of all firms



Value of small business exporters
As a share of all exports



Increasing competition and over regulation threaten ability to maintain growth and market-share

THREATS

Increasing competition

- Increasing competition from low-priced international retailers, shopping malls and “big box” retailers has undercut small “mom and pop” stores
- Urban sprawl of growing cities pits small businesses in declining city centers against newer, larger stores in outlying areas

Lack of incentives

- Minimal public support for local venture capital funds, with extremely low levels of venture investment from public pension and retirement funds
- Little practical support for small business exporters
- No effort to reverse “brain drain” in order to keep most talented financiers, scientists and businessmen

***Increasing
pressure to
remain viable***

Competitive disadvantages

- Low levels of technology penetration and innovative capacity in small businesses limit ability to compete
- Burdensome and costly business regulations
- Low rate of return and long maturation for venture funds

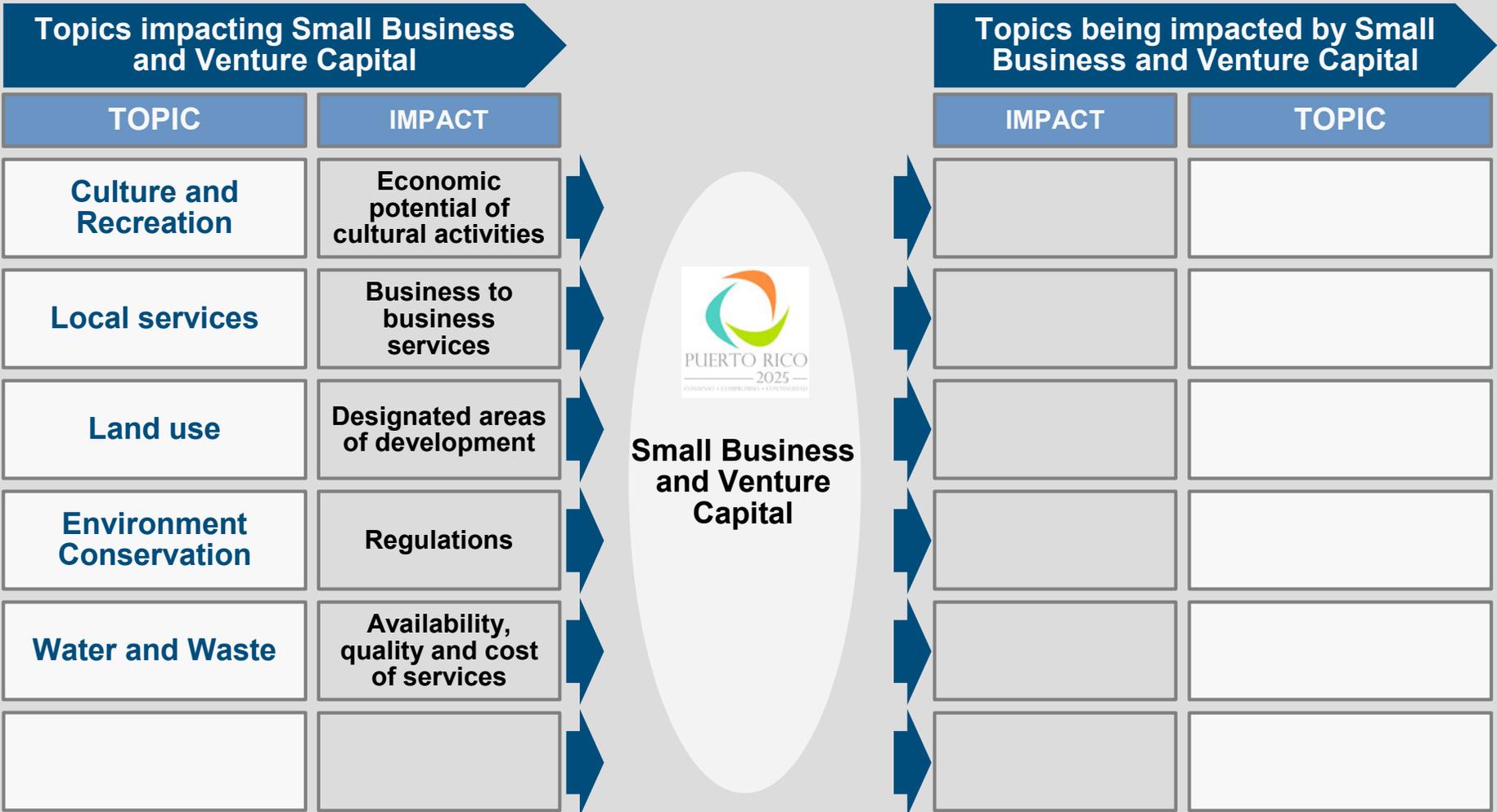
Over regulation

- Uncoordinated bureaucracy and red tape are making it increasingly difficult to run and grow businesses
- Lack of local competition discourages mergers and growth of larger, more viable medium sized firms

Small business and venture capital sector linkages



Small business and venture capital sector linkages (cont.)



Key questions going forward

- What must be done to **1) maintain** and **2) expand** the economic contribution from small businesses and the role of risk capital in Puerto Rico's economy?

- **What must be done to maintain the strengths of the small business sector?**
 - What can be done to streamline regulations and reduce the heavy cost of compliance for small businesses? Can local and municipal taxes be made less onerous on small firms?
 - What can be done to increase the number of small businesses created each year?
 - What can be done to improve awareness of and access to risk capital among small businesses?

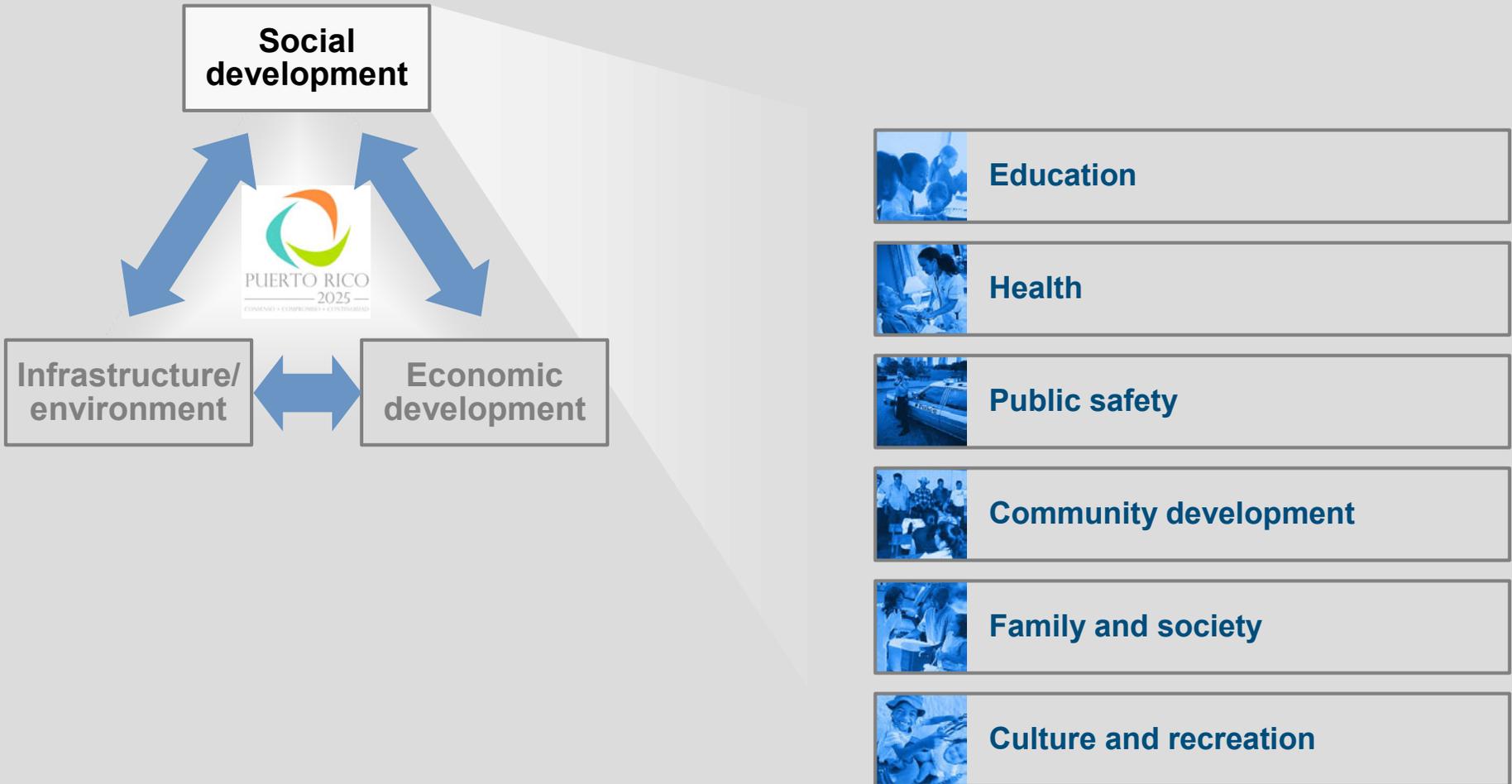
- **What can be done to leverage existing strengths and further increase the impact of these sectors?**
 - What can be done to improve technology adoption among small business owners?
 - What can be done to promote growth of small businesses to middle and large sized enterprises?
 - What can be done to expand the available pool of venture capital in Puerto Rico? What can be done to attract international risk capital?
 - What can be done to encourage and support exports from the small business sector?

Table of Contents

- Executive summary

- Appendix A: Detailed Assessment results
 - Economic development
 - **Social development**
 - Infrastructure and environmental development

- Appendix B
 - List of Interviewees
 - List of panel members
 - List of reference studies on Puerto Rico





-  **Education**
-  **Health**
-  **Public safety**
-  **Community development**
-  **Family and society**
-  **Culture and recreation**

Executive Summary - Education

- Puerto Rico has achieved substantial progress in education in the last decades with increasing investments
 - Reduction of illiteracy rates
 - Average level of the population's educational attainment)
- Regardless of the high level of investments in education, allocation is less effectively than in OECD countries, both in the K-12 system and in higher education
- Furthermore, the quality of K-12 education is in a downward trend and higher education programs are not considered appropriate for the current needs of the labor force and society
- Optimising the utilization of the resources destined to education in all levels (primary, secondary and higher education) will allow:
 - Improvements in teaching and R&D investments
 - Increasing competitiveness of Puerto Rico

Overview of Puerto Rico's Education

Strengths

- Puerto Rico has achieved substantial progress in education in the last decades, with increasing investments
- In relative terms, Puerto Rico invests more in education than OECD countries
- The average level of the population's educational attainment in Puerto Rico is comparable to G7 countries
- The quantity and cost of teachers and the cost per student at public schools follow G7 standards

Weaknesses

- Although Puerto Rico spends a similar amount on K-12 education when compared to OECD countries, such resources are not allocated as effectively
- Puerto Rico faces challenges in relation to the downward tendency in K-12 education quality
- In the case of higher education, Puerto Rico spends more than most OECD countries, but with resources also being heavily allocated to overhead expenses
- Collaboration between industry and academia on R&D is comparatively low
- Higher education programs are not considered appropriate for the current needs of the labor force and the society

Opportunities

- Optimising the utilization of the resources destined to education in all levels (primary, secondary and higher education) will allow for improvements in teaching, quality of life of all Puerto Ricans and the island's competitiveness

Threats

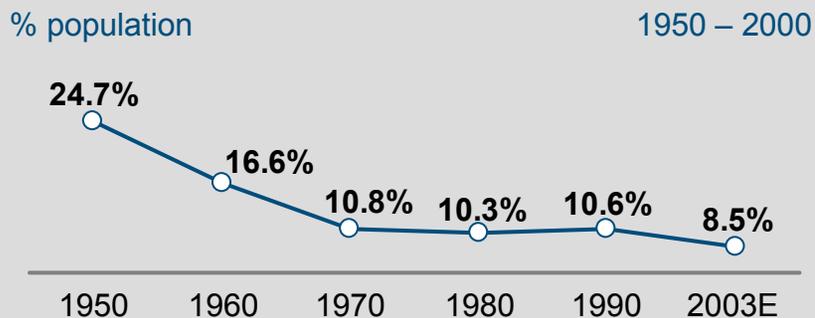
- The size and cost of the non-academic staff of the Department of Education is a threat since it absorbs a great amount of the resources that could be better utilized (I.e. in Research and Development at universities)



Puerto Rico has achieved substantial progress in education in the last decades, with increasing investments

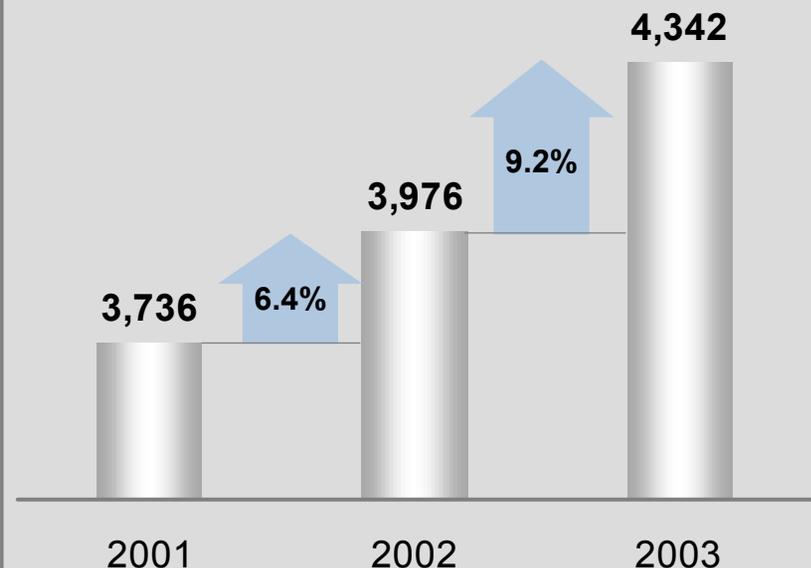
Illiteracy

– % of the population 15 years of age or older –



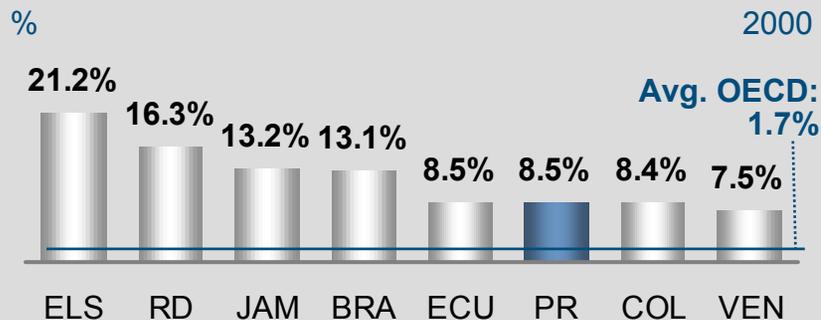
Increase of investments in education and culture

US\$ MM 2001-2003



International Comparison

– % of illiteracy in the population > 15 years old –



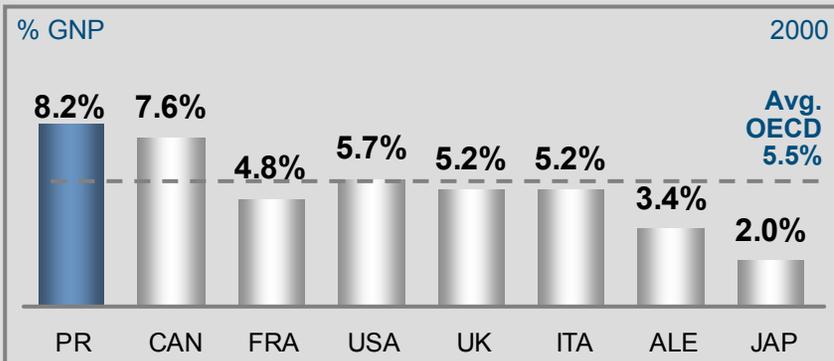
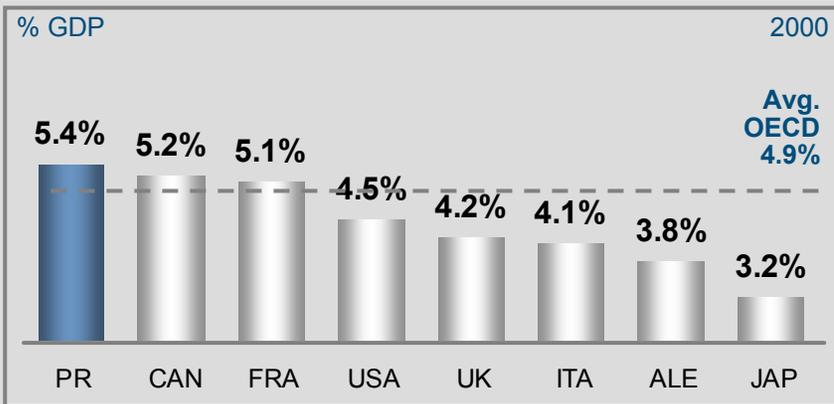
Of the state budget, Education represents 35% of the social expenditure

Note: Estimated values for PR in 2003
 Source: UNESCO; OECD; Analysis A.T. Kearney

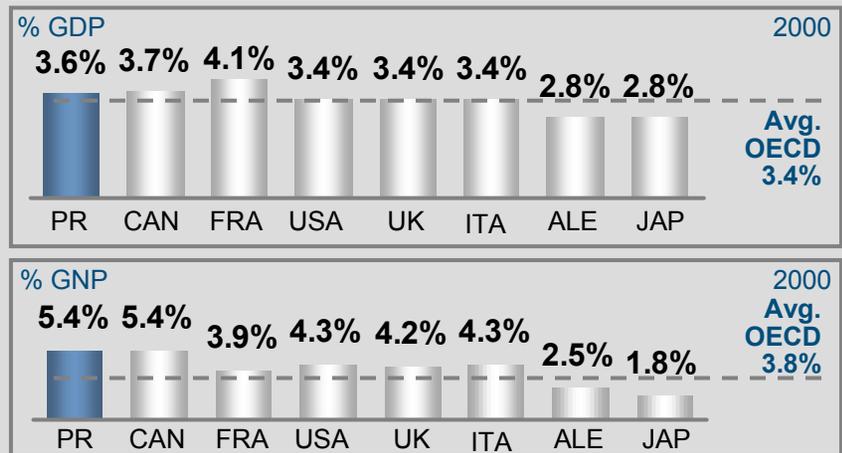
In relative terms, Puerto Rico invests more in education than OECD countries



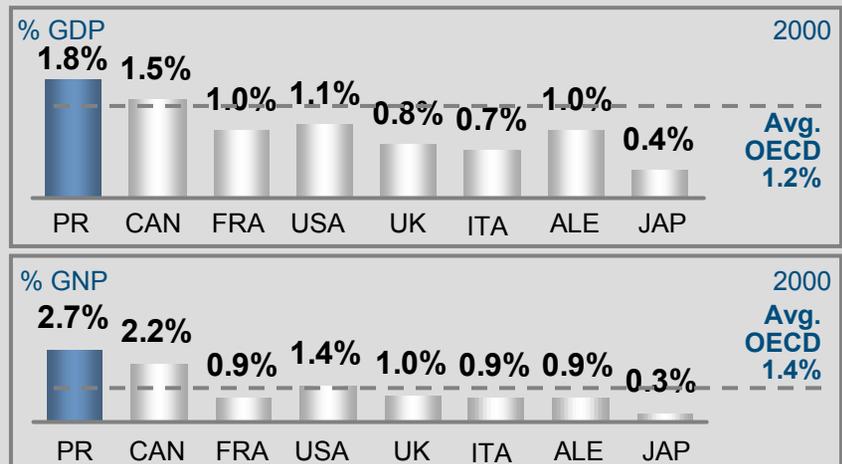
Public spending on education
As % of GDP and GNP



Expenditures in K-12 education
As % of GDP and GNP



Expenditures on higher education
As % of GDP and GNP



Of the budgeted \$ 4,342 MM for education and culture in 2003, \$ 1,227 MM are for higher education and \$ 2,743 MM for primary and secondary education

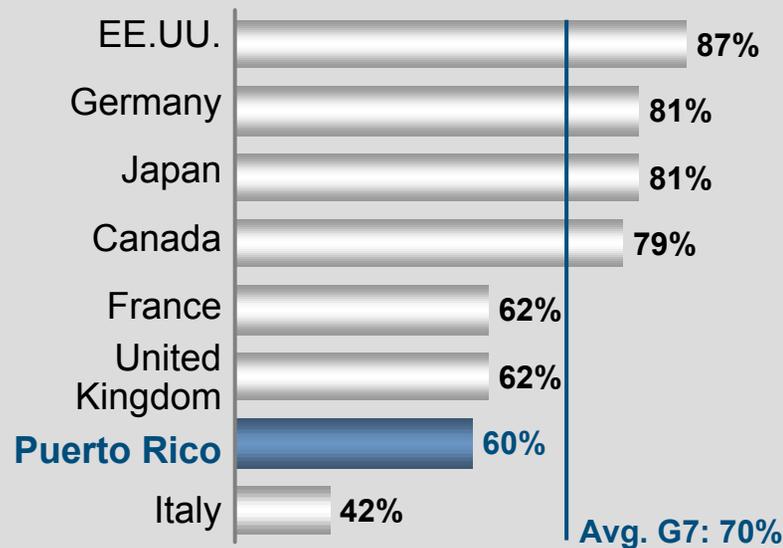
Source: UNESCO; OECD; Analysis A.T. Kearney

The average level of the population's educational attainment in Puerto Rico is comparable to G7 countries

STRENGTHS

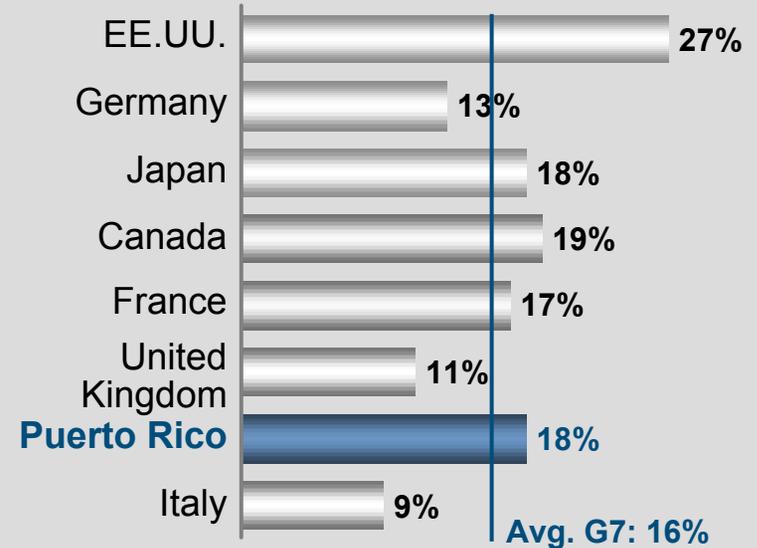
Population with secondary school

% of the population 25 years of age or older 2001



Population with a college degree

% of the population 25 years of age or older 2001

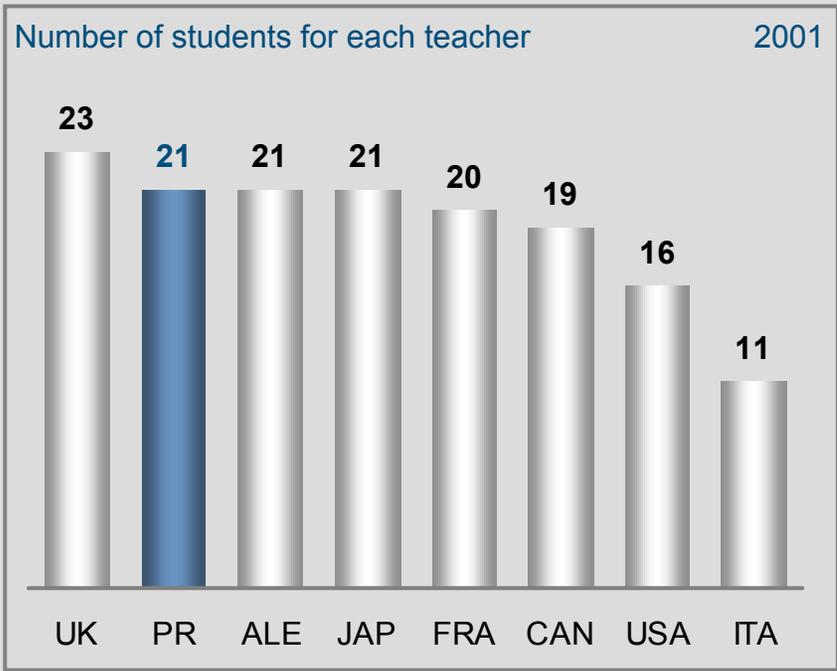


The student population that completes secondary education in Puerto Rico has a greater tendency to continue higher education studies than their counterparts in the G7, primarily because a greater percentage in Europe continue on to technical and vocational studies

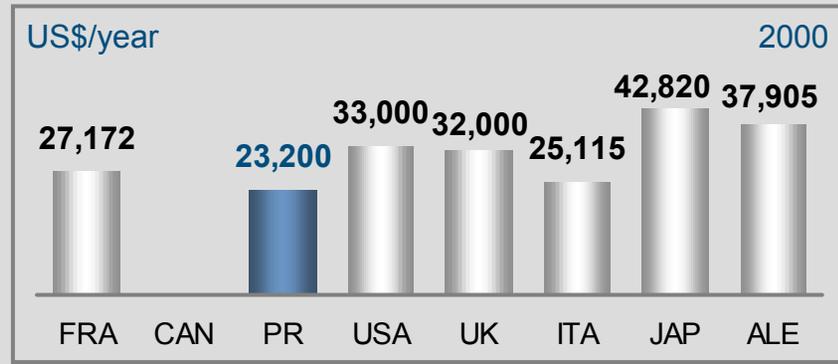
The quantity and cost of teachers and the cost per student at public schools follow G7 standards



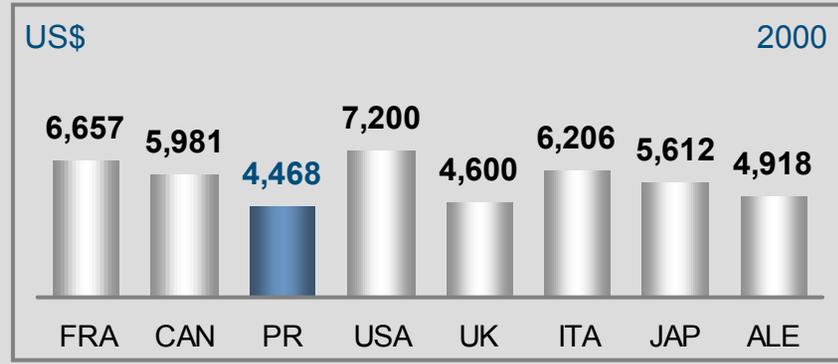
Number of students for each teacher in public schools



Average teacher salary in public schools



Spending per student in public schools



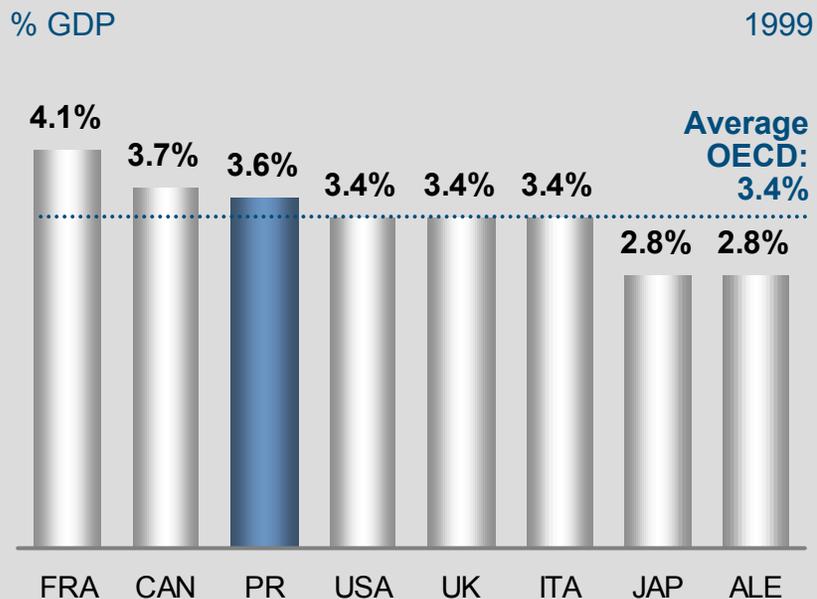
The cost difference is not due to a lesser number of professors or a lower salary but a higher percentage of non-academic staff

Note: 1990 data for Puerto Rico
 Source: UNESCO; OECD; Analysis A.T. Kearney

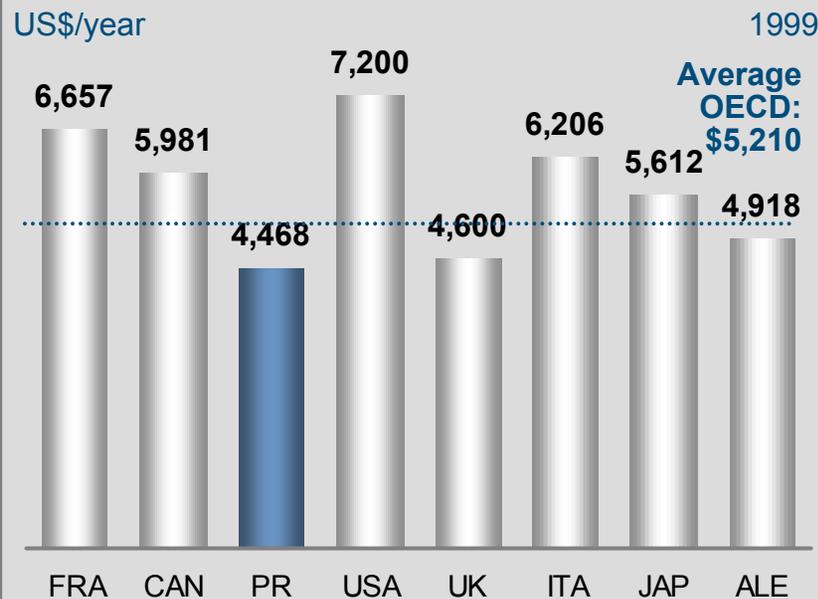
Although Puerto Rico spends a similar amount on K-12 education when compared to OECD countries...



Public spending in K-12 education



Cost by student for K-12 education

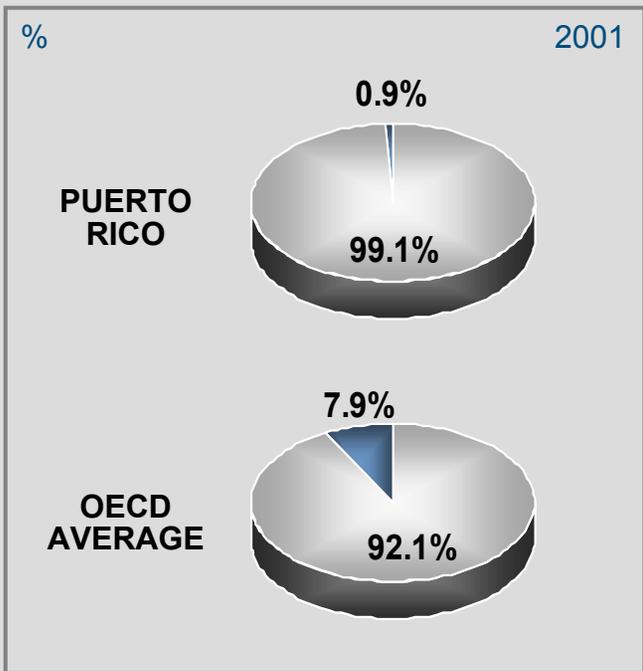


The Puerto Rico budget for K-12 education in 2003 is \$ 2,742 MM

...such resources are not allocated as effectively

	WEAKNESSES

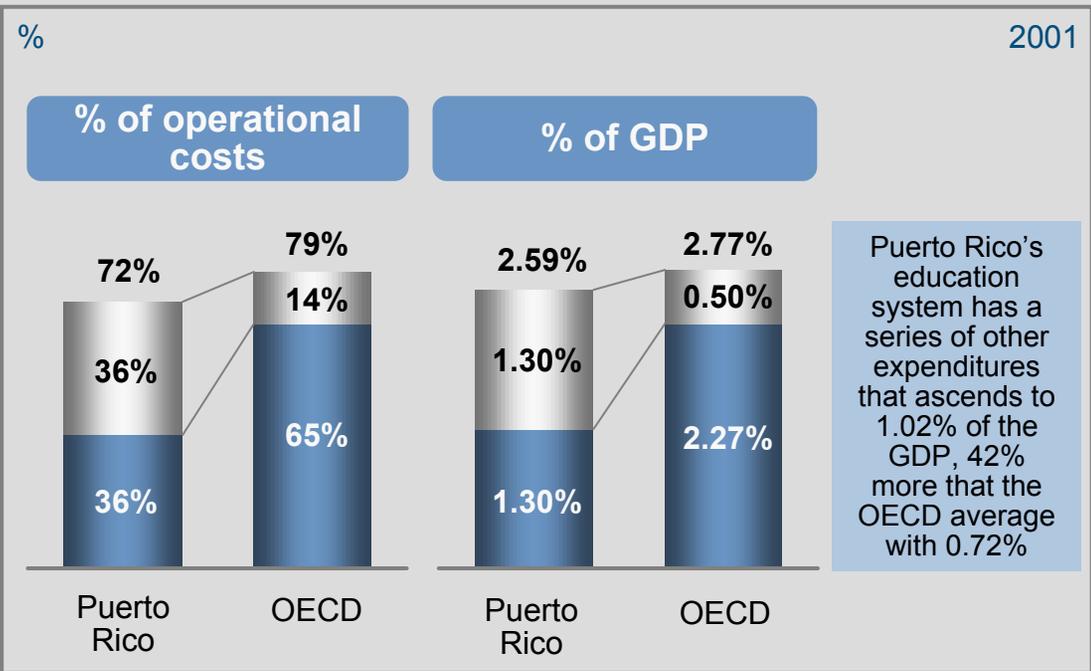
Spending profile of K-12 budget



Operational spending
 Permanent Improvement

Puerto Rico allocates less resources to permanent improvements...

Spending with payroll



Puerto Rico's education system has a series of other expenditures that ascends to 1.02% of the GDP, 42% more that the OECD average with 0.72%

Non-academic staff salaries
 Teaching staff salaries

...and spends 43% less with teaching staff salaries and 160% more with non-academic staff ones when compared to the OECD average

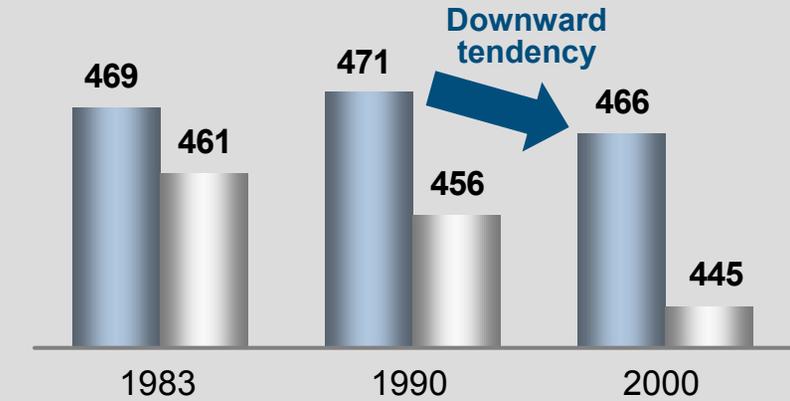
Source: OECD Education at a Glance 2001; Education Department Budget; A.T. Kearney Analysis

Puerto Rico faces challenges in relation to the downward tendency in K-12 education quality at public and private schools

Results of the CEEB¹⁾ aptitude tests

Verbal tests results

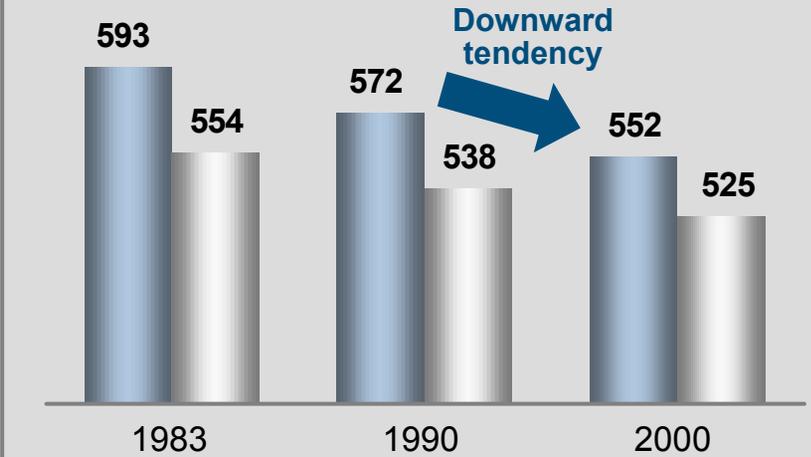
Average results 1983-2000



private schools public schools

Math tests results

Average results 1983-2000



private schools public schools

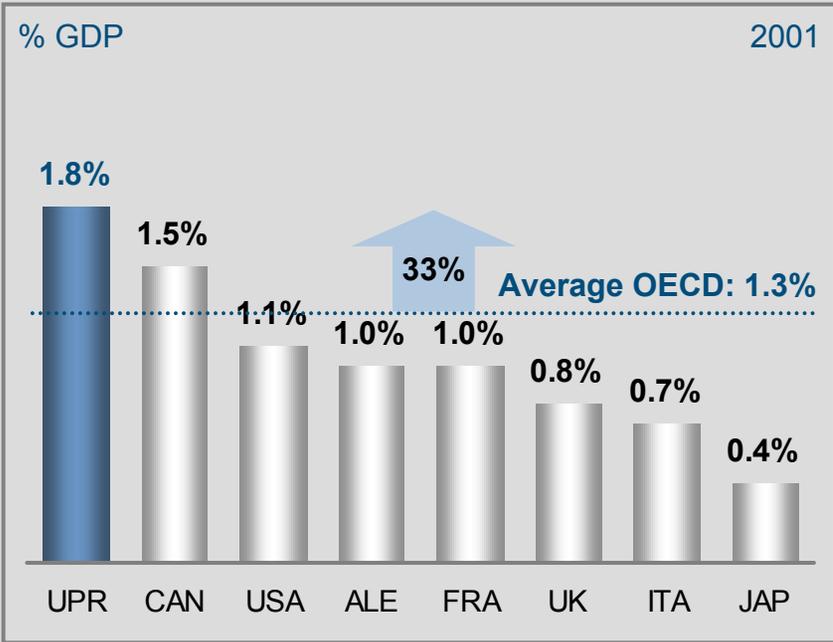
Public schools have worst results than private schools with an average difference that has kept constant around 50 points less during the past 20 years

Note: 1) College Board
Source: CEEB; Analysis A.T. Kearney

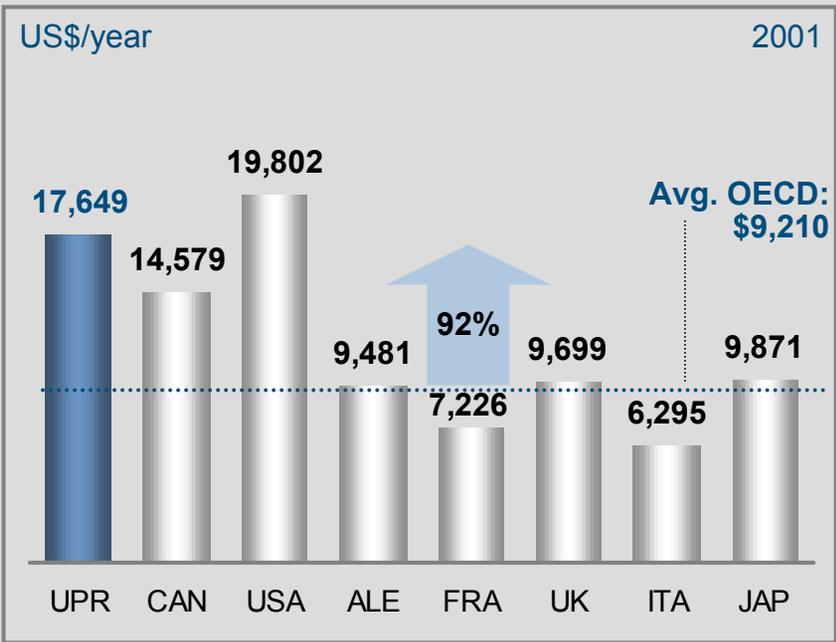
In the case of higher education, Puerto Rico spends more than most OECD countries...



Public spending in higher education



Cost per university student



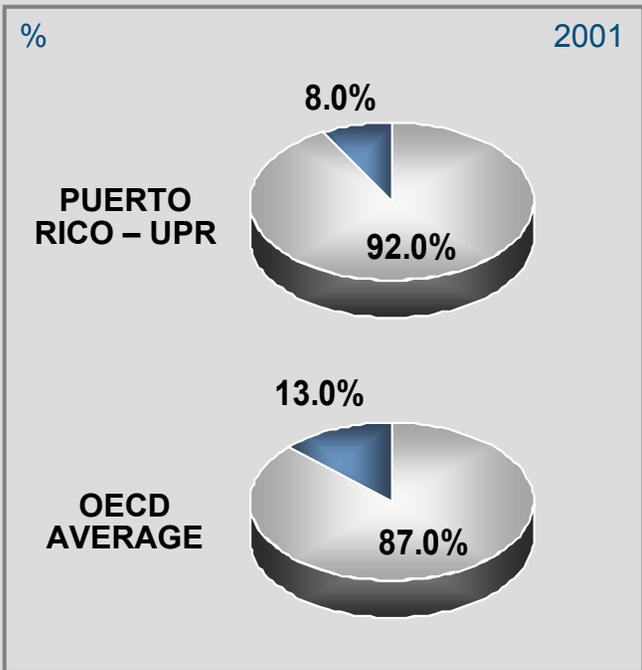
The 33% more of GDP in higher education when compared to OECD countries represents \$ 325 MM/year

Sources: OECD Education at a Glance 2001

...but with resources also being heavily allocated to overhead expenses

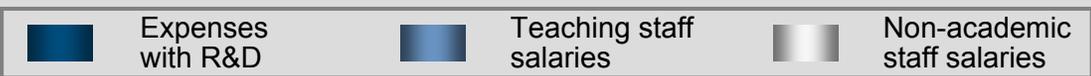
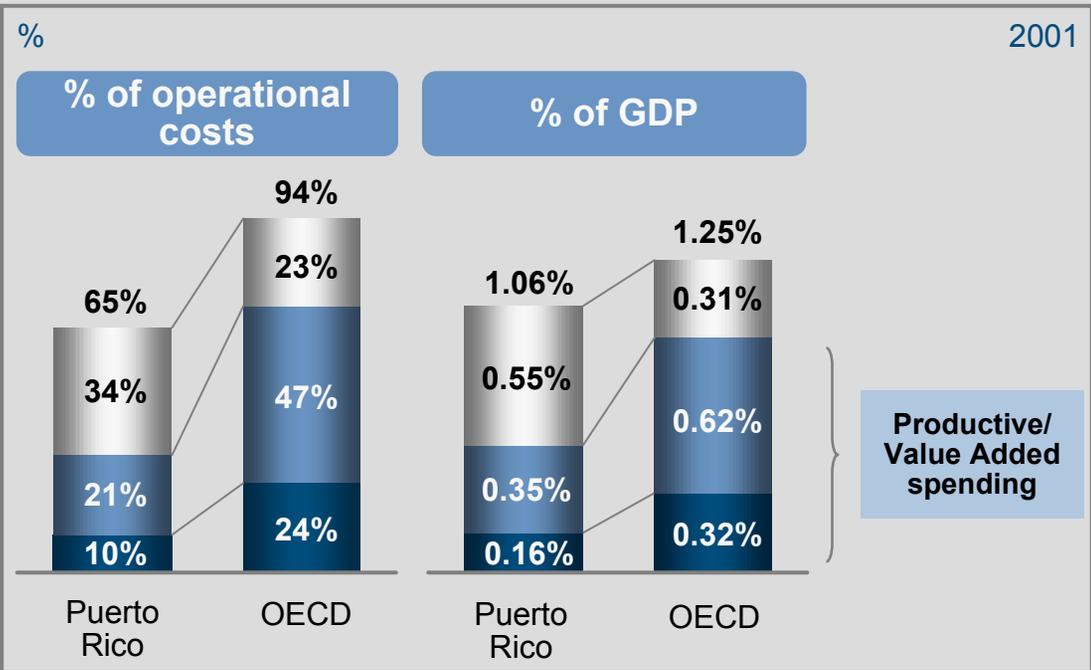
	WEAKNESSES

Spending profile of higher education budget



Puerto Rico allocates less resources to permanent improvements...

Spending with payroll and R&D



...and spends 44% less with teaching staff salaries, 50% less with R&D and 80% more with non-academic staff when compared to the OECD average

Source: OECD Education at a Glance 2001; Education Department Budget; A.T. Kearney Analysis

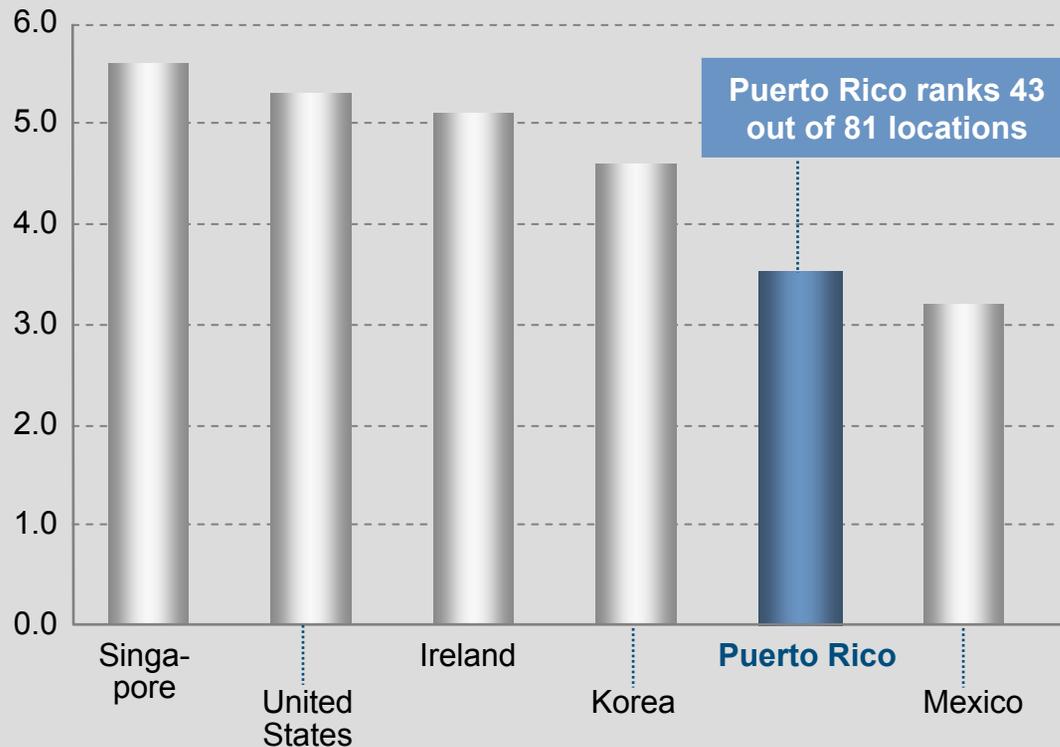
...and a comparatively low collaboration with the industry in matters such as R&D

WEAKNESSES

Collaboration on (R&D) between academia and industry

(7 – high, 1 – low)

2002



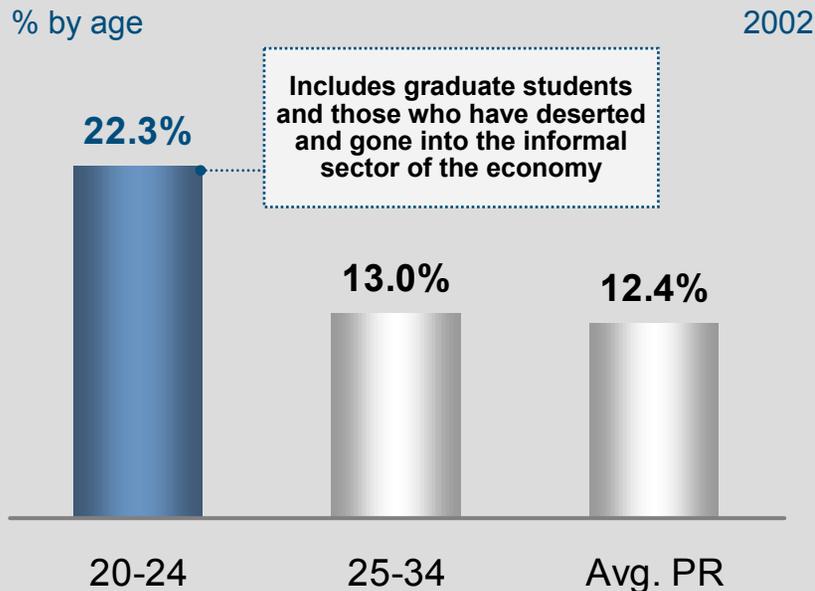
Key Factors

- Lack strong MA or PhD programs
- Generate people at the level of technical staff- not researchers
- Budget allocation for UPR gives no incentive to look to the market
- Professors are not well paid, making it hard to attract PhDs
- Consulting by professors is not encouraged
- Lacking a culture of entrepreneurship

Higher education programs are not considered appropriate for the current needs of the labor force and the society

WEAKNESSES

Unemployment Rate



Key observations

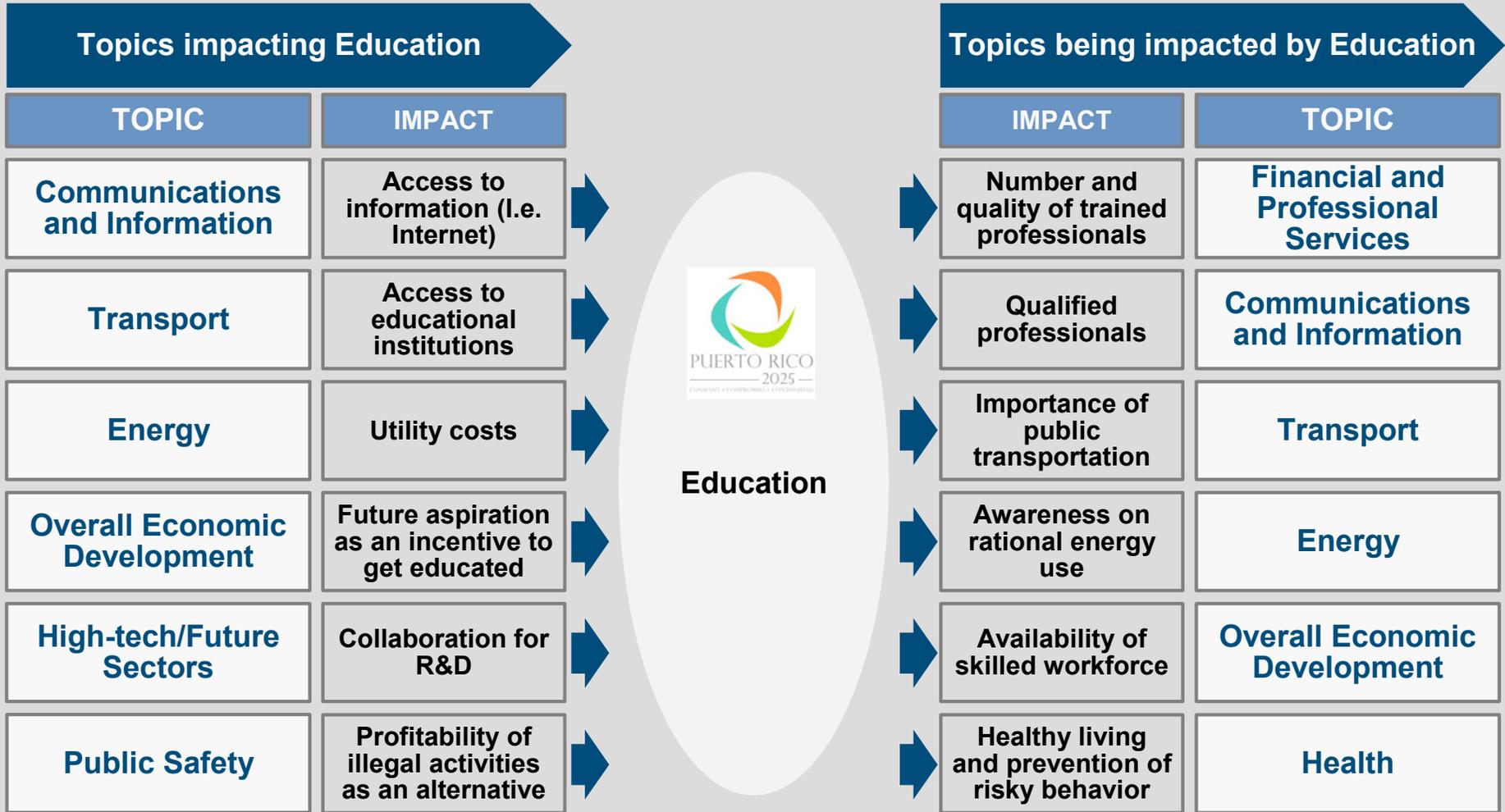
- The population with technical or vocational degrees is very low when compared to more developed countries. Only 7.2% of those 25 years of age or older, have vocational degrees while in Europe the amount is approximately 30% (60% in Germany).
- 27,300 new professionals graduated from college in 2002 (57% from private and 43% public universities, mainly UPR).

"In Puerto Rico there is an excess of engineers and lawyers with an unsatisfied high demand for electrical technicians and software developers, among other technical careers.."

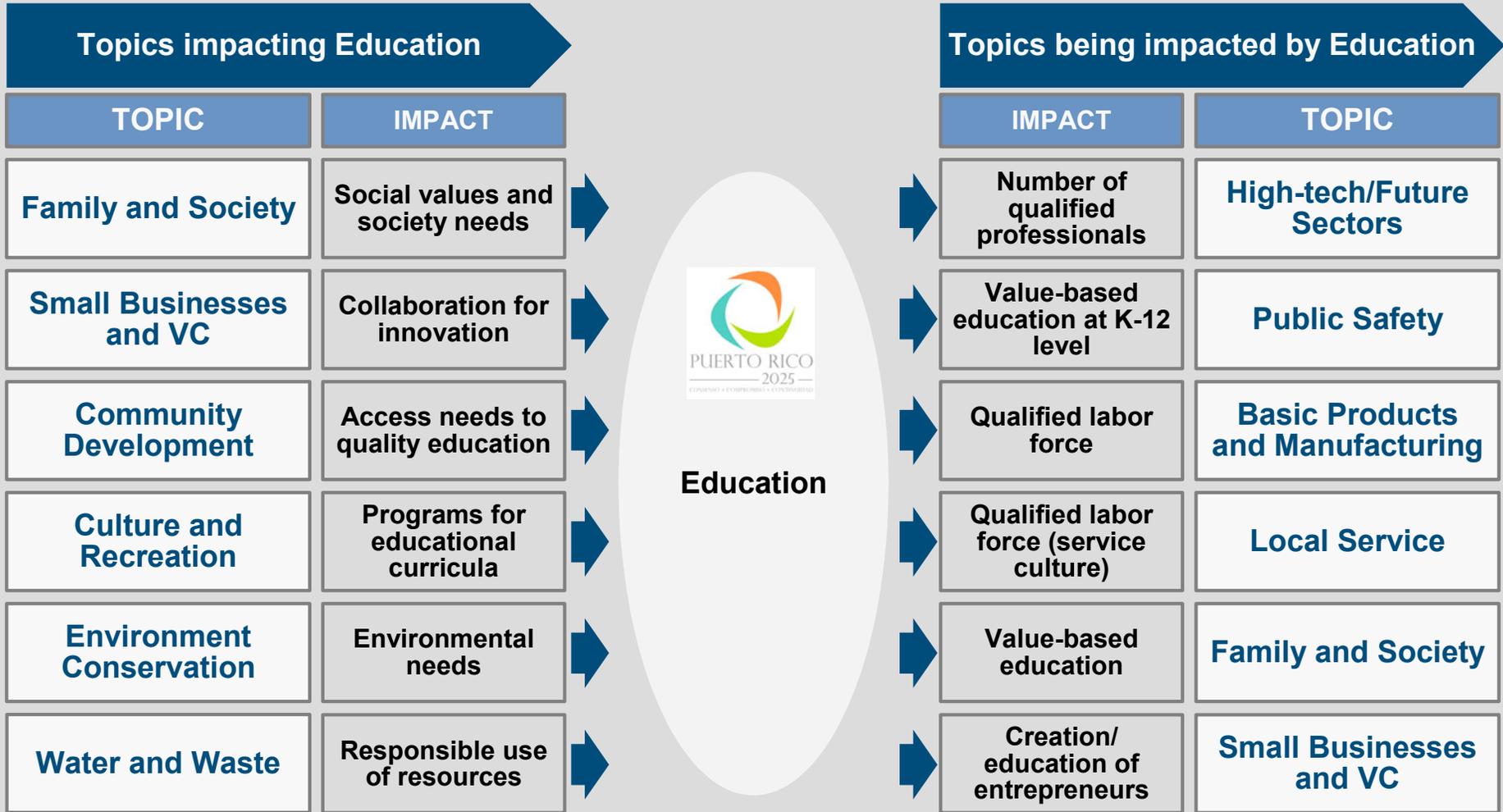
PR 2025 Interviewee

Migration to the United States or the integration to the informal sector of the economy have historically been escape valves for those who haven't been able to find a job after graduation from college

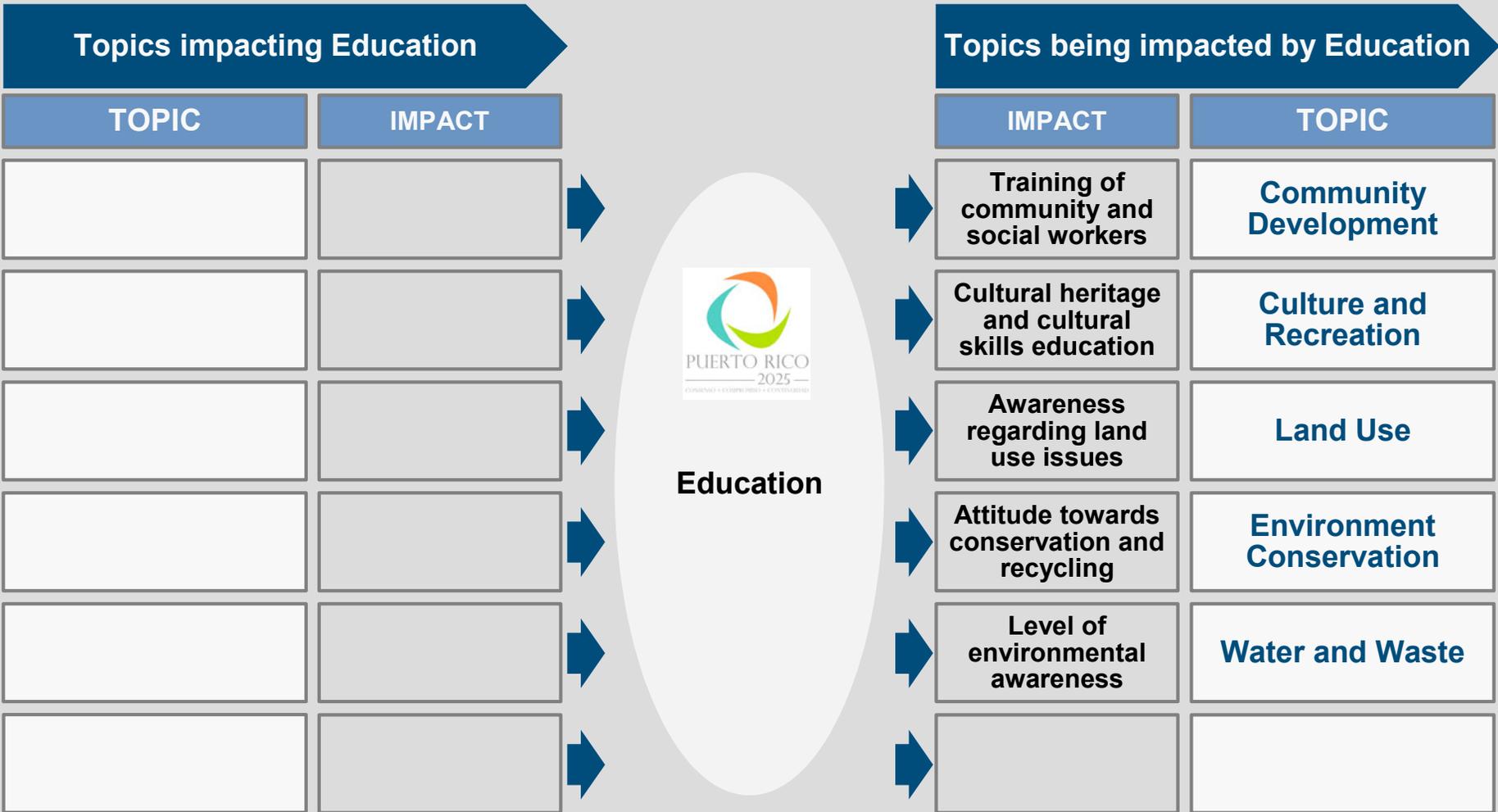
Education linkages



Education linkages



Education linkages



Key questions going forward

Education

- What has to be done to adapt the higher education system in Puerto Rico to the real and ever changing needs of the labour market?
- How can the downward trend in CEEB results be inverted?
- What should be done in the K-12 and higher education systems to invert the proportion of costs into one more focused into productive and value added spending?



-  **Education**
-  **Health**
-  **Public safety**
-  **Community development**
-  **Family and society**
-  **Culture and recreation**

Executive Summary - Health

- The health standards of Puerto Ricans have improved significantly in the last 50 years as reflected in the increase of life expectancy and sharp improvement in child mortality and other indicators.
- However, changes in demographic (ageing population) and disease profiles will require healthcare system and policies to adapt, creating challenges moving forward.
- Although several behavioral characteristics of the population have improved (ex. tobacco consumption, engagement in physical activity)
- Others have deteriorated (ex. obesity, drug use) and explain in part or at total some of the largest causes of mortality (e.x. AIDS, diabetes, hypertension, ischaemic heart disease).
- Nonetheless, specific measures addressing these behavioral risk factors can help improve this situation.
- Also, Puerto Rico demonstrates levels of healthcare spending per capita at par with most developed countries reaching almost 14% of GDP.
- However, the increasing costs, growing at rates higher than the overall economic growth may put the long term solvency and feasibility of the system at risk, and on the same token reduce the competitiveness of the Puerto Rican economy.
- Following the US pattern, despite the large share of GDP allocated to health, there is still a portion of the resident population in Puerto Rico that don't have appropriate medical coverage.

Overview of Puerto Rico's Health

Strengths

- The health standards of Puerto Ricans have improved significantly in the last 50 years
- Several behavioural characteristics of the population have improved in the last years
- Puerto Rico demonstrates levels of healthcare spending per capita at par with most developed countries

Weaknesses

- Some behavioral characteristics have deteriorated, leading to high levels in critical risk factors
- These critical risk factors have a significant impact in the health quality of its citizens
- Risk taking behavior in Puerto Rico also contributes to high high mortality and incidence rates of AIDS and other diseases
- Following the US pattern, despite the large share of health spending, there is still a portion of resident population without appropriate medical coverage

Opportunities

- Specific identified measures targeting the major behavioral risk factors will help improve the current mortality rates

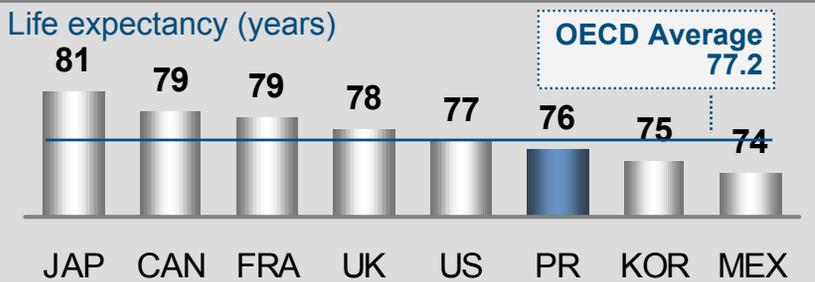
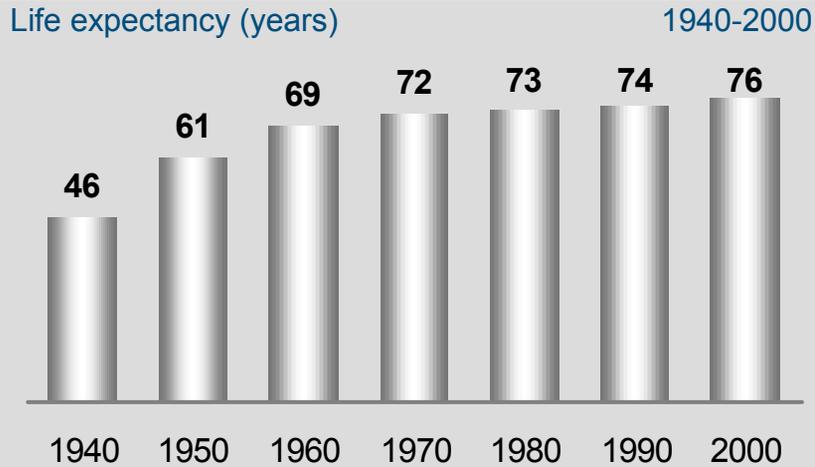
Threats

- Changes in demographic and disease profiles will require the healthcare system and policies to adapt to this challenge moving forward
- However, these costs have been growing at rates higher than the overall economic growth...
- ...and are alarmingly high when compared to GDP and GNP, which may put the long term solvency of the system at risk
- Total expenditures on the reform are increasing at a higher rate than the growth of new subscriptions, with 5.6% more in average every year

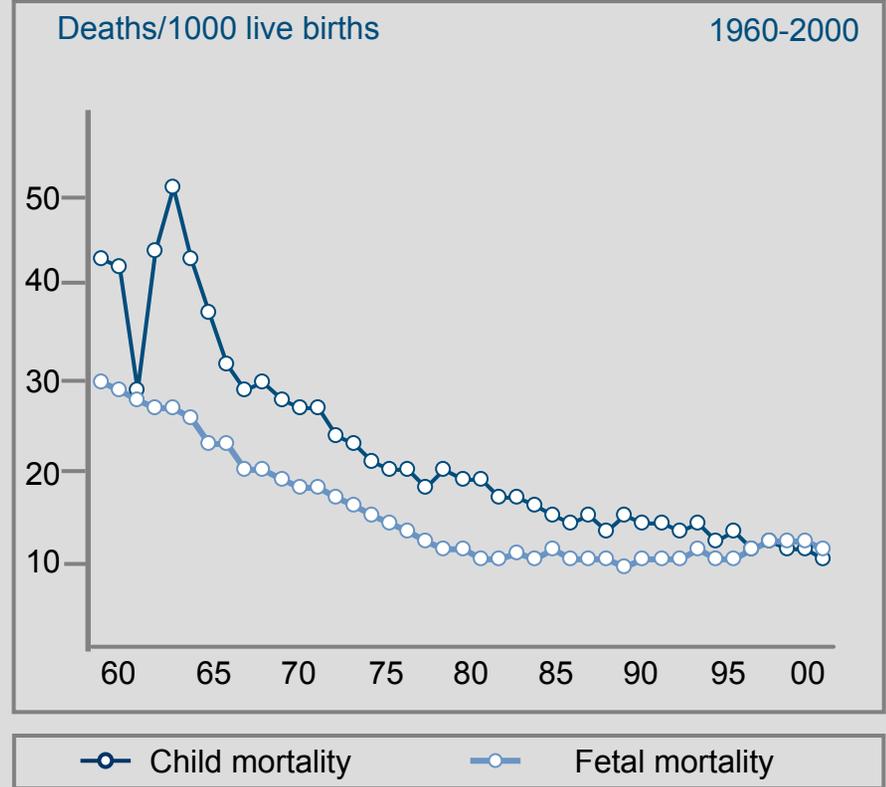
The health standards of Puerto Ricans have improved significantly in the last 50 years



Life expectancy has grown until reaching OECD levels...



Child and fetal mortality rates are at historic minimums...

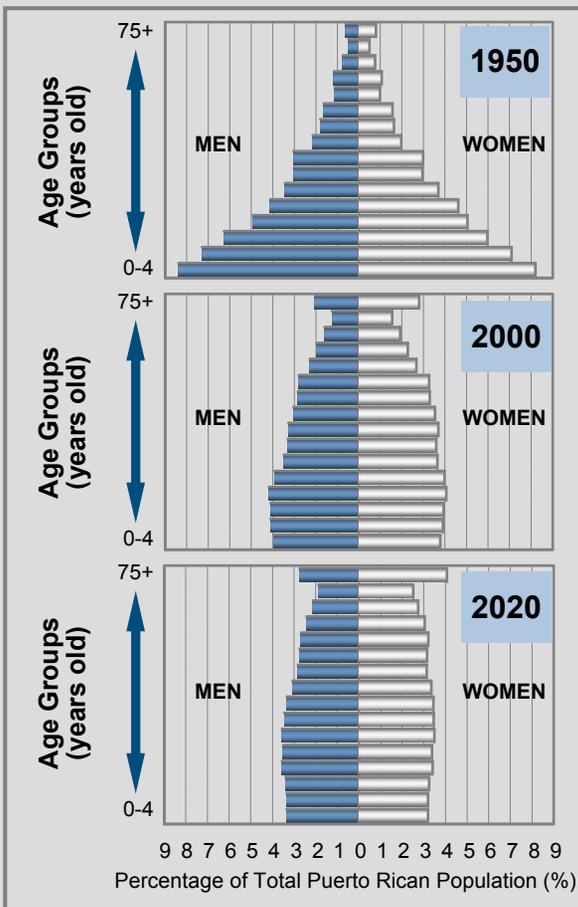


Fifty years ago Puerto Rico had infectious diseases as number one cause of death. Nowadays, Puerto Rico has the epidemiological profile of first world countries, characterized by cardiovascular health problems, cancer, etc.

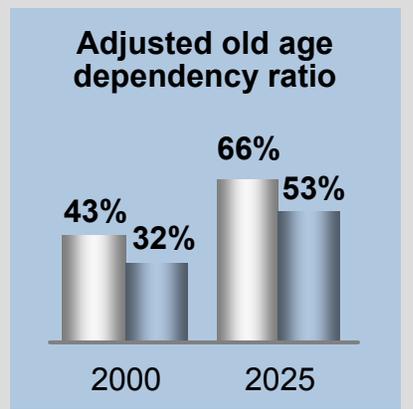
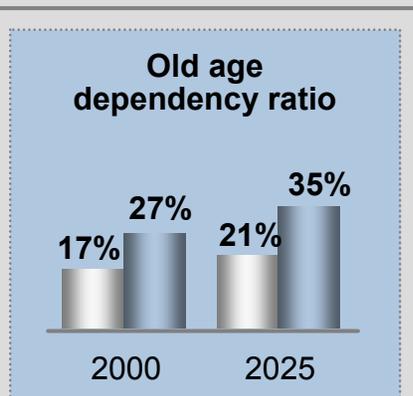
However, changes in demographic and disease profiles will require the healthcare system and policies to adapt to this challenges moving forward



As population ages...

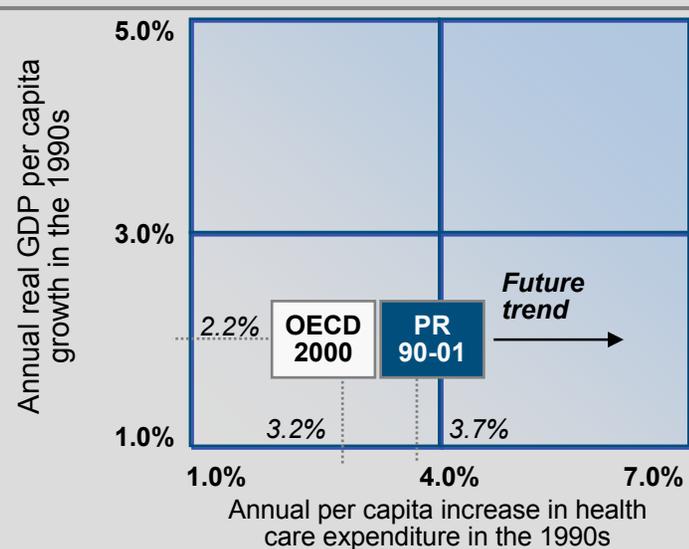


... and dependency ratios increases¹⁾...



Legend: Puerto Rico (light blue), OECD (dark blue)

... health care costs will further press government budget



Health budgets – drivers of increasing pressure:

- **Aging:** it is estimated that per capita health costs with the over 65 age group are 3 to 5 times higher than those under 65
- **Technology:** expensive new technologies are being increasingly demanded
- **Behavior:** more people want to have access to new technologies and techniques
- **Profile of new pathologies:** rapid increase in diseases (mainly related to lifestyle) with more complex and expensive treatments

Note: ¹⁾ Old age dependency rate equals the ratio between the population aged 65 and over and the population between 15 and 64. The adjusted ratio considers only the employed population between 15 and 64 in the denominator

Source: Puerto Rico Planning Board – Census Office; Society at a Glance – OECD 2003; A.T. Kearney analysis

Several behavioral characteristics of the population have improved in the last years...

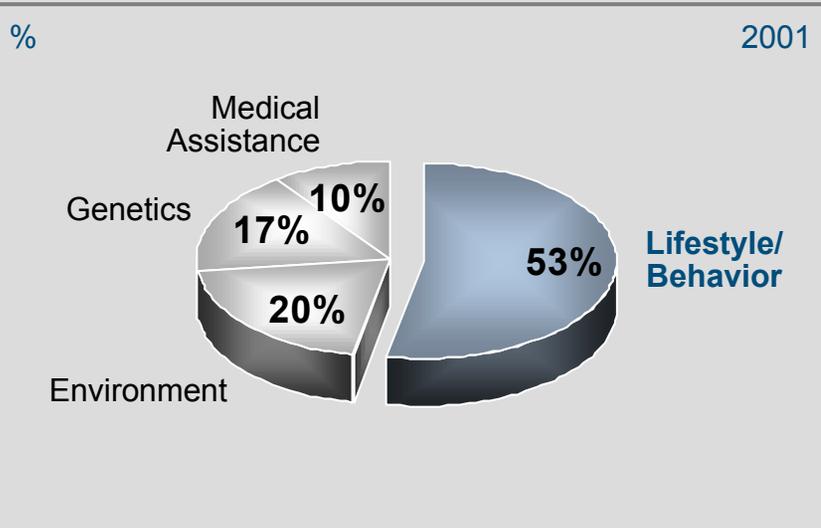
	STRENGTHS

Behavioral factors affecting health

- **Puerto Rico is the American state with less smoking tendencies (52/52)**
 - No more than 28.4% of people interviewed in a recent study have smoked more than 100 cigarettes in their life.
 - Puerto Rico shows a less than 15% tendency in people older than 18 years old, to smoke more than 100 cigarettes in their life.
- Despite some fluctuations, **the percentage of people doing physical activities to loose weight, has increased up to 45.5% from 1996 to 2000.** Particularly, people between 35 and 64 years old who are more frequently over weighted.
- Between 1996 and 2000, **the percentage of women 45 to 54 years old who have practiced a mammography study went up 10%,** from 72% to 81.7%.

...on the other hand, others have deteriorated, leading to high levels in critical risk factors

Behavioral factors are critical for longevity

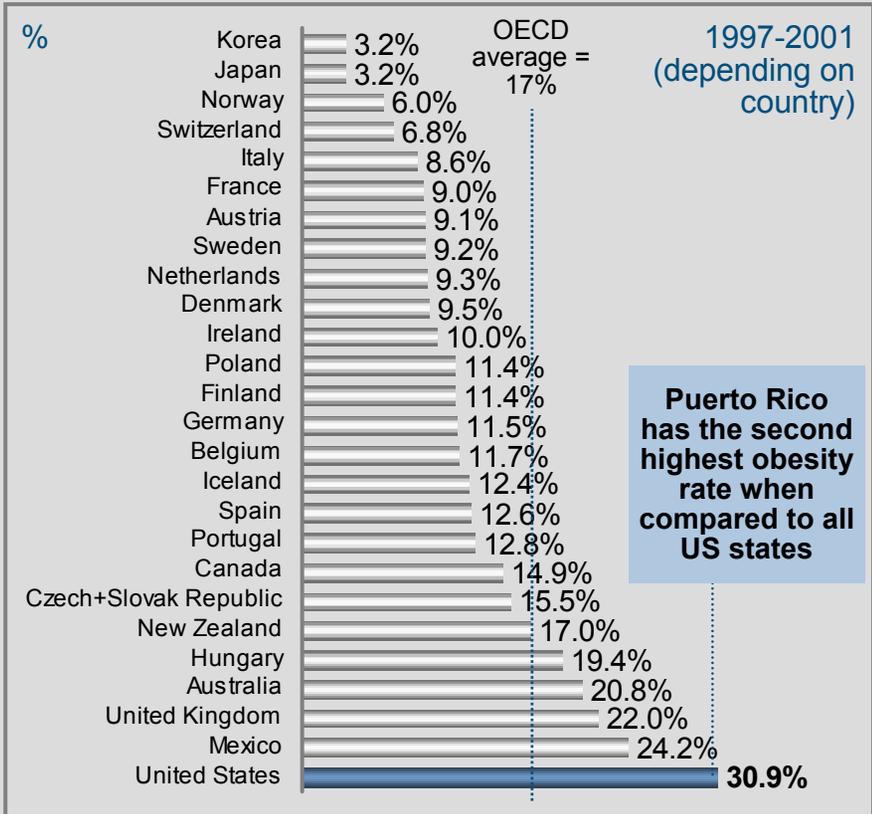


Lifestyle/behavior factors include:

- Adequate and balanced alimentation
- Regular practice of physical exercises
- Practice of periodic medical exams and check ups
- Smoking
- Excessive drinking (alcoholic beverages)

Share of Obese Population

% of population aged 15 years and over

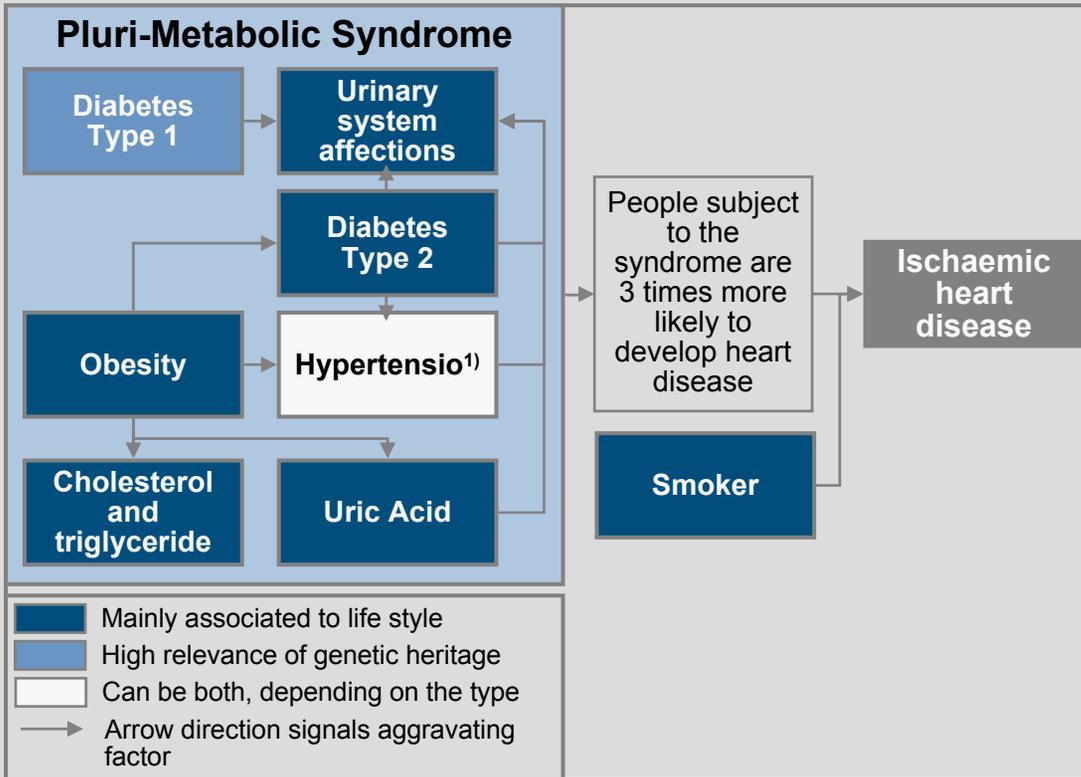


Obesity is a known risk factor (more severe than smoking and excessive alcohol drinking) for several disorders with significant economic and non-economic consequences – these tend to be aggravated going forward as obesity increasingly affects the youth

These critical risk factors have a significant impact in the health quality of its citizens

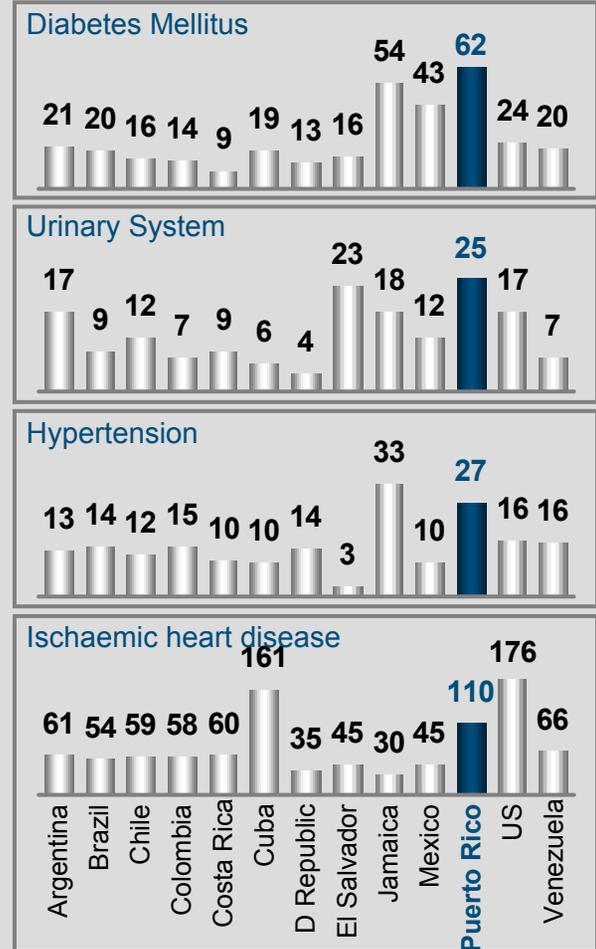
WEAKNESSES

Simplified Scheme of Some Diseases Highly Related to Life Style and Some Interrelationships



Cardiovascular diseases are the cause of nearly 50% of all deaths in Puerto Rico

Key Mortality Rates – per 100,000 inhabitants – 2000 –

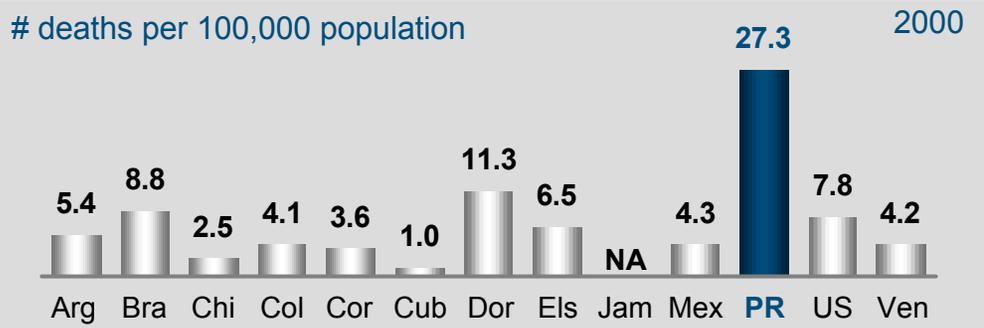


¹⁾ In the case on black origin people, the main cause is genetic heritage and in white people, lifestyle is the key cause
 Source: Stanford University; PHO; A.T. Kearney Analysis

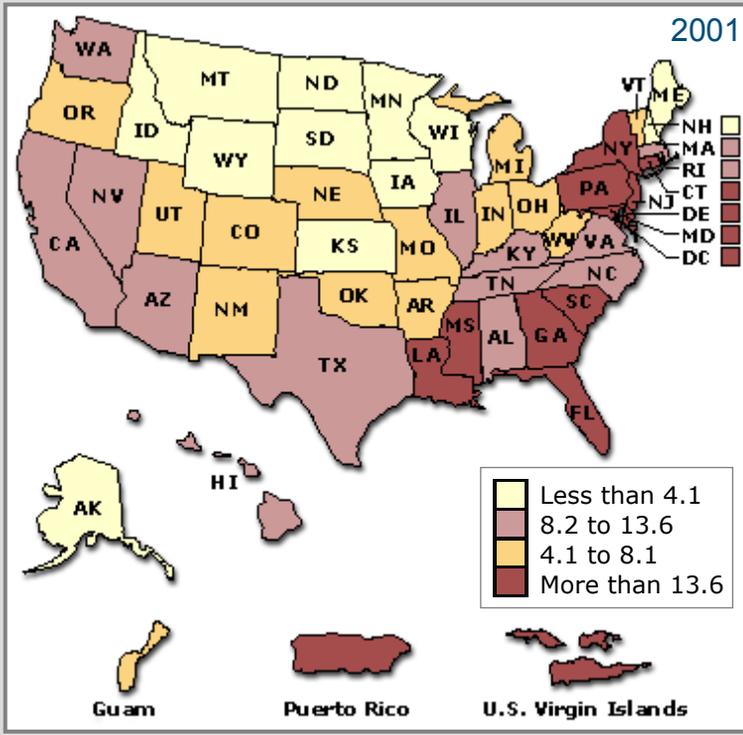
Risk taking behavior in Puerto Rico also contributes to high mortality and incidence rates of Aids...



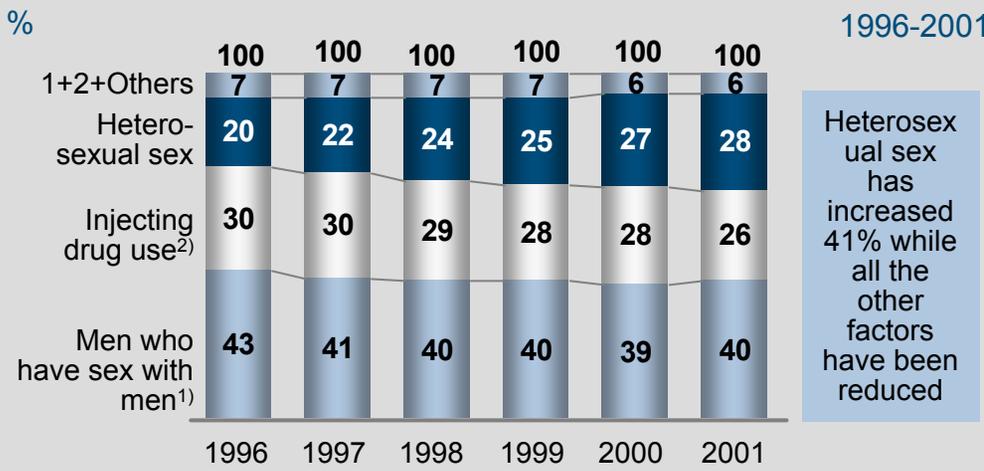
Mortality Rate due to AIDS
per 100,000 population



Incidence Rate of AIDS in the US
new cases per 100,000 population



Risk taking behaviors associated to AIDS



Overall US Average	OECD Average	Incidence in Puerto Rico
14.9	5.2	32.3

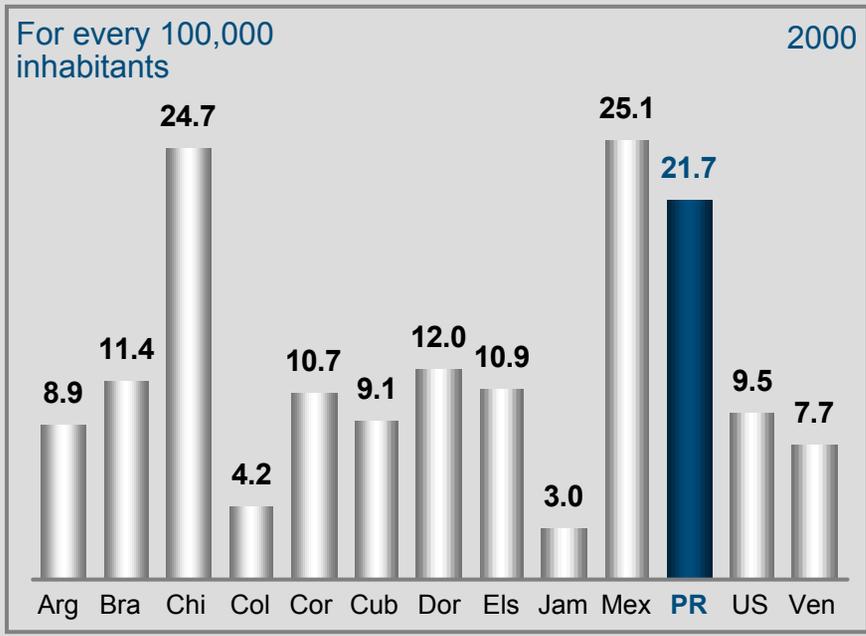
Source: Health in the Americas, PAHO; HIV/AIDS Surveillance Report: US HIV and AIDS cases reported through Dec 2001, Vol. 13, No 2, National Center for HIV, STD and TB Prevention, Centers for Disease Control and Prevention; Health at a Glance – 2003 OECD indicators; Analysis A.T. Kearney

...and other diseases



Additional Examples of Diseases Impacted by Behavioral Factors

Mortality rates due to cirrhosis and other liver affections

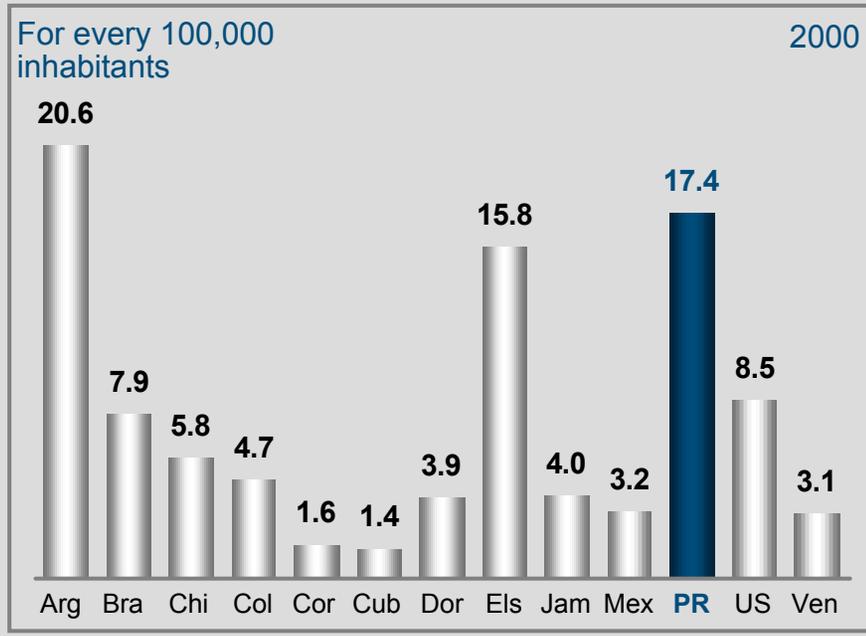


Potential Behavioral Influence:

- Excessive Drinking
- Hepatitis B and C transmitted through injection illegal drugs, unprotected sexual relationships, blood transfusion

Source: PAHO; A.T. Kearney Analysis

Mortality rates due to Septicemia



Potential Behavioral Influence:

- Injection of illegal drugs
- Abortion

Other factors: – Hospital septic environment
– Diabetes

Specific identified measures targeting the major risk factors will help improve this situation...


 OPPORTUNITIES


 Examples

Nutrition

- The reduction of saturated fatty acids helps control the rise in cholesterol levels, which is fundamental to the epidemic of heart disease, leading cause of death in PR
- Exclusive breastfeeding helps reduce the risk of iron deficiency, which can lead to impaired concentration, cognitive performance and behavioral abnormalities in infants
- The risk of diabetes is increased up to 100 fold by obesity, and 80% of the prevalence of diabetes can be attributed to obesity and overweight. Education on healthy feeding habits
- Iodine deficiency, the first cause of avoidable mental deficiency, can easily be eradicated through universal salt iodization
- The consumption of fruit and vegetables reduces the risk of chronic disease

Physical activity

- It has been estimated that eliminating physical inactivity would result in 15-39% less coronary heart disease, 33% less stroke, 12% less hypertension, 12-35% less diabetes, 22-33% less colon cancer, 5-12% less breast cancer and 18% less osteoporotic fractures
- Most active men spend 36% and most active women 23% fewer days in hospital than the least active people. Education and support of sports at all ages

Alcohol

- Reducing the levels of alcohol consumption is being proved to reduce the risk of liver cirrhosis, raised blood pressure, heart disease, stroke, pancreatitis and several types of cancer
- According to research evidence, a policy mix that makes use of taxation and control of physical access, supports drink-driving countermeasures and invests broadly in treatment and particularly in primary care is likely to succeed in reducing these problems

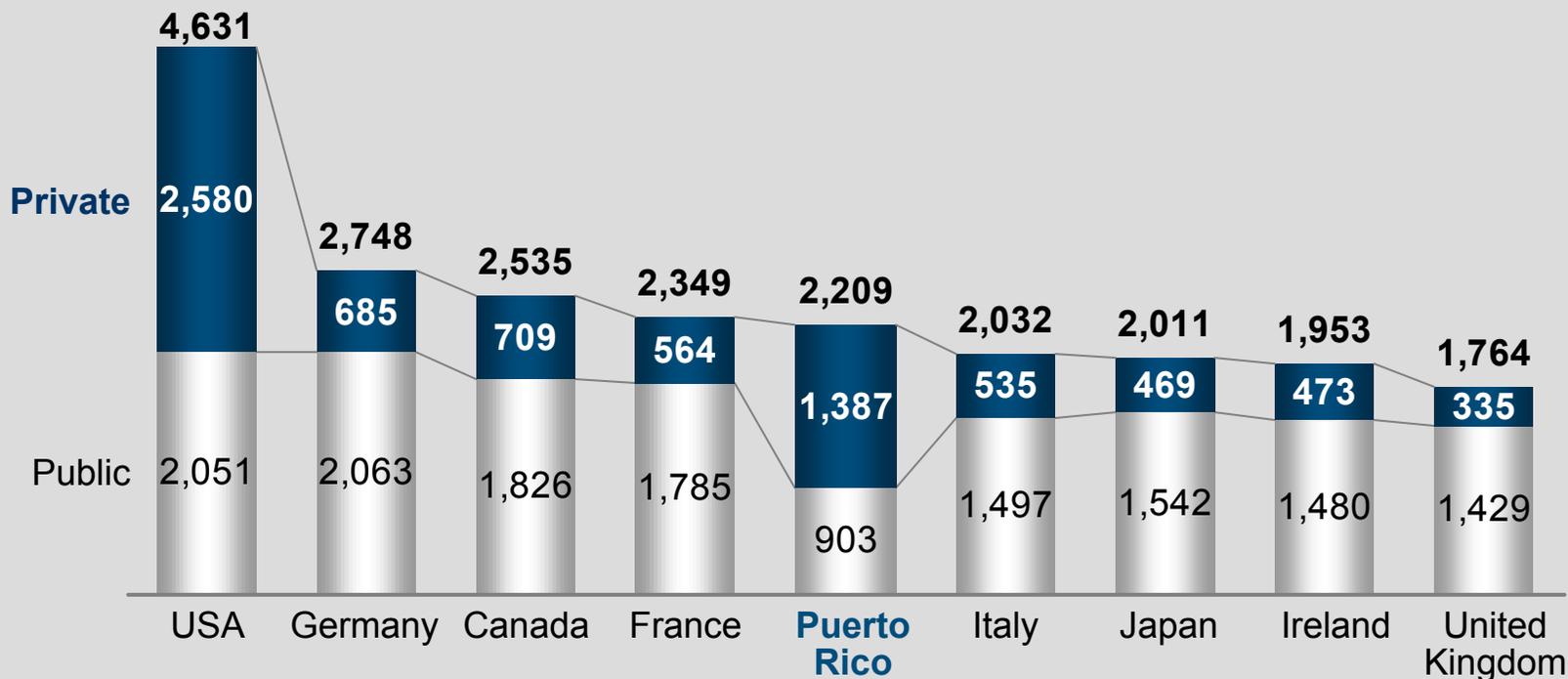
Illegal drugs

- Substance dependence must be recognized as both a chronic medical illness and a social problem
- Effective measures to control injected drugs (in a clear rise among drug users in PR) have being proved to reduce HIV and Hepatitis C infection rates

Puerto Rico demonstrates levels of healthcare spending per capita at par with most developed countries...



Expense per capita in the health sector
\$ /year (2000)

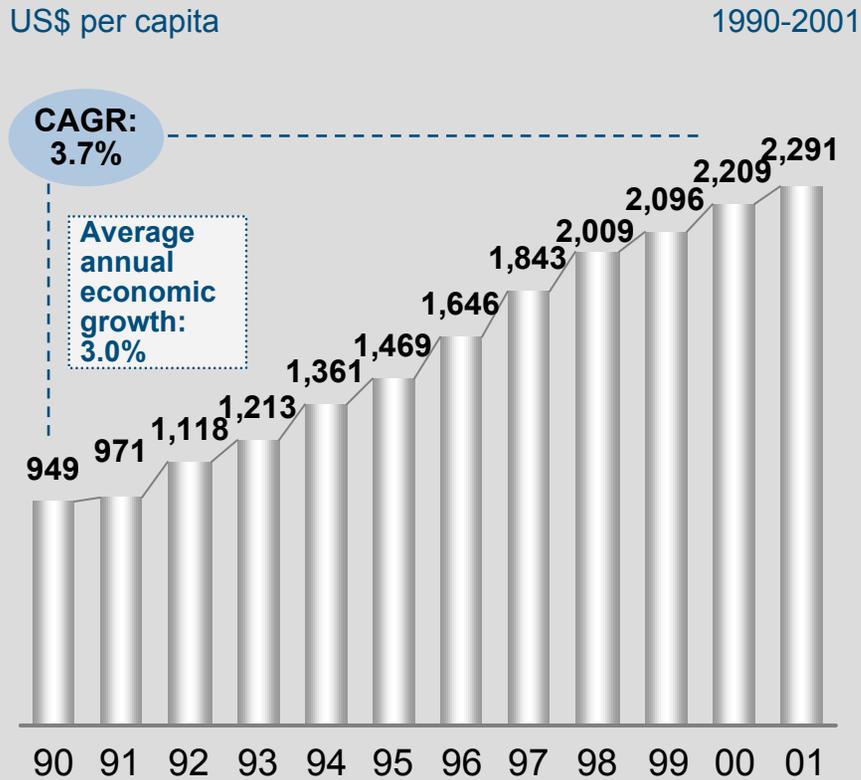


In Puerto Rico 40% of total spending goes to public health in tone with the American model, different to the 75% average in the other OECD countries

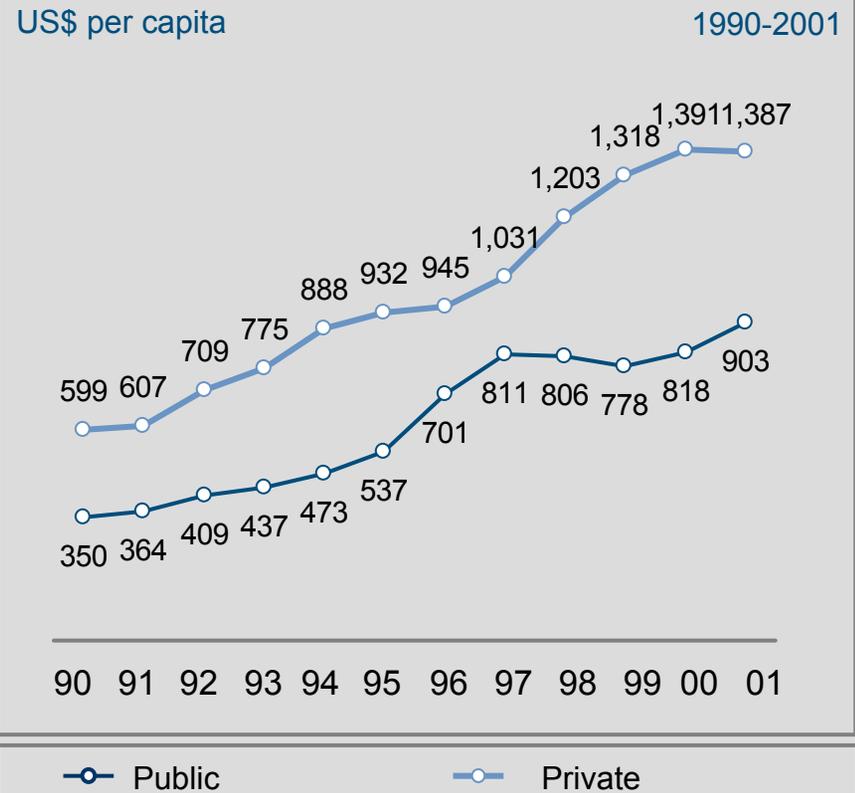
Source: PAHO; A.T. Kearney Analysis

However, these costs have been growing at rates higher than the overall economic growth...

Health spending is growing at rates exceeding overall economic growth...



Public and private spending per capita

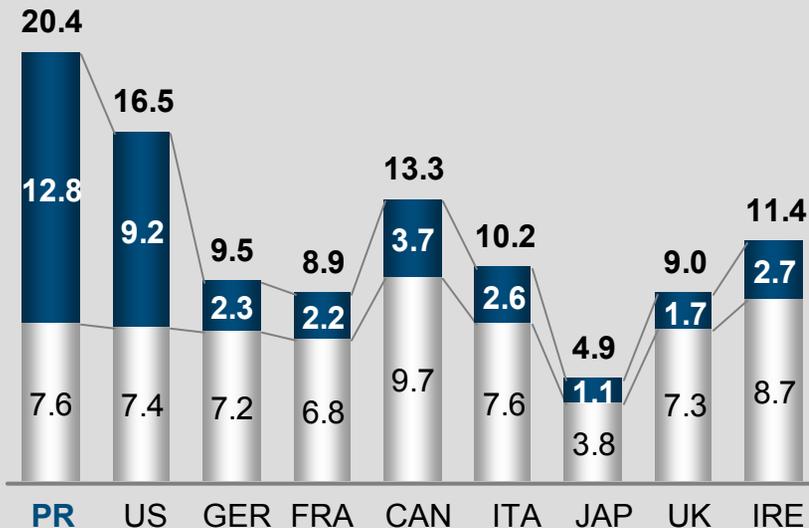


Public expenditures have grown 4.6% Vs 3.4% of the private ones. Public remains stable around 40% of total spending

...and are alarmingly high when compared to GDP and GNP, which may put the long term solvency of the system at risk

Health expenditures as % of GNP

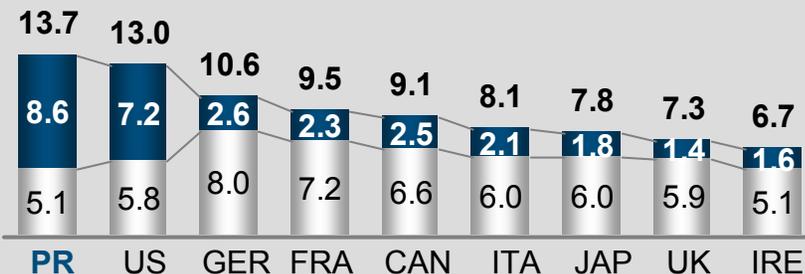
% of GNP 2000



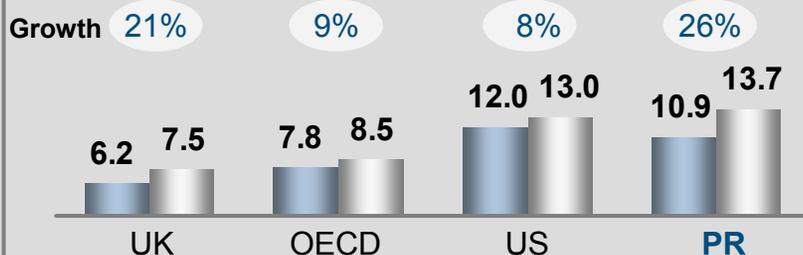
Private Public

Health expenditures as % of GDP and GNP

As % of GDP 2000



% of GDP 1990, 2000



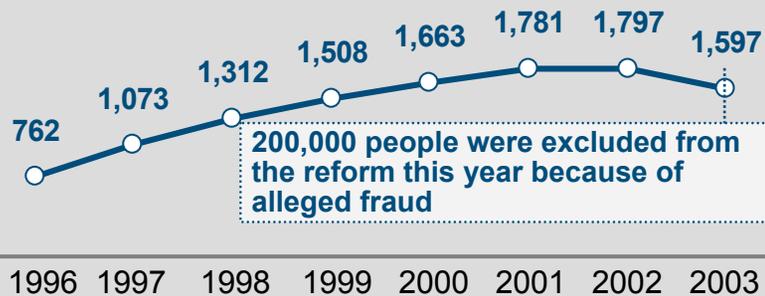
1990 2000

The level of health expenditures as 20.4% of GNP is the double of what it is in Europe and 25% more than in the US. This puts a threat to the future financing of the system considering that 15% of total population lacks adequate coverage

Total expenditures on the reform are increasing at a higher rate than the growth of new subscriptions, with 5.6% more in average every year

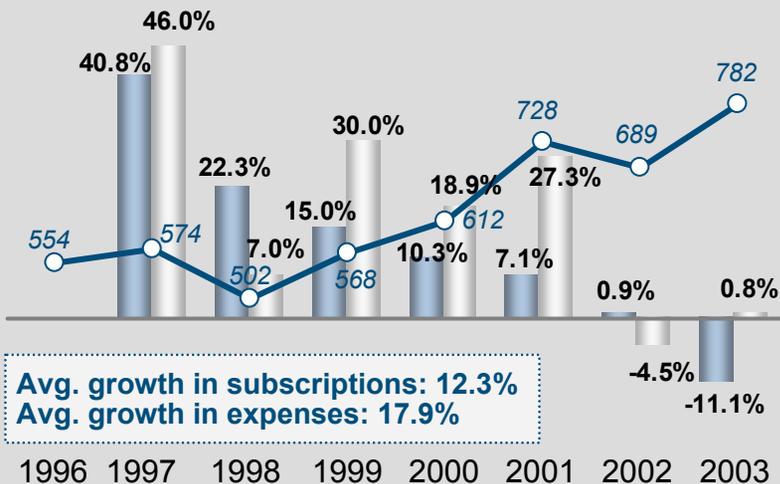
As the number of insured people in the reform increased...

of insured people ('000) 1996-2003



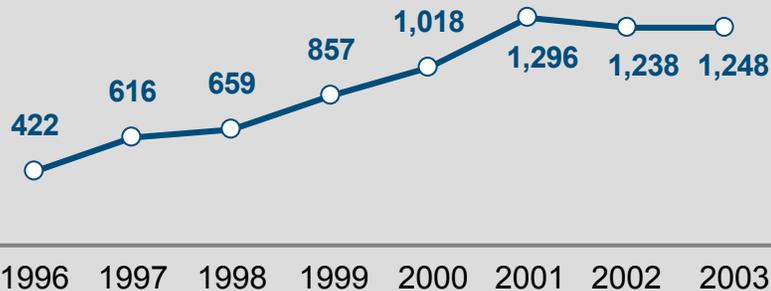
...but at a faster pace than the new subscriptions

Growth in subscriptions and expenses 1996-2003

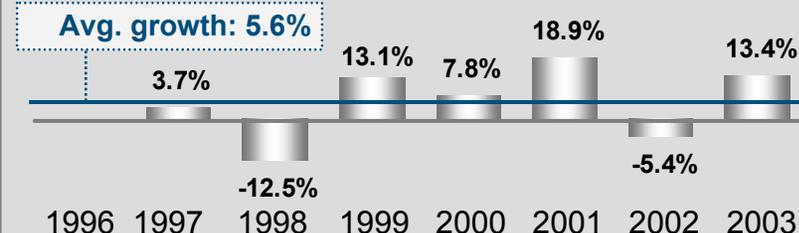


... total expenses increased as well...

Total Expenses with the reform (US\$MM) 1996-2003



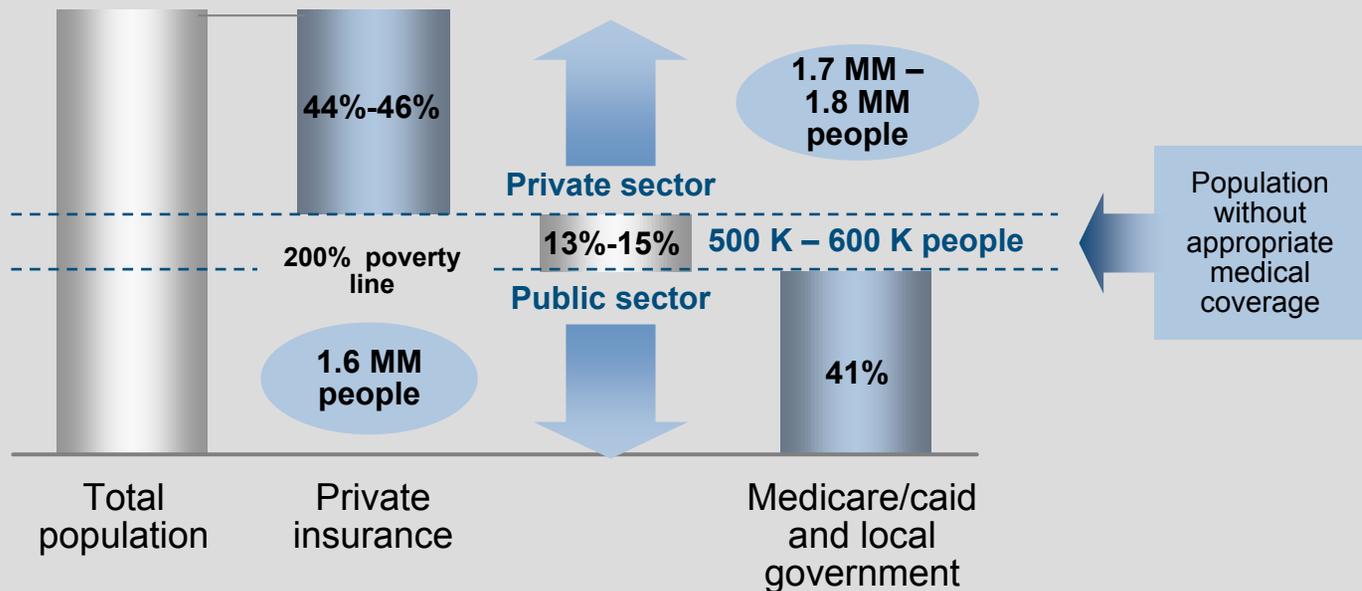
Growth in expenses per person 1996-2003



Source: Administración de Seguros del Estado (ASES); Planning Board; A.T. Kearney analysis

Following the US pattern, despite the large share of health spending, there is still a portion of resident population without appropriate medical coverage

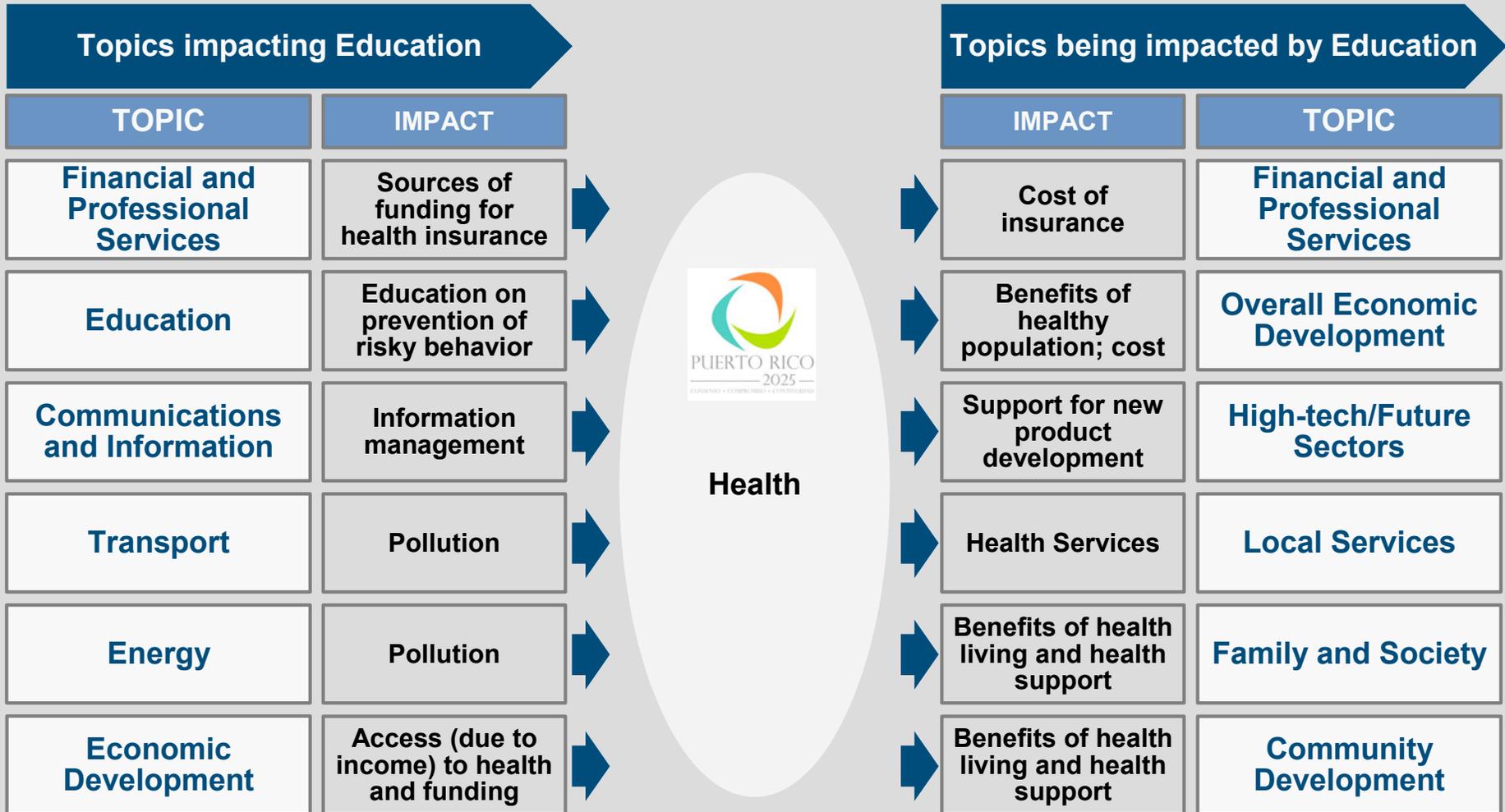
Medical coverage of the Puerto Rican population
% of population, 2003



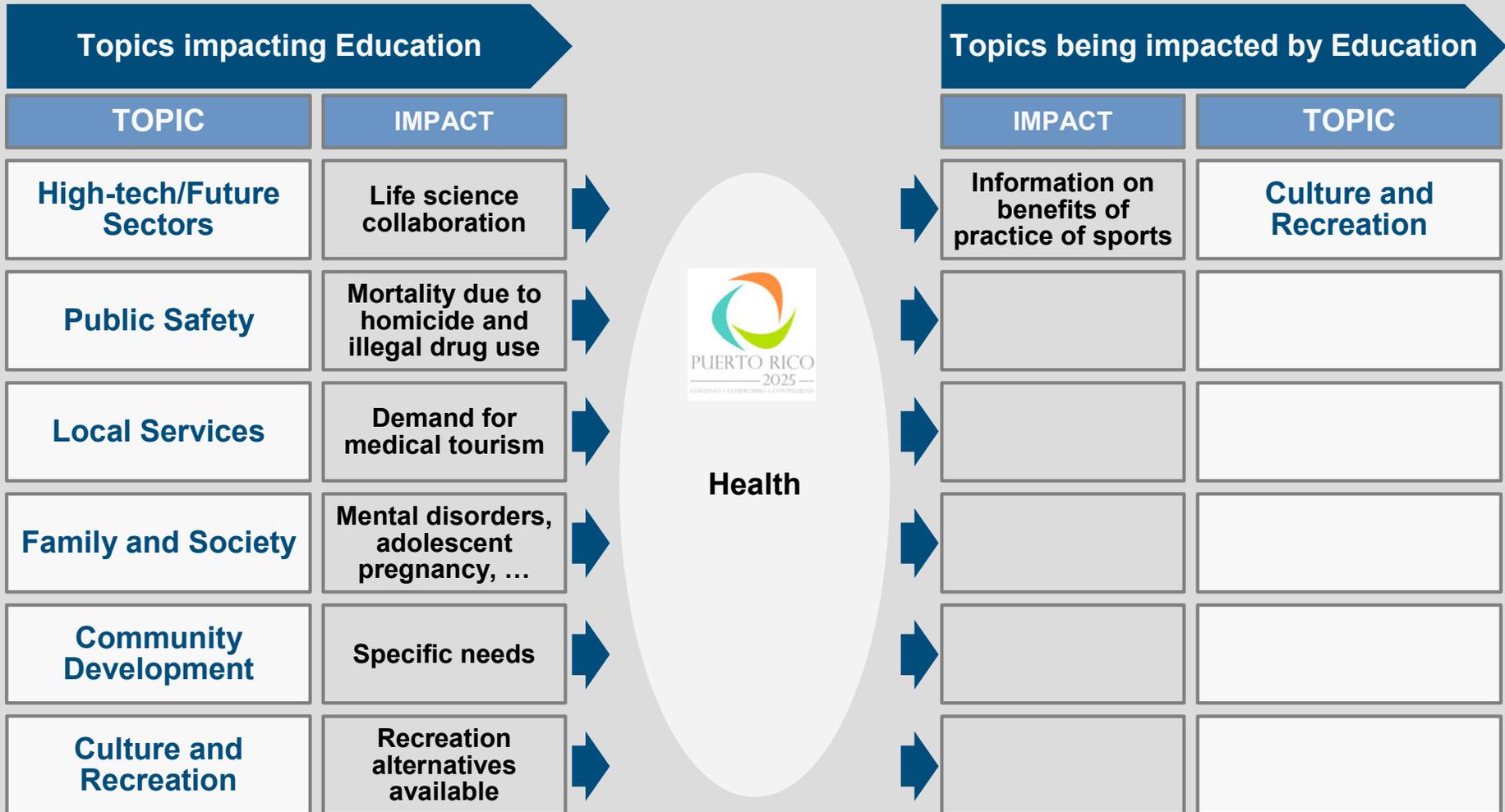
Around 400K people's annual income exceed the limit to receive free health coverage (200% of federal poverty line: ~ \$ 24K), but they can not afford private health coverage. 200K people recently left the reform program

Source: PHO; A.T. Kearney analysis

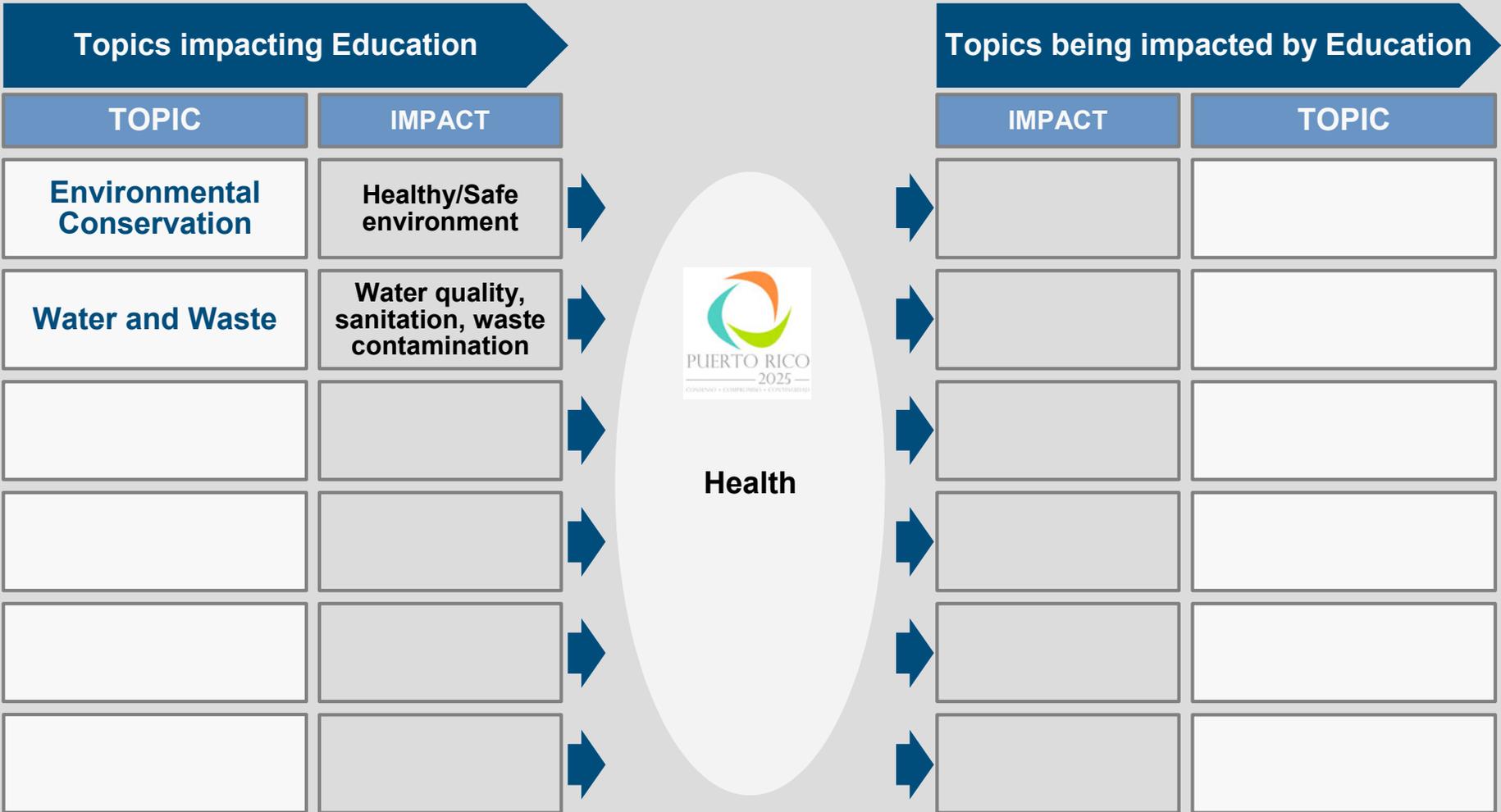
Health linkages



Health linkages



Health linkages



Key questions going forward

Health

- How can the high levels in critical factors, such as obesity and diabetes type 2 can be reduced?
- How can the AIDS incidence in Puerto Rico be reduced?, First until US average levels and then to the best cases identified?
- What programs should be implemented to reduce the high mortality rates on other behavioral based diseases such as cirrhosis and septicemia?
- Considering the growth and current levels of health spending, are these sustainable for the future? What should be done to optimize health spending?



-  **Education**
-  **Health**
-  **Public safety**
-  **Community development**
-  **Family and society**
-  **Culture and recreation**

Executive Summary – Public Safety

- Nowadays, Puerto Rico has the lowest violent crime rates in the last 20 years (excluding homicides), even lower than Europe and U.S..The same downward trend is clear in crimes against property
- This positive results have been possible in part to important investments in public safety and an efficient and expanded judicial system
- However, the number of homicides reaches alarming levels, specially among the youth. Of these homicides, 63% are directly related to illegal drugs distribution.
- As a result of these characteristics, Puerto Rico has the biggest prison population in Latin America
- The threat of this situation persisting in future is the negative impact that it has in the quality of life of those who live here and also the negative impact in the competitiveness, with reduced foreign investments and tourism and increased corruption and money laundry
- The opportunity to be explored is the fact that violence is predictable and preventable and the risk factors that promote violence and drug use should be targeted

Overview of Puerto Rico's Public Safety

Strengths

- Nowadays, Puerto Rico has the lowest violent crime rates in the last 20 years (excluding homicides), even lower than Europe and U.S.
- Property crimes cases have also shown less incidence in the last years as well as domestic violence, which is currently below the last 10 years average
- These improvements have been the result of important investments in public safety and an efficient and expanded judicial system, specially better if it is compared with the rest of Latin America

Weaknesses

- However, the number of homicides reaches alarming levels, specially among the youth
- Illegal drugs is a matter of increasing concern:
 - 63% of murders in Puerto Rico are related to illegal drugs distribution, which constitute a key issue in the island
 - The illegal drugs market in Puerto Rico is very large due to internal consumption and the traffic to the U.S
 - Puerto Rico is the second most important entry of illegal drugs to the U.S., just after the Mexican border
- Puerto Rico has the biggest prison population in Latin America – a big part of which is related to the drug business

Opportunities

- Violence is predictable and preventable
- Early prevention brings important and lasting benefits
- Existing synergies must be expanded in the fight against crime
- Focus should be on most vulnerable groups
- Juvenile violence needs to be approached through specific strategies
- Politicians play an important role against crime

Threats

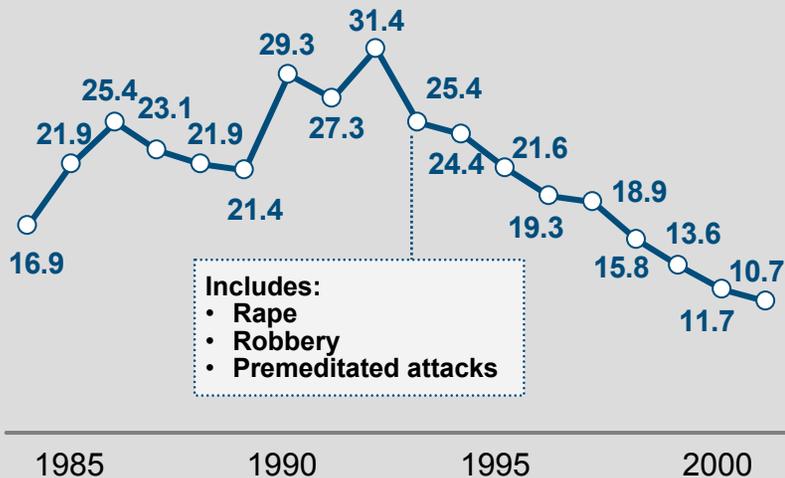
- Violence due to illegal drugs diminishes local and foreign investments
- Drug traffic strongly impacts the economics of the country, indirectly through money laundry and directly through tourism
- Drug traffic threatens every state attempt of controlling its borders and its people, goods and capital circulation
- Drug traffic generates political corruption and the state involvement in illegal activities
- Opportunity costs on human capital investments are very high, specially when it refers to the youth living in poor communities where money obtained from drugs is more evident



Nowadays, Puerto Rico has the lowest violent crime rates in the last 20 years (excluding homicides), even lower than Europe and the U.S.

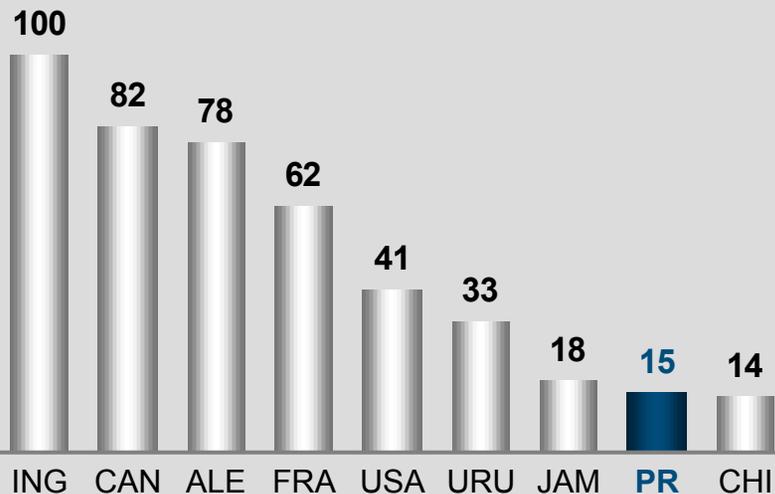
Puerto Rico violent crime rates
Excluding homicides

crimes ('000) 1984-2001



International comparison
Crimes for every 1,000 inhabitants

crimes/1,000 inhabitants Mean 1998-2000



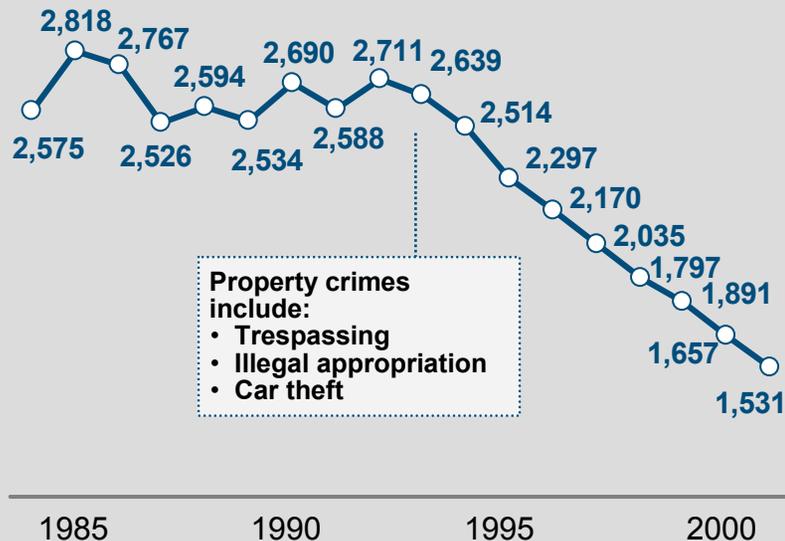
Puerto Rico shows criminal rates (homicides not included) 3 times lower than the U.S. and 5 times lower than the European average

Property crimes cases have also shown less incidence in the last years...

Property crimes rates

Crimes for every 1,000 inhabitants

crimes/100K inhabitants 1984-2001



Property crime index evolution

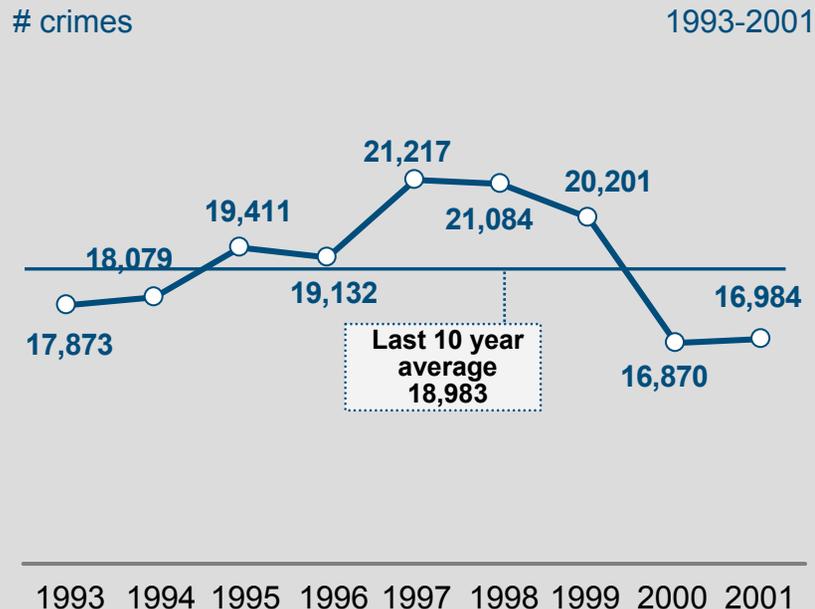
- On crimes against property:
 - Trespassing represented 42% of total property crimes in 1984 and just 34% in 2000. This means a 45% decrease, from 36,000 cases to 20,000 cases.
 - Illegal appropriations represented 39% in 1984 with 33,000 cases. In 2000, this type of felony had an incidence of 26,000 cases being 21% of the total crimes against property
 - Car robbery has maintained constant representation around 20%, incidence went low from 16,000 cases in 1984 from 12,000 in 2000.

Consolidated numbers on property crimes were reduced 31% between 1984 and 2000

...as well as domestic violence, which is currently below the last 10 years average

STRENGTHS

Puerto Rico spouse harassment rates Number of cases



Impact of Law 54, 1989

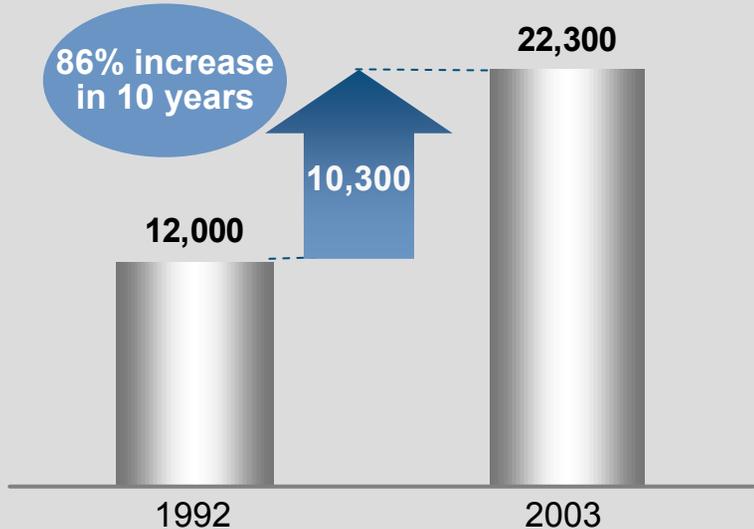
- Law 54 of 1989, about domestic violence prevention, increased significantly the number of cases reported that year.
- Some politics implemented by Women's Affairs Commission and other related agencies focus on violence prevention, and include services such as:
 - Attention to victims
 - Preventive education to enhance social awareness
 - Civil, religious and private institutions integration to explore new synergies

The number of cases reported after the implementation of law 54 in 1989 increased almost 50% in just 2 years

These improvements are in part the result of important investments on public safety...

Puerto Rico's Federal Police

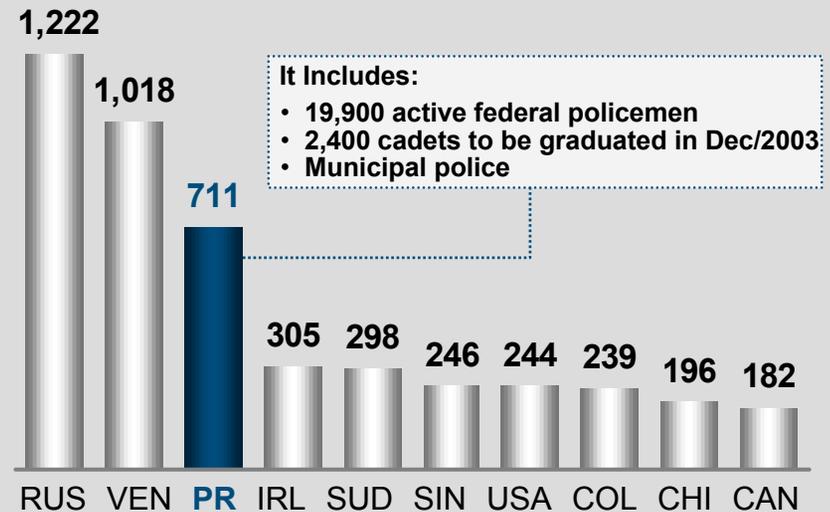
federal police personnel 1992-2003



International comparison

– Police personnel for every 100,000 inhabitants –

policemen/100K inhabitants Last available information



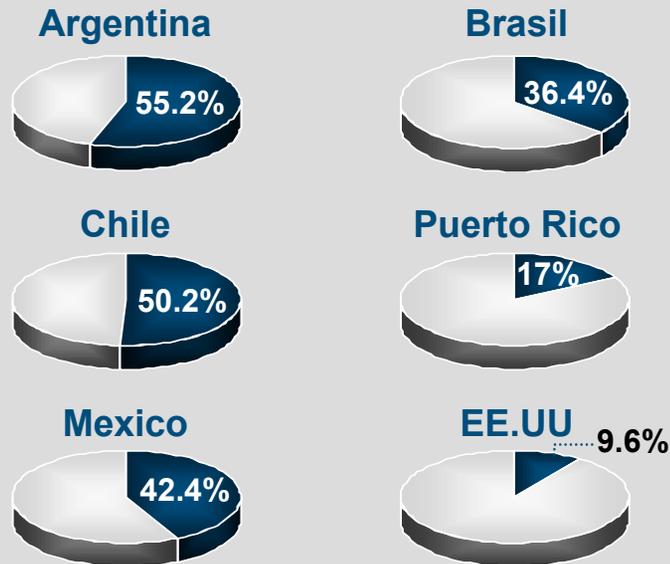
Puerto Rico has the advantage of having law enforcement federal programs and the resources and know-how of crime fighting agencies in the United States

...and an efficient and expanded judicial system, specially a better one when it is compared with the rest of Latin America



Percentage of people waiting to be subject to trial

% Arrested people waiting for trial 1992-2003



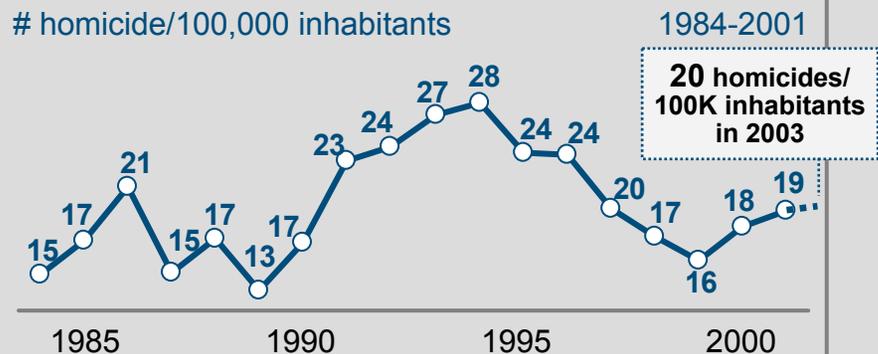
Puerto Rico judicial system measures

- Some measures used to turn the legal cases management more efficient and to promote time and quality processing standards are included in the Law of Judiciary of 1994. This law reads:
 - The use of alternate methods to solve disputes such as the detour of cases from their jurisdictional environment
 - The creation of the Appeals Court, which transformed competence areas and increased the number of judges
 - The abolition of the Supreme Court and the District Court and the creation of a First Instance Court to increase process speed and efficiency
 - The use of electronic technology and databases

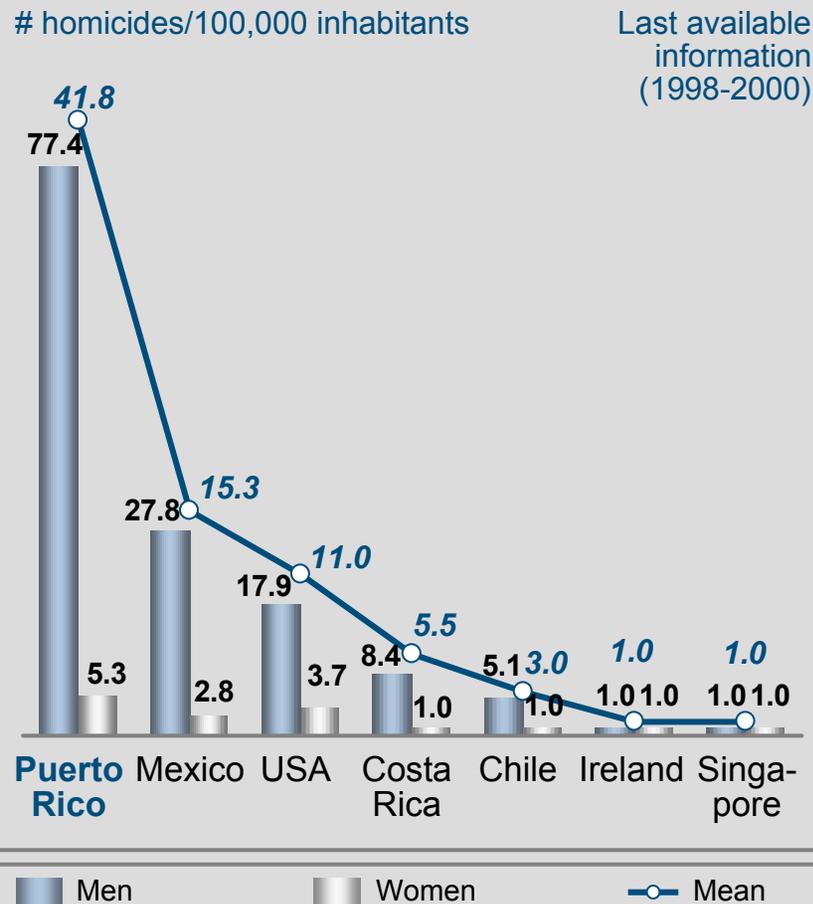
A key aspect in the judicial system efficiency covers the need to ensure its independence in order to avoid inadequate pressures and guarantee its autonomy

However, the number of homicides reaches alarming levels, specially among the youth

Puerto Rico homicide rate

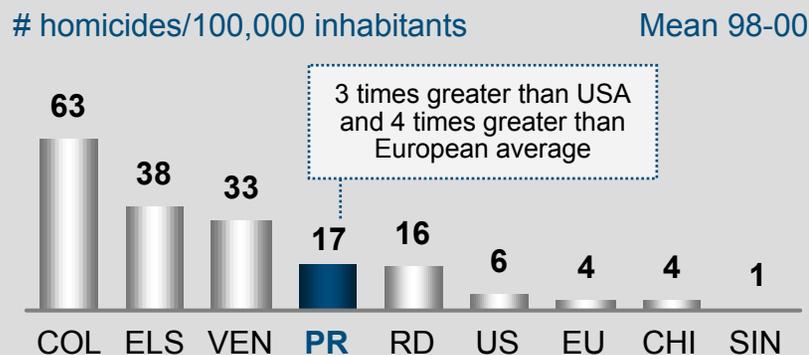


Homicides among people between 10 and 29 years old



International comparison

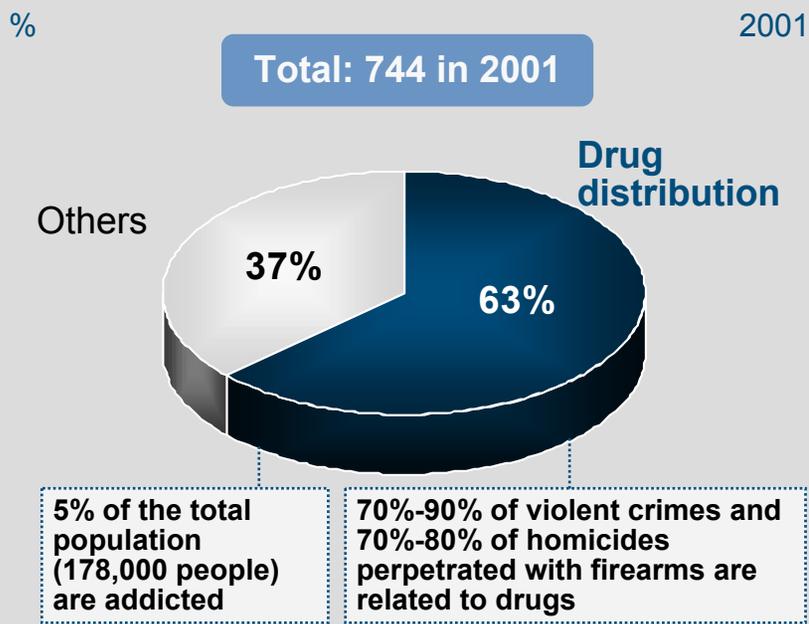
– Homicide mean between 1998 and 2000 –



63% of murders in Puerto Rico are related to illegal drugs distribution, which constitute a key issue in the island

Homicides for related causes

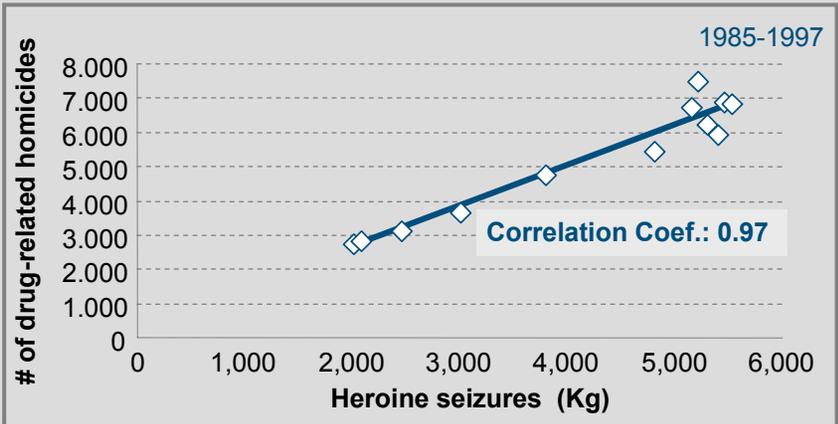
– Percentage of murders in 2001 –



The number of murders due to drug distribution depends mainly on two variables:

- Drug business size
- Intensity of fight against drug traffic

Drugs homicides vs. Seizure volumes captured in the EU



While in 1986, 1.6% of homicides were related to drugs, by 2001 this share had increased to 63%. In 2001, 68% of federal condemns in Puerto Rico were related to drugs (vs. 41.2% in the US), and from those, 77.7% involved cocaine or crack (vs. 42.5% in the US)

The illegal drugs market in Puerto Rico is very large due to internal consumption and the traffic to the U.S

Addiction levels in Puerto Rico



Puerto Rico

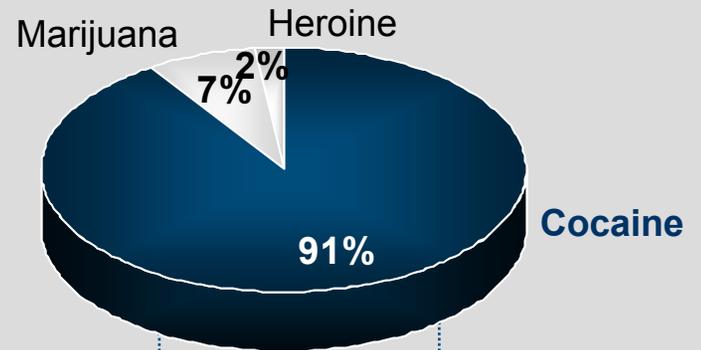
World

# addicts	178,000	200 MM
% population	4.7%	3.4%
% population > 15 years	6.1%	4.7%



Seizures captured in Puerto Rico

Pounds **Total: 17,435 pounds** 2002



Despite its diminished presence, heroine has the biggest growth rate in PR: 170% in 2001-2002

Between 70% to 90% of seizures captured had its destiny in the foreign market

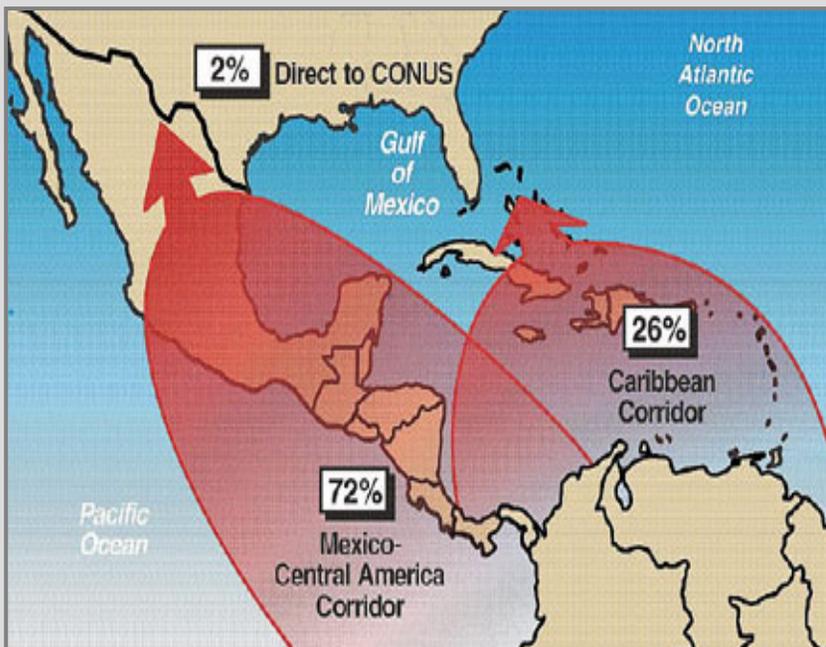
The illegal drug market in Puerto Rico is the second biggest in the Caribbean, just after Dominican Republic. It generated US\$ 700MM in 2000 (1.5% GNP). This sum represented an increase between US\$ 160 and US\$ 200 in income per capita

Source: Office of National Drug Control Policy; National Drug Threat Assessment 2003; A.T. Kearney Analysis

Puerto Rico is the second most important point of entry of illegal drugs to the U.S., just after the Mexican border

WEAKNESSES

Main drug entries to the U.S.



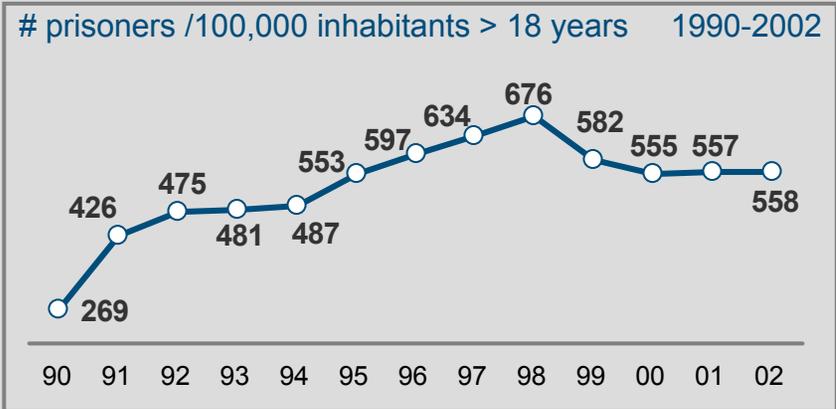
Main characteristics of drug traffic from Puerto Rico to U.S.

- Quick boats from Colombia, freighters and small aircrafts transport the drug to Puerto Rico in a first stage
- Small fishing boats are used in the second stage and they are the most common way to introduce drugs to Puerto Rico
- Fajardo is the main port of drug entry (POE), it gives access to 75% of the total drug volume
- More than 70% of drugs accessing Puerto Rico have the U.S. as their final destiny
- The contraband is transported in containers on board freighters
- New York and Miami are the main entry doors for illegal drugs coming from Puerto Rico to the United States.

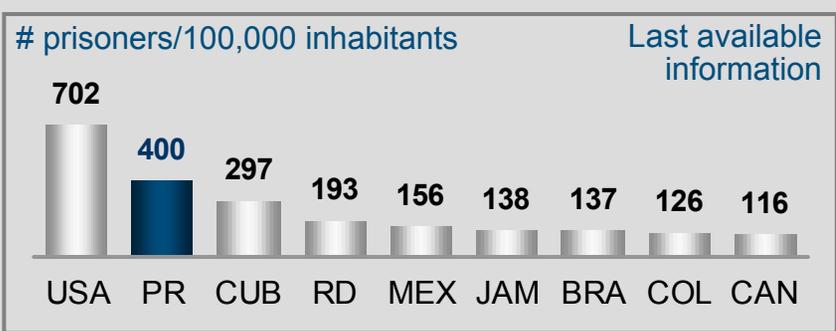
Dominican drug dealers groups, working closely with Colombian organizations, dominate the cocaine market in Puerto Rico and its distribution to the U.S.

Puerto Rico has the biggest prison population in Latin America – a big part of which is related to the drug business

Prison population growth in Puerto Rico



International comparison



Relevant facts

- Puerto Rico has the biggest prison population (in relative terms with total population) of Latin America, reaching 15,520 prisoners
- Puerto Rico has 50 prisons, many of them have serious deficiencies in security and infrastructure (e.g. Oso Blanco)
- There are doubts about the integration back to society of the prisoners, from these
 - 58% relapse in jail
 - 70% are drug addicts
- Every prisoner costs around \$65, this is \$ 1.1 MM per day or \$ 400 MM per year for the reformatory system
- The local government has also paid millions of dollars in federal court fines due to overpopulated prisons

The rate of solved legal cases in Puerto Rico is less than 40%, this is a very poor indicator when compared with New York’s rate of over 80%

Identified opportunities on public safety

Opportunity description

Opportunities	Impact
<p>Violence is predictable and preventable</p>	<ul style="list-style-type: none"> Identifying and measuring certain key predictable risks factors could alert authorities on time to take action. These factors are related to each individual and family (e.g., depression and married couples problems), to the local region (e.g., drug traffic, increased weapons use) and macroeconomic aspects (e.g., unemployment)
<p>Early prevention brings lasting and important benefits</p>	<ul style="list-style-type: none"> Prevention efforts attack problems from the bottom, first by avoiding them from occurring and then by minimizing their consequences
<p>Existing synergies must be expanded in the fight against crime</p>	<ul style="list-style-type: none"> The existing overlap of all risk factors for violence suggests high potential alliances among groups interested in prevention (e.g., local government, social workers, police, community based organizations, etc). Some benefits obtained out of this can be: <ul style="list-style-type: none"> Increased quality of the interventions made Avoid effort duplicity Increased available resources, due to human capital deployment and joint actions

Identified opportunities on public safety (cont'd)

Opportunity description

Opportunities	Impact
<p>Focus must be placed on the more vulnerable groups</p>	<ul style="list-style-type: none"> • Even though all social classes suffer violence, different studies have shown consistently that people in lower economic status are in major risk. The factors related to poverty, instead of poverty itself, considerably increase the risk of violence.
<p>Juvenile violence needs to be approached through specific strategies</p>	<ul style="list-style-type: none"> • Most successful actions against youth violence seek increased personal abilities, moral values and principles. An appropriate violence preventive action for childhood is to adopt programs in kindergarten. These programs early introduce kids to the skills needed to succeed in school and raise their probabilities to accomplish academic goals as well as enforcing self-esteem and good relationships with other children. Long term studies have encountered that children in touch with these type of programs are less prone to violent or illegal conducts
<p>Politicians play an important role against crime</p>	<ul style="list-style-type: none"> • The success of public efforts against violence strongly depends on political commitment. The support given by politicians is needed to guarantee adequate funding and legislation. It is also needed to legitimize and motivate social awareness in preventing crime.

Identified threats in public safety

THREATS

Threats

Violence due to illegal drugs diminishes local and foreign investments



Drug traffic strongly impacts the economics of the country, indirectly through money laundry and directly through tourism



Drug traffic threatens every state attempt of controlling its frontiers and its people, goods and capital circulation



Drug traffic generates politics corruption and the state involvement in illegal activities



Opportunity costs on HR are high, specially those referent to young people living in poor communities where money obtained from drugs is evident



Impact

- Violence increases costs to companies because they have to pay more for safety and more taxes to strengthen local public safety agencies

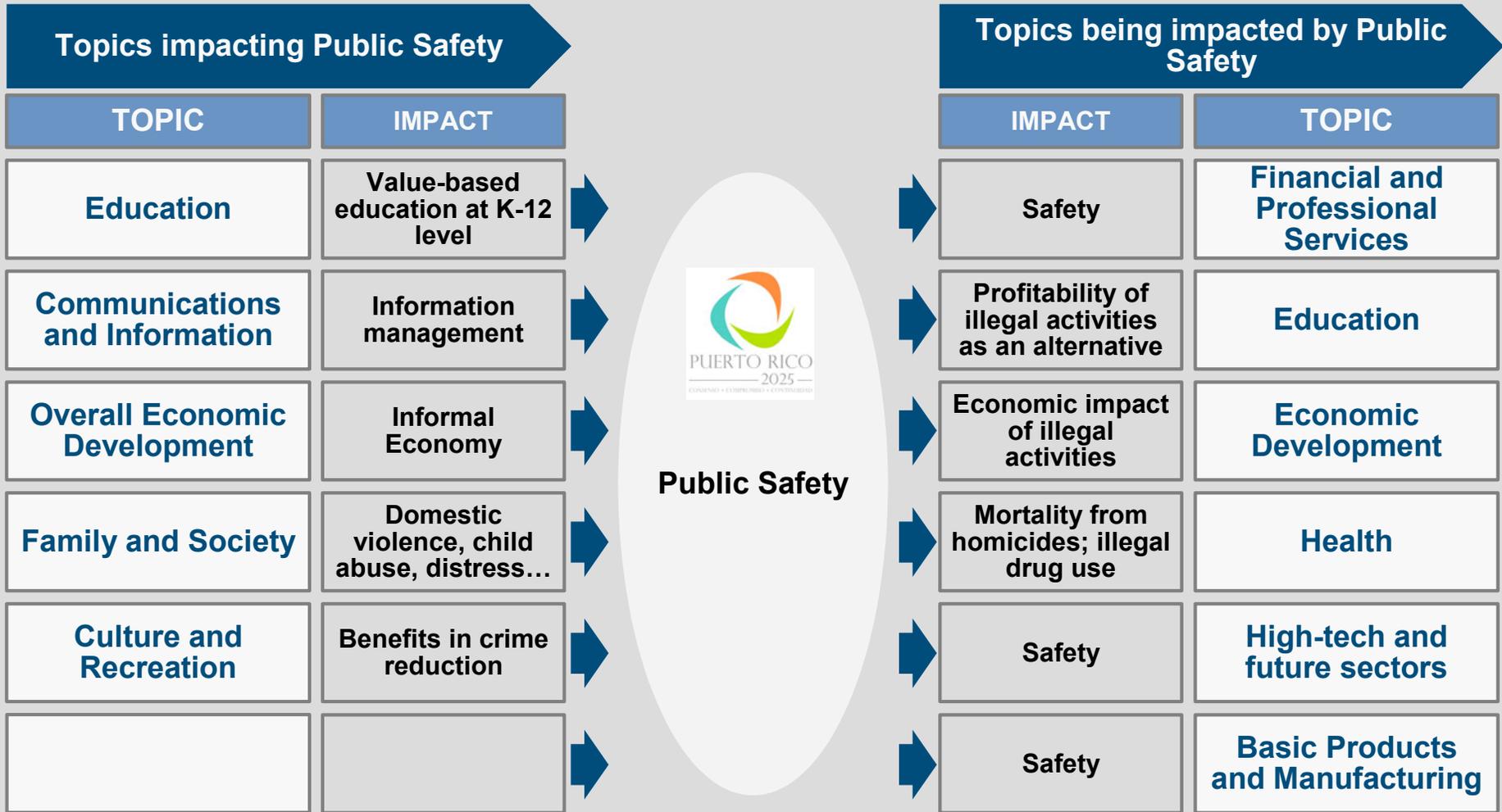
- International media presents the Caribbean as a “drug-traffic-paradise”, affecting the tourism choice to visit, specially tourism concerned with security
- Money-laundry has long term negative effects, mainly because the “bubble-consumption” generated and not sustained by real economy

- Drug dealers only obey supply and demand laws, there is no reason to believe geographical borders threaten their traffic of drugs, money, weapons and people

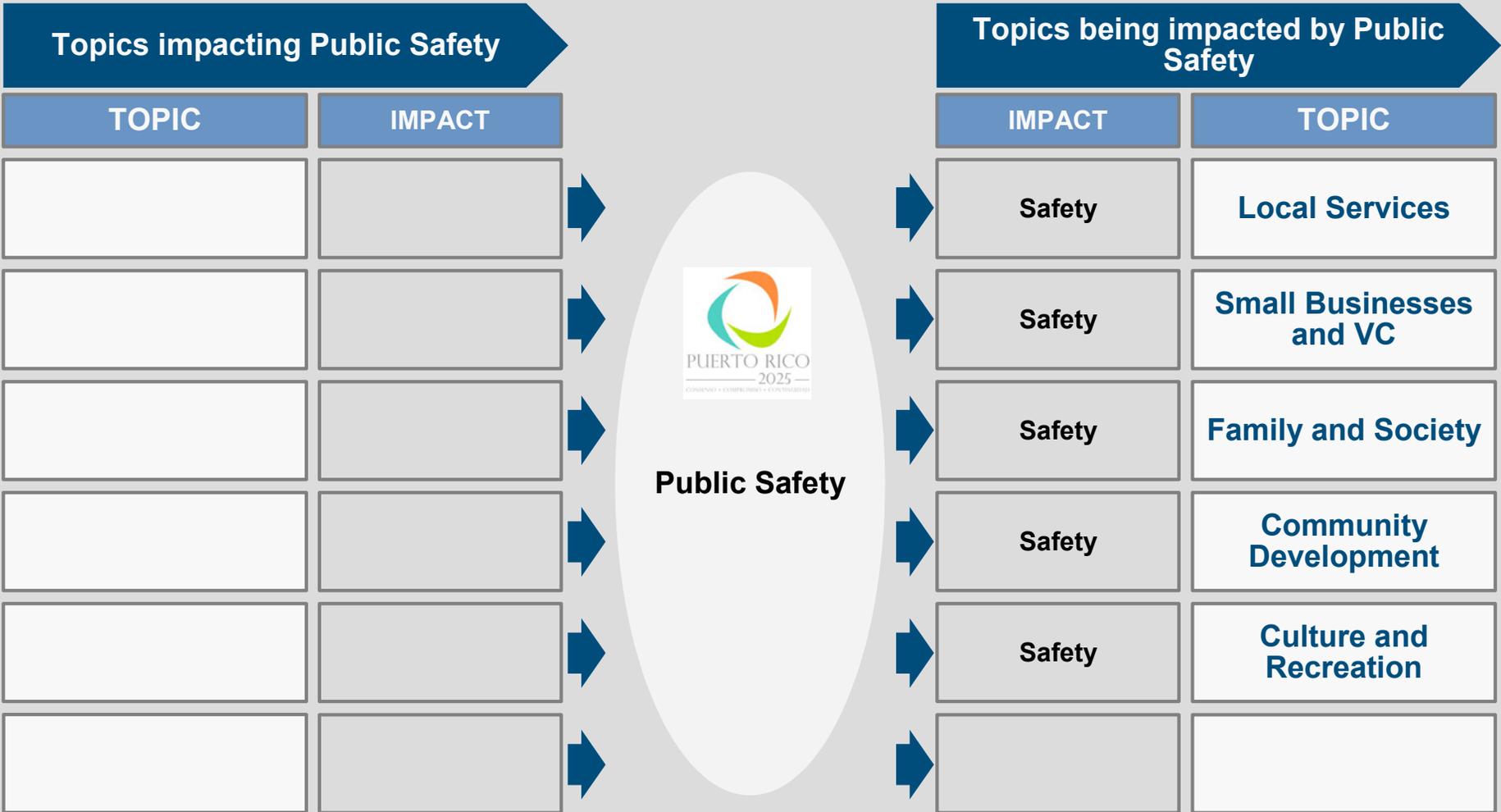
- Drugs introduce corruption in public organizations, specially those where legitimacy loss is socially perceived

- The wealth generated by drug traffic is clearly seen and, as a consequence, young people do not consider education and legal work as the best way to improve their life style

Public safety linkages



Public safety linkages



Key questions going forward

Public Safety

- What should be done to reduce the alarming levels of homicides in Puerto Rico to the best cases in the OECD? What should be done in the case of youth homicides specifically?
- What should be done to maintain the current low levels of violent crimes (not homicides) and property crimes?
- What programs should be implemented to reduce domestic violence to a third of its current levels? What to practically eliminate it?
- How can Puerto Rico be free of the drug business that is currently taking place in the island for local consumption and to be sent to the US?
- How to reduce the high levels of illegal drug addiction?
- What should be the best strategy to reduce the prison population and guarantee the highest rehabilitation levels?



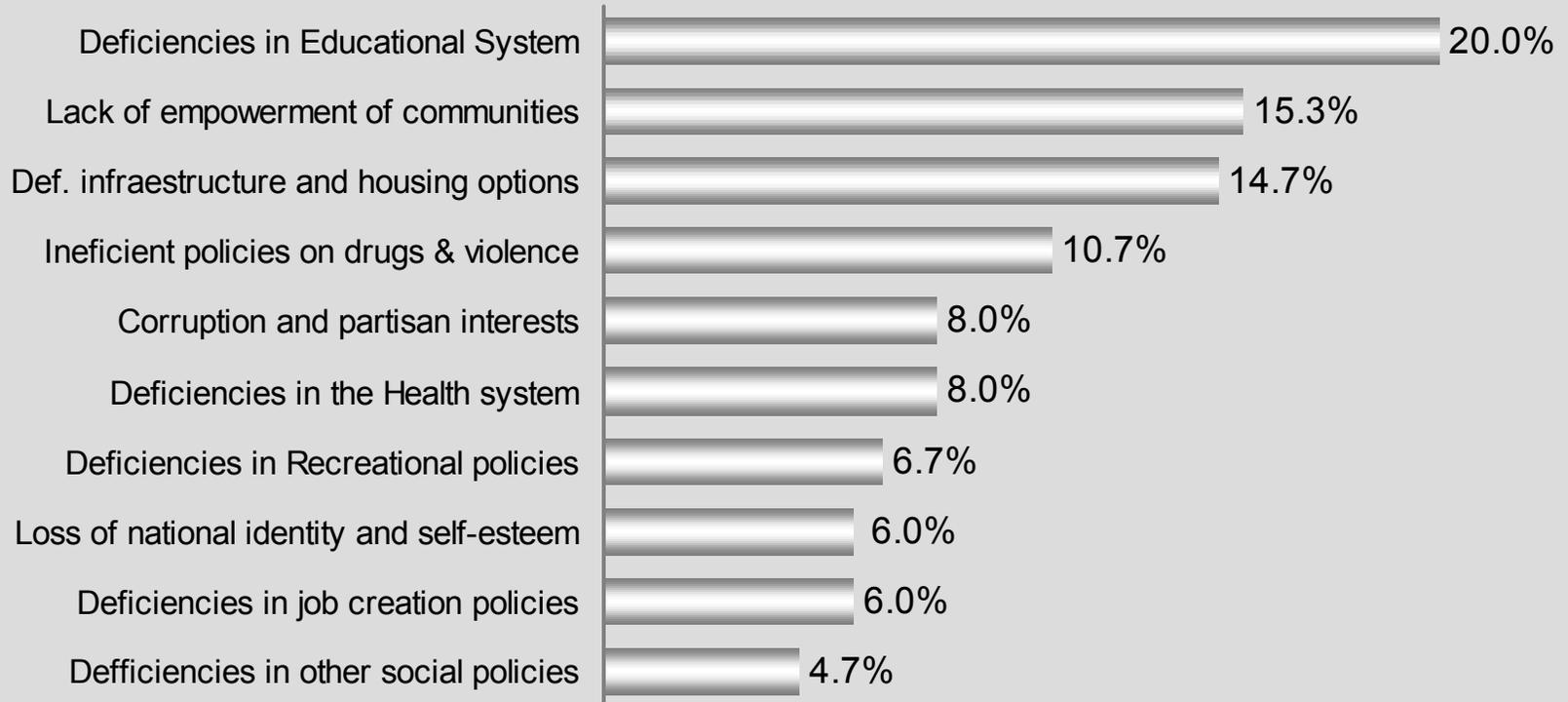
-  **Education**
-  **Health**
-  **Public safety**
-  **Community development**
-  **Family and society**
-  **Culture and recreation**

Executive Summary – Community Development

- The communities have to deal with deficient infrastructure, the lack of collective transportation, expensive public services and the lack of housing options
- Lack of programs, facilities, public spaces and options for recreation, culture and sports reduce the quality of life of the community
- Not addressing these issues is a threat to the quality of life towards the future
- Even though the communities and the government have taken actions to address these problems in recent years, the communities are not empowered enough to try to find adequate solutions to all these problems
- In the process to guarantee empowerment, the role of the public sector and the community must be clearly defined
- The government has a key role in creating the mechanisms for empowerment and exploring synergies among agencies
- Community-based initiatives must be supported appropriately
- Specific training programs for professionals working with the community must be implemented together with the optimisation of the processes followed by government agencies

The main issues that concern the communities have been identified and discussed extensively in the panel meetings

Main group of issues identified



Each of these groups are detailed in 3 or 4 specific issues that affect communities in Puerto Rico

Despite the improvements in the last decades, Puerto Rico has to overcome significant challenges going forward

Community Development – Impacts on Quality of Life and Competitiveness

Strengths

- The communities and the government have taken actions to address the problems that most affect the community in recent years, such as the deficient education and infrastructure and the lack of empowerment at the community level

Opportunities

- In the process to guarantee empowerment, the role of the public sector and the community must be clearly defined
- The government has a key role in creating the mechanisms for empowerment and exploring synergies among agencies
- Community-based initiatives must be supported appropriately
- Specific training programs for professionals working with the community must be implemented together with the optimisation of the processes followed by government agencies

Weaknesses

- The communities have to deal with deficient infrastructure, expensive public services and the lack of housing options
- Among others, the lack of collective transportation specially affects communities
- Lack of programs, facilities, public spaces and options for recreation, culture and sports reduce the quality of life of the community
- The communities are not empowered enough to try to find solutions to all these problems

Threats

- Not addressing the current issues faced by the communities in Puerto Rico (deficient infrastructure, lack of recreation, etc) is a threat to the quality of life towards the future

The communities have to deal with deficient infrastructure, expensive public services and the lack of housing options

Main issues identified by the communities

- **Lack of a broader vision related to infrastructure** – The current economic development strategies are based in an excessive construction (with lack of planning) – Not necessarily considering the real needs of the communities
- **Poor planning at the local level**– Organized communities could suggest planning options to attend their local needs, avoiding duplication of efforts and optimising the use of available resources
- Investment is more focused in studies than in implementation
- **Corruption, excess of bureaucracy** and management inefficiencies
- Lack of will to implement the existing policies
- Big economic interests affect the planning process
- Lack of infrastructure for recycling

...among others, the lack of collective transportation specially affects communities

Main causes identified by the communities

- **Deficiencies in planning and in the design of the network** for collective transportation
- Lack of consultation to meet community needs
- **Distrust from the community** to use public transportation – it isn't reliable –
- Individualistic culture focused on the automobile
- Collective transportation is associated with poverty – having a car is a sign of status – **car culture**

Lack of programs, facilities, public spaces and options for recreation, culture and sports reduce the quality of life of the community

Main issues identified by the communities

- Lack of public spaces for entertainment and the existing ones don't take into consideration the needs and wishes of the population
- There isn't an adequate maintenance of existing facilities – the community is not empowered and it does not identify itself with its recreation facilities
- Accessibility/transportation problems
- Lack of government initiative/ incentives/ lack of communication
- Lack of spaces to develop actors
- Bureaucracy doesn't allow access to recreation programs
- Underestimation of the role of recreation in citizen formation
- High entertainment cost
- Excessive economic interests that promote vulgarity on TV / radio/ theater, etc
- Low quality of programme planning and low integration

Not addressing these issues is a threat to the quality of life towards the future



Not exhaustive

Threats in Community Development

Threats	Impact
<p>Not taking necessary measures in the educational system</p>	<ul style="list-style-type: none"> • Reduction in the quality of life of Puerto Ricans due to: <ul style="list-style-type: none"> — Increase in unemployment — Increase in school desertion
<p>Continue having half of the population living under poverty levels</p>	<ul style="list-style-type: none"> • High economic cost: <ul style="list-style-type: none"> — Public health system costs — Pension and welfare subsidies costs — Proliferation of the informal economy • High social cost: <ul style="list-style-type: none"> — Population lacking appropriate education levels — Vicious cycle of the “culture of subsidies” — Maintenance of one of the risk factors partly related to crime
<p>Not taking the necessary measures to fight violence and drugs</p>	<ul style="list-style-type: none"> • Increase in criminality levels (specially in the number of homicides) • High economic cost of the fight against crime

Even though the communities and the government have taken actions to address these problems in recent years...



Examples of actions to improve the life in the communities

- The need to create an office to address the needs of the community was implemented with the **creation of the Special Communities office** first in the San Juan municipality and later on in the whole island.
- Funds were dedicated exclusively to guarantee the improvement on the quality of life in the communities: **The “Fideicomiso Perpetuo” program was created with a \$1 Billion fund** for the construction and rehabilitation of 20,000 homes, bringing basic infrastructure to these communities such as light, water, roads, etc.
- In 2002 the **“Puerto Rican Alliance against Poverty”** was established to channel help coming from academic, religious and business sectors
- **The Program for Social and Economic Rehabilitation (PRES)** was reactivated to bring priority attention to these communities. 1182 families benefit from this program.
- In the health front, different strategies have been implemented such as **“Proyecto CARMEN”**, **“Municipios Saludables”** and **“Comunidad Saludable”**

..the communities are not empowered enough to try to find adequate solutions to all these problems

	WEAKNESSES

Main issues identified by the communities

- Lack of qualifications in participative culture in the community and the government
- The communities have difficulties in getting organized
- Lack of mechanisms for the real participation of the communities (process)
- There is no solidarity and partnership among the different community based groups and organizations
- Gigantism of the government – bureaucracy that prevents the active participation of society – The communities lack the resources to attend the bureaucratic demands
- The government want the support of the communities but don't want to support them
- Contradiction in the practices and procedures of the government personnel – lack of implementation of public policy

The communities in Puerto Rico can learn from similar situations and best practices in community management from other places in the world


 OPPORTUNITIES

Main challenges identified worldwide in community management

- Community leaders do not have the necessary support
- Public officials involved in community development are not well prepared/equipped to work effectively in or with less fortunate communities
- Policy makers involved with community development in many cases do not have the necessary knowledge of the communities and the issues they face
- Lack of mechanisms that allow community based organizations to know and apply the best local and international practices

Key elements

- How to support social and community leaders?
- How to improve public sector capacitation?
- How to improve processes followed by government agencies/ policy makers?

The best practices promote comprehensive and participatory policies for community development that involve the public sector, the professionals working with the community and the community-based organizations

In the process to guarantee empowerment, the role of the public sector and the community must be clearly defined

Basic elements of policies

Basic elements to be defined

Who should participate and how should they relate?

What should be the role of public policy makers?

What should be the role of community leaders?

Roles and actions

- Effective work plans should be developed among:
 - **Community people** – Inviting more of them to take on leadership roles and become social leaders
 - **Local professionals** – Helping them to become more efficient in their work, in their interaction with other agencies and communities
 - **Public policy makers** – Promoting their understanding, from a personal experience, of community problematic

- Develop action plans, policies, financing systems and incentives to provide the knowledge and support to help community based organizations to make a difference

- Identify the real needs of the communities
- Mobilize the resources inside the communities
- Act as a point of connection with the public policy makers and the local professionals

The government has a key role in creating the mechanisms for empowerment and exploring synergies among agencies


 OPPORTUNITIES


 Not
exhaustive

Opportunities in community development

Opportunities

Empower communities to solve their problems

Increase interaction among agencies related to the social and economic development of communities

Impact

- Reduction of public spending to redirect funds to specific needs and not generic programs covering all communities
- Improvement in the quality of life in communities with less resources since solutions could be generated more quickly
- Improvement in individual self-esteem so they feel useful and relevant in the solution of community problems

- Take advantage of the synergies that exist in the different processes
- Economies of scale and therefore a better use of public spending

Community-based initiatives must be supported appropriately

Challenge

- **Community initiatives do not have the necessary support**

Best Practices

- **Financing:**
 - The existence of a development fund that guarantees a successful entrepreneurial social activity. These funds deliver small amounts of money to community groups as projects progress.
 - Financing programs should continue to support those groups that have developed successful projects in the past.
 - Professional development systems are established to allow small community project directors to acquire business and management skills and know-how. Normally these projects are initiated by the public sector and continued by private initiatives.
 - Viability studies are conducted to facilitate access to social capital funds and low cost loans to community based organizations.
- **Mutual support (Exploring synergies):**
 - Register existing community based organizations in a server available for consultations by the public and private sectors, fund /loans providers and other community based organizations.
 - Creation of “Community Bridges”, portals and information centres where people developing new community programs can be in contact with social leaders with vast experience.

Community-based initiatives must be supported appropriately (cont.)

Challenge

- **Community leaders do not have the necessary support**

- **Promotion:**

- There should exist a promotion program directed at politicians and government agencies where they are shown the benefits of empowering the community based organizations along with the necessary conditions for their success. Awards for the best community initiative are sometimes established.
- Community leaders are considered by appointment to participate in organizational councils or local/municipal and/or state service agencies

Best Practices

Specific training programs for professionals working with the community must be implemented

OPPORTUNITIES

Challenge

- Professionals involved in community development are not well prepared/equipped to work effectively in/with communities with less resources

Best Practices

- **Professional Development:**
 - Some governments have developed “Centres for Community Development” to improve the training for public sector professionals and social assistants to work with less fortunate communities. These include databases for investigations and best practices examples.
 - Government agencies do annual revisions of the training received by these professionals, who have to prove they have the appropriate skills to work inside the communities.
 - Training facilitators focus on the skills and knowledge required to work in multidisciplinary teams and partnerships.
 - There are service quality control mechanisms of public employees, where new training needs are identified and improved methods of teaching are prepared.

... together with the optimisation of the processes followed by government agencies

	OPPORTUNITIES

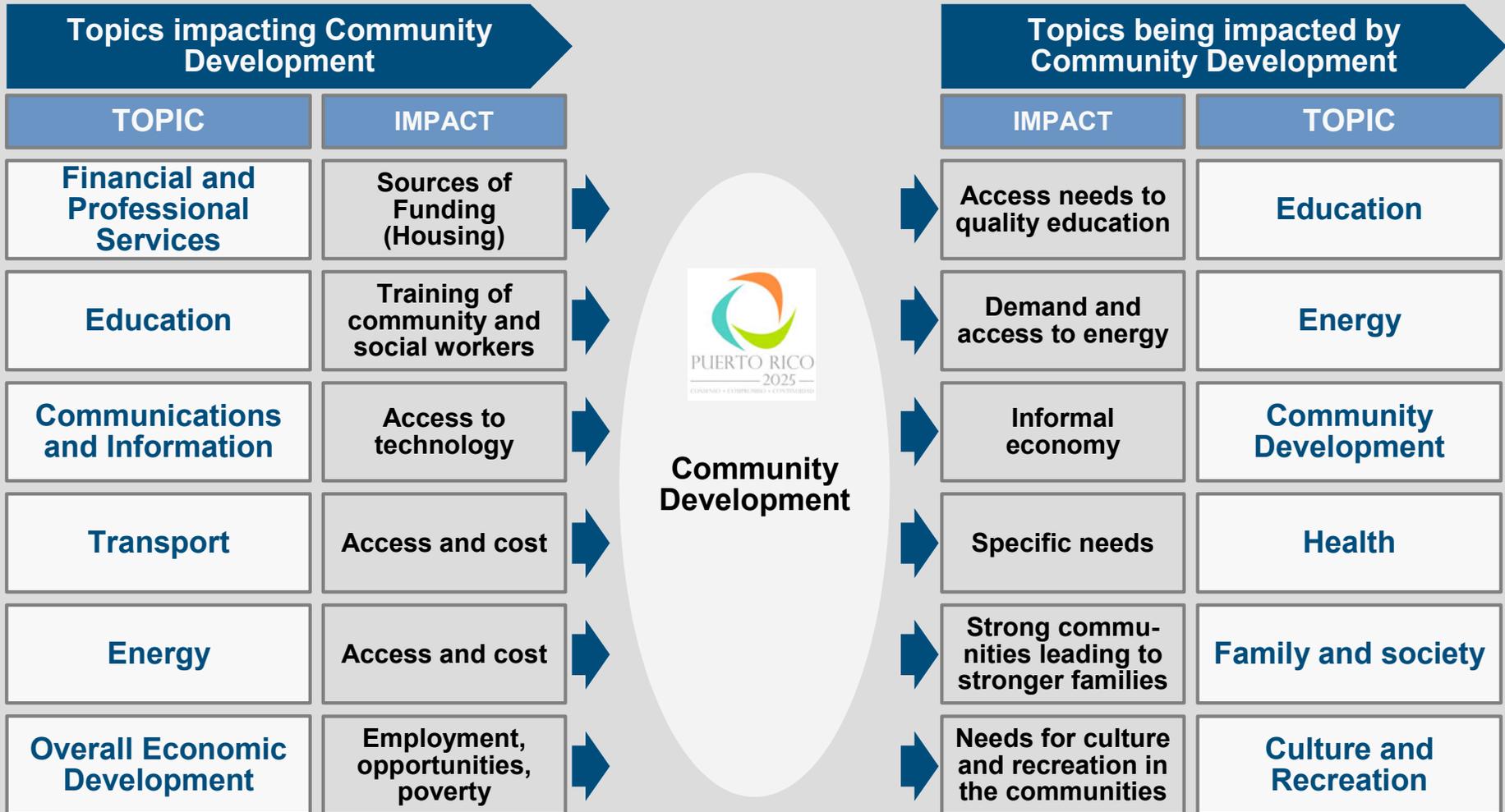
Challenge

- How to improve processes followed by government agencies/policy makers?

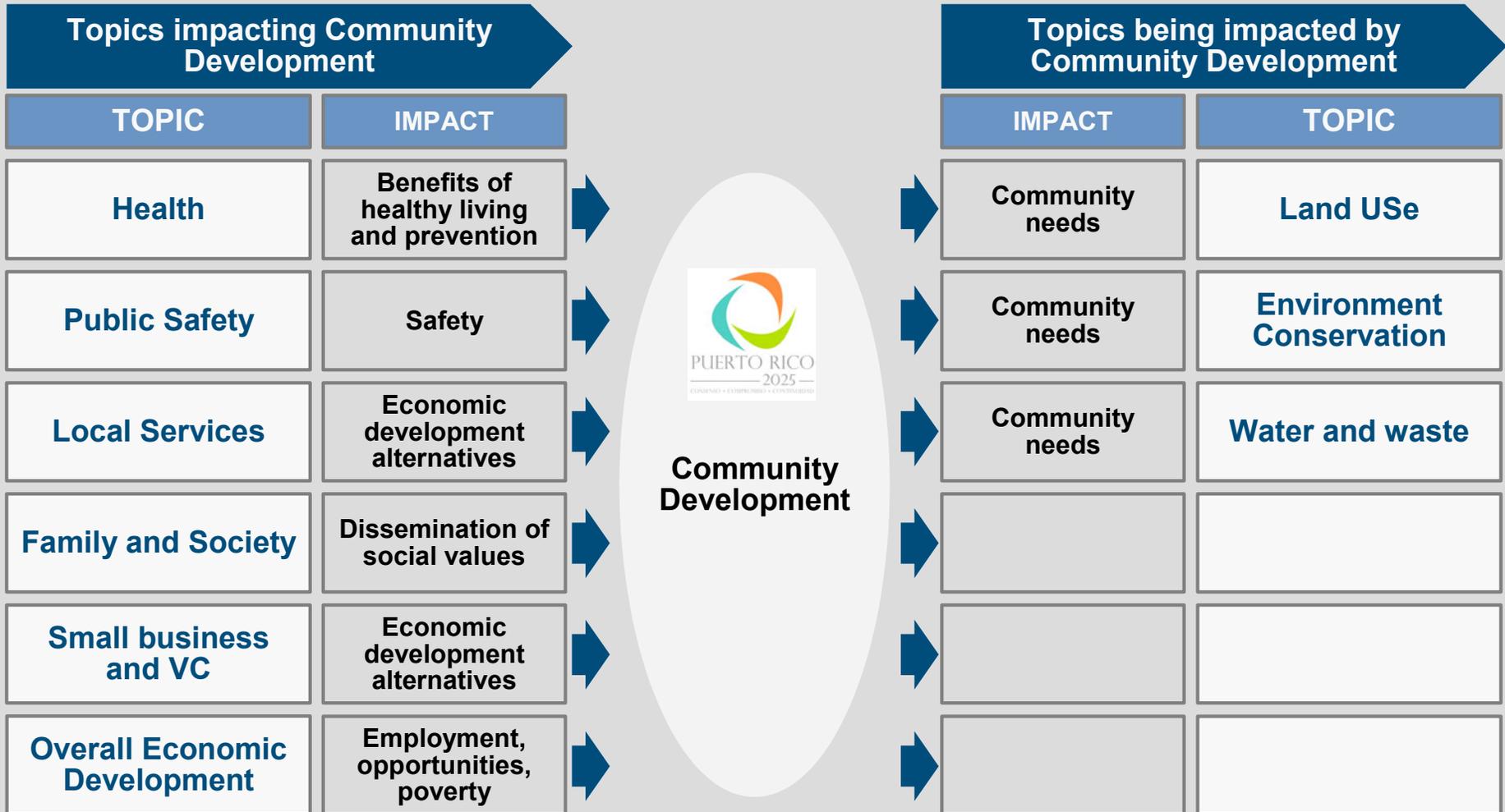
Best Practices

- **Guaranteeing a participatory process:**
 - Policy makers use panels and discussion commissions in the definition of policies and projects related to the community in which the private initiative participates together with the community based organizations.
- **Increase in participation:**
 - There is extensive participation on the part of public officials outside of their base departments. For the most part, these efforts focus on activities with communities that suffer some sort of basic deficiency or socially excluded groups. All officials related with specific communities have to personally know the problematic of these communities.
 - All governmental agencies with responsibilities that impact communities have annual objectives of exchange between sectors.
 - Agencies have a budget for officials temporarily transferred to other areas.
- **Improving learning methods:**
 - There is a direct access to best practices and resources (human and others) to study and implement specific situations to the communities.
 - All organizations participating in a bidding process with the government in community actions should demonstrate that the methodology used is based on best practices.

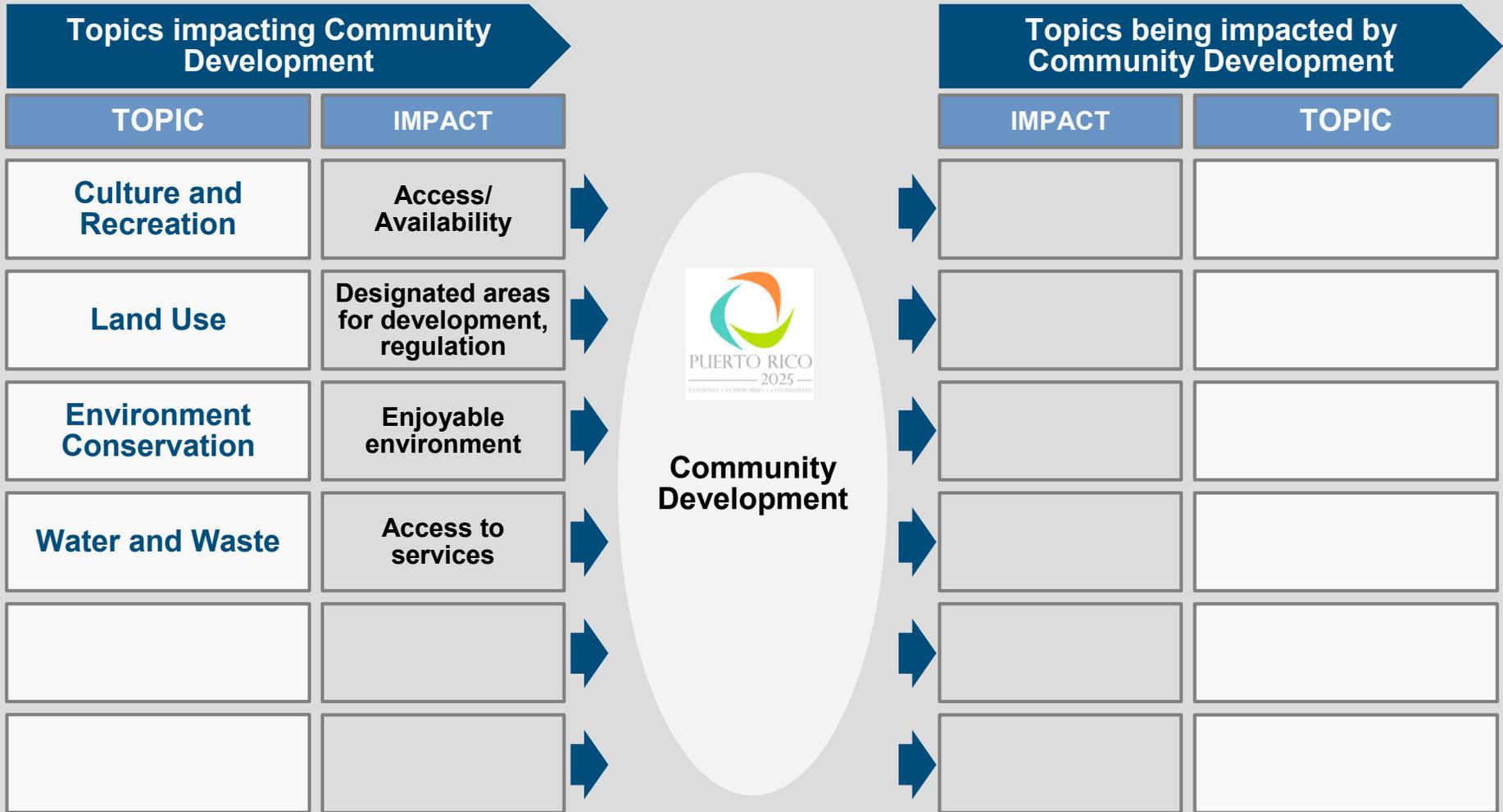
Community Development linkages



Community Development linkages (cont.)



Community Development linkages (cont.)



Key questions going forward

Community Development

- Which should be the priorities to improve the quality of life of the less fortunate communities in Puerto Rico?
- What should be done to guarantee the level of empowerment needed by the community to actively participate in the solution of its problems?
- What should be the role of the government, the private sector and the private professionals in the projects affecting the communities?
- What is the best balance for funding community-based projects between public, private and community resources?



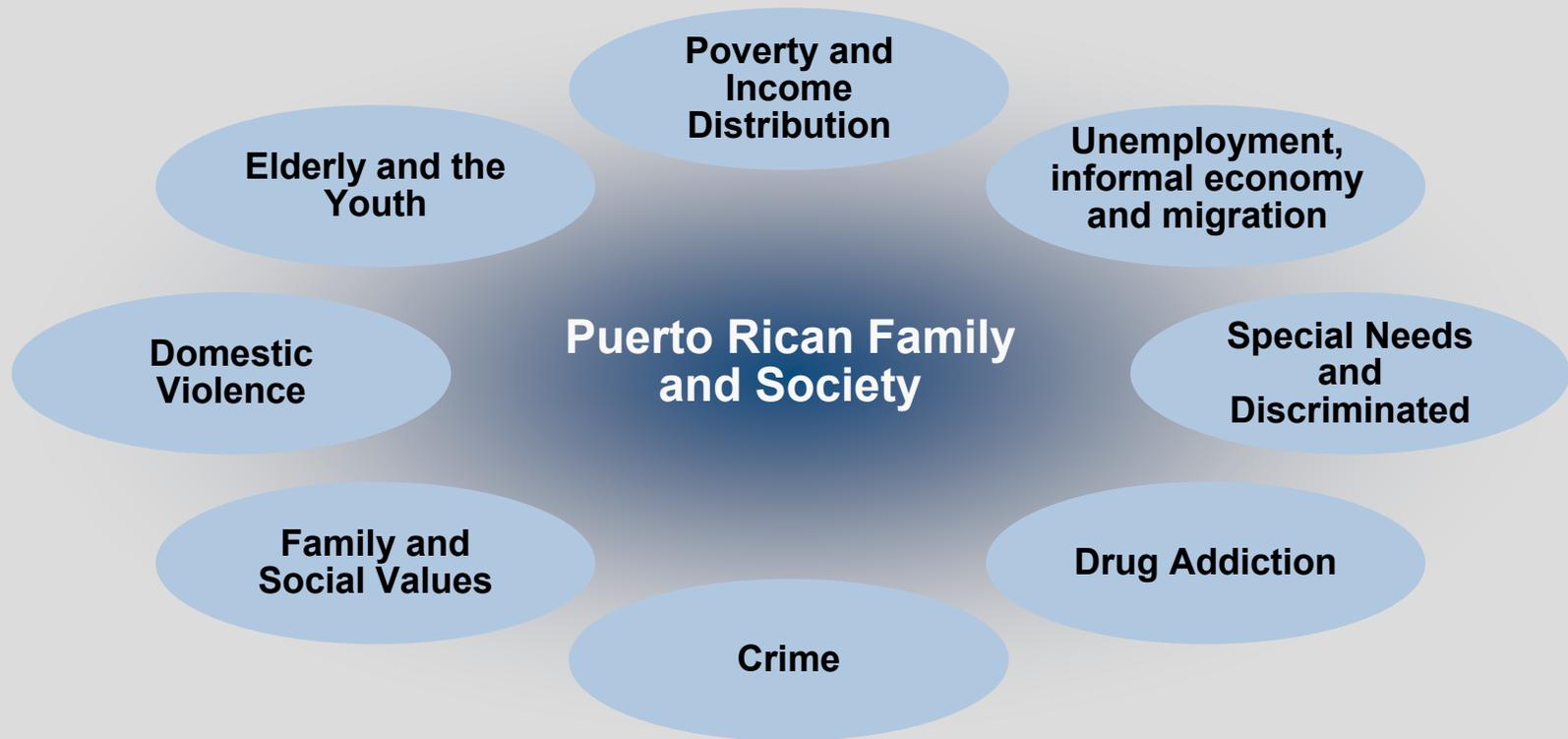
-  **Education**
-  **Health**
-  **Public safety**
-  **Community development**
-  **Family and society**
-  **Culture and recreation**

Executive Summary – Family and Society

- Puerto Rico ranks as a location with high human development, having some of the best indexes on quality of life in Latin America and the Caribbean
- Even though poverty levels in Puerto Rico have improved in the last decades, unemployment and poverty levels are still considerably high when compared internationally and among the youth
- Although important for poverty alleviation in Puerto Rico, federal transfers have led to a dependency issue and negative incentives in the society
- Teenage births in Puerto Rico are high for international standards, with important consequences in family stability
- The loss of family values has been consistently highlighted as a major challenge for Puerto Rico going forward
- Puerto Rico has to urgently address all the previous factors to avoid facing an increasing social distress going forward, with consequent negative impacts in quality of life and competitiveness
- Targeting sustainable job generation policies should be a priority, together with addressing directly the education at K-12 level due to the major role played by the schools in perpetuating social values by providing a healthy social environment for child development

Family and Society involves a broad set of interrelated issues that might impact family development and undermine social stability/harmony

Key Dimensions Impacting Family and Society



Overview of Puerto Rico's Family and Society

Strengths

- Puerto Rico ranks as a location with high human development, having one of the best quality of life in Latin America and the Caribbean
- Poverty levels in Puerto Rico have improved in the last decades, being among the lowest in Latin America and the Caribbean
- The relationship with the US has been an strength to the extent that it helped to alleviate poverty intensity through federal transfer payments

Weaknesses

- Poverty and unemployment — main factors related to family disruption — are still considerably high in Puerto Rico when compared internationally
- Such rates are higher among the youth, what might lead to increasing distress in the Puerto Rican society going forward
- In this context, families in Puerto Rico are facing an alarming level of domestic violence and violent crimes, specially murders related to drug trafficking
- Although important for poverty alleviation in Puerto Rico, federal transfers have led to a dependency issue and negative incentives in the society
- Teenage births in Puerto Rico are high for international standards, with important consequences in family stability
- The loss of family values has been consistently highlighted as a major challenge for Puerto Rico going forward

Opportunities

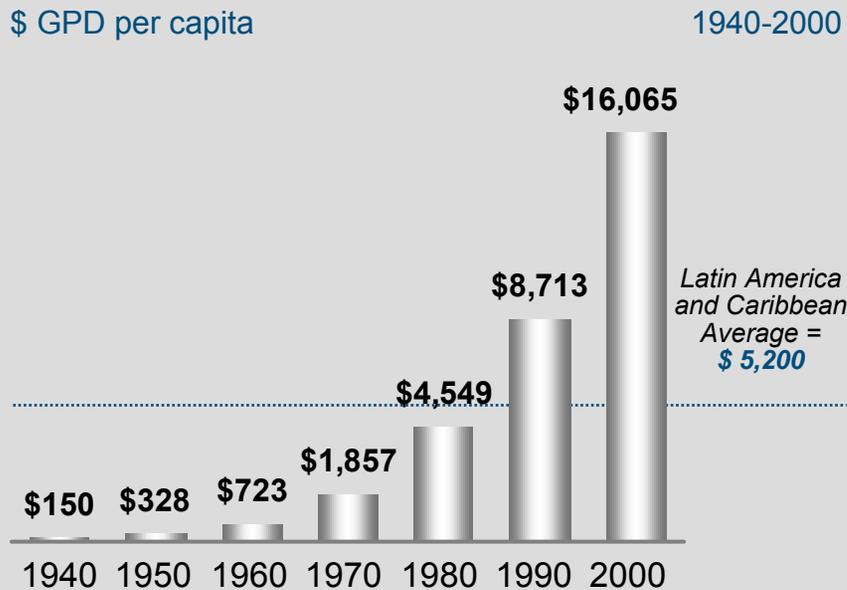
- Schools can and should play a major role in perpetuating social values by providing a healthy social environment for child development

Threats

- Puerto Rico has to urgently address some key issues (such as unemployment, poverty and the role of families and schools in the dissemination of positive values) to avoid facing increasing social distress going forward, with consequent negative impacts in quality of life and competitiveness

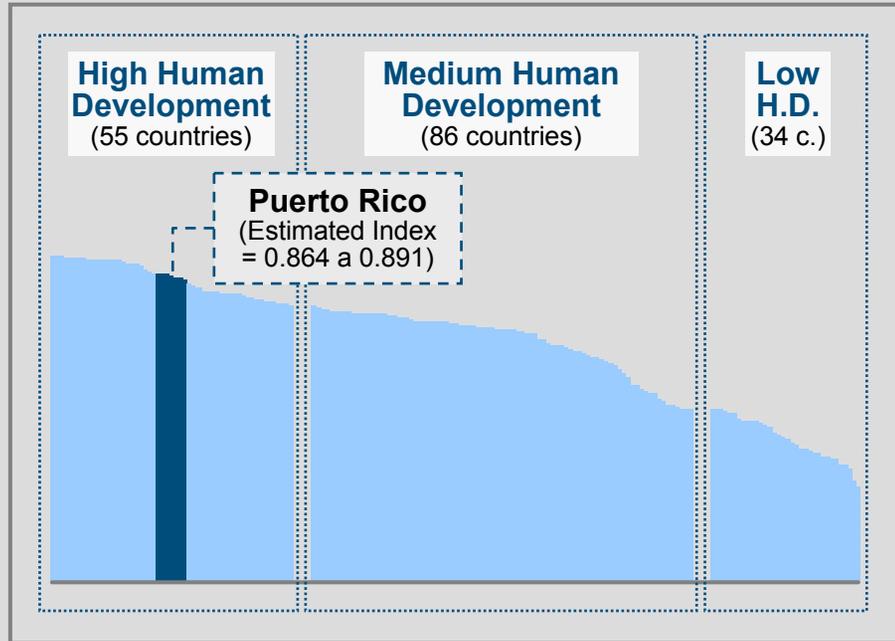
Puerto Rico ranks as a location with high human development, having one of the best quality of life in Latin America and the Caribbean

Evolution of Per Capita Income in Puerto Rico



Human Development Index

– HDI Report 2003 –



While most countries in Latin America and the Caribbean are classified as “Medium Human Development” nations, Puerto Rico ranks among the “High Human Development” locations considering an aggregate of life expectancy, education attainment and standard of living

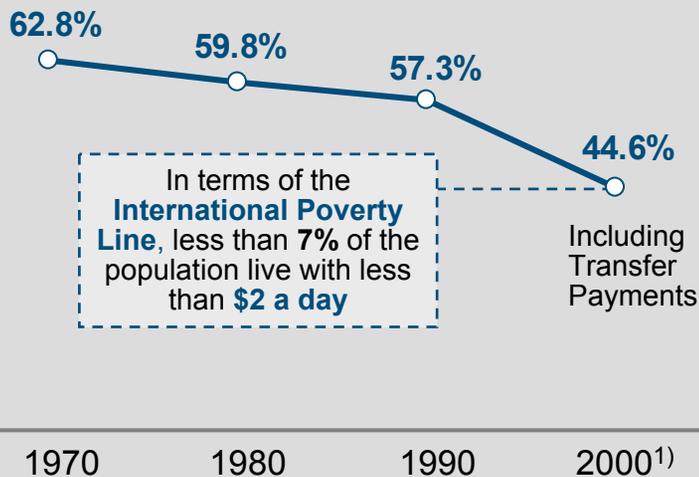
Source: Human Development Report 2003; The World Economy: A Millennial Perspective – OECD 2001; “Puerto Rico: Negotiating Development and Change”, James L. Dietz; A.T. Kearney analysis



Poverty levels in Puerto Rico have improved in the last decades, being among the lowest in Latin America and the Caribbean

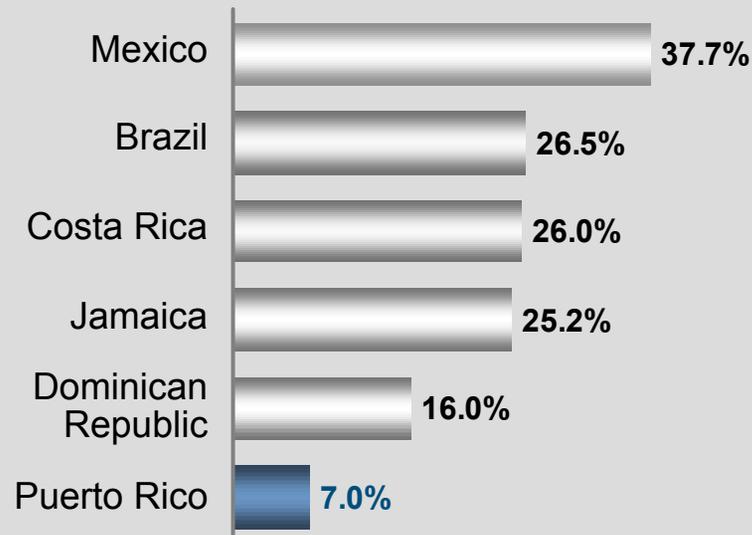
Poverty Evolution in Puerto Rico
— National Poverty Line

% families living below the national poverty line 1970-2000



Poverty Levels in Latin America and the Caribbean — International Poverty Line

% of population living with less than \$2 a day 1990s



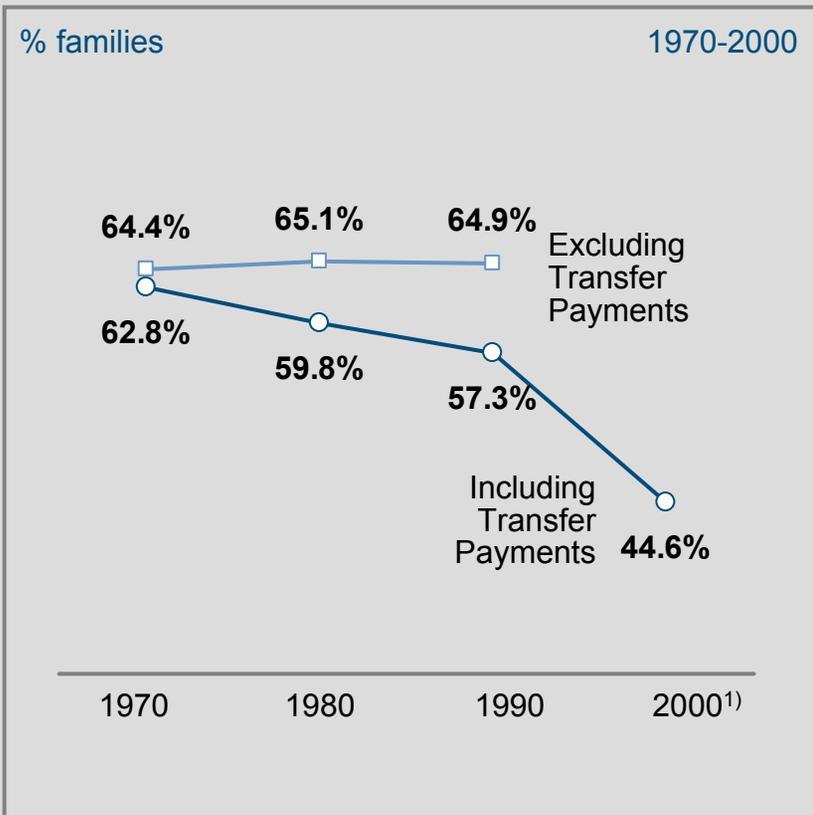
Puerto Rico also experienced a decrease in income inequality as confirmed by the downward trend of the Gini coefficient from 0.560 in 1970 to 0.499 in 1990

Sources: “Island Paradox”, Francisco L. Rivera-Batiz and Carlos E. Santiago; 1)Census 2000 – Children in Puerto Rico: Results from the 2000 census; “Puerto Rico: Negotiating Development and Change”, James L. Dietz; 2002 World Development Indicators – 2.6 – Poverty; A.T. Kearney analysis

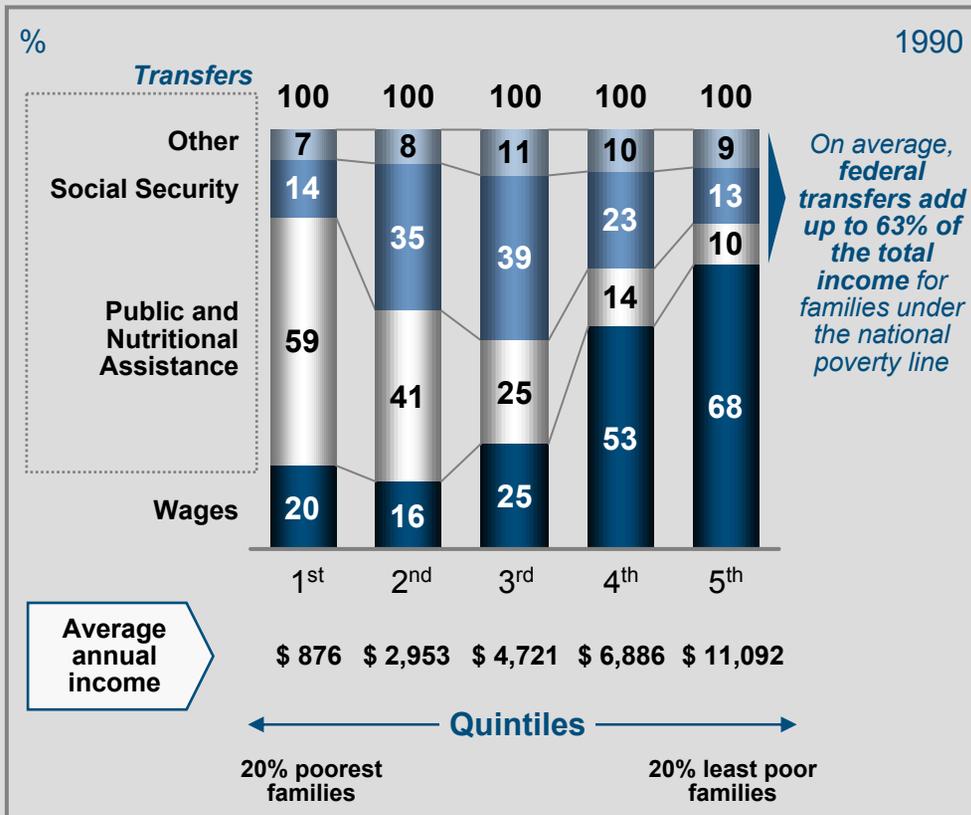
The relationship with the US has been an strength to the extent that it helped to alleviate poverty intensity through federal transfer payments



Poverty Evolution in Puerto Rico
% of families living below national poverty line



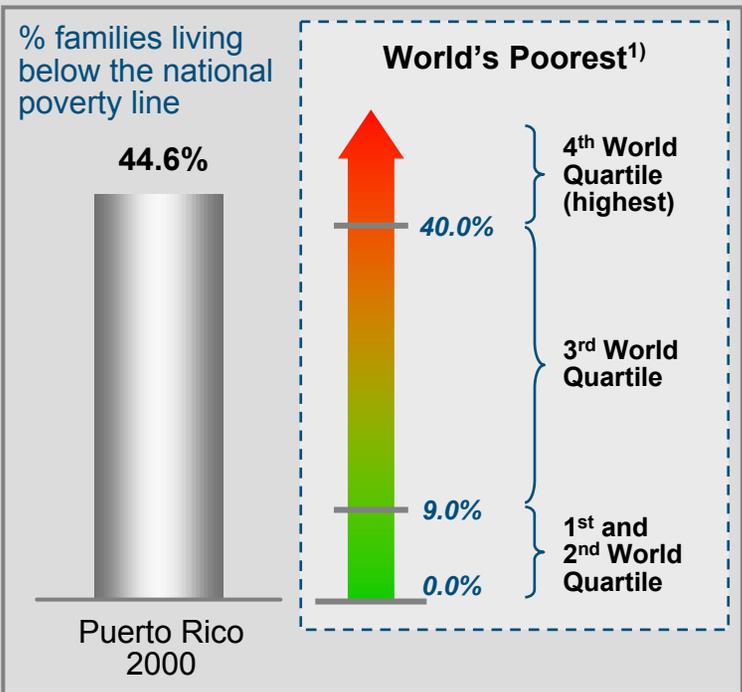
Main Sources of Income by Quintile of Families under the Poverty Line



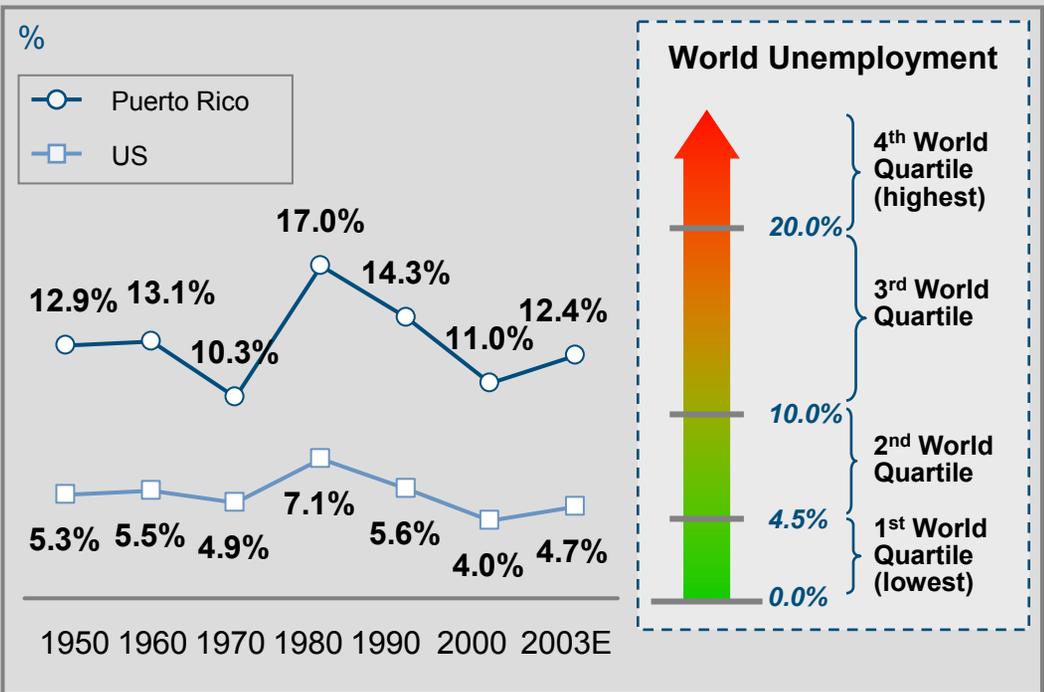
Sources: "Island Paradox", Francisco L. Rivera-Batiz and Carlos E. Santiago; 1) Census 2000 – Children in Puerto Rico: Results from the 2000 census; "Puerto Rico: Negotiating Development and Change", James L. Dietz; Census Data; "La Pobreza en Puerto Rico: Una Guía para la Política Pública", Orlando Sotomayor; A.T. Kearney analysis

Poverty and unemployment — main factors related to family disruption — are still considerably high in Puerto Rico when compared internationally

Number of families below the national poverty line is still high...



... while unemployment in Puerto Rico remains at double digit levels



Of all Puerto Rican families living under the poverty line in 1990, only 33.9% were headed by an employed person

Note: 1) The national poverty line varies significantly among countries — rich nations generally employ more generous standards of poverty than poor nations
 Sources: “Puerto Rico: Negotiating Development and Change”, James L. Dietz; CIA World Fact Book 2002; Census Data; A.T. Kearney analysis

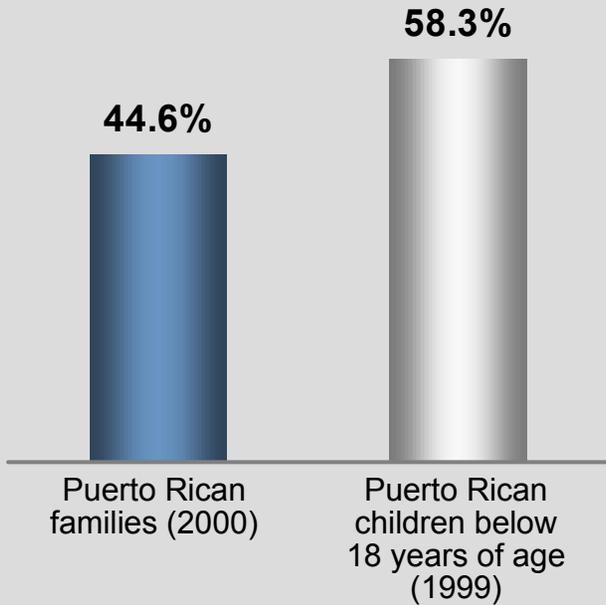
Such rates are higher among the youth...



Poverty and Unemployment in the youth

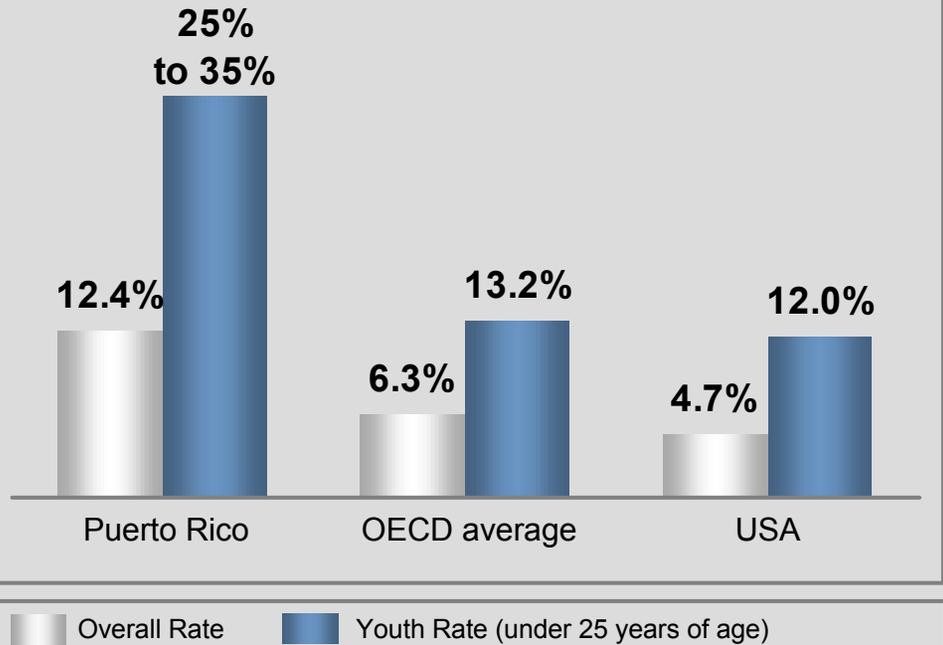
Puerto Rican children impacted by Poverty

% living below the national poverty line 1940 – 2000



Unemployment Rates Overall and Youth Unemployment

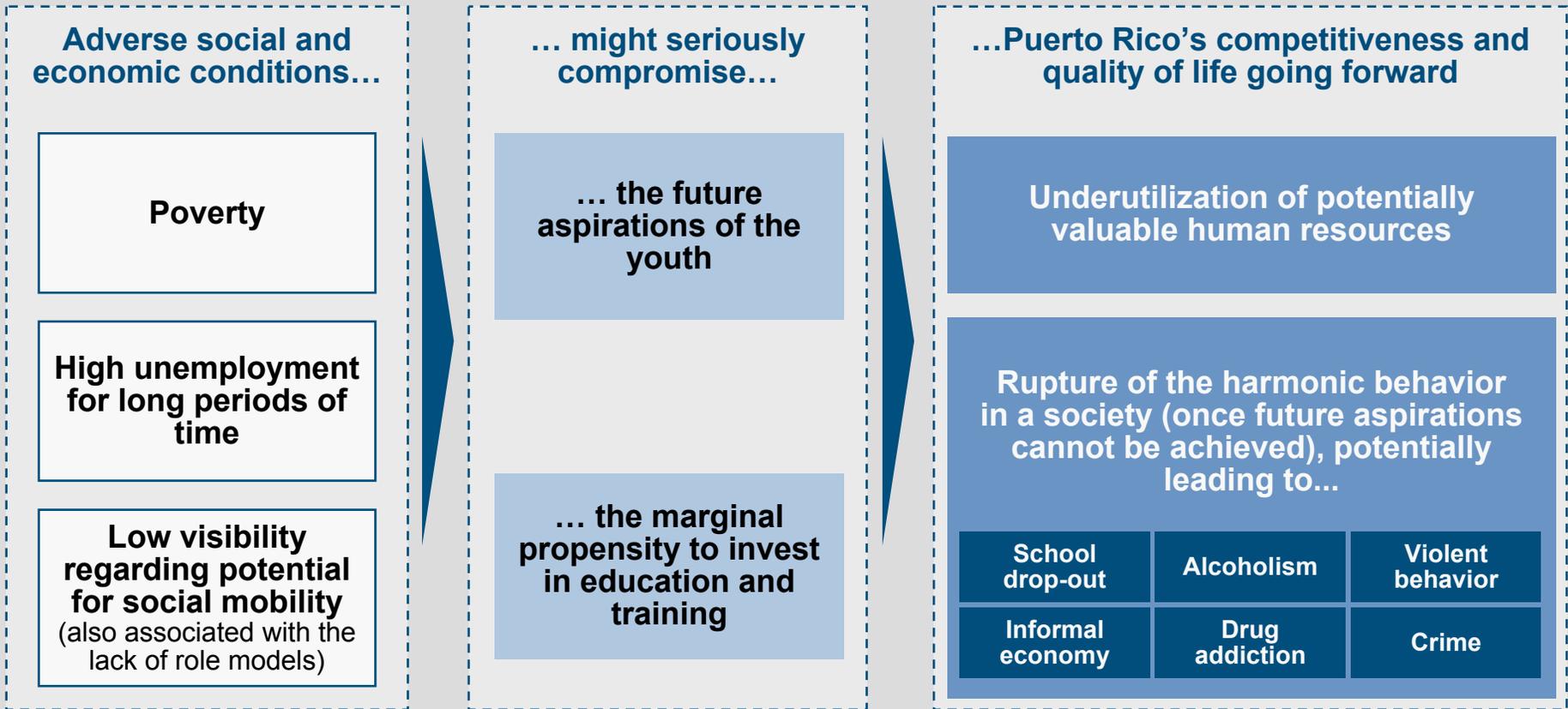
% 2002



Sources: US Census; OECD in figures – 2003 Edition – Statistics on the member countries; A.T. Kearney analysis

... what might lead to increasing distress in the Puerto Rican society going forward

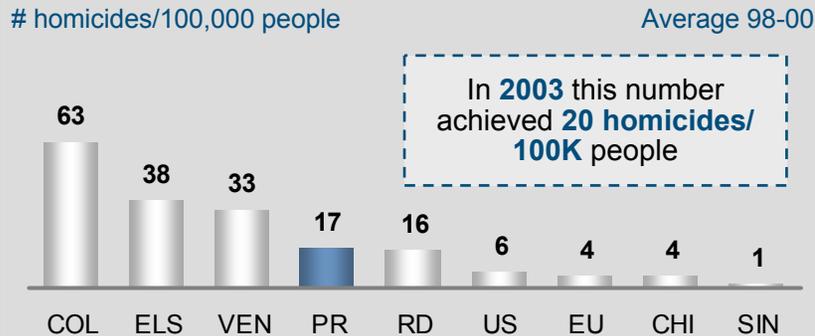
Theoretical cause and effect map Impact of Social and Economic Conditions on Family and Society Issues



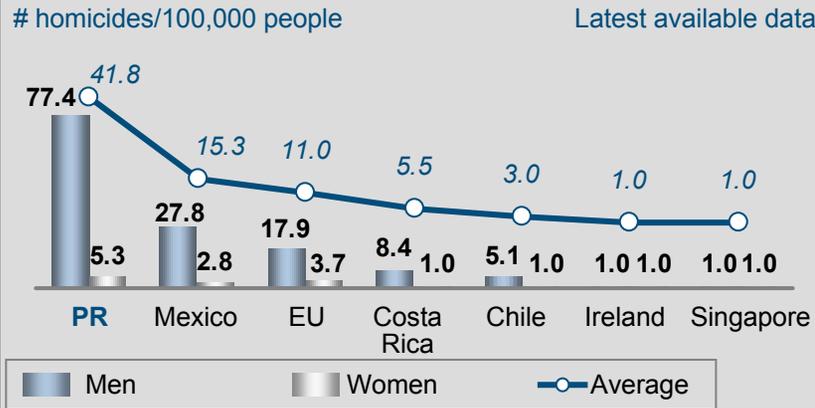
In this context, families in Puerto Rico are facing an alarming level of violent crimes, specially murders related to drug trafficking

International comparison

Average in # of homicides between 1998 and 2000



Homicide rate in those 10-29 years of age



Other key facts

- The **role of drug trafficking** in violent crimes has **increased** substantially in the last decades. While in **1986, 1.6% of the total homicides** were related to drugs, **by 2001 this share had increased to 63%**
- The number of reported cases of **minors experiencing abuse** from their parents has **increased 55%** from 1994 to 2001 (this is at least in part due to the enforcement of higher reporting)

Profile of the Juvenile Delinquent

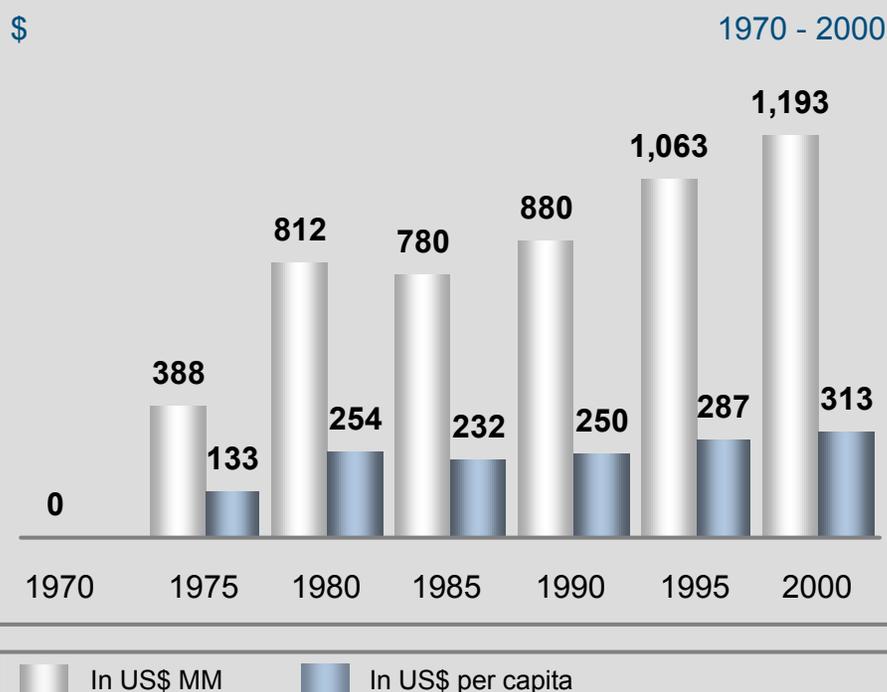
- Between the ages of 16-18
- School desertor
- Schooling level between 6th and 9th grade
- Household headed by single mother and main source of income is public assistance
- Has been victim of physical abuse
- Poor self-esteem
- At least one member of the household is a drug user
- In the case of females, one fourth are single mothers

Source: P.R. Planning Board, Informe Social Criminalidad en Puerto Rico, May 2003

Although important for poverty alleviation in Puerto Rico, federal transfers have led to a dependency issue and negative incentives in the society

WEAKNESSES

Nutritional Assistance Transfers¹⁾



Key adverse factors associated with the transfers

- **Dependency** and **negative incentives** to work, according to which people might **choose to leave the workforce** completely or look for some sort of activity in the **informal sector** to complement the level of income received from the benefits. As a consequence:
 - The **labour force participation (LFP)** in Puerto Rico is **remarkably low** (46.2% vs. 67.2% in the US for 2000)²⁾
 - The informal economy, in legal activities or not, keeps growing strongly (according to studies, the **unemployment rate** of Puerto Rico **would fall by 1/3** if the informal economy jobs were considered employed)
- This situation might have **significant adverse consequences** for the Puerto Rican society going forward, not only due to the cycle of dependency that is continually nurtured, but also due to the **negative examples and values transmitted to the youth** in the environment of their homes, increasing the sense of **submission to the status quo and lack of positive role models to be followed**

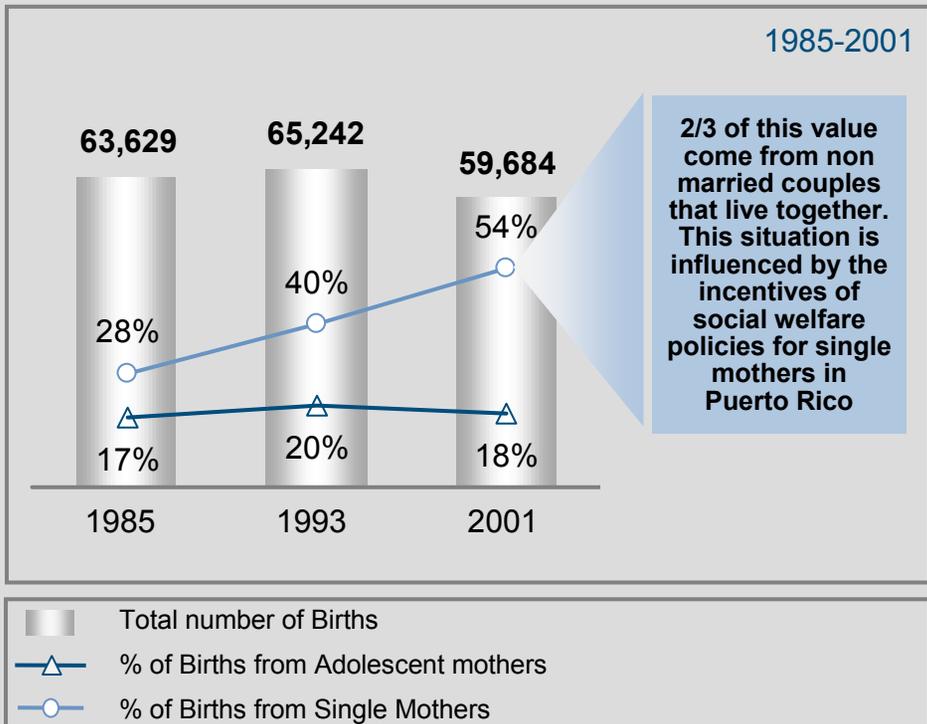
Notes: 1) Nutritional Assistance Transfers represent around 60% of all means-tested benefits, which depend on the income status of the individual (nutritional assistance, student scholarships, housing). All means-tested benefits represent around 30% of the total federal transfers, the remaining 70% being earned benefits (social security, Medicare, pensions, veterans benefits)

2) The low LFP is also related to the phenomenon of discouraged workers (typical in economies with high unemployment rates for extended periods of time) that withdraw from the labor force due to the belief that they cannot find jobs

Source: "Puerto Rico: Negotiating Development and Change", James L. Dietz; Census Data; A.T. Kearney analysis

Teenage births in Puerto Rico are high for international standards, with important consequences in family stability

Evolution of Births in Puerto Rico



Key Facts

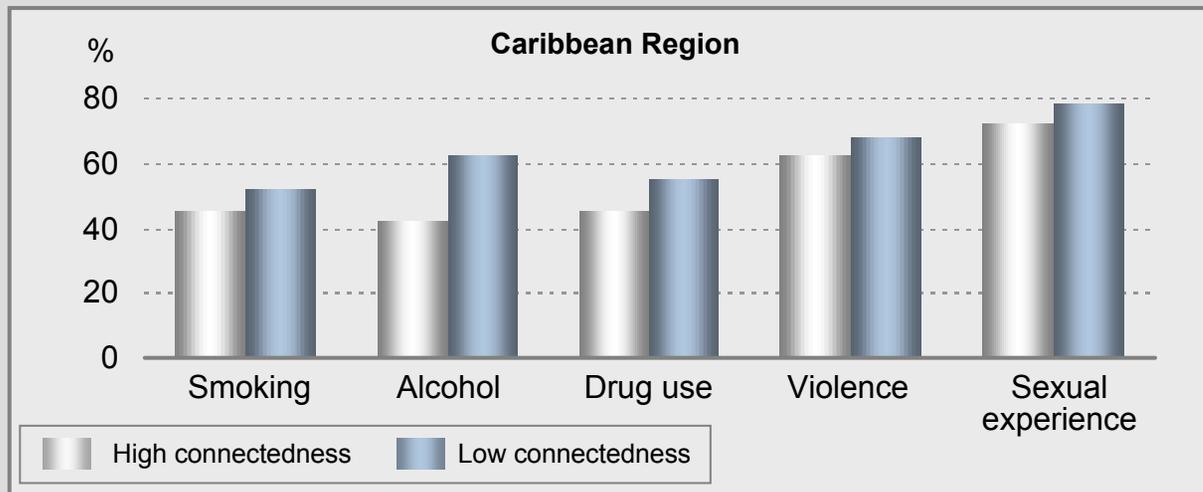
- **Teenage births** tend to be strongly associated with a **wide range of disadvantages** for mothers, children and society in general:
 - Young mothers are **more likely to drop out of education**, be poorly paid, bring up their children as **single mothers** and live on welfare.
 - Babies may often encounter health problems such as **low birth weight**
 - Children from teenage mothers may also be more likely to become **victims of neglect** and to have **less attachment in school**
- **71%** of the Puerto Rican **female headed families** were **living in poverty** in 1999, vs. 44% in the case of married couple with children
- While the overall number of Puerto Rican families living below the poverty line declined in the last years, the **number of female-headed families living in poverty increased 12%** between 1990 and 2000

The average number of births from adolescent mothers in the OECD countries was 16 (per 1 000 women aged 15 to 19 years old) in 1998, while in Puerto Rico this number achieved 67 in 2001

The loss of family values has been consistently highlighted as a major challenge for Puerto Rico going forward

WEAKNESSES

Predicted Probability of Engaging in Risk-Taking Behavior by Level of Parental Connectedness



Key Observations

- During the interviews and community meetings carried on so far by the PR 2025 team, the **loss of family values** has been pointed out as an **issue of major concern**
- A study realized in 1991 (Rosa Laboy) on the **youth perspectives regarding the family environment** in Puerto Rico revealed that **only 37% of the youth** thought their families to be highly functional (there is, that members would enjoy satisfaction and social support from their family relationships).

“Familial behavior is both the strongest protective and risk factors in youth development”

Protective factor

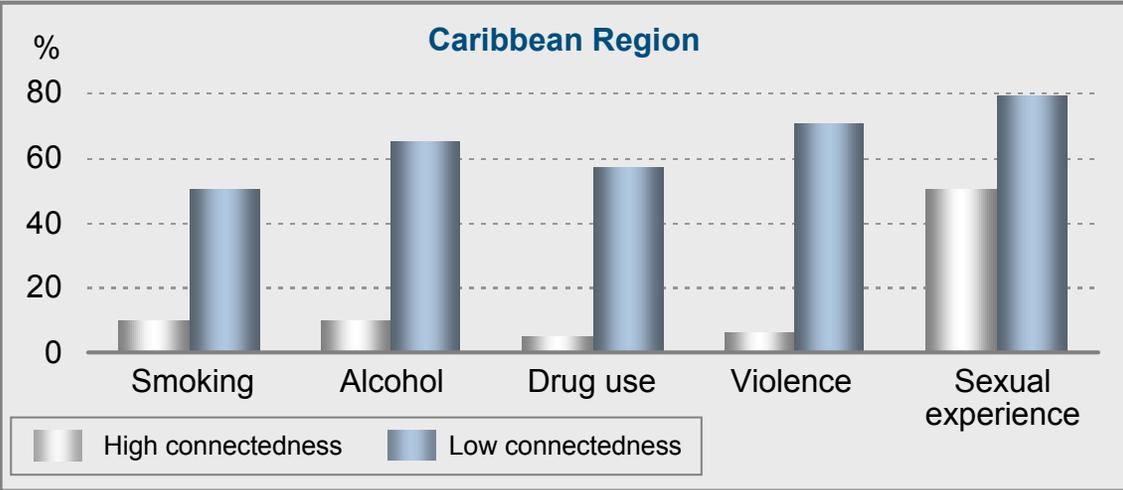
- Family connectedness
- Appropriate parental discipline
- Moral guidance
- Protection from danger
- Economic support

Risk factor

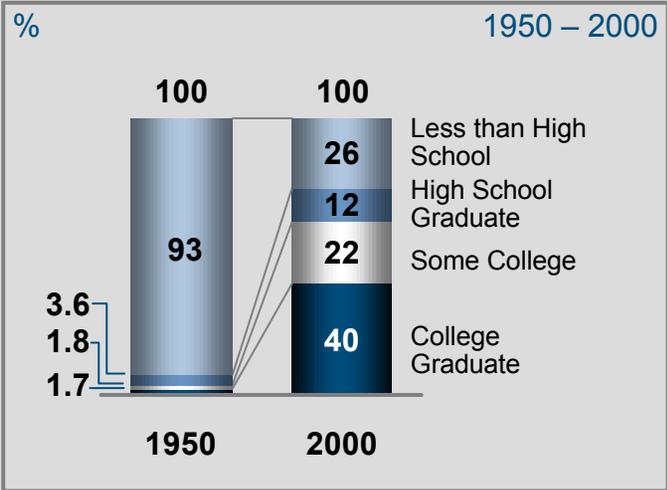
- Parental display of negative behavior, such as drug use, alcohol abuse and violence
- Absence of parental guidance and support

Schools can and should play a major role in perpetuating social values by providing a healthy social environment for child development

Predicted Probability of Engaging in Risk-Taking Behavior by Level of School Connectedness



Evolution of the Educational Status in Puerto Rico



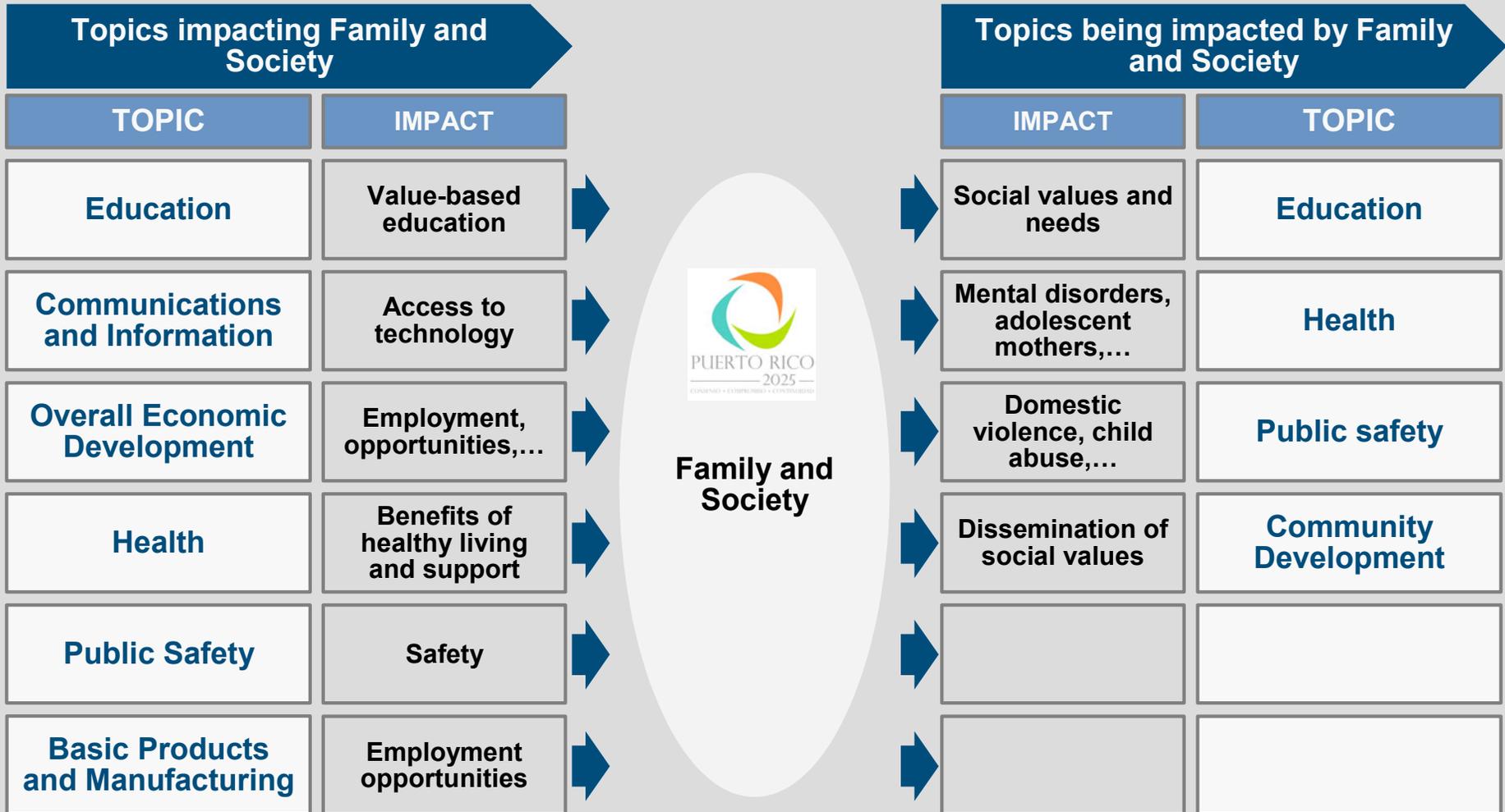
*“Boys and girls who fell connectedness to school are **25 to 80 percentage points less likely to engage in risk-taking behaviour** than are those who do not have any connectedness”. This reflects the high importance of “the physical environment in which youth live and the institutions they confront daily”*

The World Bank, 2003

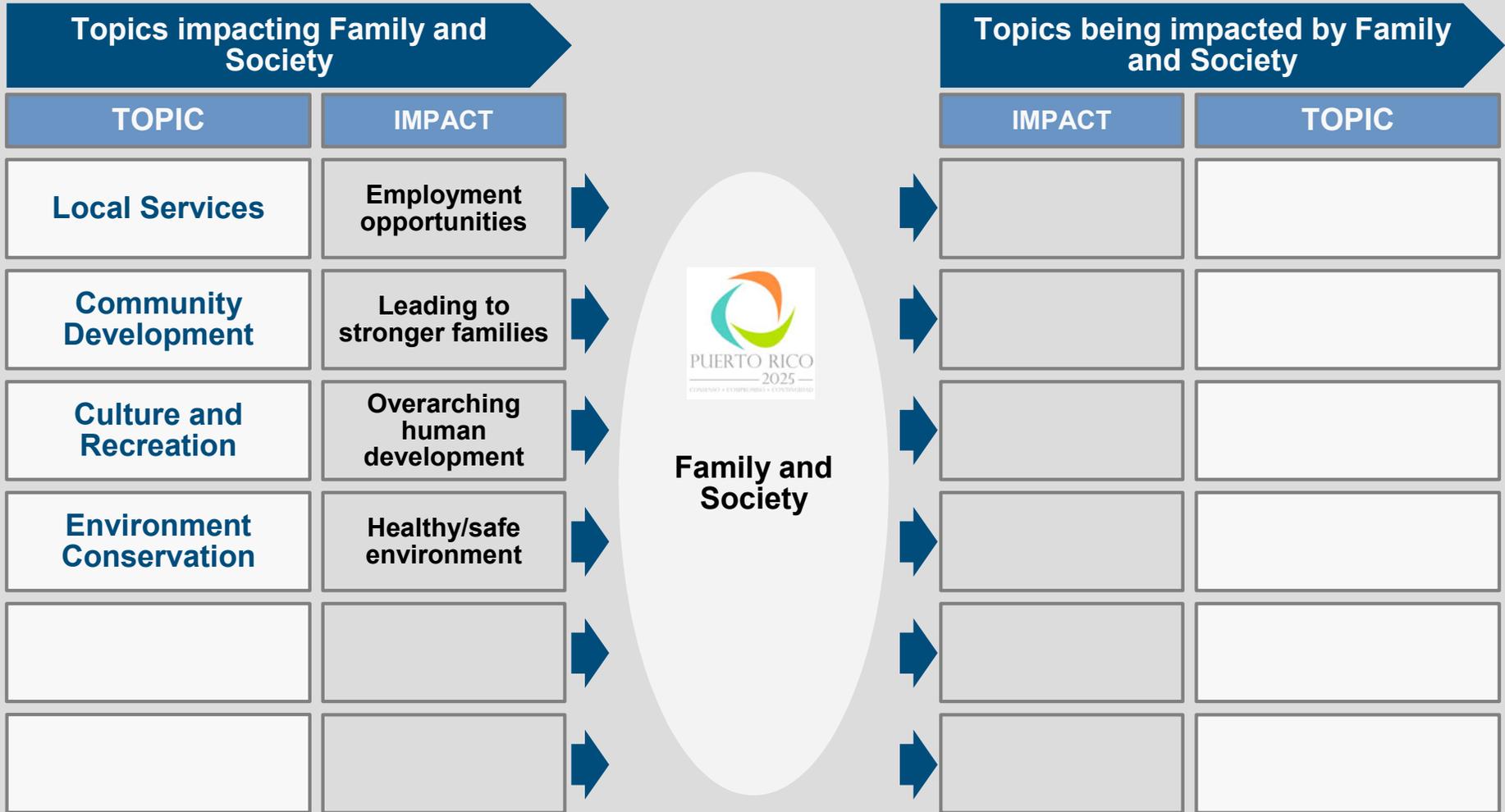
Although improvements in education attainment have been achieved in the last decades, **leveraging the quality of the educational environment** and strengthening the school as an institution might represent an important opportunity to recuperate/ strengthen the values of the family and society in Puerto Rico

Source: World Bank, 2003

Family and society linkages



Family and society linkages



Key questions going forward

Family and Society

- How can the current levels of poverty and unemployment be reduced to best practice levels in Puerto Rico? What should be done regarding youth unemployment and childhood poverty?
- How can the current levels of domestic violence, child maltreatment and homicides be reduced to best practice levels?
- What programs should be put in place to reduce the alarming rates of teenage births, to best practice levels?
- What should be the role that the family has to play in the future of Puerto Rico?



-  **Education**
-  **Health**
-  **Public safety**
-  **Community development**
-  **Family and society**
-  **Culture and recreation**

Executive Summary – Culture and Recreation

- Puerto Rico has as part of its rich heritage some historical sites and colonial architecture with few parallels in the world
- Besides this, Puerto Rico has developed and exported to the world some forms of unique cultural expressions in music, dance, arts and crafts, among others which are clear representations of our unique culture
- On the other hand, in many cases, the influence and, to a certain extent, the assimilation of American values has occurred at the expense of the traditional Puerto Rican culture
- Despite some inherent strengths for film production, Puerto Rico is perceived in the motion picture industry in the US as a location without adequate infrastructure and with higher costs than other places in the US and LA for international productions
- The fear of street criminality pushes the population away from participating in cultural activities and the ones that are offered do not always match the real demand of the community that will benefit from it. This is due to the lack of communication with the society in the planning process
- Nonetheless, the exposure of youth to art expressions is an opportunity to be further explored since it's recognized as a resource to reduce the probability of youth incurring in risk-taking behaviour
- Another interesting opportunity for the future include the leverage of know-how on specific areas such as music production to turn Puerto Rico into an international music production centre

Overview of Puerto Rico's Culture

Strengths

- Puerto Ricans are amongst the most happy people in the world according to a study published by the British magazine New Scientist
- Puerto Rico has developed and exported to the world some forms of unique cultural expressions
- Craftsmen and artisans in Puerto Rico have developed a unique style, producing high quality craftsmanship and utilizing very diverse materials and techniques
- Historical sites and colonial architecture in PR has few parallels in the world
- The ICP among other cultural institutions is opening new museums and fine art centres across the island
- Puerto Rico possesses a series of inherent strengths for film production

Weaknesses

- In many cases, the influence and, to a certain extent, the assimilation of American values has occurred at the expense of the traditional Puerto Rican culture
- Those who express pride about their traditional Puerto Rican culture are often perceived as “anti-Americans”
- The unique relationship with the US is not explored adequately to leverage funding alternatives, and to take advantage of the market size in the US and the heritage link with the Puerto Rican and Latino communities
- Despite some inherent strengths for film production, Puerto Rico is perceived in the motion picture industry in the US as a location without adequate infrastructure and with higher costs than other places in the US and LA for intl. productions
- The fear of street criminality pushes the population away from participating in cultural activities
- The cultural activities offered do not always match the real demand of the community that will benefit from it, due to the lack of communication with the society in the planning process

Opportunities

- The exposure of youth to art expressions reduce the probability of them incurring in risk-taking behaviour
- Turn Puerto Rico into:
 - An international music production centre
 - An international film production centre
 - The Latin America art capital

Threats

- Puerto Rican culture is perceived in some US communities as a second rate culture
- Lack of an adequate inclusion of the cultural topic in the education curricula at all levels can end up accelerating the process of assimilation of external influences in detriment of the local culture and values

Puerto Rico's culture presents a series of strengths that make it unique internationally

STRENGTHS

Culture — Strengths

- Puerto Ricans are amongst the most happy people in the world according to a study published by the British magazine *New Scientist* that ranks them in 5th place
- Puerto Rico has developed and exported to the world some forms of unique cultural expressions in its genre such as “salsa” music and dance
- Craftsmen and artisans in Puerto Rico have developed a unique style, producing high quality craftsmanship and utilizing very diverse materials and techniques
- Historical sites and colonial architecture in Puerto Rico has few parallels in the world
- The cultural world in Puerto Rico is increasing its offer, quality and geographic coverage due to the strengthening and consolidation of its cultural institutions:
 - Museum and cultural centers rehabilitation in all of Puerto Rico on the part of the ICP
 - New location for the MAC
 - Etc
- Puerto Rico possesses a series of inherent strengths to film production when compared to other locations
 - Its tropical climate allows filming in exterior throughout the whole year
 - Its proximity to the United States and the absence of custom proceedings facilitates dual production and people and equipment mobility

However, there are weaknesses that impact negatively the quality of life of Puerto Ricans

Culture — Weaknesses

- In many cases, the influence and, to a certain extent, the assimilation of American values has occurred at the expense of the traditional Puerto Rican culture
- Those who express pride about their traditional Puerto Rican culture are often perceived as “anti-Americans”
- The unique relationship with the US is not explored adequately to leverage funding alternatives, and to take advantage of the market size in the US and the heritage link with the Puerto Rican and Latino communities.
- Puerto Rico is perceived in the motion picture industry as not having the sufficient infrastructure to attract international productions such as movies and great theater plays
- Some experts in the United States don’t consider the film production market in Puerto Rico to be profitable. This type of project for the Latino audience is centered more and more in Los Angeles where they can produce at a lower cost due to the existing economies of scale and scope from the clusters already in place
- The fear of street criminality impacts negatively and pushes the population away from participating in cultural and recreational activities
- Cultural events are not always developed with the communities or the groups to be benefited, losing valuable resources without the expected results

Opportunities related to culture in Puerto Rico

Culture — Opportunities

Opportunities

Impact

Improve the quality of life and the economic and social future of Puerto Rico

- According to a recent study the exposure of youth to some type of artistic expression results in:
 - Less absenteeism in schools
 - Less teen pregnancies
 - Less use and abuse of alcohol and drugs
 - More discipline and better school results

Turn Puerto Rico into an international music production centre

- For this, Puerto Rico has to:
 - Take advantage of its knowledge and music history
 - Take advantage of its relation with the United States and its markets
 - Develop its infrastructure (eg. studios) and the necessary market and distribution network
 - Create the legal framework and the necessary financing

Turn Puerto Rico into an international film production centre

- For this, Puerto Rico has to:
 - Take advantage of its relation with the United States and its markets
 - Take advantage of the location, climate and places
 - Develop the infrastructure (eg. Studios) and the necessary market and distribution network
 - Create the legal framework and the necessary financing

Opportunities related to culture in Puerto Rico (cont.)

Culture — Opportunities

Opportunities

Turn Puerto Rico into the art capital of Latin America

Impact

- Puerto Rico can become the capital of Latin American art and be one of the mandatory stops for main international tours:
 - Expanding good existing collections in the main museums such as the MAPR, MAP, MAC
 - Opening up new museums and establishing allies and collaboration programs with the main museums around the world to acquire know-how and bring their collections
 - Investing in the formation of new artists, opening up more art schools, bringing internationally renowned professors and providing scholarships to local and Latin American outstanding students
 - Increasing the quality of hotel infrastructure and tourism related services

There are also threats that need to be addressed


 THREATS

Culture — Threats

Threats

Puerto Rican culture is perceived in some US communities as a second rate culture

Lack of an adequate inclusion of the cultural topic in the education curricula at all levels

Impact

This phenomenon restricts the potential retail of products and services identified as “Puerto Rican” in the United States

The lack of an adequate inclusion of the cultural topic in the education curricula at all levels limits one of the main transmission and communication channels of traditional culture to the Puerto Rican society. This can end up accelerating the process of assimilation of external influences in detriment of the local culture and values

Overview of Puerto Rico's Recreation

Strengths

- The good climate allows for outdoor recreational activities throughout the year
- Due to the reduced dimensions of the island and the good infrastructure, Puerto Ricans have easy and quick access to different recreational activities that are being developed anywhere in the island
- There is a great number of recreational facilities and NGOs dedicated to the promotion of sports and recreation in PR
- The government budget for Recreation and Sports increased from \$30.1MM in 2001 to \$56.5MM in FY02-03, (88% increase)
- Tourists visiting Puerto Rico have ample entertainment options in addition to the traditional "Caribbean island" and "cultural and architectural richness".

Weaknesses

- PR has one of the highest levels of inactivity amongst the adult population in all the United States (1/52) and the tendency of inactivity is increasing, mainly due to the lack of time for leisure as result of modern lifestyle
- Puerto Rico faces challenges regarding its current recreational assets including deficient maintenance and vandalism
- The available recreational facilities in PR are not always built to satisfy community needs but as a legal requirement
- Lack of recreational options for different age groups, specially outside of the metropolitan area
- Lack of government support for NGOs dedicated to sports and recreation

Opportunities

- The role of the government is key in making the best use of available resources and in defining policies to support recreation in the population
- The use of recreation in violence prevention programs (VPP) has proved to be very successful in reducing juvenile delinquency

Threats

- Not taking the necessary preventive measures can make the alarming situation in some social indexes in the youth in Puerto Rico to get worse

Recreation in Puerto Rico also provides a series of strengths

STRENGTHS

Recreation — Strength

- The good climate allows for outdoor recreational activities throughout the year
- Due to the limited dimensions of the island and the ample road system, Puerto Ricans have easy and quick access to different recreational activities that are being developed anywhere in the island
- There is a great number of recreational facilities and NGOs dedicated to the promotion of sports and recreation on the island
- The government budget for Recreation and Sports increased from \$30.1 MM in 2001 to \$56.5 MM in FY 2002-03, an 88% increase
- Tourists visiting Puerto Rico have ample entertainment options in addition to the traditional “Caribbean island” and “cultural and architectural richness”. Among these are equine events, basketball, volleyball, aquatic sports, golf, cavalcades, etc

However, there are weaknesses that need to be addressed...

Recreation — Weaknesses

...regarding demand for recreational options

- PR has one of the highest levels of inactivity amongst the adult population in all the United States (1/52)
- From 1996 to 2000, the tendency of inactivity increased from 79.4% to 83.8%. During the same period people who did some type of exercise during the previous month decreased from 51.9% to 45.9%
- The lack of leisure time as a result of modern lifestyle (including lost hours in traffic to and from work) was perceived by 51.6% of people as the main obstacle to participate in outdoor recreational activities. In addition to this there is the high criminality rates that discourage recreational activities even more

The impact in society from these weaknesses is bigger due to the lack of interaction/coordination between the different agencies, the private sector and the community

... regarding supply of services and facilities

- The available recreational facilities in Puerto Rico are not always built to satisfy community needs/requests and are often built only as a legal requirement. This has resulted in an excessive number of basketball courts throughout the island (which are cheap) and a lack of other type of facilities
- The deficient facilities maintenance has been identified as one of the major problems related to outdoor recreation
- Vandalism of recreational activities is the second greatest problem identified by communities with 46.1% responses
- Lack of recreational options for different age groups, specially outside of the metropolitan area
- Lack of government support for NGOs dedicated to sports and recreation (specially due to the high levels of bureaucracy)

The role of the government is key in making the best use of available resources and in defining policies to support recreation in the population

Recreation – Opportunities

Opportunities	Impact
<p>Take advantage of inter-agency efforts</p>	<ul style="list-style-type: none"> • More inter-agency efforts should be explored to do activities with the community. These should have access to a variety of high quality recreational options. Some initiatives that are already taking place are “Zone Press” and “VIVE”
<p>Special programs for people who are more sedentary</p>	<ul style="list-style-type: none"> • A profile of more sedentary people has been identified, for which special programs should be designed • The inactivity is more frequent amongst females than males, blacks than whites, older than younger and people with less resources than those with more resources
<p>Take advantage of available recreational facilities</p>	<ul style="list-style-type: none"> • The great number of available facilities and NGOs dedicated to recreation and sports should be better utilized to expand recreational options to all members of the society, regardless of their age or condition

The use of recreation in violence prevention programs (VPP) has proved to be very successful in reducing juvenile delinquency



Recreation – Opportunities

Opportunity

Prevention programs focused in addressing criminal risk factors in the youth should be developed and explored in depth. Some benefits of these are significant long term cost reductions including criminal justice, health services, pensions, etc.

Profile of the juvenile delinquent

- Between the ages of 16-18
- School deserter
- Schooling level between 6th and 9th grade
- Household headed by single mother and main source of income is public assistance
- Has been victim of physical abuse
- Poor self-esteem
- At least one member of the household is a drug user
- In the case of females, one fourth are single mothers

Examples of prevention programs with the youth

Programs to maintain youth in after school programs

Youth that participates in after school programs have better grades, relate better with others, demonstrate better behaviour and less tendency to incur in violent acts than those who don't participate

Other

- Mentorship programs for kids in 9th grade
- Drug rehabilitation programs for parents

Experts estimate that Violence Prevention Programs (VPP) save \$ 3 in the fight against violence for each \$ 1 invested

Not taking the necessary preventive measures can make the alarming situation in some social indexes in the youth in Puerto Rico to get worse

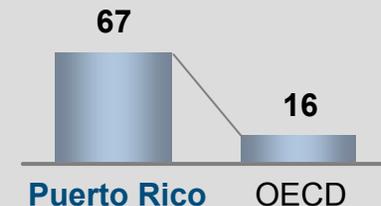
THREATS

Potential results of not participating in recreational activities...

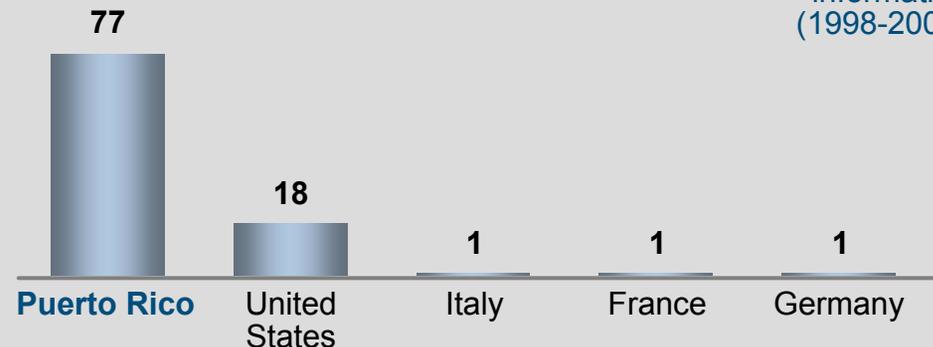
- Although there isn't a proven statistical correlation, experts in the WHO believe that youth that doesn't participate in recreational and sports activities have a greater probability of:
 - Involve themselves in criminal activities and violent acts as perpetrators or victims
 - Be in, or cause a car accident
 - Suffer non intentional wounds
 - Try cigarette smoking, alcohol and illegal drugs
 - Have irresponsible sex

... the current levels of youth violence and irresponsible sex are alarmingly high

births from adolescent mothers (15-19) per 1000 women 2001

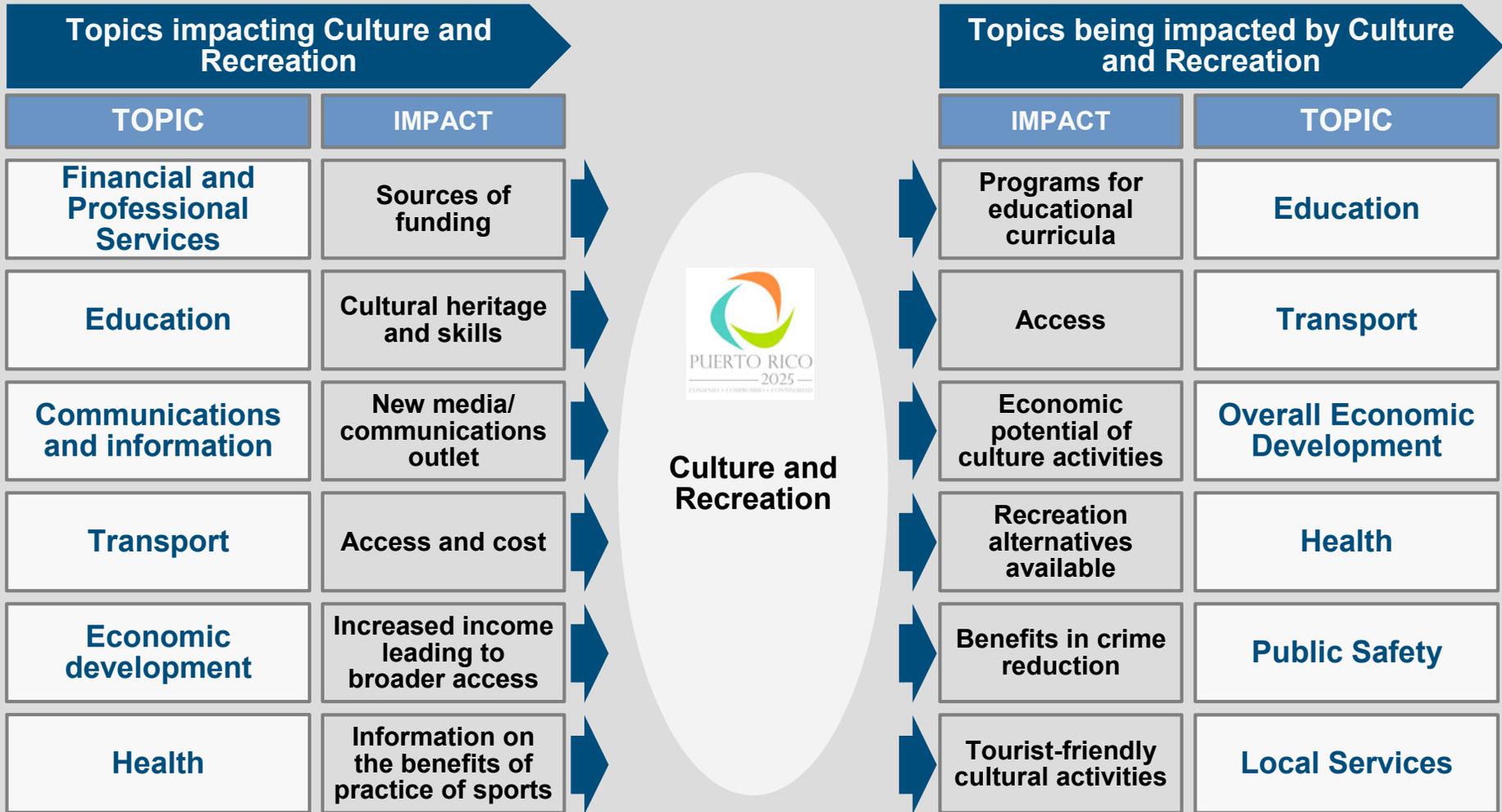


Homicides: males 10-29 years (per 100K population) Last available information (1998-2000)

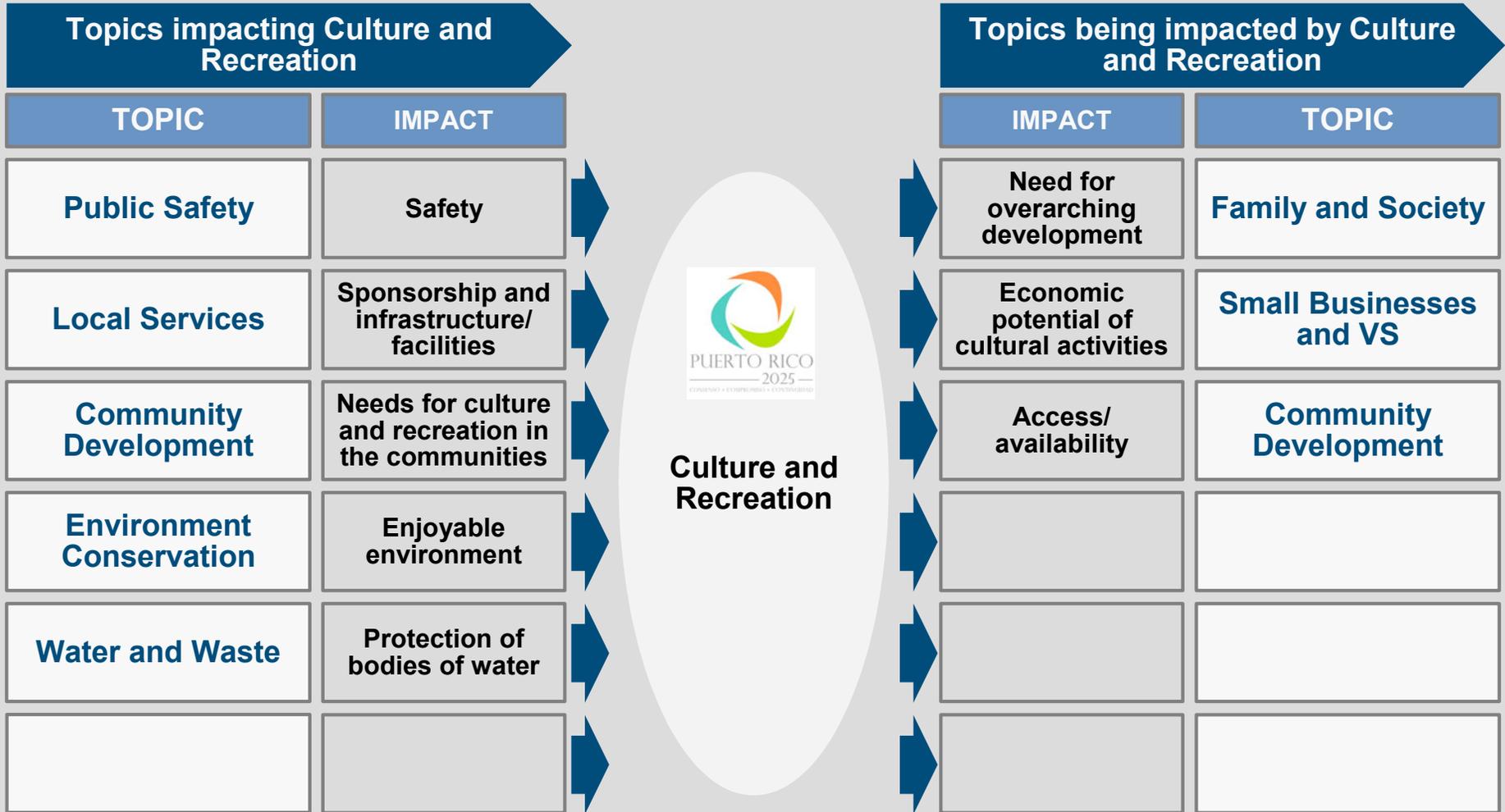


- Between 20% and 45% of boys and 47% and 69% of girls who are serious violent offender at the age 16-17 years are on what is termed a “life-course persistent developmental pathway”, and continue their violent behaviour into adulthood

Culture and recreation linkages



Culture and recreation linkages



Key questions going forward

Culture and Recreation

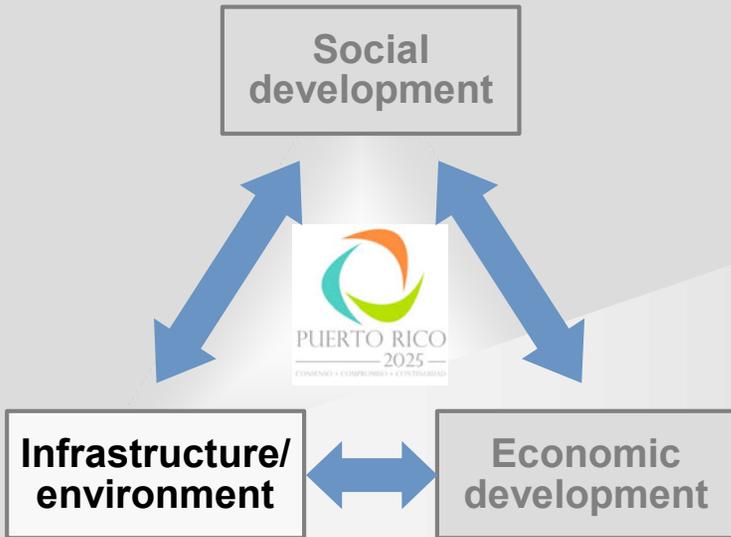
- What programs should be implemented in order to Improve the quality of life and the economic and social future of Puerto Rico through culture and recreation
- How can Puerto Rico become an international production center for the motion picture industry?
- How can Puerto Rico become an international production center for the music industry?
- What should be done to turn Puerto Rico into the art capital of Latin America?
- Which should be the priorities in terms of recreational infrastructure and programs in Puerto Rico?
- What should be done in terms of Violence Prevention Programs (VPP) using recreation and culture?

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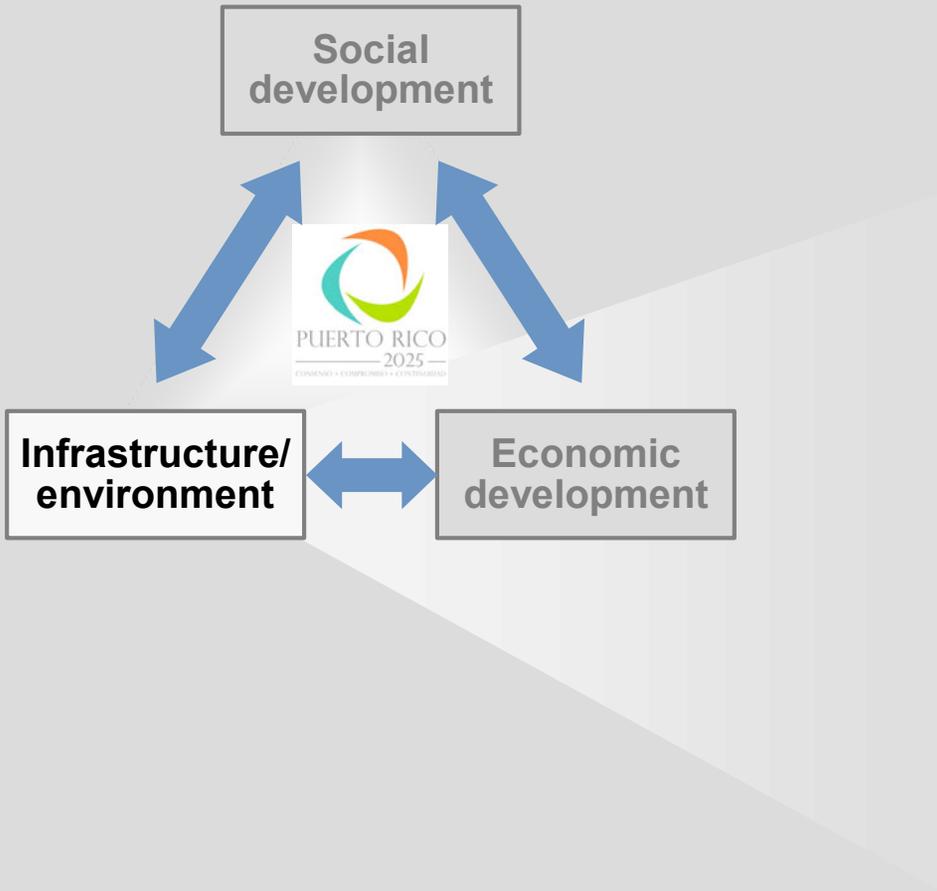
- Executive summary

- Appendix A: Detailed Assessment results
 - Economic development
 - Social development
 - **Infrastructure and environmental development**

- Appendix B
 - List of Interviewees
 - List of panel members
 - List of reference studies on Puerto Rico



-  **Energy**
-  **Water and waste**
-  **Land use**
-  **Communication and information**
-  **Transport**
-  **Environmental Quality**



-  **Energy**
-  **Water and waste**
-  **Land use**
-  **Communication and information**
-  **Transport**
-  **Environmental Quality**

Key Messages – Energy

- Low fuel prices
- High cost for electricity
- High dependency on imported oil
 - Some progress towards diversification
- Relatively inefficient electric power utility
 - Lack of competition
 - Weak regulator
- Potential to leverage renewable resources

Overview of Puerto Rico's Energy Infrastructure

Strengths

- Puerto Rico is very competitive in fuel costs compared to other locations

Weaknesses

- Though reduced, Puerto Rico's dependence on oil for electricity is still among the highest in the World
- Despite low fuel costs, Puerto Rico's industrial electricity cost is 73% higher than the OECD average subsidizing residential customers and decreasing the island's competitiveness
- PREPA has low productivity compared to its peers in the US and faces transmission and distribution losses higher than key competing locations
- Emissions from electricity generation account for 71% of all industrial air pollution and 33% of industrial surface water discharges in Puerto Rico
- Although improving, the environmental impact associated with energy consumption is still high compared to other locations

Opportunities

- A more balanced use of traditional sources of energy to produce electricity should be planned as a way to reduce oil dependence and price volatility
- Other initiatives in renewable energy resources might also be leveraged, following global trends
 - Technologies based on wind, sun and ocean resources
 - Waste-to-energy systems
- In particular, the high annual incidence of solar radiation in Puerto Rico makes it a suitable location to leverage this energy source

Threats

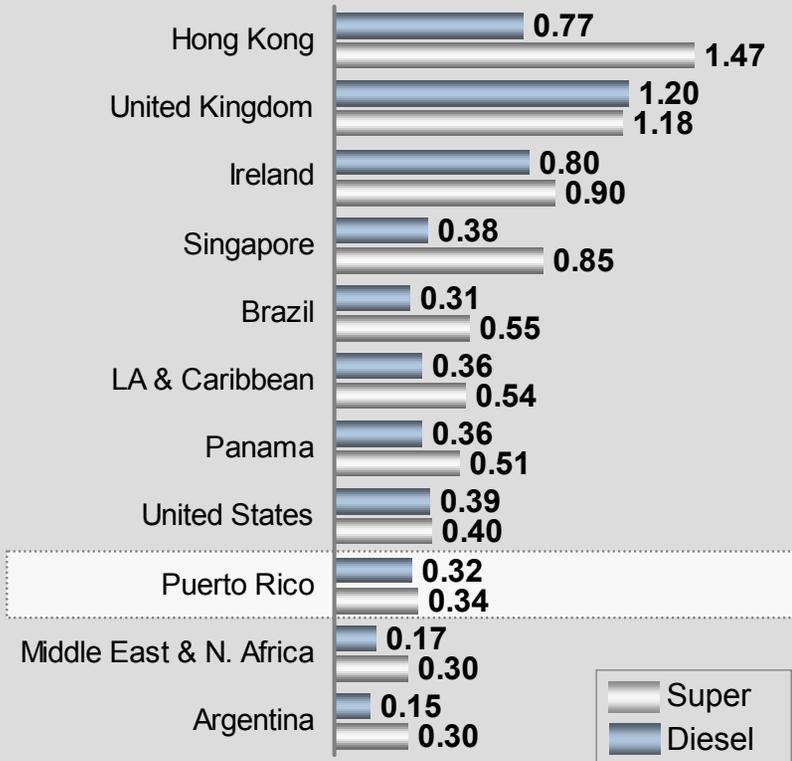
- Puerto Rico's dependency on imported oil exposes the country to high commodity volatility prices
- Aging infrastructure, lack of maintenance and cost inefficiencies could lead to reduced service levels, harming both competitiveness and quality of life
- Puerto Rico's location in a hurricane path threatens above ground electrical infrastructure

Puerto Rico is very competitive in fuel costs compared to other locations



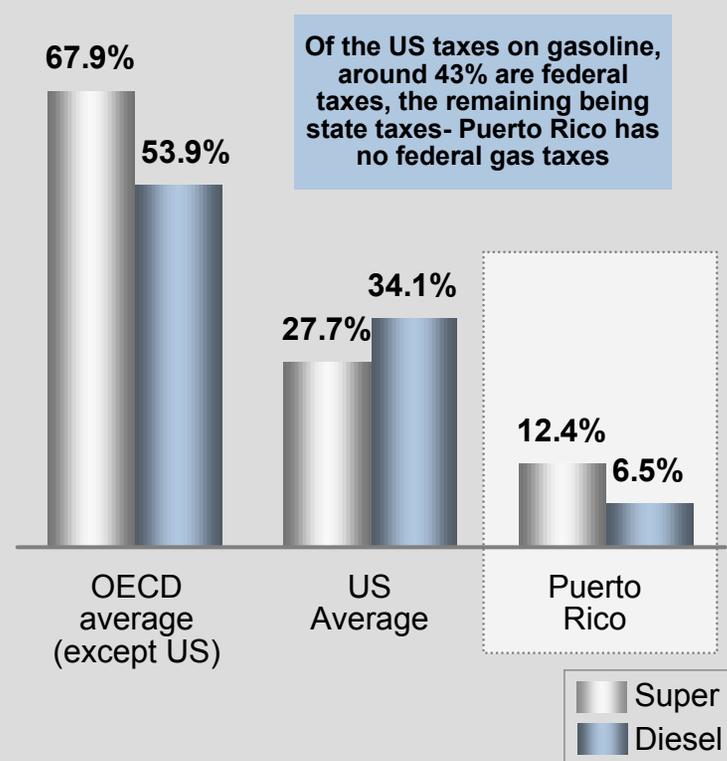
Prices for Fuel

US\$/liter 2002



Total Taxes on Premium Gasoline

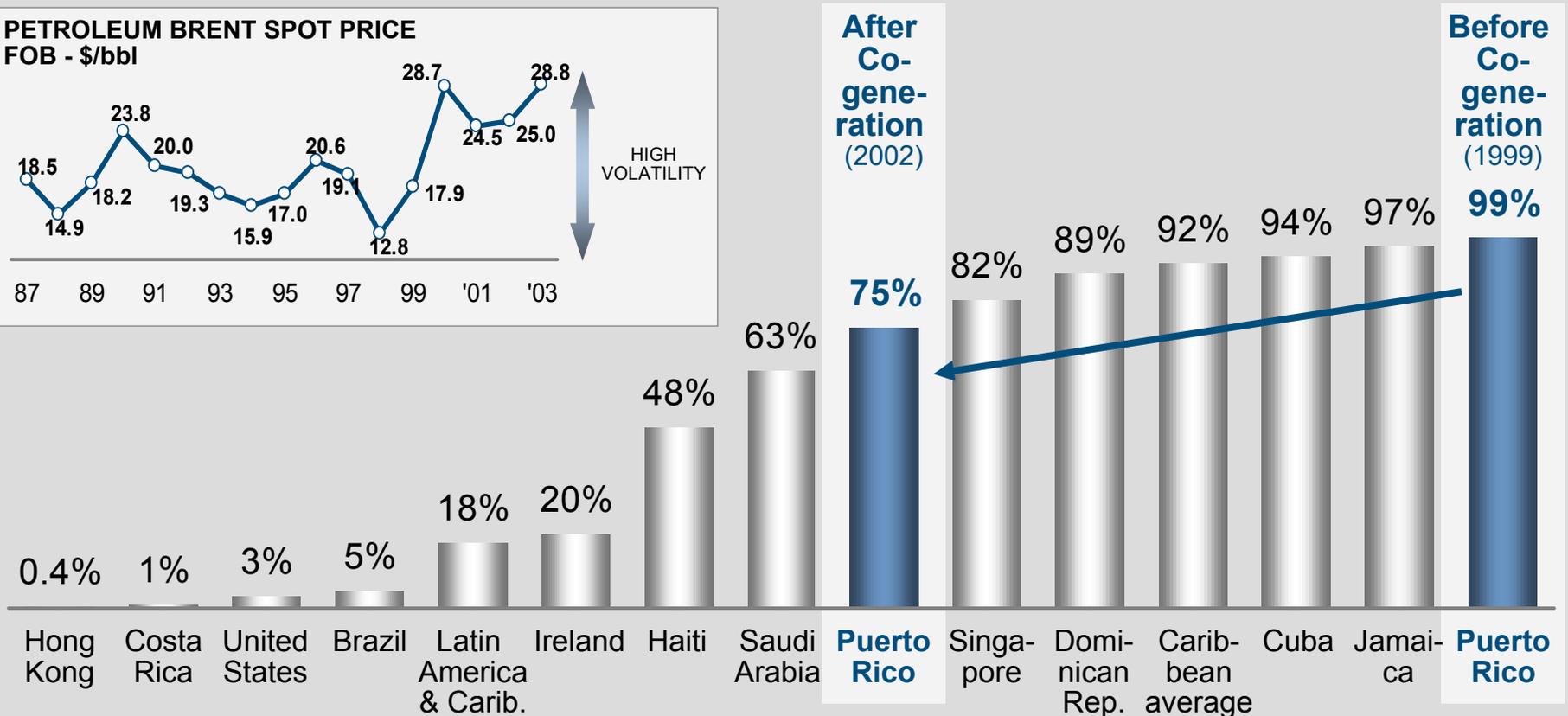
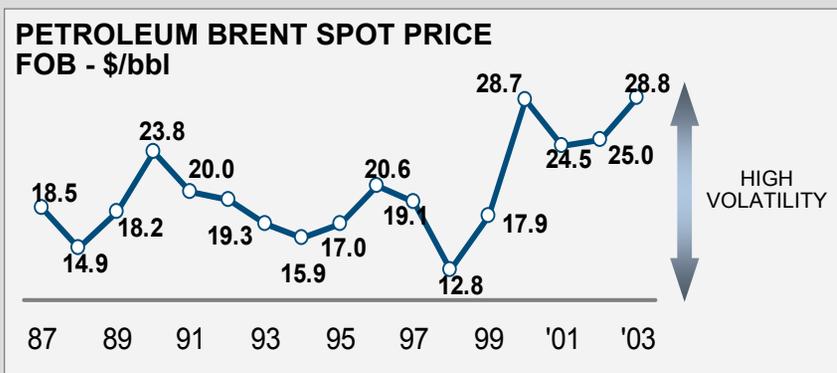
% 2003



Though reduced, Puerto Rico's dependence on oil for electricity is still among the highest in the World



Dependency on oil for electricity production
% of electricity generated from oil — 2000

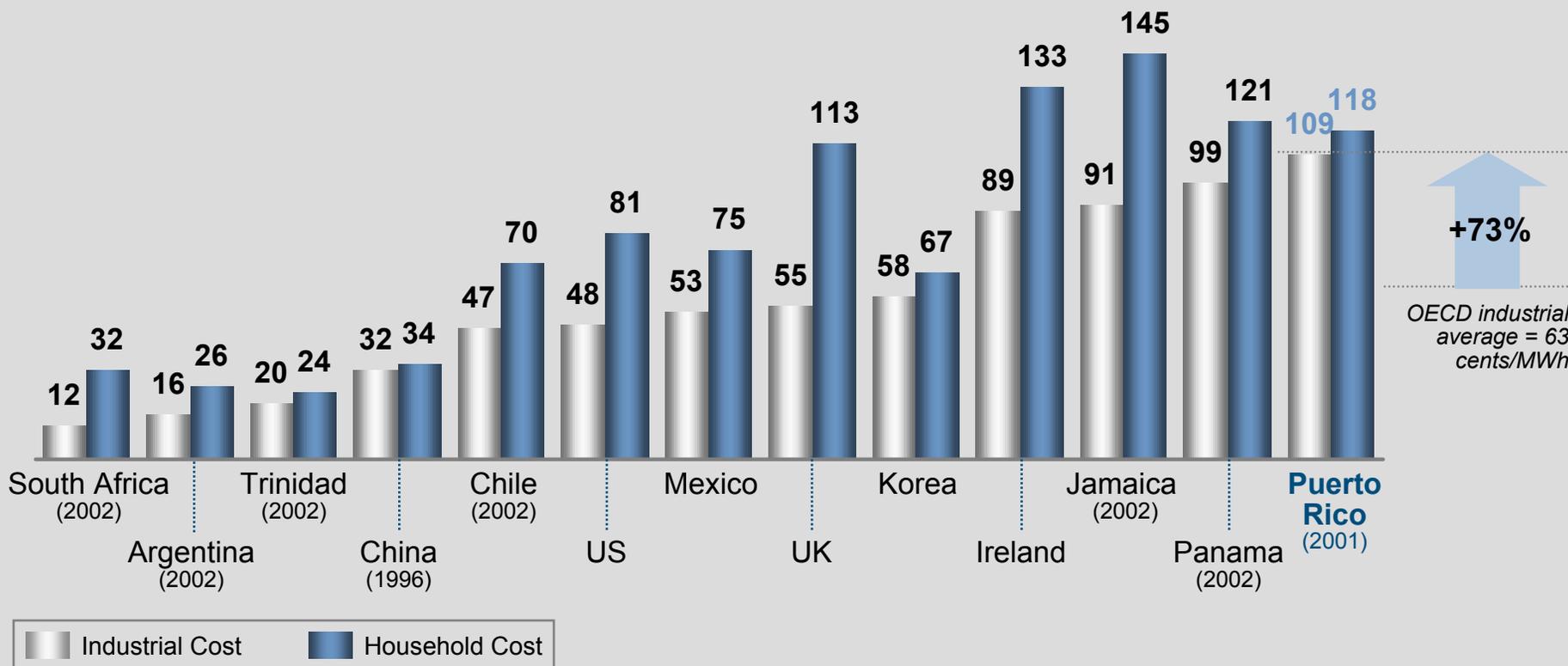


Source: World Bank, PREPA, U.S. Department of Energy, Energy Information Administration, Prepa Annual Report 2001-02, A.T.Kearney analysis

Despite low fuel costs, Puerto Rico's industrial electricity cost is 73% higher than the OECD average...



Electricity Costs
Cents per MWh
1Q 2003 (unless other date stated)

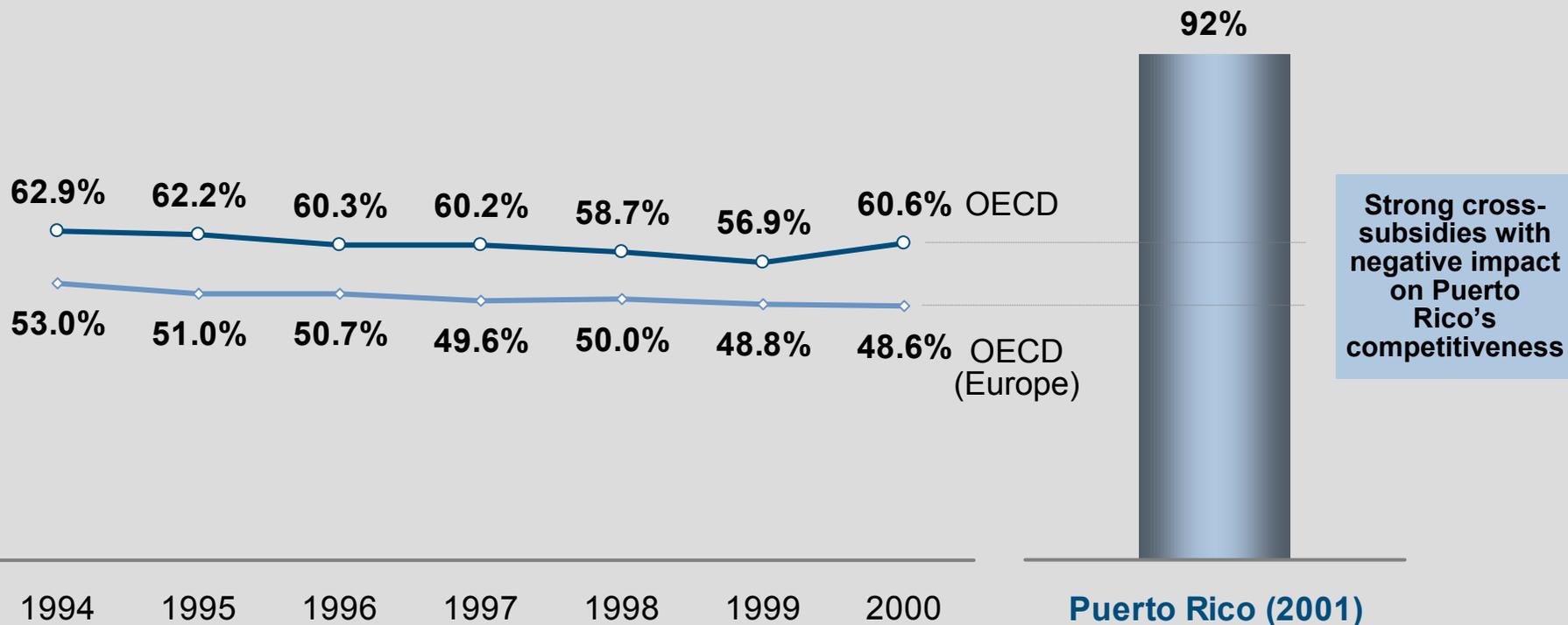


Source: Energy Prices and Taxes – Quarterly Statistics – 3rd quarter 2003; “Restructuring the Puerto Rico Energy Sector”, July 2003 – Fomento; A.T.Kearney analysis

...highly subsidizing residential customer and decreasing the island's competitiveness

WEAKNESSES

Ratio of Industrial To Household Electricity Rates
 – Puerto Rico vs. OECD –



The ratio between Puerto Rico's industrial and residential electricity rates is almost 2 times larger than the OECD (Europe) average, meaning a high cross-subsidy from industrial to residential clients

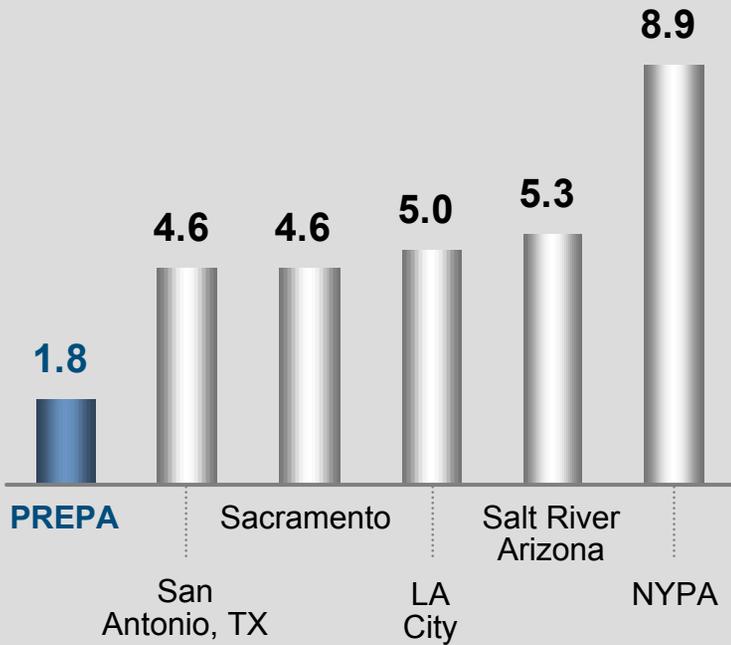
Source: Energy Prices and Taxes – Quarterly Statistics – 3rd quarter 2003; “Restructuring the Puerto Rico Energy Sector”, July 2003 – Fomento; A.T.Kearney analysis

PREPA has low productivity compared to its peers in the US and faces transmission and distribution losses higher than key competing locations



Sales per employee

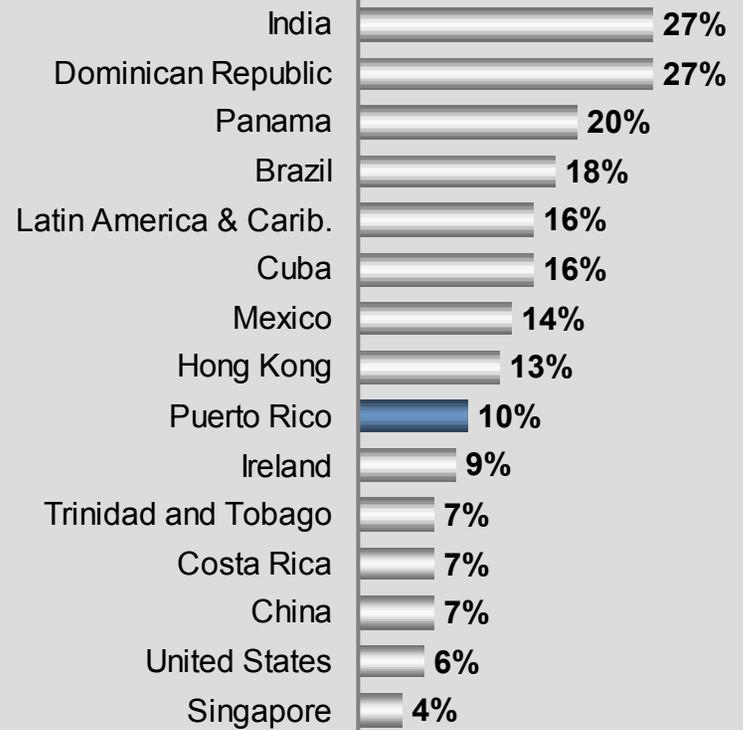
kWh sales/employee 2000



Transmission and distribution losses

% of output — 2000

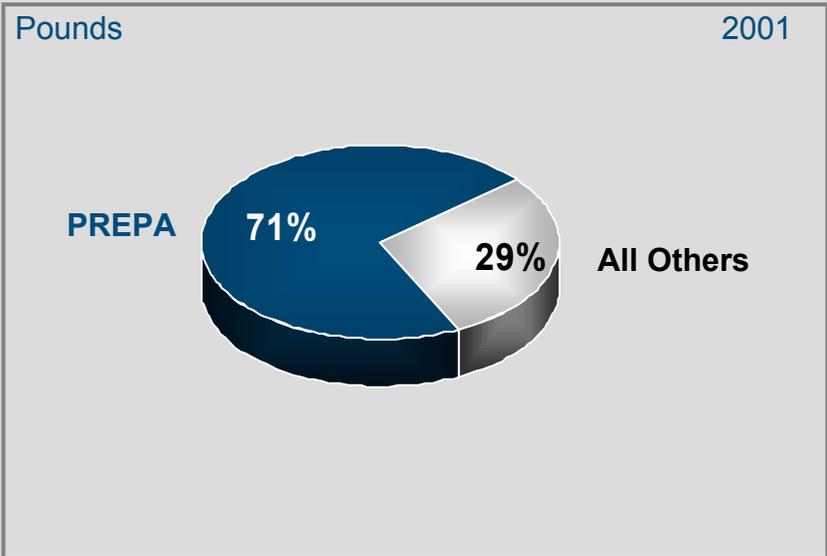
% of output 2000



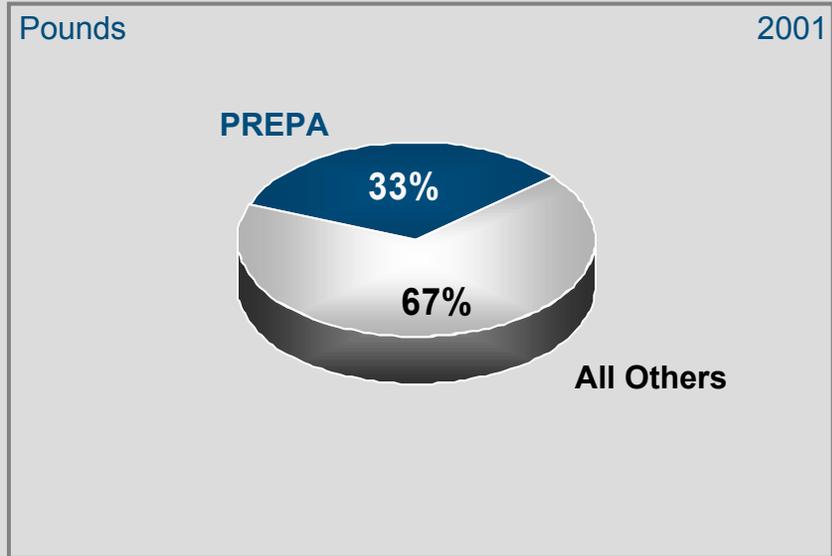
Source: GDB PREPA Bond Issue July 2002; Energy Information Administration; World Bank; A.T.Kearney analysis

Emissions from electricity generation account for 71% of all industrial air pollution and 33% of industrial surface water discharges in Puerto Rico

Total Air Emissions by Source
– On-site and Off-site reported releases for facilities in all industries for all chemicals in Puerto Rico –



Surface Water Discharges by Source
– On-site and Off-site reported releases for facilities in all industries for all chemicals in Puerto Rico –



A more balanced use of traditional sources of energy to produce electricity should be planned as a way to reduce oil dependence and price volatility

Electricity Generating Capacity in Puerto Rico

Megawatts

Capacity Addition 2002/03

PREPA

Mayaguez
Arecibo
Other
San Juan
Palo Seco
South Coast
Aguirre



0.46
San Juan
5 and 6

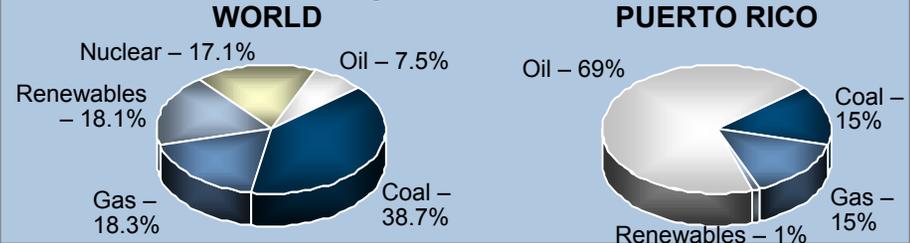
0.51
Eco
Electrica

0.45
AES

Increasing capacity non-oil related

Natural gas and coal as alternative sources of energy have been implemented by EcoElectrica and AES, respectively

Fuel Shares in Electricity Production in 2001



Summary of strengths and weaknesses of traditional sources of energy for Puerto Rico

<p>Oil</p> <ul style="list-style-type: none"> Strengths: great infrastructure, marketing and distribution, inertia, cheap, close to supplies (Hess refinery, St. Croix) Weaknesses: Jones Act, potential for oil spills, environmental disadvantages, price volatility, dirty - esp. bunker 	<p>LPG</p> <ul style="list-style-type: none"> Strengths: large supply in the region, easier to transport Weaknesses- all LPG would have to be imported Opportunities- Source for electricity
<p>Coal</p> <ul style="list-style-type: none"> Strengths: cheap, no oil spills, easy to transport to Puerto Rico (less than half the price of the next competitor), new coal plant can be cleaner than Bunker C, less sulphur but more CO₂ Weaknesses: Environmental controls are expensive, public perception 	<p>Natural Gas</p> <ul style="list-style-type: none"> Strengths: volume discounts, low cost, environmentally friendly, public acceptance, proximity of sources (Trinidad and Tobago), port and storage capacity Weaknesses: Lower yield for generating electricity (without new equipment), price volatility In US natural gas is more expensive than oil

Source: PREPA Bonds 2002; Global Review, EcoElectrica; IEA Country Submissions (2002); A.T.Kearney analysis

Other initiatives in renewable energy resources might also be leveraged...



	Application	Key Countries	General obstacles for adoption
Wind	<ul style="list-style-type: none"> • Grid connected electricity supply 	<ul style="list-style-type: none"> • Denmark, Germany, Netherlands, Spain, US, Italy • Russia - along the Volga River and North Caucasus 	<ul style="list-style-type: none"> • Lack of specific national renewable energy strategy • Competition from subsidized conventional energy sources • Lack of adequate legislation and regulatory framework • Initial investments • Cost to serve generally distorted by subsidies to conventional energy sources
Geothermal	<ul style="list-style-type: none"> • Grid connected electricity supply • Heat and hot water supply 	<ul style="list-style-type: none"> • Russia – Kamchatka, the Kuril Islands and North Caucasus • U.S, Mexico, Japan, Italy, New Zealand 	
Biomass	<ul style="list-style-type: none"> • Heat and hot water supply • Transportation 	<ul style="list-style-type: none"> • Japan, Switzerland, U.S (municipal waste) • U.S, Australia, Finland, Japan, Sweden (solid biomass) • Estonia, Latvia, Lithuania (wood wastes mostly) • Brazil (ethanol in cars) 	
Solar collectors	<ul style="list-style-type: none"> • Heat and hot water supply 	<ul style="list-style-type: none"> • U.S (Miami, California) • Austria • Germany • Switzerland 	
Hydropower²⁾	<ul style="list-style-type: none"> • Grid connected electricity supply 	<ul style="list-style-type: none"> • Japan, Germany, Italy, Austria, Spain 	

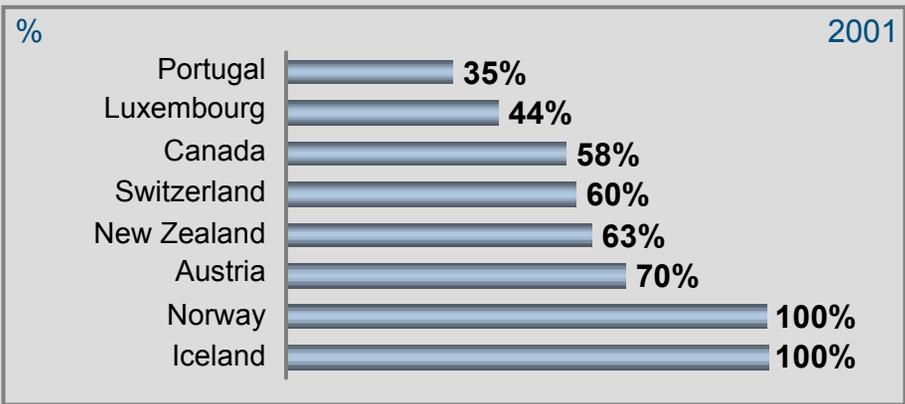
Note: 1) Areas heavily and historically dependent on traditional fossil technologies; areas with disruption in fuel supply due to rugged weather and transportation conditions; areas where long distances between regions have a significant impact on transportation costs
 2) Countries where pumped storage represents more than 30% of total hydropower capacity

Source: IEA Country Submissions (2002); A.T.Kearney analysis

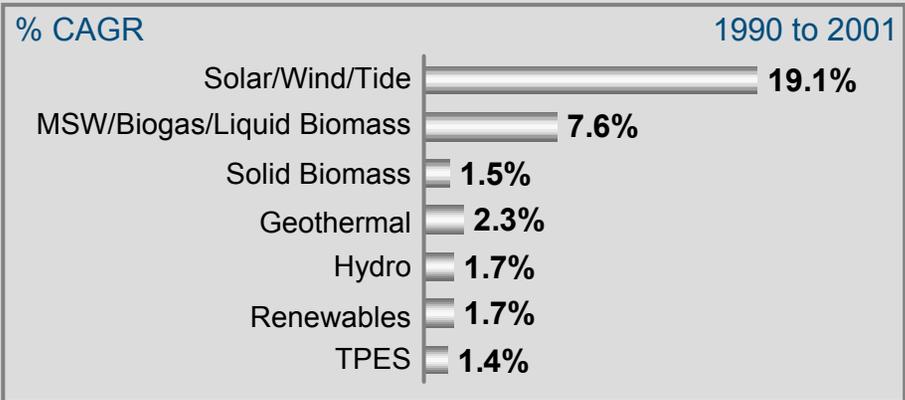
...following global trends



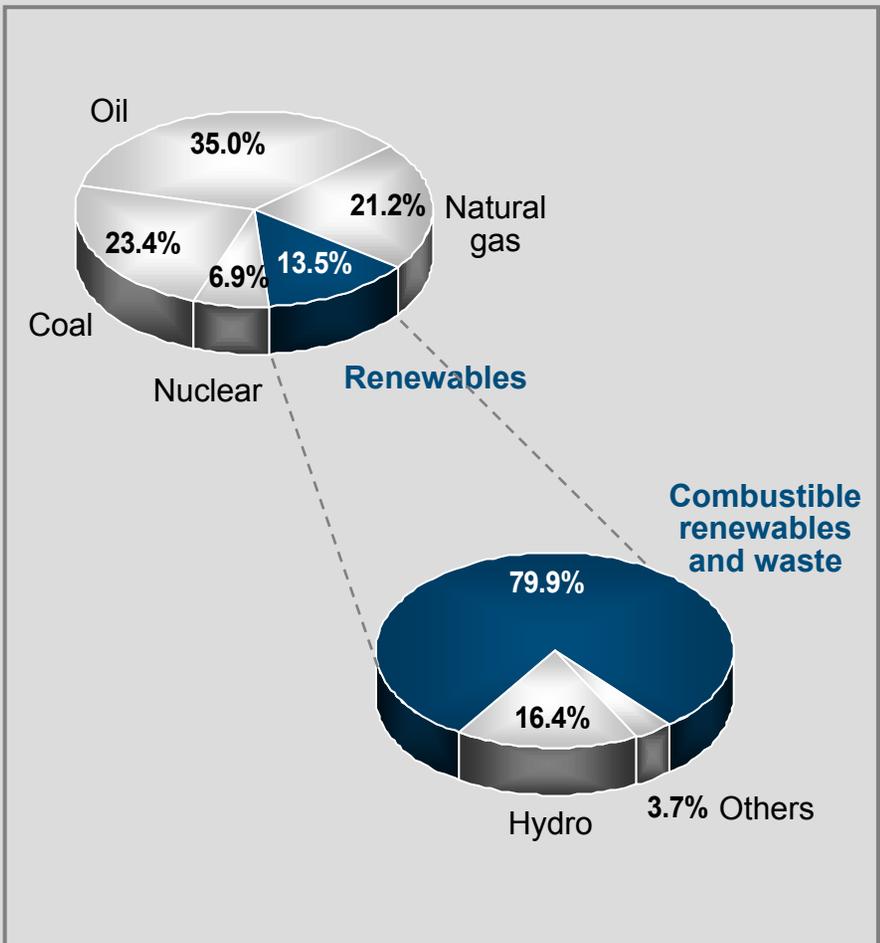
Share of electricity production from renewable sources¹⁾



Annual Growth Rates of World Renewables Supply from 1990 to 2001



World fuel share in energy supply (10,038 Mtoe) — 2001



Note: 1) Areas heavily and historically dependent on traditional fossil technologies; areas with disruption in fuel supply due to rugged weather and transportation conditions; areas where long distances between regions have a significant impact on transportation costs

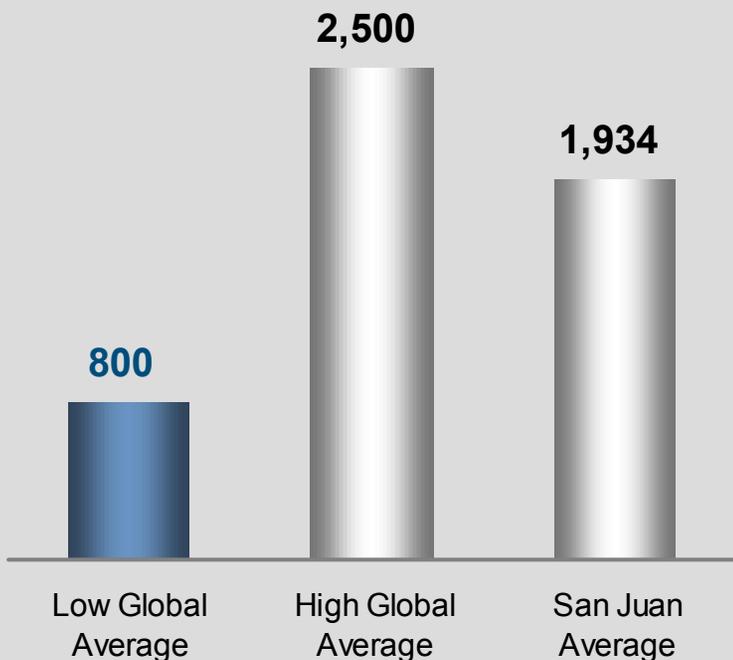
Source: IEA Country Submissions (2002)

In particular, the high annual incidence of solar radiation in Puerto Rico makes it a suitable location to leverage this energy source

Solar Radiation

– kWh per square meter per year –

kWh per square meter per year



Solar Power Implementation Examples in the Caribbean

- In **Barbados**, growth in the use of solar energy was stimulated by fiscal incentives. Triggered by the **1984 Income Tax (amendment) Regulations**, which gave important incentives to people installing water-heating systems, some **36,000 of the 78,000 households in Barbados now have solar water heaters**
- In **Cyprus**, 0.86 m² of solar water heaters per capita have been installed, **avoiding nearly 4% of total CO₂ emissions**

Puerto Rico's dependency on imported oil exposes the country to high commodity volatility price

THREATS

Petroleum brent spot price¹⁾ (FOB price – \$/bbl)



Comments

- With power consumption increasing by **over 3% per year** since 1990, Puerto Rico could diversify energy sources to reduce oil dependency
- **Incentives for** renewable energy adoption may encompass accelerated depreciation, investment tax credits, reduced VAT and infrastructure preparation
- Puerto Rico has the same weather conditions as Florida and California. However, Puerto Rico only consumes 113K feet of **solar thermal collector** compared to 4,3 and 3,2MM feet at those other states
- As an island, Puerto Rico could **reduce potential risk** of oil leakage by introducing renewable energy sources

The use of renewable energy should be a priority in order to reduce Puerto Rico's dependence on oil

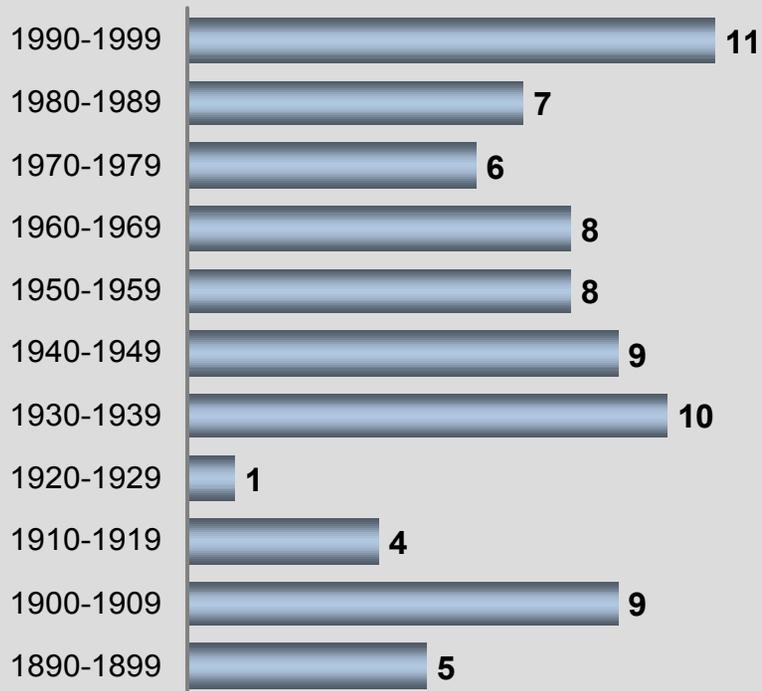
Note: 1) U.S. Department of Energy, Energy Information Administration

Puerto Rico's location in a hurricane path threatens above ground electrical infrastructure

THREATS

Tropical Storms and Hurricanes

Passing Within 2 degrees of Puerto Rico and Virgin Islands –



Examples of Impacts

Hurricane Georges

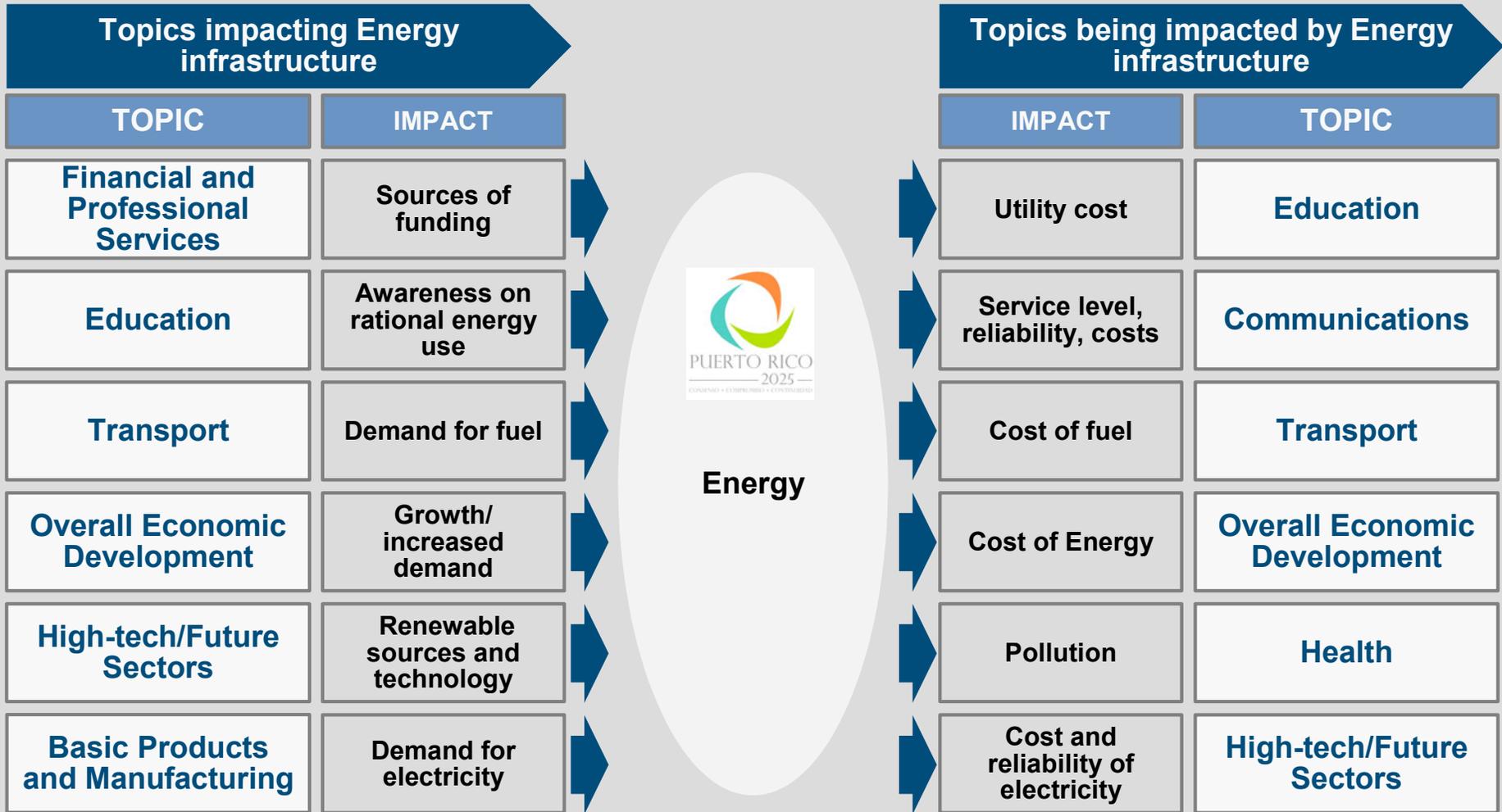
Characteristics:

- Most destructive hurricane to strike Puerto Rico since 1932
- Sustained winds of 115 mph and gusts to 150 mph

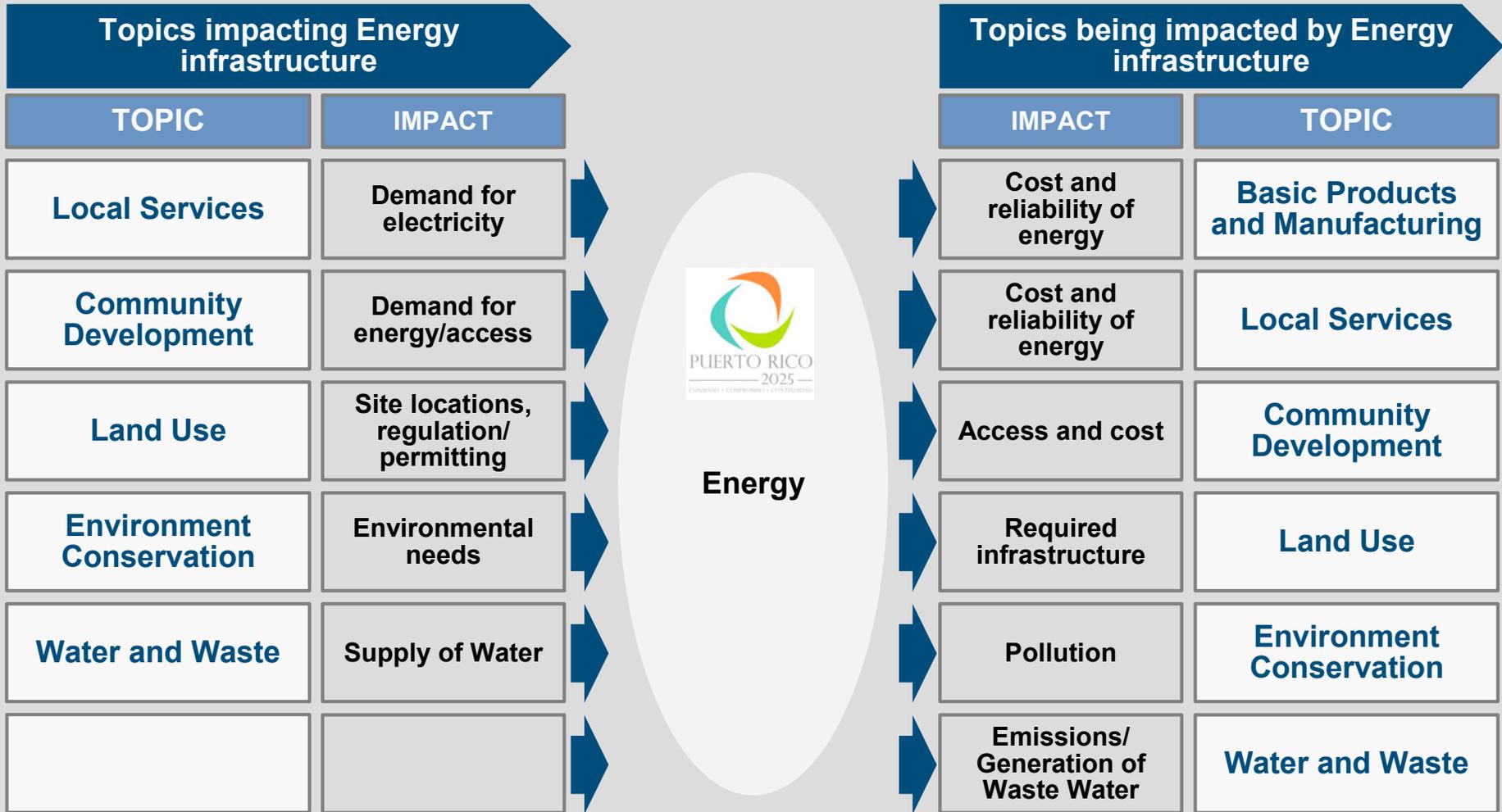
Impact:

- Total damage = \$1.9 billion
- Loss of electricity to 96% of the customers
- 50% of electrical poles and cables damaged
- Loss of water and sewer service to 75% of the customers
- 8.4% of telephone customers lost service
- \$22 million in damage to roads
- 28,000 homes totally destroyed and 72,600 partially destroyed
- Loss of 75% of the coffee crop, 95% of plantains and bananas and 65% of poultry

Energy infrastructure linkages

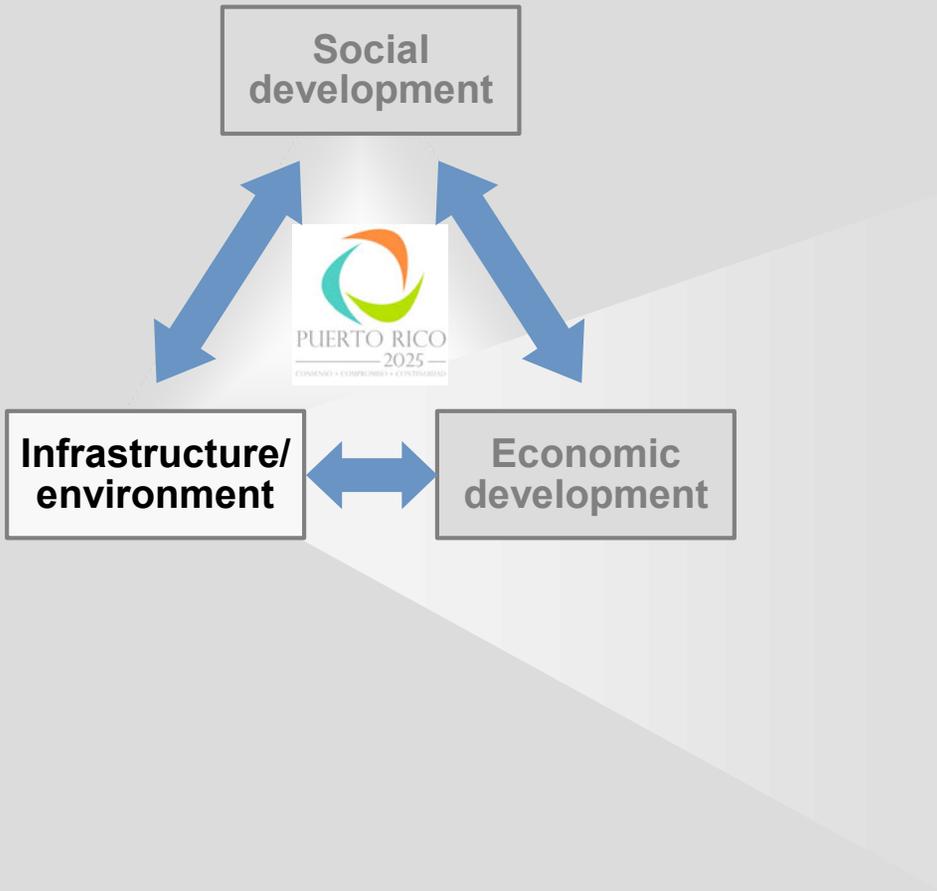


Energy infrastructure linkages (cont.)



Questions for the future

- How can Puerto Rico diversify its energy sources while reducing prices?
- How can consumers be encouraged to conserve energy?
- How can the environmental impact of energy use be reduced?
- What is the most effective way to regulate the electricity market?
- What new energy sources should be developed/encouraged?



-  **Energy**
-  **Water and waste**
-  **Land use**
-  **Communication and information**
-  **Transport**
-  **Environmental Quality**

Key Messages – Water and waste

- Aquifers critical for industrial and residential use but quality and capacity is declining
- Major investments in water infrastructure but problems remain
- Highest access to water and sanitation compared to Latin America, but
 - Water sources polluted as a result of poor planning
 - Issues with sanitation system- leaking septic tanks, illegal discharges
- Inefficient water utility
 - Distribution losses
 - Service interruptions
 - Low productivity
- Landfills reaching capacity and many operating in violation of environmental standards
- High levels of waste generation and low levels of recycling

Overview of Puerto Rico's Water and Waste Infrastructure

Strengths

- Puerto Rico has the highest rate of access to running water and sanitation in Latin America and the Caribbean
- Major spending on water infrastructure will support growing demand going forward
- Puerto Rico has excellent aquifers
- There are extensive legal and regulatory institutions to manage water and waste issues

Weaknesses

- Lack of long term planning/management has impacted water sources, distribution and waste management
- PRASA faces efficiency challenges and scale issues
- Puerto Rico cannot account for approximately half of all water produced, above average even for developing countries
- Puerto Rico generates more waste per day than most peers and has a low recycling rate
- Given the high rates of waste generation and low recycling, 86% of Puerto Rico's landfills will reach capacity within 10 years
- Around the San Juan area, all of the landfills will reach capacity within 5 years and none are in satisfactory condition
- Although being of critical importance for key industries in Puerto Rico, there is no site for hazardous waste disposal in the island

Opportunities

- Most of waste produced is recyclable – the 1994 waste assessment showed that 80% of Puerto Rico's waste is made up of recyclables and biomass
- Waste to energy plants could be considered as a method to deal with both the waste problem and the high cost of electricity
- Companies in Puerto Rico are already leveraging industrial symbiosis relationships
- Leverage existing institutions, laws and local expertise as well as public interest in environmental issues to improve performance on recycling, conservation, etc...

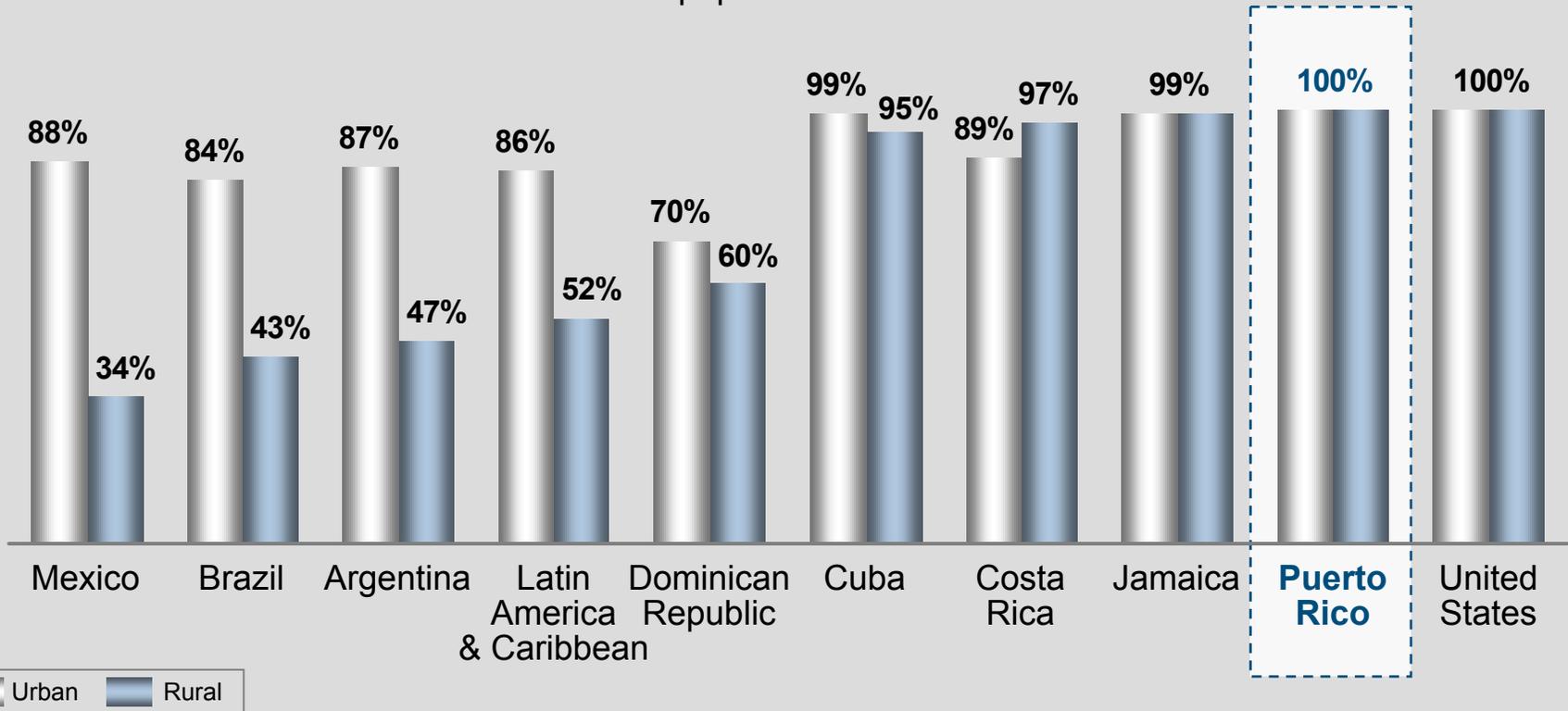
Threats

- Declining quality of aquifers and lack of industrial waste water facilities could make Puerto Rico less attractive going forward
- If the water and waste management infrastructure is not improved:
 - Water sources will become increasingly polluted
 - Landfills will reach capacity and impact the environment
 - Distribution systems will not be sustainable
 - Hazardous waste management will increasingly become an issue

According to official statistics, Puerto Rico has the highest rate of access to running water and sanitation in Latin America and the Caribbean



Access to improved sanitation facilities
% of population — 2000



Sanitation coverage is either in the form of public sewage access or septic tanks

Source: World Bank, Pan American Health Organization; A.T.Kearney analysis

Major spending on water infrastructure will support growing demand going forward

Examples on Recent Investments in Water Infrastructure

Authority for Infrastructure Financing

- **Size of investment:** US\$ 145 million
- **Objectives:**
 - Increase reliability water filtration system
 - Increase capacity of filtration plants around the island
- **Key characteristics**
 - 18 new filtration plants
 - Increase capacity by 21 million gallons per day
 - Collaboration with PRASA

North Coast Superaqueduct

- **Size of investment:** US\$ 500 million
- **Objectives:**
 - Support increasing demand for water up to 2050 in the San Juan area
 - Avoid service interruption during periods of droughts/improve reliability
- **Key characteristics**
 - Inaugurated in September 2000
 - Project includes a new drinking water treatment plant, raw and treated water storage facilities, a 72-inch diameter pipeline, 30 miles long and six north coast interconnections
 - Aqueduct distributes 75 million gallons of water daily (but with capacity to reach 100 million) to 15 municipalities along the northern coast of the island
 - Project will benefit 1.6 million people directly

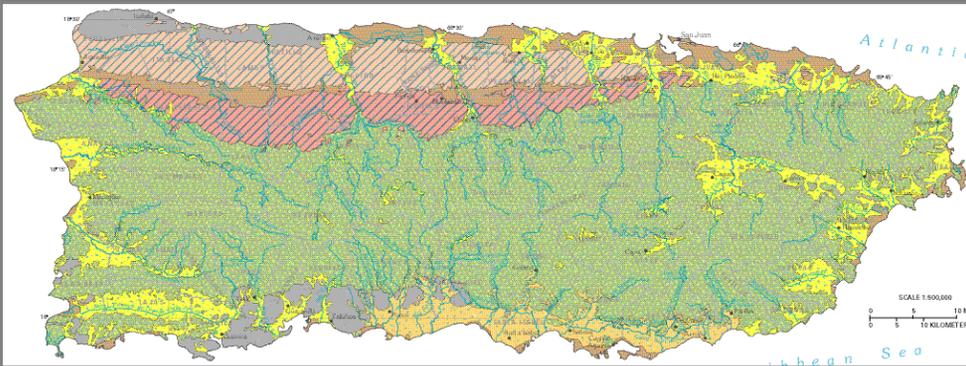
Program “Agua para Todos”

- **Size of investment:** US\$ 139 million
- **Objectives:**
 - Reduce system losses/leakage
 - Optimize production of water in treatment plants
 - Replace deteriorated pipes
 - Reduce water theft
 - Implement educational programs to stimulate the efficient use of water
 - Require AAA to read all water meters
- **Key characteristics**
 - Includes 678 projects to benefit 591 communities
 - Program involves several agencies (PRASA, EQB, DNER, Department of Agriculture,...)

Puerto Rico has excellent aquifers

STRENGTHS

Main Aquifers in Puerto Rico



	Supply – Million Gallons per Day –
 Alluvial-Valley Aquifer	NA
 South Coast Aquifer	25 MGD
North Coast Limestone Aquifer System	
 Upper aquifer	30 MGD
 Lower aquifer	6 MGD

Key Characteristics

- The **aquifers have a storage capacity 70 times greater** than the combined capacity of all reservoirs in the island
- The **northern aquifers** of the Karst region have **historically provided excellent resources** for both domestic and industrial use
- In particular, **aquifers represent the main source** of water for **industrial use**
- Several industries, particularly **pharmaceuticals**, have chosen their location based on the aquifers

While their quality and capacity has declined, the aquifers are still a crucial asset

There are extensive legal and regulatory institutions to manage water and waste issues

STRENGTHS

Federal

Selected laws regarding water and waste

- **Clean Water Act (1972)**
 - Regulates discharges of pollutants into the waters of the United States
- **Resource Conservation and Recovery Act (RCRA) (1976)**
 - Ensures that waste is managed in a manner that protects human health and the environment
- **Safe Drinking Water Act (1974)**
 - Ensures that public water supplies meet national standards that protect consumers from harmful contaminants in drinking water
- **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – Superfund (1980)**
 - Establishes prohibitions and requirements concerning closed and abandoned hazardous waste sites

Critical agencies responsible for water and waste issues

- Environmental Protection Agency (EPA)
- US Geological Survey (USGS)
- US Army Corps of Engineers
- National Oceanic and Atmospheric Administration (NOAA)

Puerto Rico

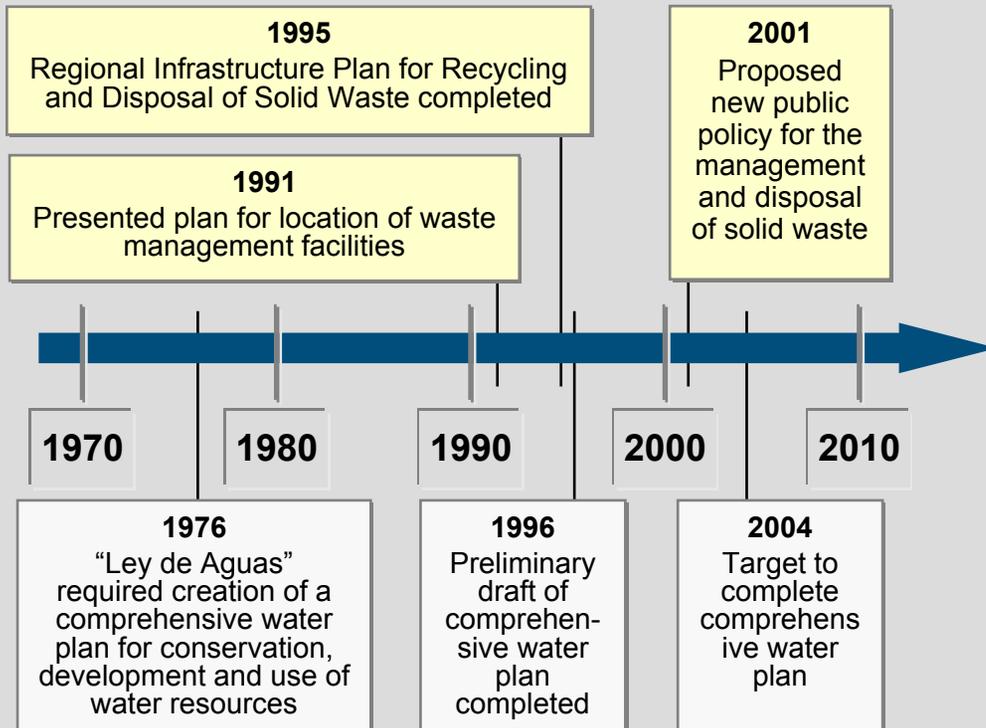
- **Public Policy Environmental Act (1970)**
 - Establishes a public policy and environmental review requirements, creates EQB and provides for environmental causes of action, enforcement and penalties
- **Water Quality Standards Regulation (1974 – revised 2003)**
 - Classifies bodies of water in terms of their intended uses
 - Maintains general water quality standards
 - Prohibits water pollution generally as well as the point source discharge of water pollutants
- **Control of Hazardous and Non-hazardous Wastes (1985 – revised 1993)**
 - Classifies hazardous waste
 - Sets requirements for hazardous waste generators, transporters and owner/operators of treatment, storage and disposal facilities

- Puerto Rico Aqueduct and Sewer Authority (PRASA)
- Solid Waste Management Authority (SWMA)
- Environmental Quality Board (EQB)
- The Department of Natural and Environmental Resources (DNER)
- Department of Health
- Department of Agriculture

Lack of long term planning/management has impacted water sources, distribution and waste management

WEAKNESSES

Timeline of plans for water and waste management in Puerto Rico



- Although the "Plan Integral de Aguas" has been legally required since 1976, it still has not been completed
- Although the 1995 waste infrastructure plan has been revoked, no new plan has been completed

Impacts of lack of long term planning

WASTE MANAGEMENT

- Most landfills will reach capacity within 10 years, and it will take at least 5 years to develop new ones

DISTRIBUTION

- Ad-hoc development has resulted in over 100 pumping stations and treatment plants, while countries with similar populations often have only a handful of regional facilities. This leads to less than optimum scale
- Interruptions to water supply are common in some areas, mainly due to failure to anticipate changes in supply and demand (droughts, population growth, sprawl,...)

WATER SOURCES

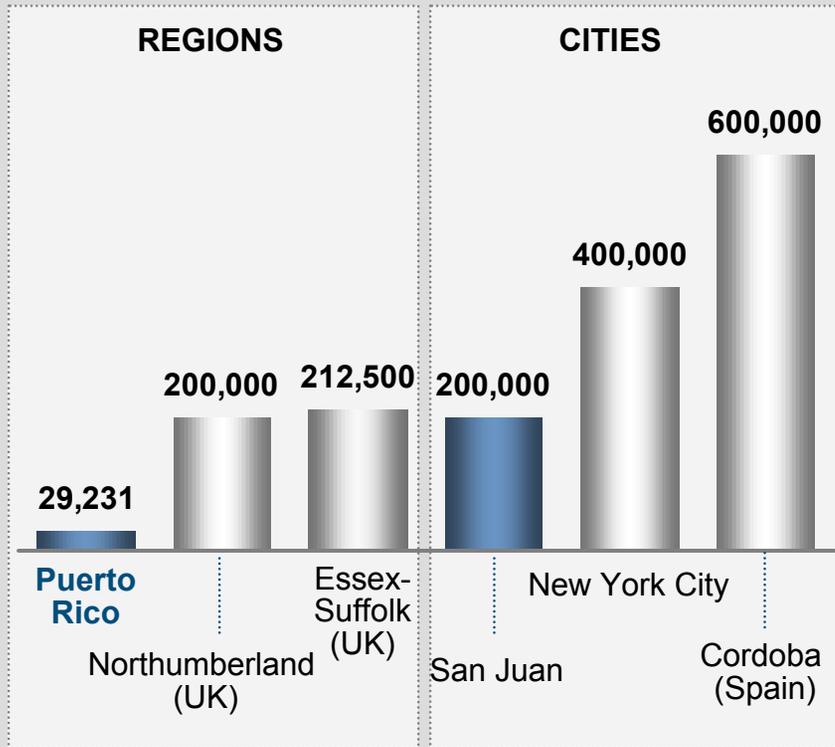
- Contamination of rivers, reservoirs, estuaries and aquifers due to locating potential sources of contaminants near them
- Contamination of coastal aquifers due to salt water intrusion resulting from over-exploitation of the aquifers
- Conflicts in the priority of water use between PRASA, PREPA and agricultural, commercial and industrial sectors

PRASA faces efficiency challenges and scale issues



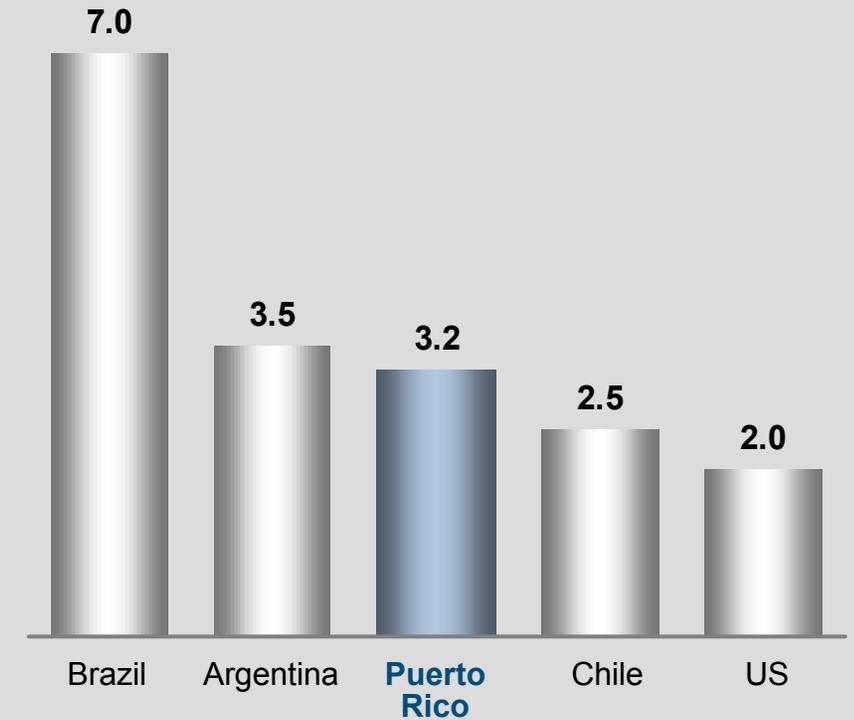
Average Population Served by Water Plant

Average population served by a single water treatment plant 2002



Employees per 1,000 Connections

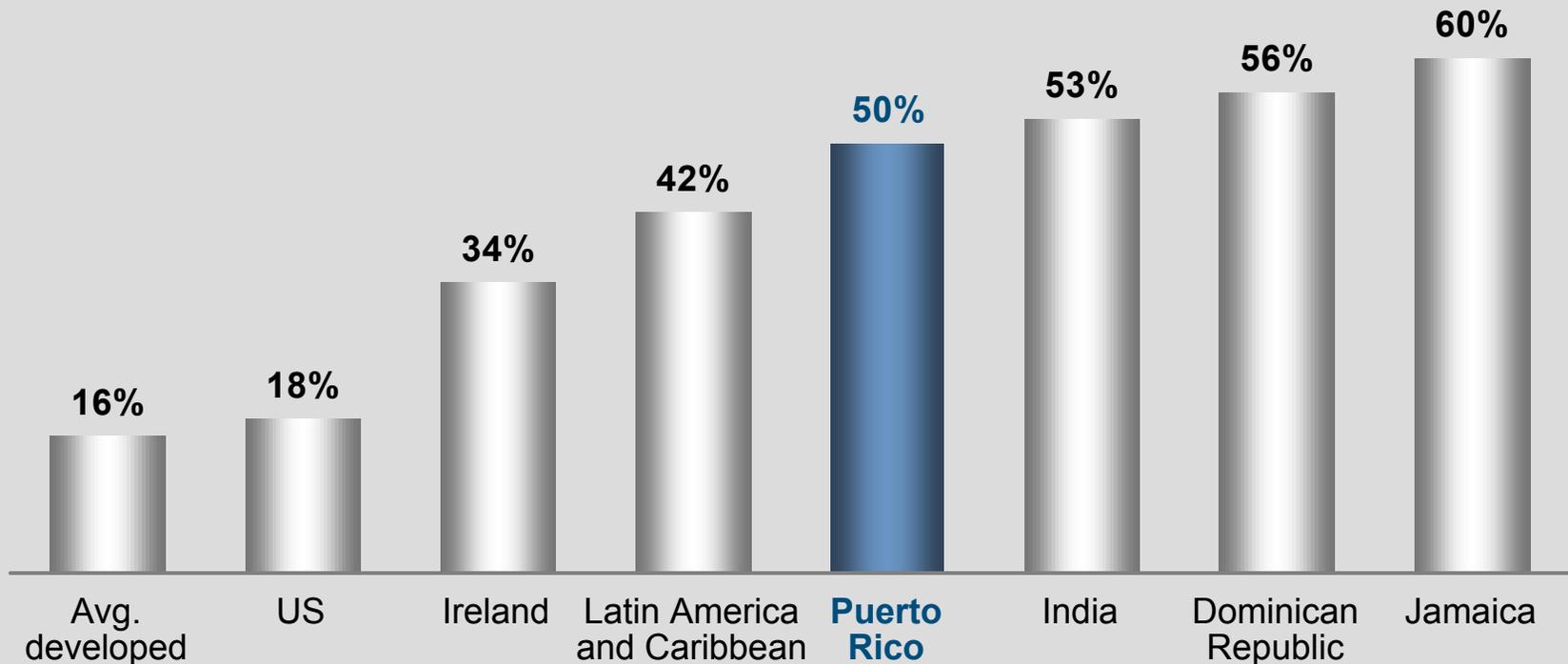
Employees per 1,000 Connections 2002



Puerto Rico cannot account for approximately half of all water produced, above average even for developing countries

WEAKNESSES

Unaccounted for water
As % of total water produced — 2002



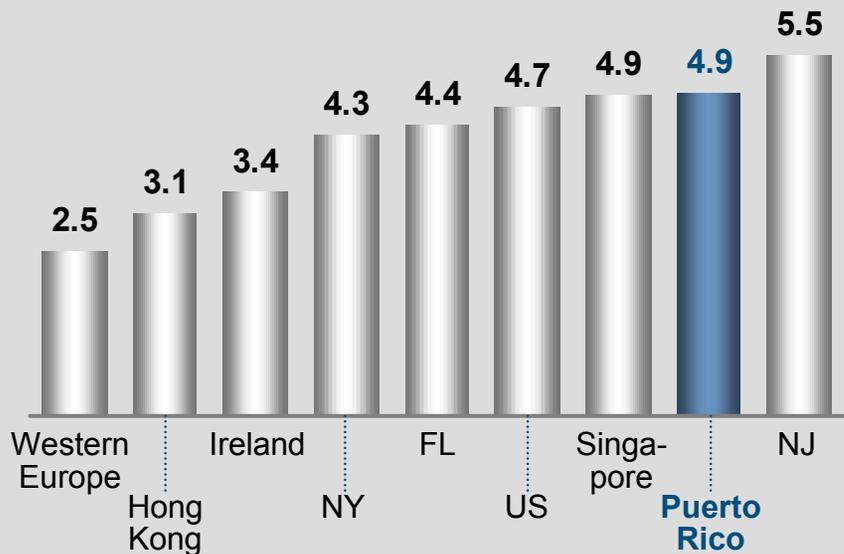
Source: Local water authorities, USGS, Global Water Supply and Sanitation Assessment 2000 Report, UNICEF, WHO, WSCC, A Scorecard for Water Utilities in Developing Countries, PRASA

Puerto Rico generates more waste per day than most peers and has a low recycling rate



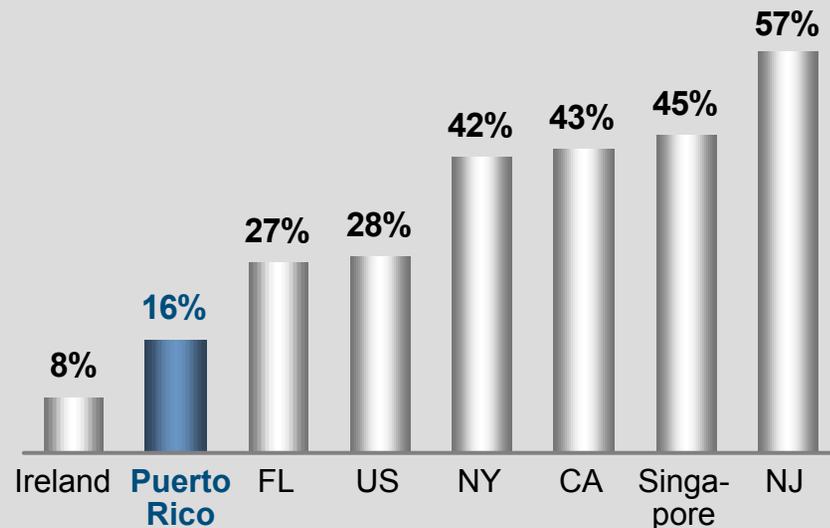
Waste generated

Pounds per person per day 2002



Waste recycled

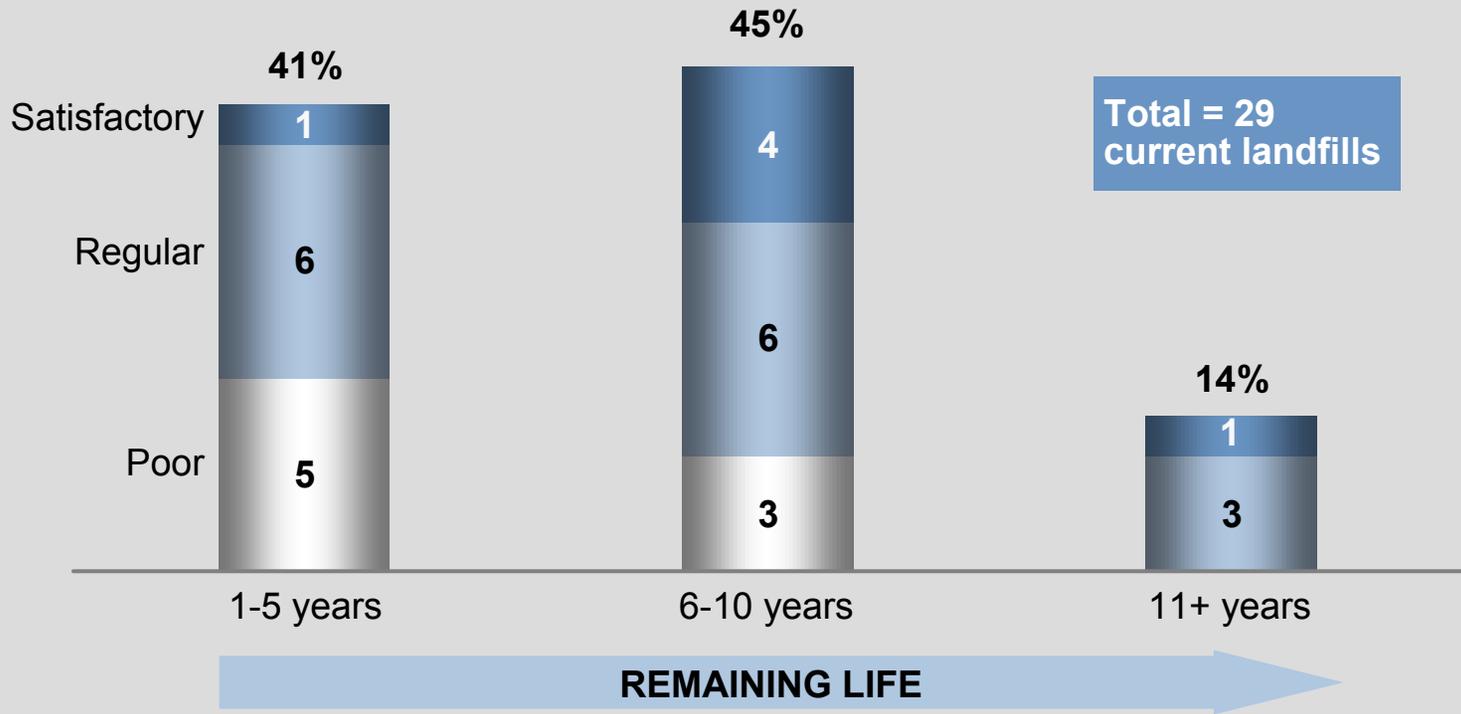
% of total waste recycled 2002



While Law 70 of 1978 requires Puerto Rico to recycle 35% of solid waste by 2006, current trends indicate that this target will not be reached

Given the high rates of waste generation and low recycling, 86% of Puerto Rico's landfills will reach capacity within 10 years

Quality and remaining life of landfills in Puerto Rico
 Remaining lifetime and condition — 2002



Despite the fact that the creation of a new landfill requires at least 5 years of preparation, there are no current plans to create new landfills

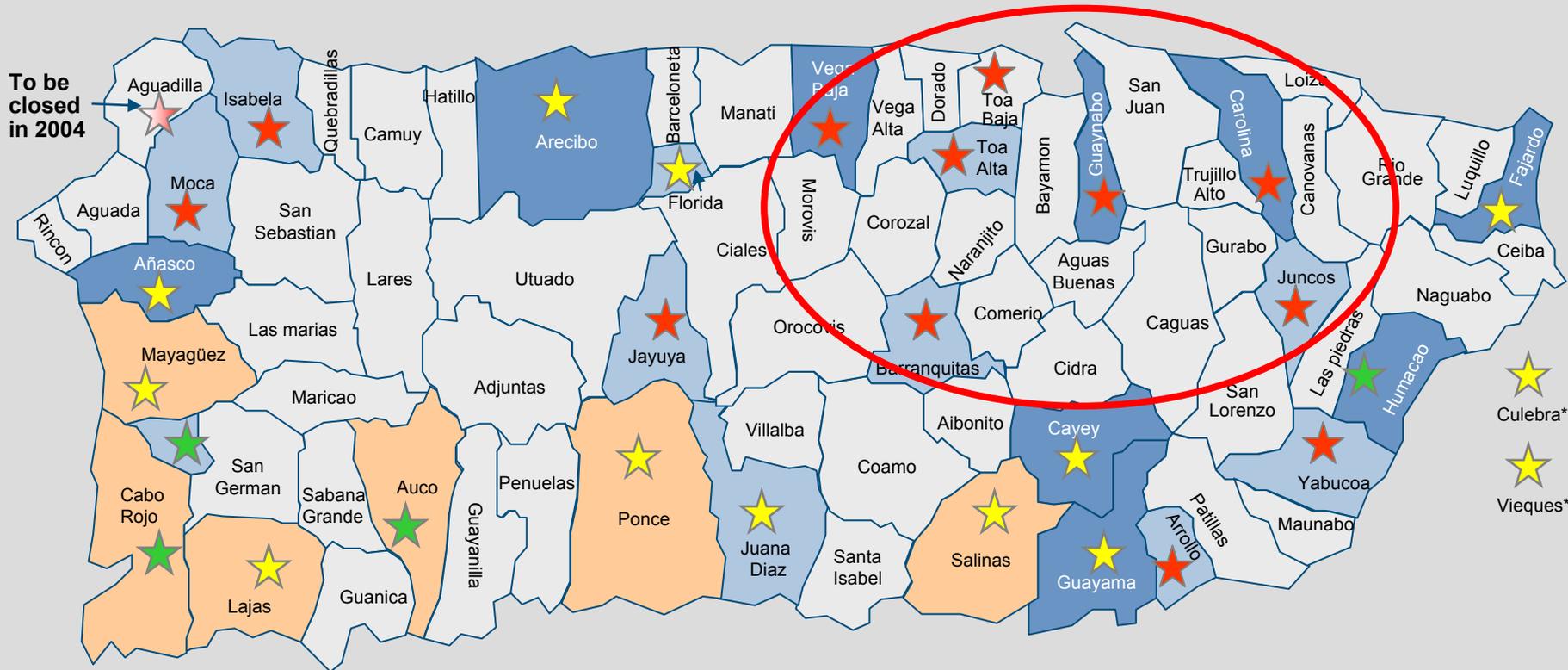
Note: In December 2003, SWMA began a process to revise the remaining life of current landfills
 Source: Environmental Quality Board; A.T.Kearney analysis

Around the San Juan area, all of the landfills will reach capacity within 5 years and none are in satisfactory condition

WEAKNESSES

Geographic Distribution of the Landfills in Puerto Rico

– Location, Expected Life and State of Operations –

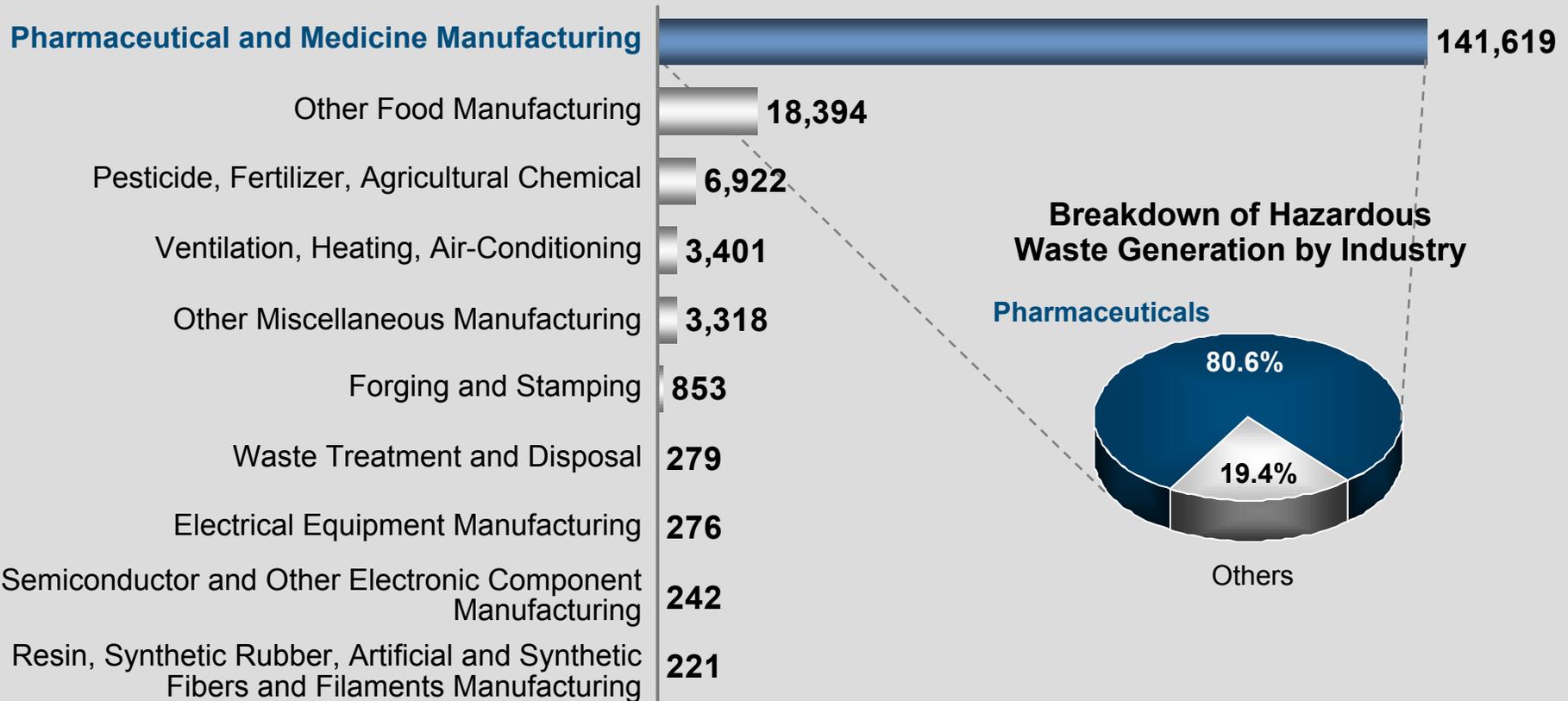


Expected Life: ★ 1-5 years ★ 6-10 years ★ 11+ years
 Operations: Poor Regular Satisfactory

Note: In December 2003, SWMA began a process to revise the remaining life of current landfills
 Source: SWMA, Environmental Quality Board; A.T.Kearney analysis

Although being of critical importance for key industries in Puerto Rico, there is no site for hazardous waste disposal in the island

Hazardous Waste – Top Ten Industries in Waste Generation in Puerto Rico in 2001 – Tons generated by NAICS code –



Source: EPA; A.T.Kearney analysis

Other Weaknesses

- **Despite official universal coverage, sanitation problems persist in communities**
 - Widespread use of septic tanks that fail to meet environmental standards
 - Direct discharge of sewage by individuals into rivers and other bodies of water is still an issue
 - Overflow occurs during periods of flooding due to limited capacity of the system

- **Pricing of water does not create incentives to conserve**
 - Very low water rates have not been raised in many years
 - Cost often based on estimates of usage rather than actual usage of water

- **The industrial waste infrastructure in Puerto Rico presents some clear competitive disadvantages:**
 - Puerto Rico does not have an industrial sewer system
 - Overall, industrial waste removal is more expensive than in other areas due to limited infrastructure
 - There is no hazardous waste site on the island, leading to high costs to dispose such waste. This is particularly critical for some central industries in Puerto Rico's development strategy (pharmaceuticals, high technology manufacturing, biotechnology), which generate large amounts of hazardous waste

- **There is no system to deal with household hazardous waste**
 - Estimated at 1 – 1.5% of household waste or up to 80 tons per day

- **Poor infrastructure has disparate impact on disadvantaged communities**
 - Poorer access to clean water and effective sewage
 - More likely to have covert landfills

Opportunities

Most of the waste produced is recyclable

1994 waste assessment showed that 80% of Puerto Rico's waste is made up of recyclables and biomass

Improve recycling infrastructure and foster public campaigns on :

**REDUCE
REUSE
RECYCLE
RECOVER**

Waste-to-energy technology has improved greatly

Build waste to energy plants to address two of the critical issues facing Puerto Rico- the expected loss of landfill capacity and the high cost of electricity

Industrial symbiosis efforts beginning

Facing high energy and transportation costs and tightening environmental regulations, many firms have begun to respond with innovative methods for using other firms' waste as inputs

Plan industrial clusters and processes to increase resource effectiveness within and across firms

Companies in Puerto Rico are already leveraging industrial symbiosis relationships


 OPPORTUNITIES

Company, Location	Exchange	Instead of	As a result
AES, Guayama	Buys water from PRASA wastewater treatment plant	Extracting water from aquifers or ocean	Avoids further depleting limited natural resource
AES, Guayama	Sells cogenerated steam to Chevron Phillips refinery	Chevron Phillips making its own process steam	Avoids running two industrial boilers that emit SO _x , NO _x , PM
Bacardi, San Juan	Traps own methane for reuse in boiler	Venting to atmosphere	Reduces hazards from ignitable gas; reduces greenhouse gas emissions to atmosphere
Bacardi, San Juan	Sells CO ₂ byproduct to drink manufacturers	Venting to atmosphere	Avoids additional greenhouse gas emissions to atmosphere and gains revenue
Serrallés, Ponce	Sells large scrap cloths to local carwash	Sending scrap to landfill	Carwash avoids purchasing virgin textiles, replaces cost with revenue
Top Apparel, Caguas	Organize collective wastewater treatment, with treated sludge/bio-solids applied to hay farm and teak forest	Individual wastewater treatment, landfilling sludge	Both water and landfill space are conserved
Pharmaceutical Cluster, Barceloneta	Arranges sale of used and off-spec chemicals between various manufacturers e.g. solvents from pharmaceuticals to paint manufacturers	Disposal to land or off-island	Other manufacturers avoid purchasing new solvents

Source: Center for Industrial Ecology, Yale School of Forestry and Environmental Studies- Puerto Rico: An Island of Sustainability Activity Report 2001-2003

Other Opportunities

■ Institutions, laws and local expertise exist to develop solutions to current problems

- Leverage local experts to improve agency performance
- Foster a culture of compliance so that existing laws have their intended effect

■ Strong desire for community participation

- Leverage increasing public and youth interest in environmental issues to improve performance on recycling, conservation, etc...
- Moreover, Puerto Rico could leverage the fact that it is a small, densely populated island to foster a sense of urgency towards sustainable development

■ Puerto Rico has many large multinational firms, with access to best practices and advanced technology for minimizing their environmental impact

- Provide incentives for companies to carry on conservation efforts on water and waste aligned with their mission statements

Declining quality of aquifers and lack of industrial waste water facilities could make Puerto Rico less attractive going forward

THREATS

Key Characteristics

- Puerto Rico lacks an industrial sewer system
 - Industrial must pre-treat their waste water before releasing it into the domestic sewer system, adding to costs
- In many areas of the island, the quality and supply of water in aquifers has declined due to contamination, excessive use and poor management
 - Contamination from chemicals due to industrial discharges
 - Salt water intrusion from over-exploitation
 - In Manatí, Salinas and Santa Isabel, concentrations of nitrates have risen to a level that impedes their use for potable water
 - Aymamón aquifer in Barceloneta contaminated by Upjohn

Examples of Companies Leaving Puerto Rico due to Water and Waste Issues

WASTE WATER TREATMENT

“Schering and Upjohn both closed facilities in Puerto Rico due in part to the high costs of waste water treatment”

PANEL MEMBER, DEC 2003

WASTE TREATMENT

“Puerto Rico lost a major Biotech project to Ireland because we did not have the infrastructure to handle the waste generated...”

INTERVIEWEE, SEP 2003

WATER SUPPLY

“Intel chose to set up a plant in Costa Rica rather than Puerto Rico because the water supply here was inadequate...”

INTERVIEWEE, AUG 2003

WATER QUALITY

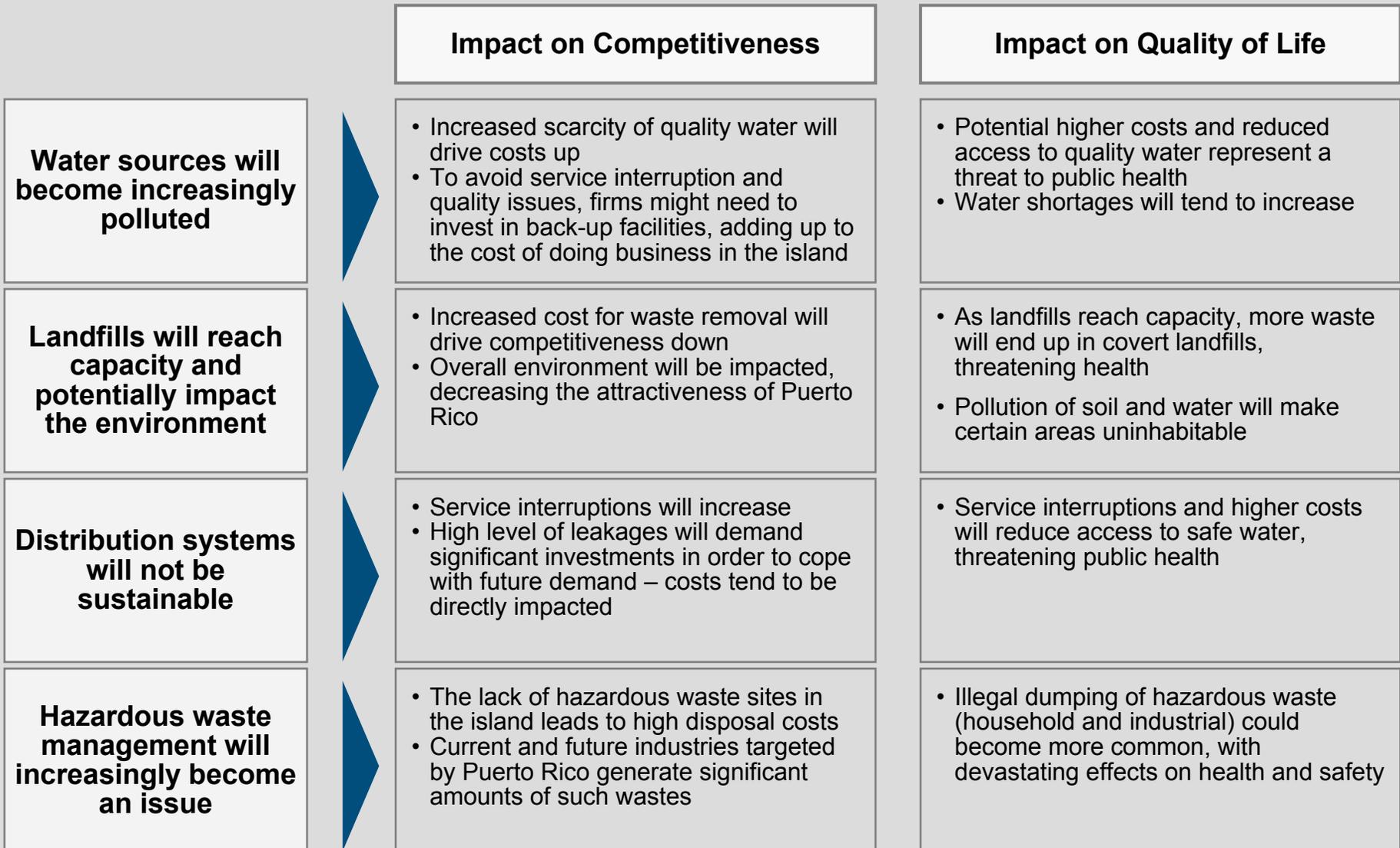
“Goya’s costs are higher in Puerto Rico than elsewhere because here they have to treat the water before they use it, as well as after...”

INTERVIEWEE, AUG 2003

Other Threats

THREATS

If planning and performance on water and waste questions are not addressed...



Water and waste infrastructure linkages

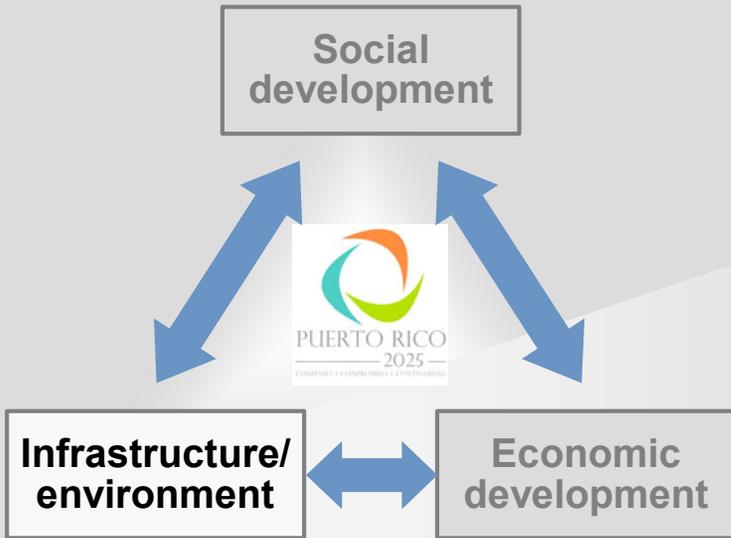


Water and waste infrastructure linkages



Questions for the future

- Given the lack of planning and the dire consequences facing the island if these challenges are not met, how can we create the necessary sense of urgency around problems of water and waste?
- Given its financial constraints, what is the best way for PRASA to improve the quality of drinking water and the reliability of service?
- Given community opposition to new landfills or waste to energy plants and the desperate need for additional waste management capacity, what is the fairest way to develop and site new waste management facilities?
- What will it take to develop new attitudes to consumption, reuse and recycling?



-  **Energy**
-  **Water and waste**
-  **Land use**
-  **Communication and information**
-  **Transport**
-  **Environmental Quality**

Key Messages – Land Use

- High population density and high consumption puts pressure on land use
 - Rising home prices driving urban sprawl
 - Most new homes built through simple lotification - exempt from most regulations
 - Many challenges to building high density housing
- On paper, planning laws and institutions are comprehensive
 - But lack a broad and effective land use plan
 - Planning and environmental assessment done on a case-by-case basis
 - Inefficient permitting system with unpredictable outcomes
- Many groups desire greater participation in the planning/permitting process but there is increasing tension between developers and community/environmental groups

Overview of Puerto Rico's Land Use

Strengths

- Puerto Rico has widespread home ownership and a strong construction sector compared to several US states
- On paper there is a strong institutional and legal framework for managing land use and environment
- Community involvement in land use decisions is increasing

Weaknesses

- Puerto Rico's high population density creates a challenging environment for managing land use
- Puerto Rico lacks a comprehensive land use plan
- The permitting process is widely seen as flawed with numerous examples of major projects been delayed or stopped due to permit challenges
- Most development involves small scale individual plots, exempt from most planning and permitting requirements
- Puerto Rico has one of the lowest percentages of protected land compared to other locations, mainly due to the lack of a comprehensive land use plan

Opportunities

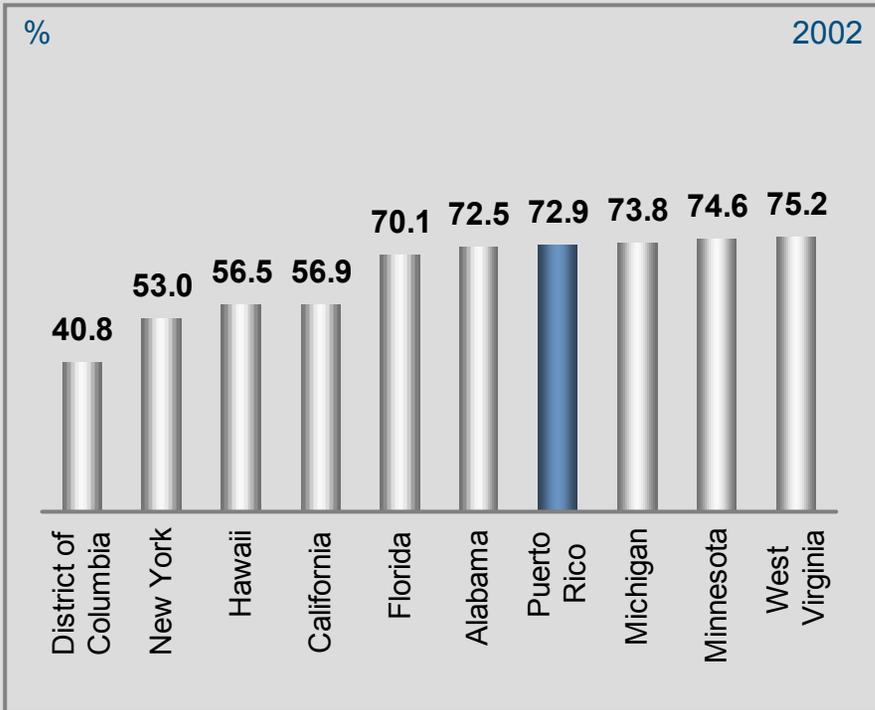
- Unused or low density urban land offer the potential for urban renewal
- The island's mountainous topography and the decline of agriculture offer the opportunity to preserve a large percentage of the land as undeveloped
- There is a comprehensive set of laws and institutions that could be leveraged more effectively

Threats

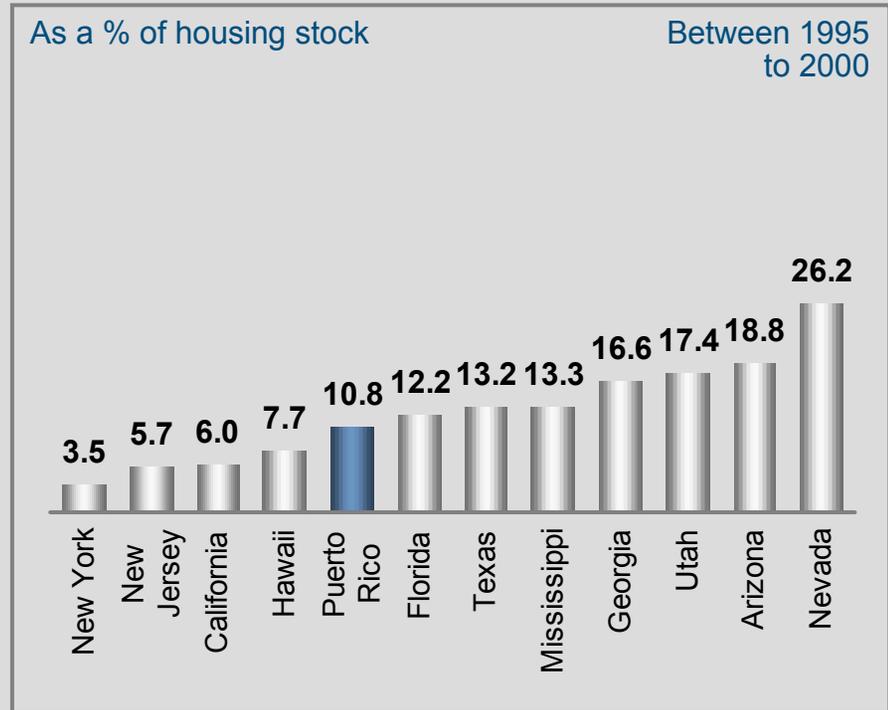
- Rising home prices are driving increased development of rural land
- Without holistic planning, compliance, education and incentives, Puerto Rico faces:
 - Destruction of environmental habitats
 - Declining competitiveness due to inefficient and unpredictable processes
 - Impact to quality of life- health, safety, lack of infrastructure
 - Increased social tension as both community groups and developers feel that the system treats them unfairly
 - Increased impact of natural disasters like floods and hurricanes

Puerto Rico has widespread home ownership and a strong construction sector compared to many states

Puerto Rico ranks 4th in the US in the % of owner occupied homes



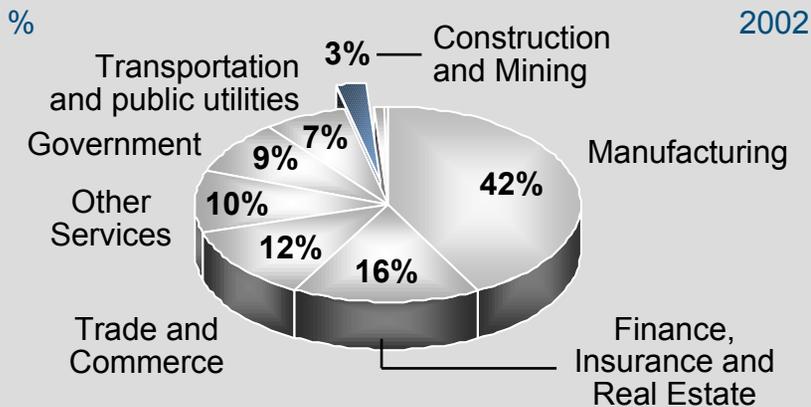
Puerto Rico ranks 22nd in the US in the % of homes built 1995-2000



Though small as a percentage of total GDP, employment in construction has nearly doubled since early 1980s

Construction Share of the Economy

– as a % of GDP –



Key Facts

- The construction sector was the growth leader during the second half of the 1990s, mainly due to private spending
- From 1993 to 2002, industry net income has grown at an annual rate of 7.9%
- Share of GNP in construction rose from 11% in 1995 to 17% in 2000
- From 1993 to 1999 housing increased 240% in Puerto Rico vs. 60% in the US

Employment in construction

– as a % of Total Employment –

Employment in 1,000s

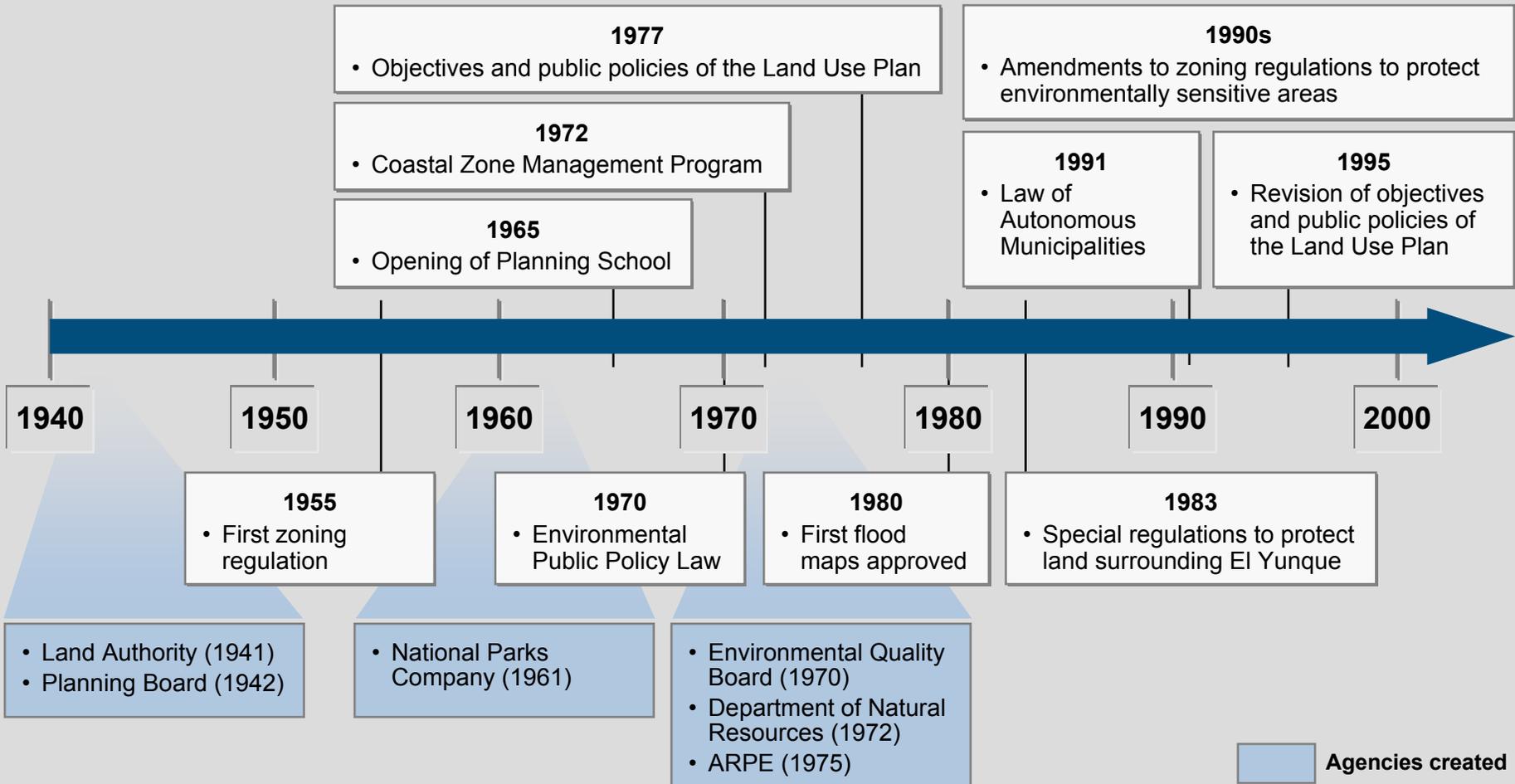
1983-2002



On paper there is a strong institutional and legal framework for managing land use and environment



Key facts related to the establishment of the institutional and regulatory framework associated to land use in Puerto Rico



Community involvement in land use decisions is increasing

STRENGTHS	

Selected Community Groups

- Casa Pueblo
- Ciudadanos en Defensa del Ambiente (CEDDA)
- Iniciativa para un Desarrollo Sostenible
- Comunidades Unidas Contra la Contaminación (CUCCo)
- Alianza Ambiental Puertorriqueña
- Alma y Suelo
- Ciudadanos Pro-Bosque San Patricio
- Comité Pro Desarrollo de Maunabo
- Frente Unido Pro-Defensa del Valle de Lajas
- Ciudadanos del Karso
- Comité pro rescate y desarrollo de Vieques
- Caguas Unidas en Defensa del Ambiente
- Mayaguezanos Pro Salud y Ambiente

Examples of Community Participation

- **Citizens Committee for the Rescue of Caimito**
 - Friends of Caimito recognized as an auditor for development projects by the Planning Board in 1998 and by ARPE in 2001
 - They must be informed of any project before its approval (including its objectives, location, proposed development methods, etc.)
 - They evaluate the project based on its environmental impact and the needs of the community
 - They participate in public hearings (vistas)
 - Asked for a construction moratorium in San Juan in 2000
- **Juntas de Comunidad**
 - Required by Law of Autonomous Municipalities
 - Evaluate and endorse municipal plans
 - Make recommendations to the mayor

Most people agree that the old system of public hearings did not allow for true community participation

Puerto Rico's high population density creates a challenging environment for managing land use



Urban population density

Population per square mile
Primary Metropolitan Statistical Area

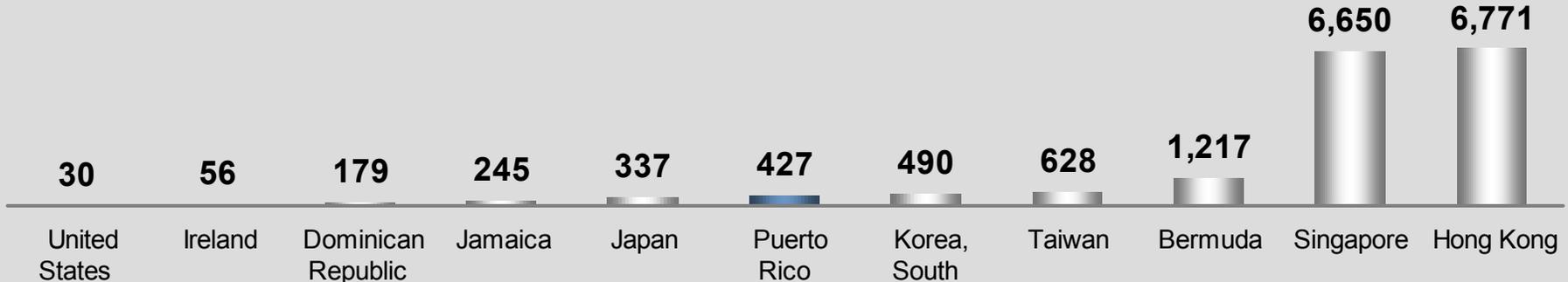
2000



Total population density

Population per square km

2003



Puerto Rico's population generates more waste per person than the US average and twice as much as Western European nations

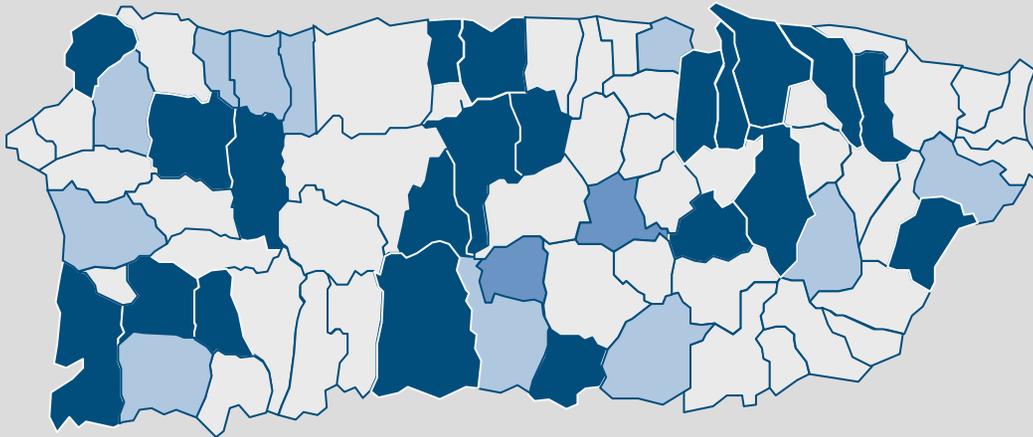
Source: US Census Bureau, CIA World Factbook 2003

Puerto Rico lacks a comprehensive land use plan

WEAKNESSES

Status of Municipal Land Use Plans

Sept 2003



Key facts

- Planning Board has “objectives and public policy of land use plan” but not a physical plan
- There are 7 regions but the San Juan metropolitan region is the only region with a plan
- There are “special plans” for critical areas such as forests and the urban train- municipal plans must respect these plans
- Law of Autonomous Municipalities requires each municipality to prepare a Land Use plan, subject to approval by the Planning Board
- Once the plan is approved, the municipality may request transfer of powers from the Planning Board and ARPE
- Only 23 municipalities have had their plans approved
- Municipalities are very small units for planning- average area is 114 sq km compared to 2,500 sq km for an average US county

Due to the lack of a comprehensive plan, land use proposals are generally evaluated on a case by case base through a lengthy, unpredictable evaluation process

The permitting process is widely seen as flawed with numerous examples of major projects been delayed or stopped due to permit challenges

WEAKNESSES

Main Permitting Process Issues

- **Developers complain**
 - Process is often slow and expensive
 - High profile examples of permits being revoked
 - Criteria for environmental impact statements are not clear
 - Delays and uncertainty are limiting economic growth
 - Community groups sometimes use environmental arguments as a cover for other concerns
- **Community groups complain**
 - Communities do not have input early enough in the process
 - Developers drive the process, not planners
 - Large developers are able to negotiate exceptions
 - Development often has a disparate impact on disadvantaged communities
- **Planners complain**
 - The exceptions are the rule
 - Lotification allows small builders to ignore zoning rules
 - Development has happened in flood zones, forest areas and coastal zones through rezoning or simply ignoring the regulations

Examples of Projects Stopped or Delayed due to Permit Challenges

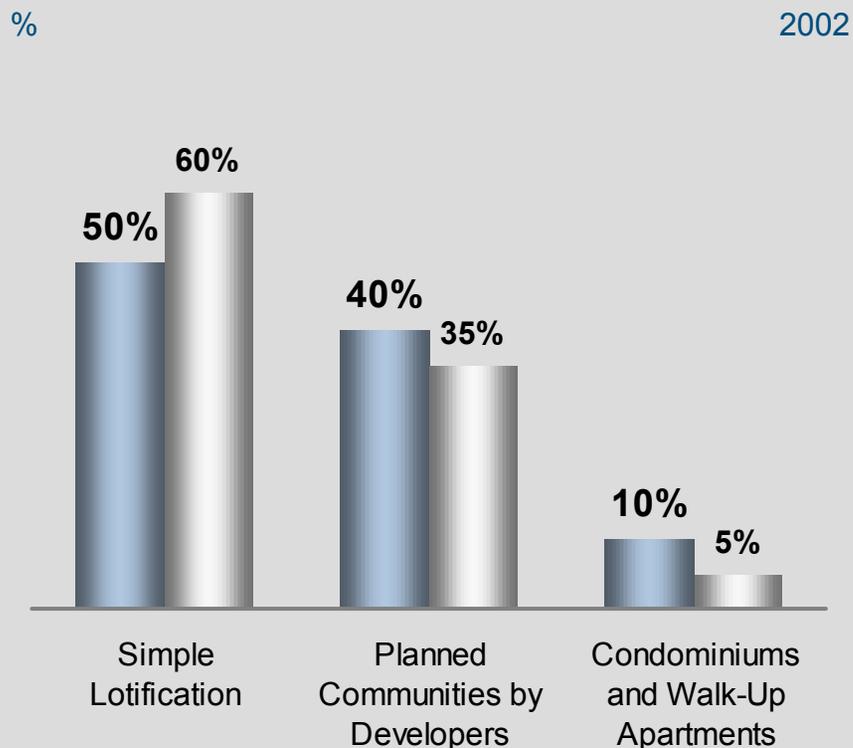
- Paseo Caribe
 - \$170 million residential/tourist/commercial complex, next to Caribe Hilton
 - 3 year delay due to permit problems, lawsuit by nearby residents and investigation by the House San Juan Development Committee
- Route 66
- Condado Trio
- Princesa de Mar in Punta Las Marias
- Madeira Condominium in Ocean Park
- Golden Triangle Convention Center
- Millenium Condominium in Puerta de Tierra
- Rehabilitation of Santurce
- Expansion of Montehiedra in Caimito
- Costa Serena in Pinones
- Cibuco Valley in Lajas

The uncertainty of approved permits increases costs for developers and investors and in turn slows economic growth

Most development involve small scale individual plots, exempt from most planning and permitting requirements

WEAKNESSES

Unplanned development represents a majority



Simple lotification exempts small builders from most government regulations

- **Exemption from paying:**
 - Construction excise taxes or property taxes
 - Fees to PRASA for regional water distribution or wastewater treatment systems
 - Fees to the Highway Authority for road improvements
 - Fees towards the construction of schools, community centers or recreational facilities
- **Other exemptions:**
 - Do not follow guidelines for soil erosion control
 - Do not prepare, submit or comply with environmental evaluations or impact statements or perform soil studies
 - Do not have to go through permitting process
 - Do not follow ARPE Regulation 25 for the removal and replanting of trees
 - Do not need to meet ARPE's building code
- **Other consequences:**
 - Promote the creation of illegal landfills
 - Are more susceptible to natural disasters

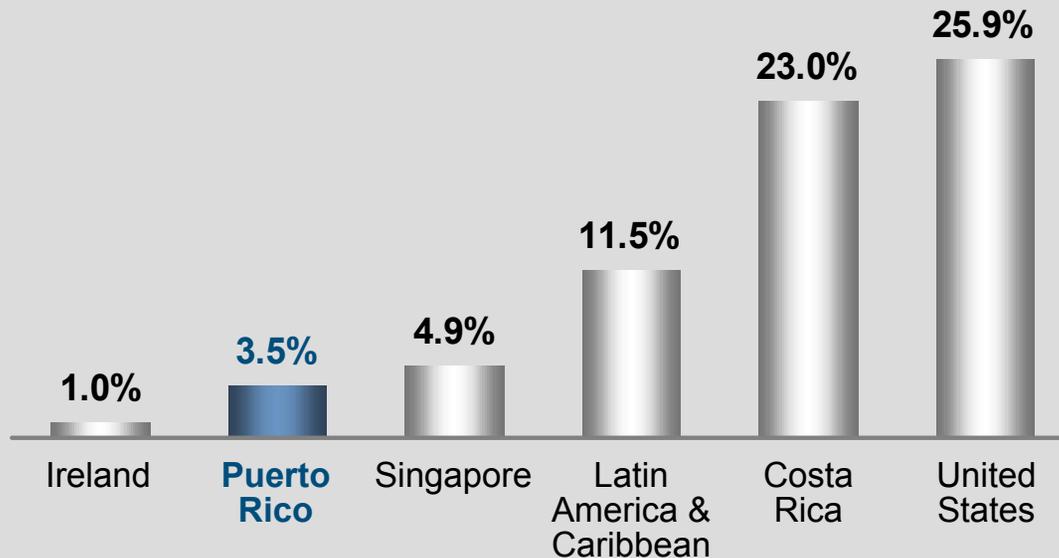
Puerto Rico has one of the lowest percentages of protected land compared to other locations, mainly due to the lack of a comprehensive land use plan

WEAKNESSES

Nationally protected areas

% of total land area

2002



Key facts

- Since critical areas were not historically designated for conservation, it is now difficult to prevent development
- One way to achieve this is through the purchase of land by the Conservation Trust. However, they estimate that to protect 12% (the international standard) of all land in this manner would cost \$ 1 billion
- Moreover, 80% of forests are in private hands and have few protections, due to the lack of a comprehensive planning
- Even when plans do exist, such as Coastal Zones and Flood Plans, development still sometimes occurs

Given Puerto Rico's small size and high population density, it is even more important that a significant percentage of land be protected

Opportunities

KEY ASSETS TO LEVERAGE

Comprehensive Laws and Institutions

Streamline and enforce current regulations

- Develop comprehensive land use plan
- Reduce number of exceptions allowed
- Enforce/ incentivize compliance

Underutilized Agricultural Land

Focus on leveraging high value added agriculture production, such as organic produce, ...

Underutilized Urban Land

Revitalize urban areas and increase density, slowing urban sprawl

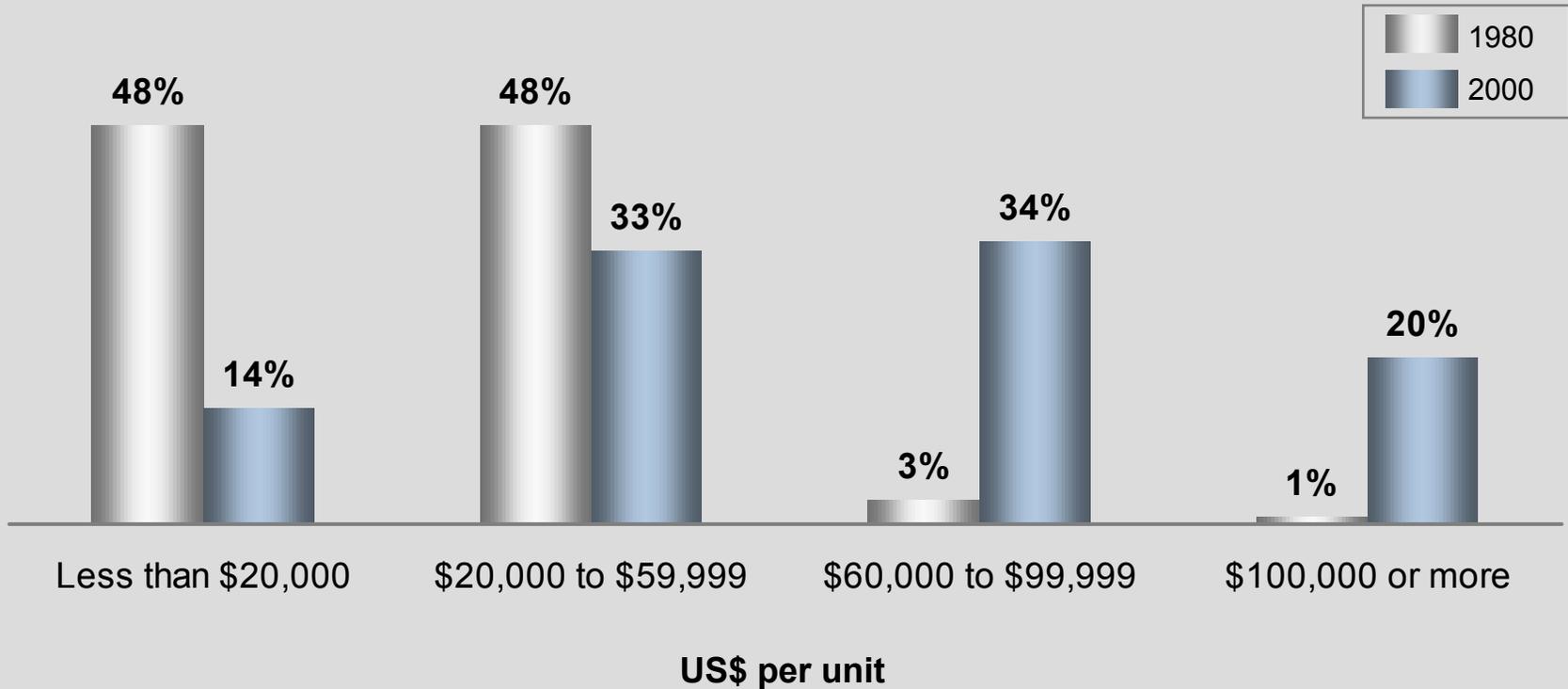
Strong Desire for Community Participation

Build on public interest to increase opportunities for meaningful participation in the planning process

Rising home prices are driving increased urban sprawl



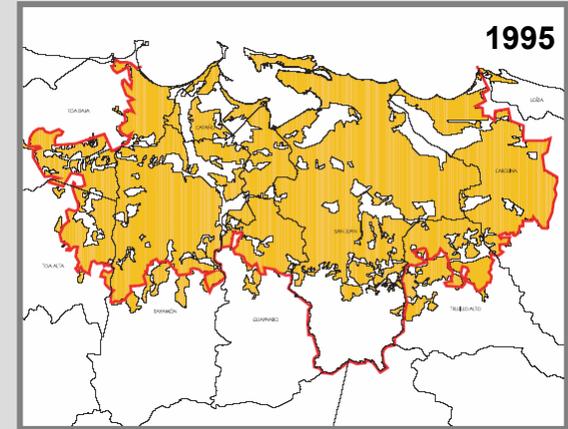
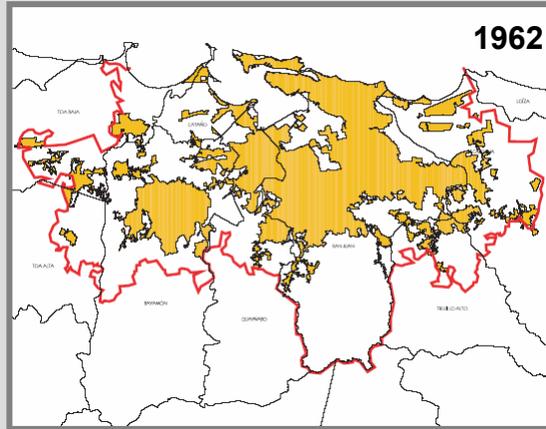
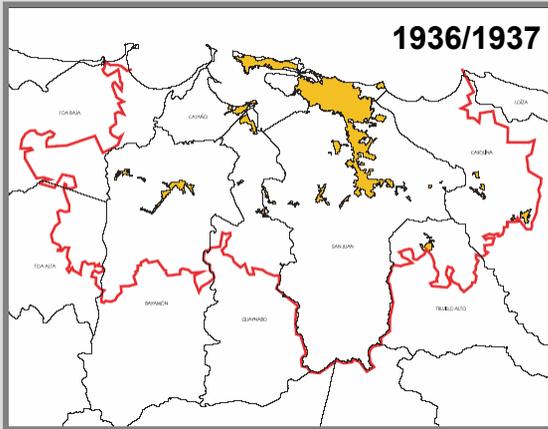
Prices Asked for Vacant Units for Sale % - 1980-2000



Source: US Census 1980, 2000

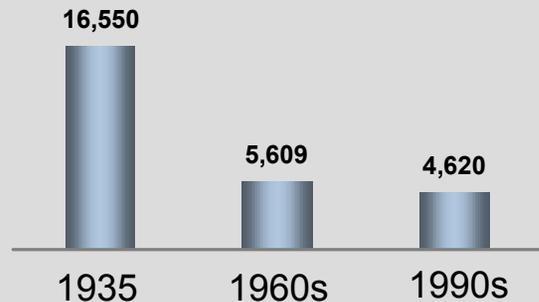
Population density in expanding urban areas has decreased leading to neglected urban centers and increasing urban sprawl

As the Built Up Area of San Juan Has Grown...



The Density of the Built Up Area Has Declined

People per square km of built area (San Juan Metro Area)



Key Points

- The amount of urban land has increased
- The amount of agricultural land has decreased
- The municipality of San Juan has actually experienced negative population growth over the past decade
- The number of abandoned buildings in San Juan has increased

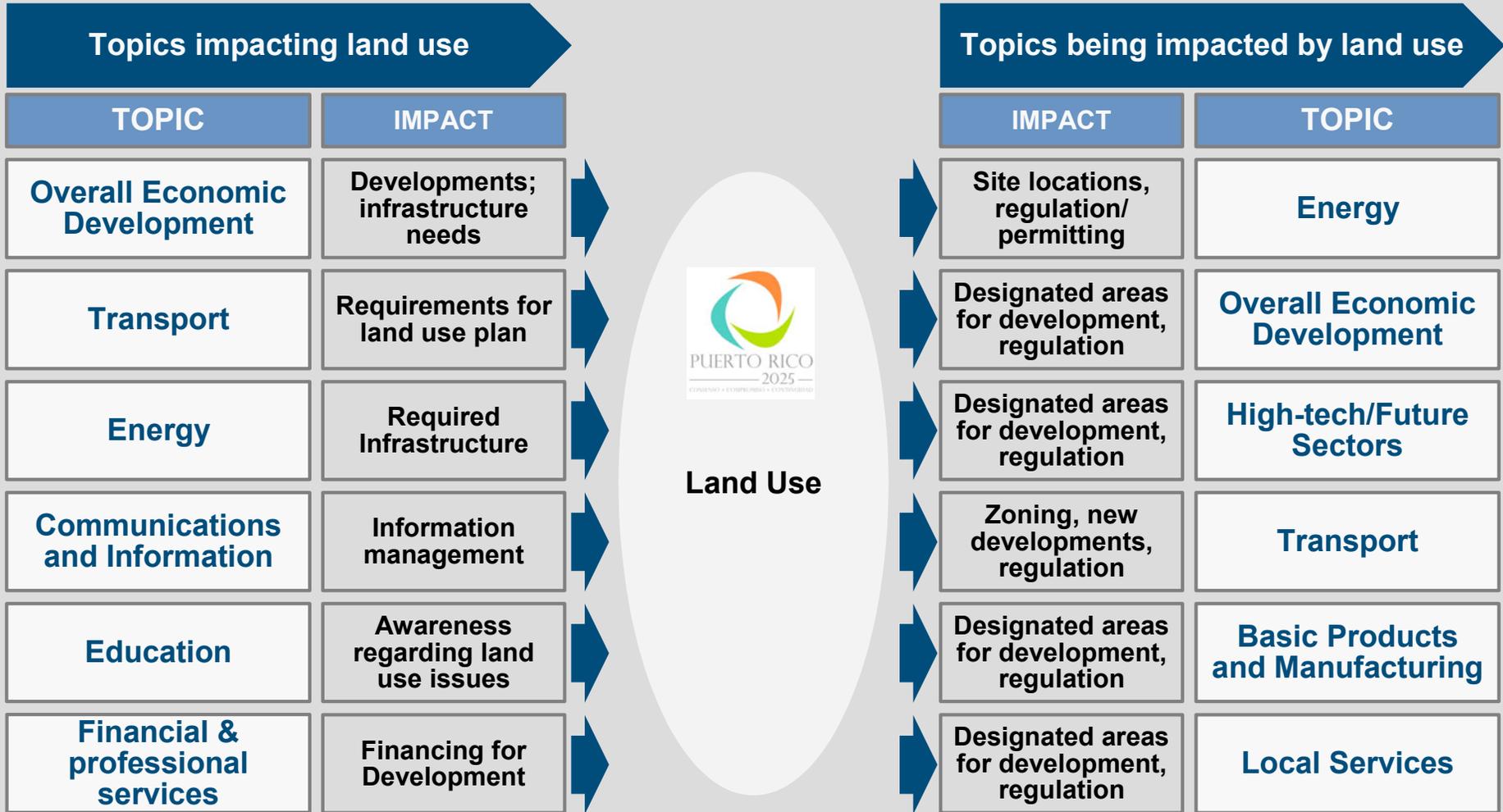
The lack of an integrated land use plan might lead to several impacts in Puerto Rico's quality of life and competitiveness



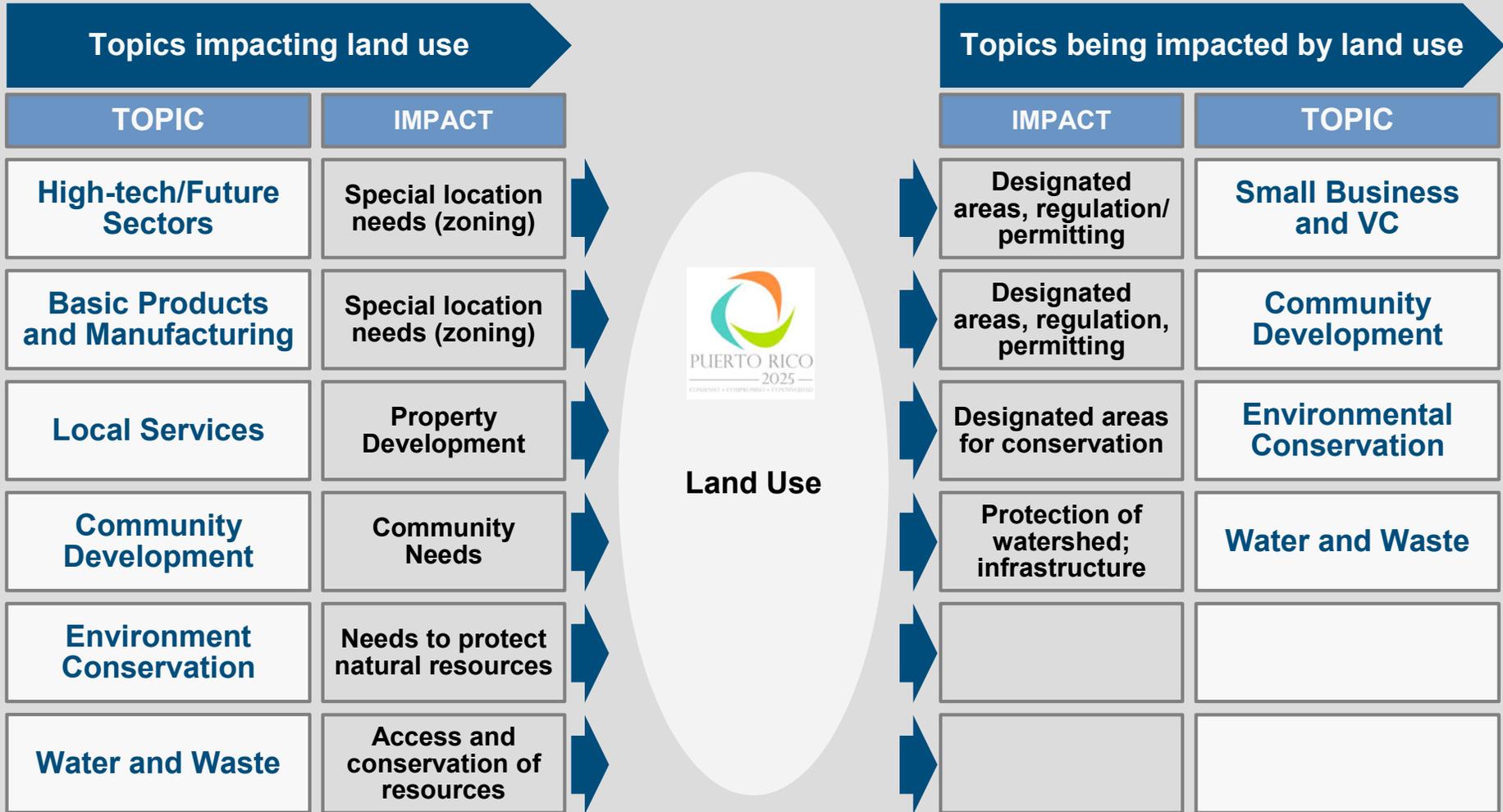
Key Dimensions Impacted buy the Lack on an Integrated Plan



Land Use linkages

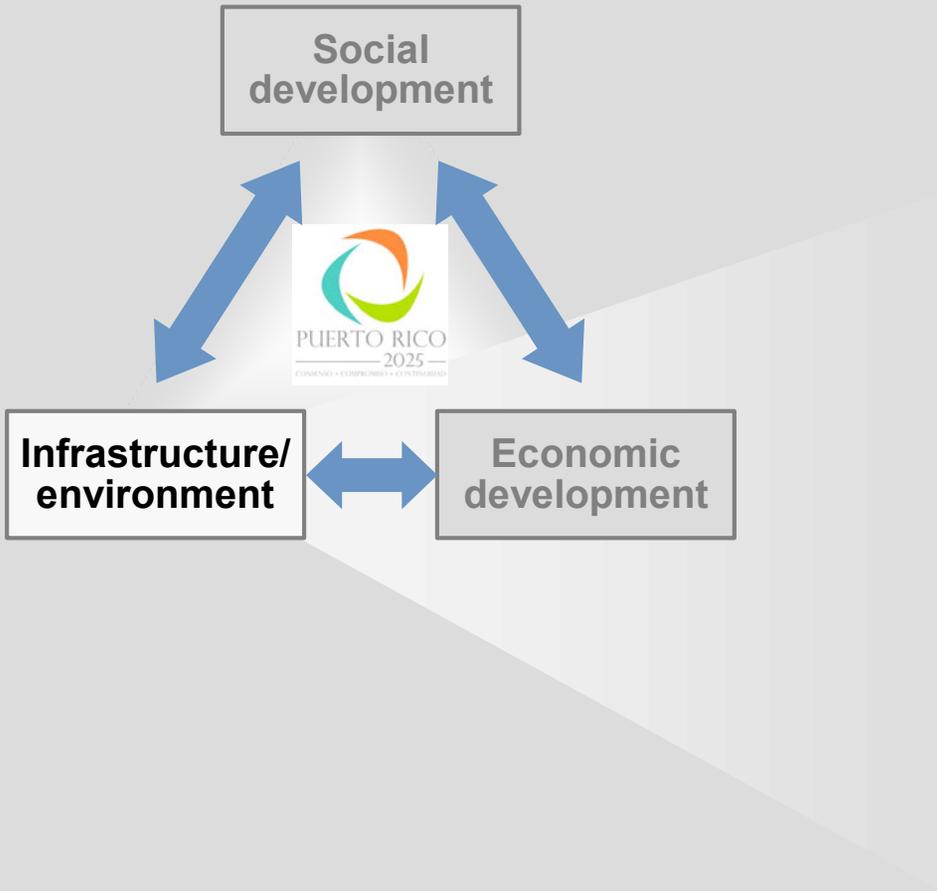


Land Use linkages



Questions for the future

- What barriers need to be overcome to create a comprehensive land use plan?
- What are the characteristics of a comprehensive land use plan?
- What is the best way to ensure that all groups truly participate in the development of the plan?
- What incentives and disincentives will ensure compliance with the plan?



-  **Energy**
-  **Water and waste**
-  **Land use**
-  **Communication and information**
-  **Transport**
-  **Environmental Quality**

Key Messages – Communications and Information

- Leading infrastructure compared to Latin America and the Caribbean (fixed, mobile, internet, broadband)
- Lagging infrastructure compared to US, Ireland, Singapore and other advanced countries (fixed, mobile, internet, broadband)
- Strong basic engineering education but lack of incentives for advanced research
- Competitive mobile market
- Lack of competition in fixed line market
- Problems with internet access in schools
- Growth of knowledge-based economy and society depends on leadership in telecommunications

Overview of Puerto Rico's Communications Infrastructure

Strengths

- Puerto Rico's telecom infrastructure is comparatively advanced
- Puerto Rico's fixed and mobile penetration compare well to Latin America and the Caribbean
- Puerto Rico ranks third in Latin America and the Caribbean in internet penetration
- The wireless market is fast growing and highly competitive
- Important progress has been made towards e-government

Weaknesses

- Puerto Rico ranks 4th in the US in the % of zip codes with no competitive local exchange carrier (CLEC)
- Puerto Rico's fixed and mobile penetration lag the US and best in class competitors, as do Internet and broadband penetration
- High speed internet access is available across the island, but competition is comparatively low
- Collaboration between industry and academia on R&D is comparatively low
- Internet access in schools lags key competitors
- Communications and Information Technology are seen as having a low priority for the government
- Reliability and provisioning speed of advanced services are seen as key areas for improvement
- Lack of public policy consistency is seen as the largest barrier to growth in the C&IT sector

Opportunities

- Government/private sector/university partnerships for research and curricula
- Retain and develop local talent
- Become a leader in new technologies – Internet2/ IPv6/ENUM
- Government as major purchaser of IT/ telecom
- Encourage local companies to pursue high technology export opportunities

Threats

- Weak or expensive infrastructure could threaten Puerto Rico's ability to compete in fast growth, high technology markets and other knowledge-based industries
- Failure to develop widespread access to broadband could slow development of consumer services
- Cost/ reliability of electricity could impact telecom industry

Puerto Rico's telecom infrastructure is comparatively advanced

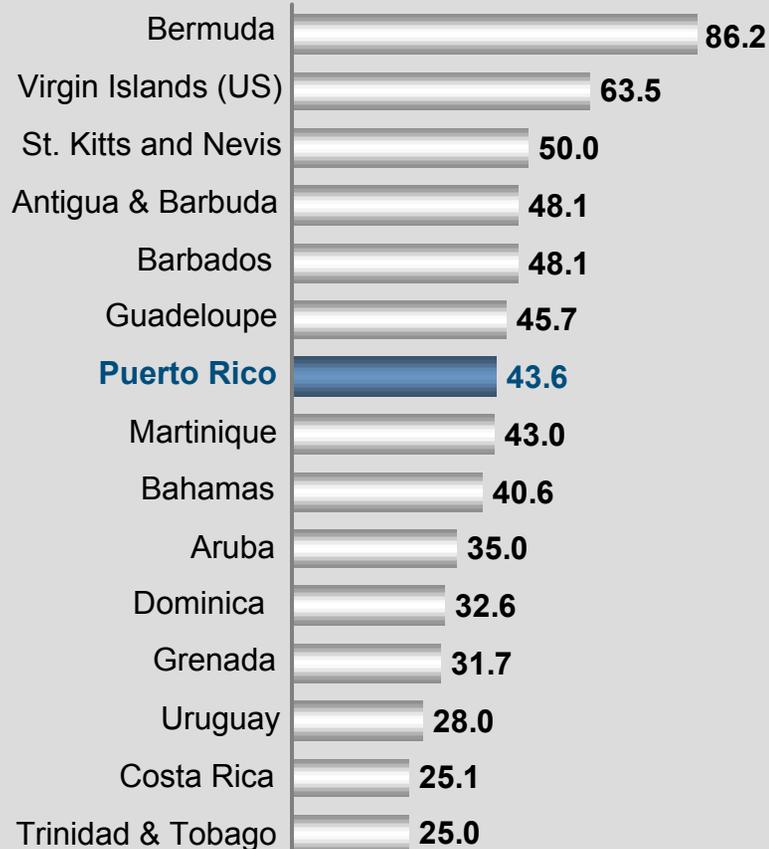
- 100% digital network
 - \$ 1 billion invested between 1999 and 2003 in upgrading and expanding PRT's network
 - Extensive fiber network
 - PRT has over 4,600km of fiber optic cable, creating 12 self-healing rings that cover the island
 - Centennial offers 800km of fiber optic cable
 - PREPA installing fiber as well
 - Asynchronous Transfer Mode (ATM) network that rivals or exceeds the quality of many ATM networks in the US
- 92 satellites
 - 6 major submarine cables
 - Americas, Arcos, Florico II/ TCSI, Taino, Antillas and SAM USA
 - Puerto Rico ranks 7th in Latin America and the Caribbean in fixed Line and cellular penetration
 - Puerto Rico ranks 3rd in internet penetration

Puerto Rico's fixed and mobile penetration compare well to Latin America and the Caribbean

STRENGTHS

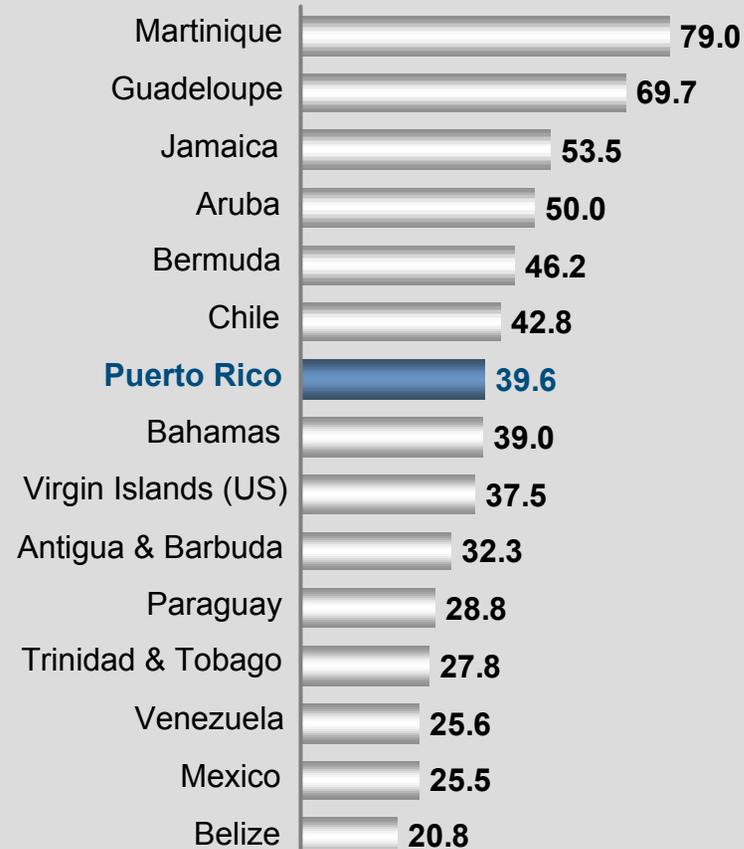
Fixed line density

Telephone Mainlines per 100 People 2002



Mobile density

Mobile Subscribers per 100 People 2002



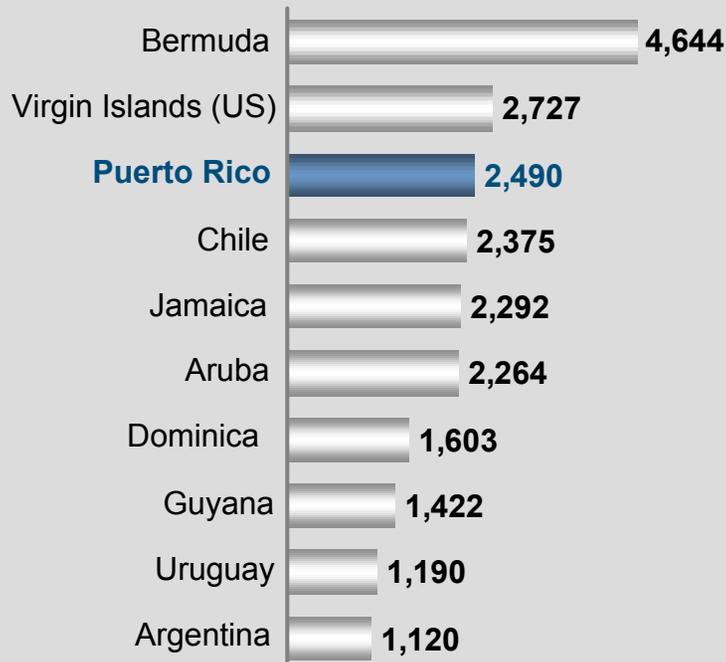
Source: International Telecommunications Union, Paul Budde Communication; A.T.Kearney analysis

Puerto Rico ranks third in Latin America and the Caribbean in internet penetration



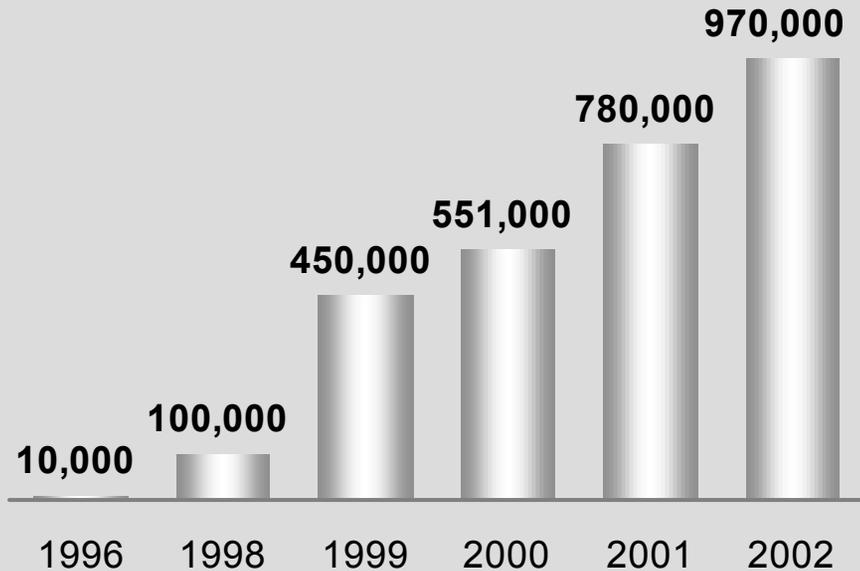
Internet penetration

Internet connections per 10,000 People 2002



Internet users in Puerto Rico

Total Internet Users 1996-2002

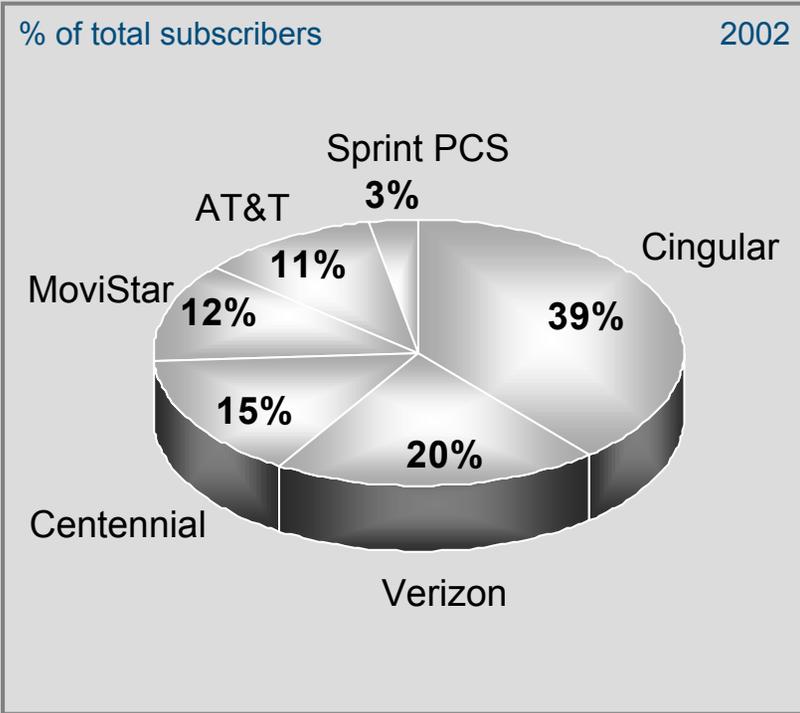


An estimated 61% of internet users are outside the San Juan metropolitan area

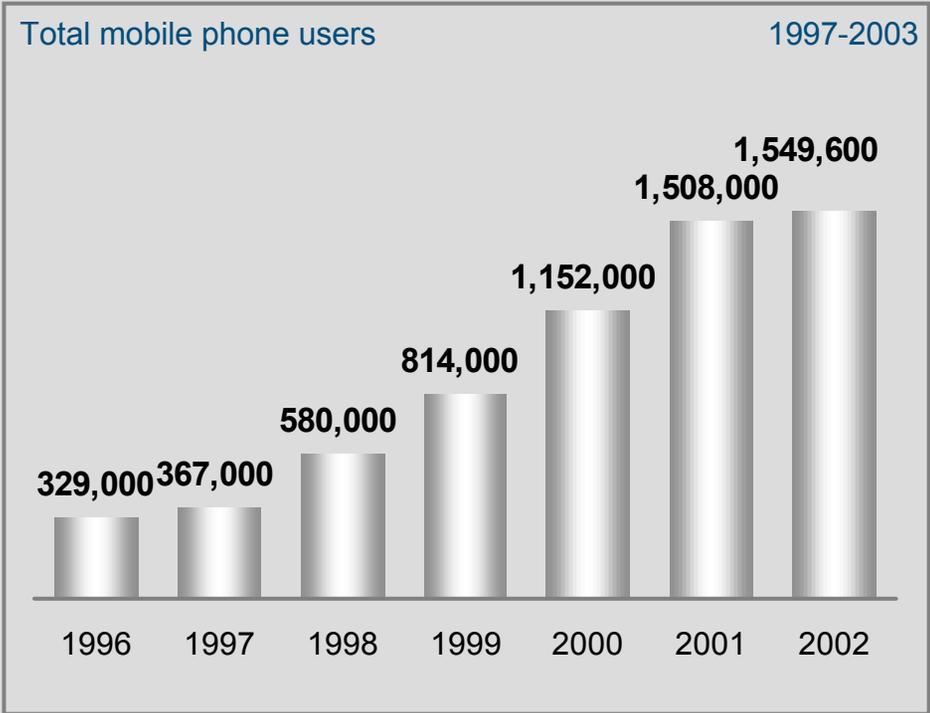
The wireless market is fast growing and highly competitive



Cellular phone market share



Mobile phone users



While the number of users is growing more slowly, ARPU (average revenue per user) in Puerto Rico is comparatively high due to the large number of minutes used

Source: Paul Budde Communication; A.T.Kearney analysis

Important progress has been made towards e-government


 STRENGTHS

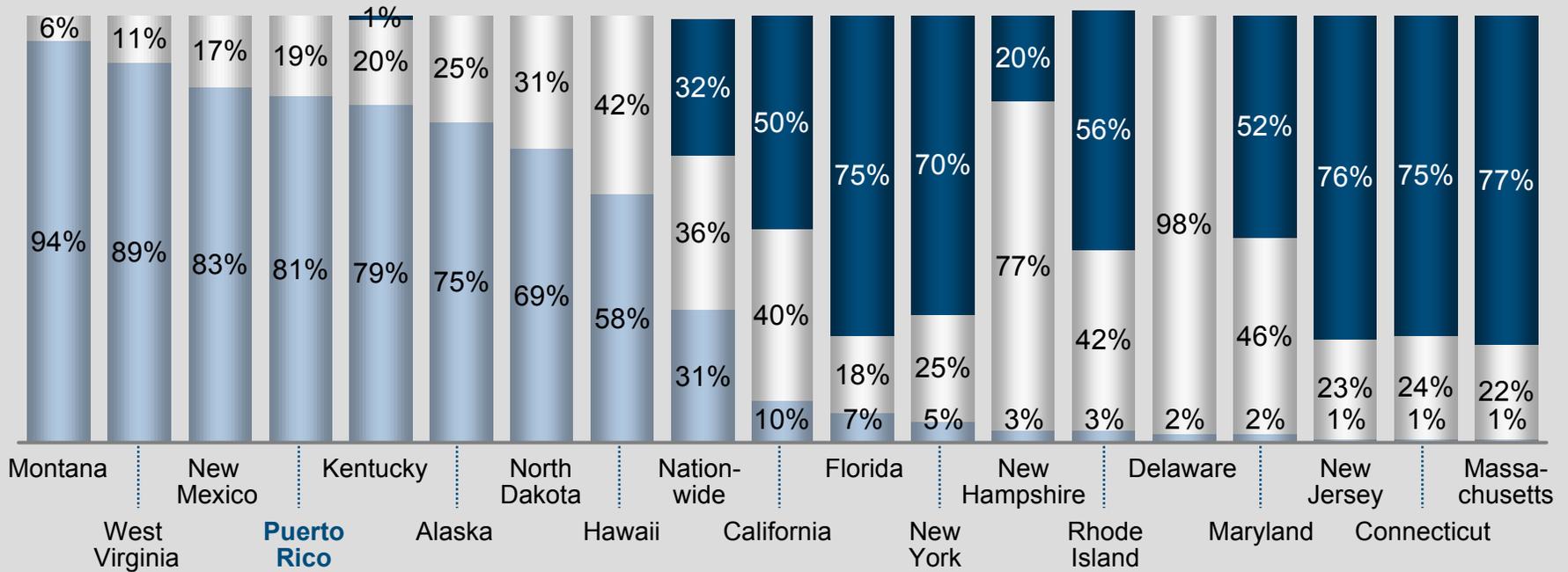
	2000	2003	2004
Telecommunications network	30%	95%	100%
Information infrastructure	1%	50%	100%
Central governmental portal	No	Yes	Yes
Publication of governmental information	15 agencies	42 agencies	138 agencies
Interaction of citizens with government (forms)	10	520	700
On-line government transactions	0	70	100

Puerto Rico ranks 4th in the US in the % of zip codes with no competitive local exchange carrier (CLEC)



Competitive Local Exchange Carriers (CLEC)

% of zip codes with CLECs — Dec 2002



Number of providers: 0 (lightest blue), 1-3 (medium blue), 4 (darkest blue)

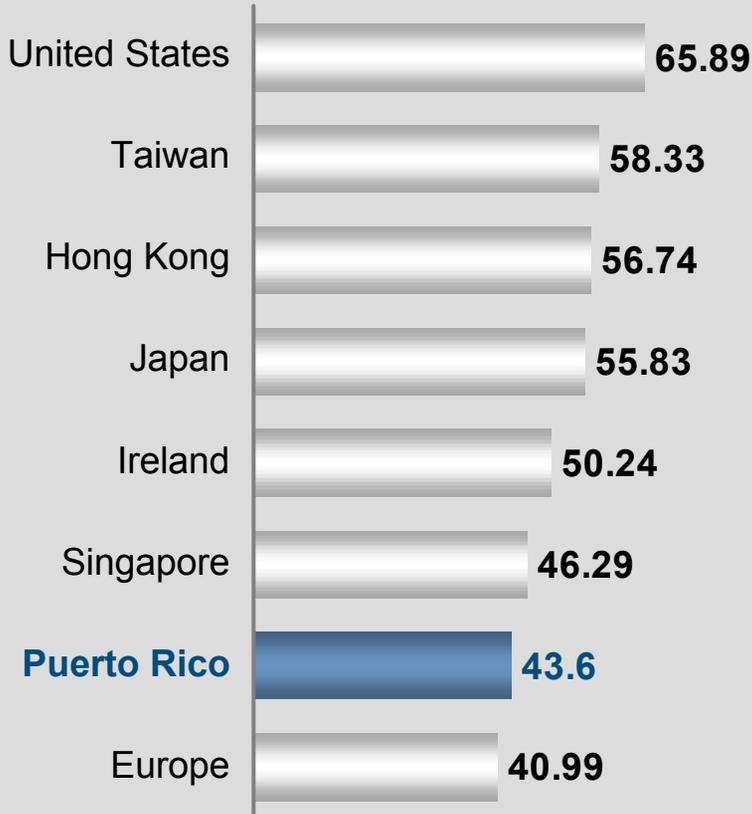
PRTC owns approximately 93% of fixed lines

Puerto Rico's fixed and mobile penetration lag the US and best in class competitors



Fixed line density

Telephone mainlines per 100 people 2002



Mobile density

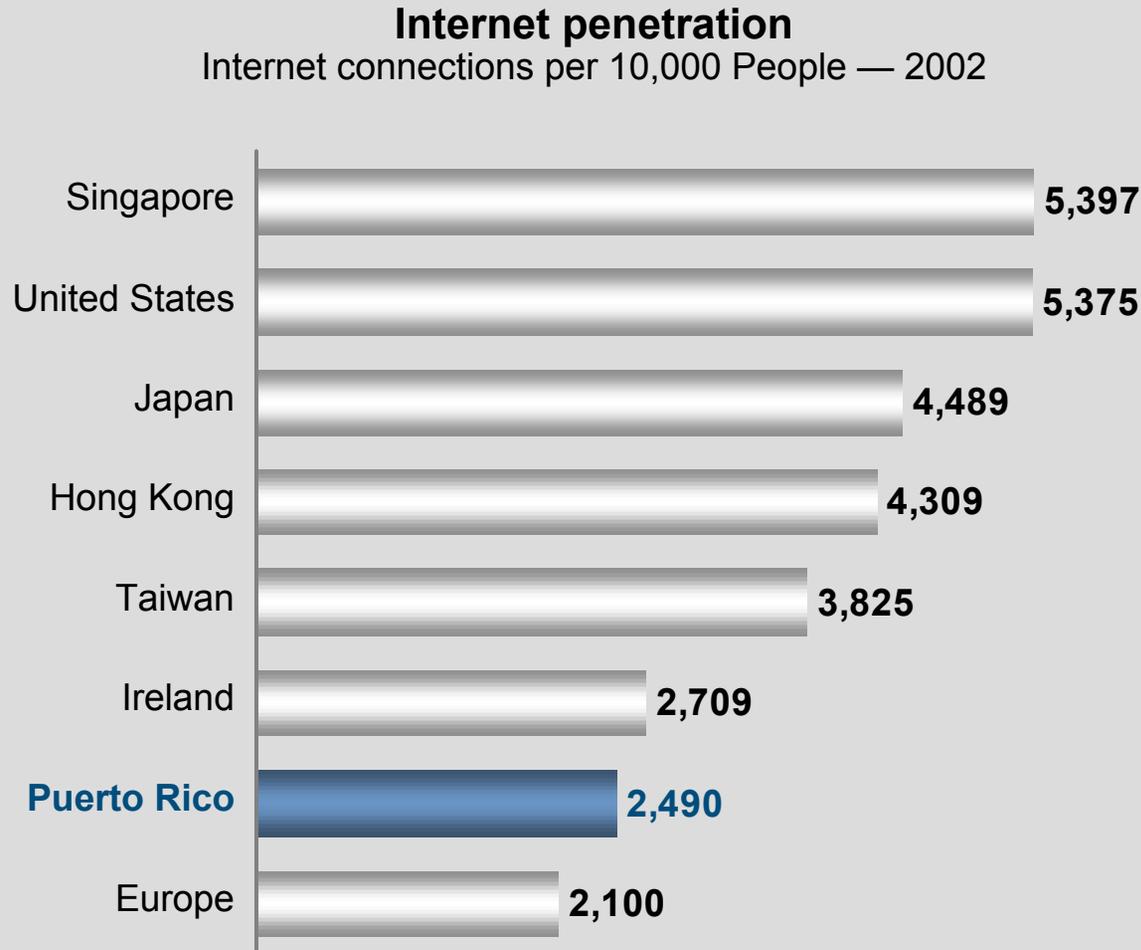
Mobile subscribers per 100 people 2002



Source: International Telecommunications Union, Paul Budde Communication; A.T.Kearney analysis

Puerto Rico's Internet penetration lags the US and key competitors

WEAKNESSES

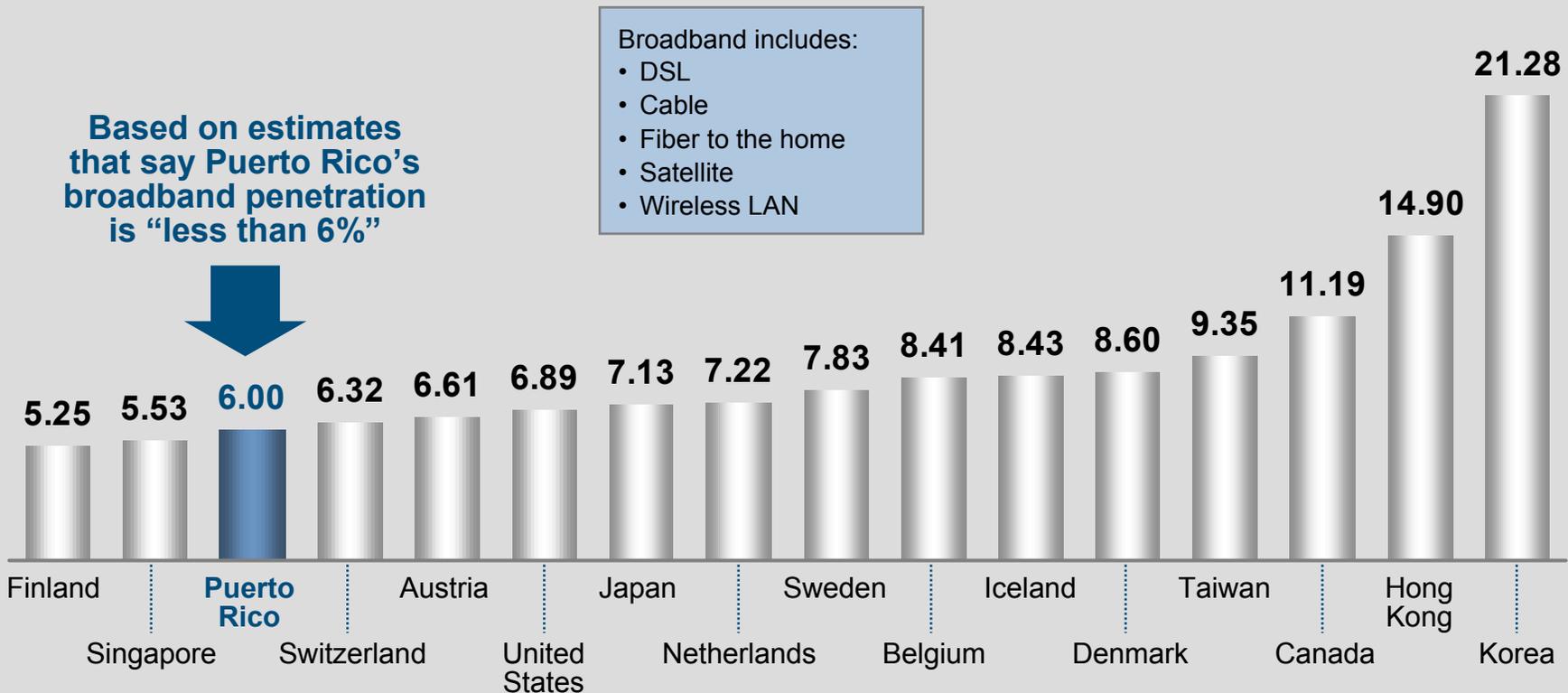


Source: International Telecommunications Union, Paul Budde Communication; A.T.Kearney analysis

Estimates put Puerto Rico's broadband penetration below the US and other advanced countries



Broadband penetration
Broadband connections per 10,000 People — 2002

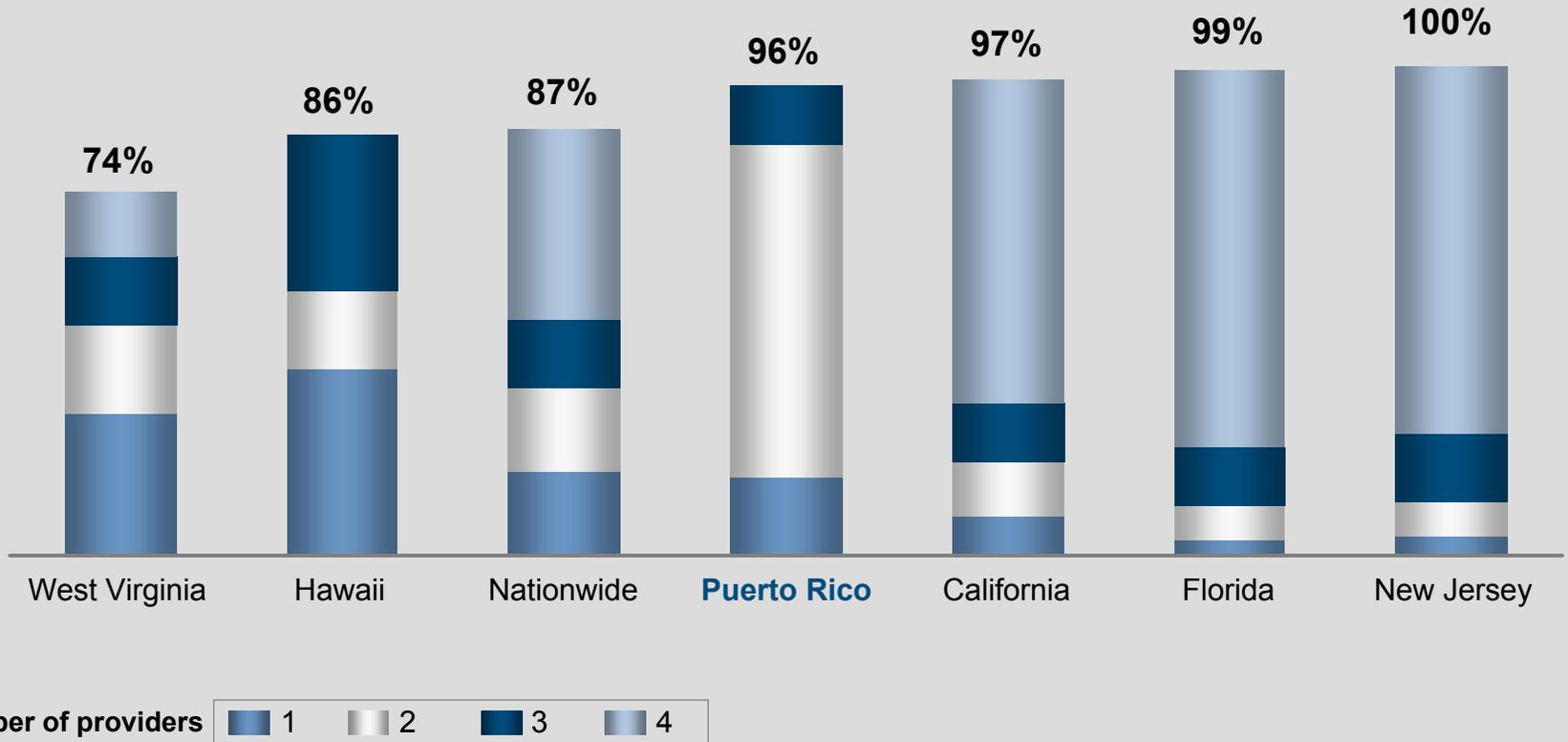


Source: International Telecommunications Union, Paul Budde Communication; A.T.Kearney analysis

Competition in high speed access is comparatively low



High speed internet access
% of zip codes with high-speed lines in service — Dec 2002



Source: FCC; A.T.Kearney analysis

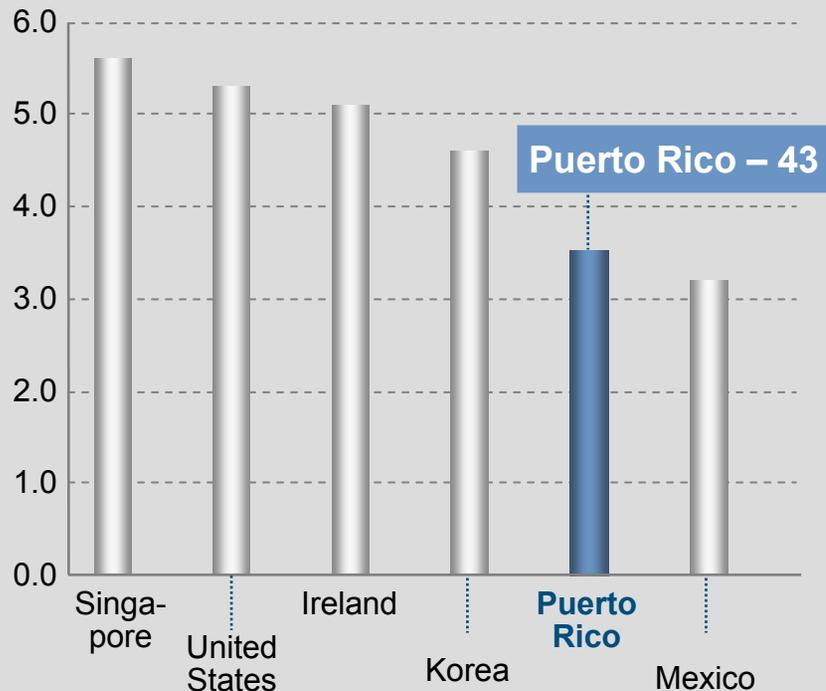
Collaboration between industry and academia on R&D is comparatively low

WEAKNESSES

Collaboration on (R&D) between academia and industry

(7 – high, 1 – low)

2002



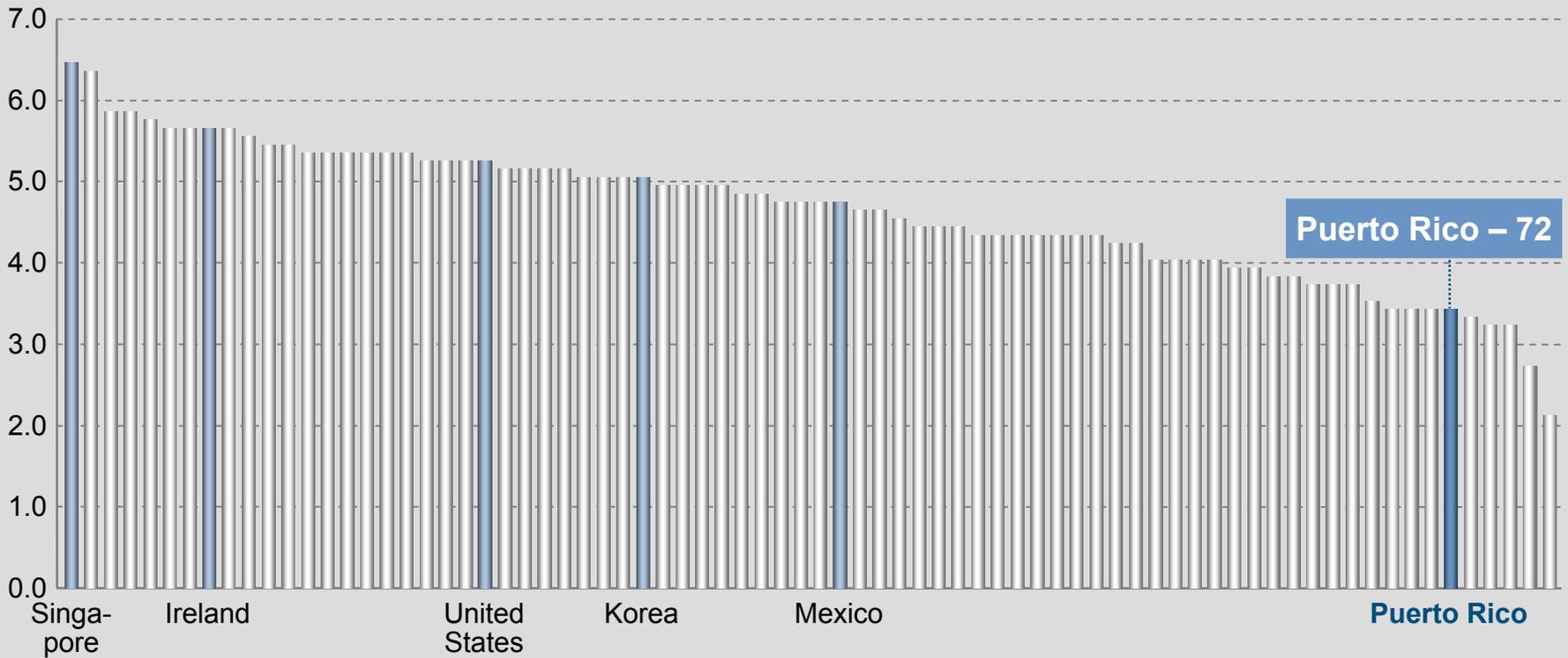
Key Factors

- Lack strong MA or PhD programs
- Generate people at the level of technical staff- not researchers
- Budget allocation for UPR gives no incentive to look to the market
- Professors are not well paid, making it hard to attract PhDs
- Consulting by professors is not encouraged
- Lacking a culture of entrepreneurship

Communications and Information Technology are seen as having a low priority for the government



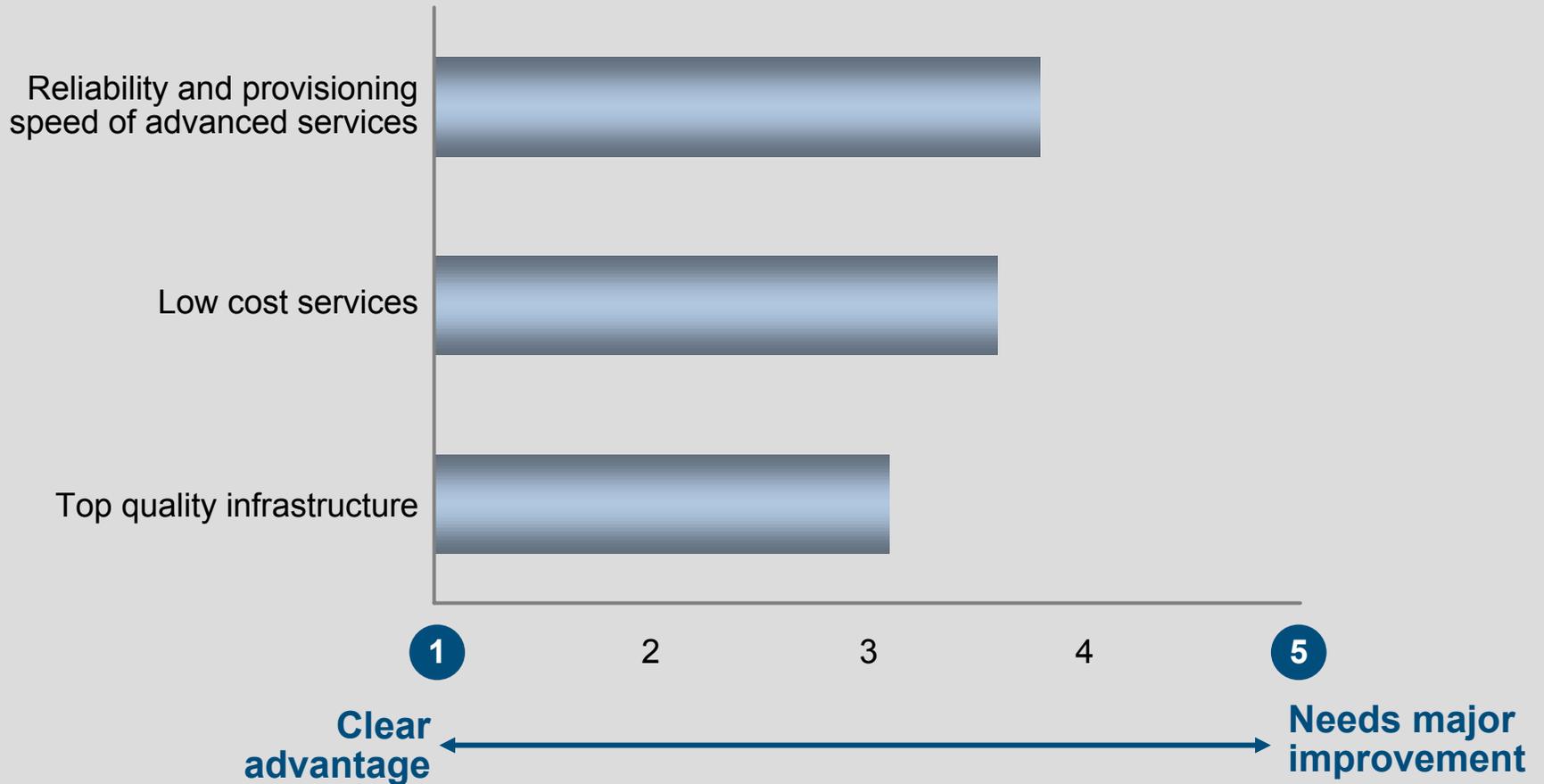
Priority of Communications and IT for government
(7 – high, 1 – low)



Reliability and provisioning speed of advanced services are seen as key areas for improvement



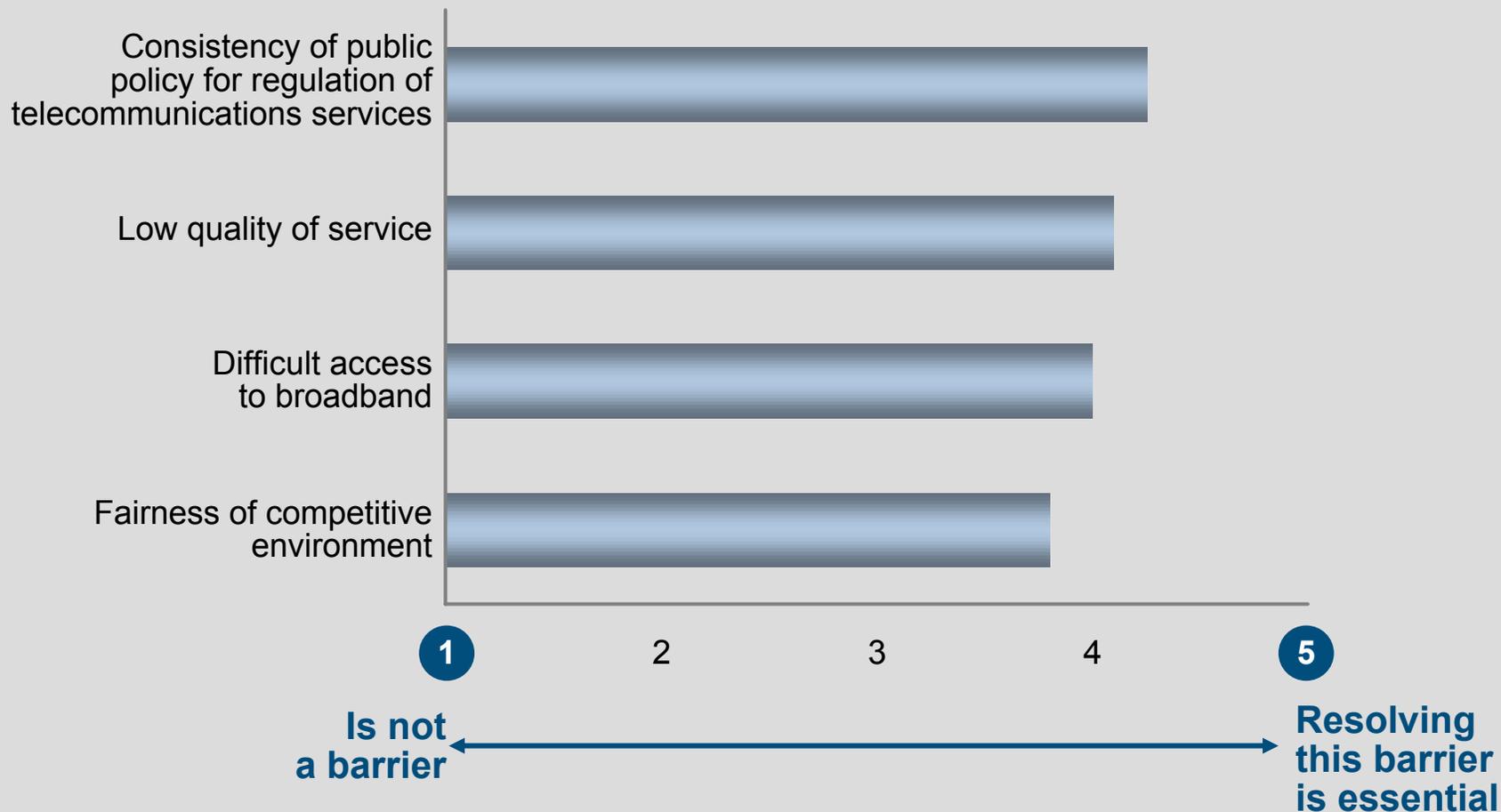
Rate the local telecom industry along the following key success factors



Lack of public policy consistency is seen as the largest barrier to growth in the C&IT sector



Rate the importance of these barriers to the growth of the C&IT Sector



Key assets to leverage

**Presence of High Technology
Multinationals**

Small entrepreneurs must learn how to serve and develop collaborations with the large companies

**Strong Engineering
Education System**

Retain and develop local talent

**High penetration of internet compared
to Latin America and Caribbean**

Aggressively promote broadband and implementation of leading edge technology (IPv6/ Internet2/ ENUM)

**Cultural Bridge Between North and
South America**

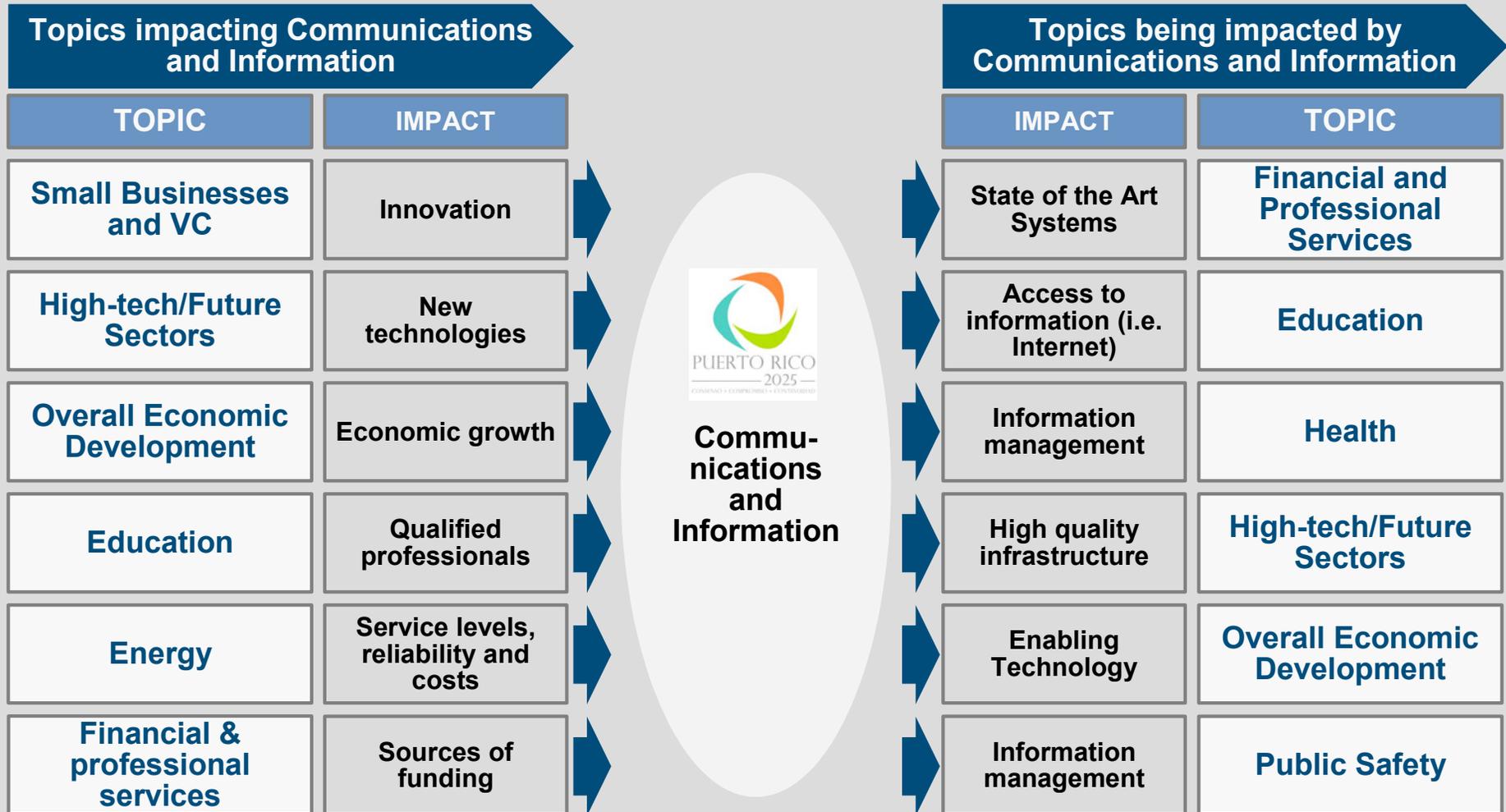
Become a regional hub for telecommunications and information technology and services

Threats

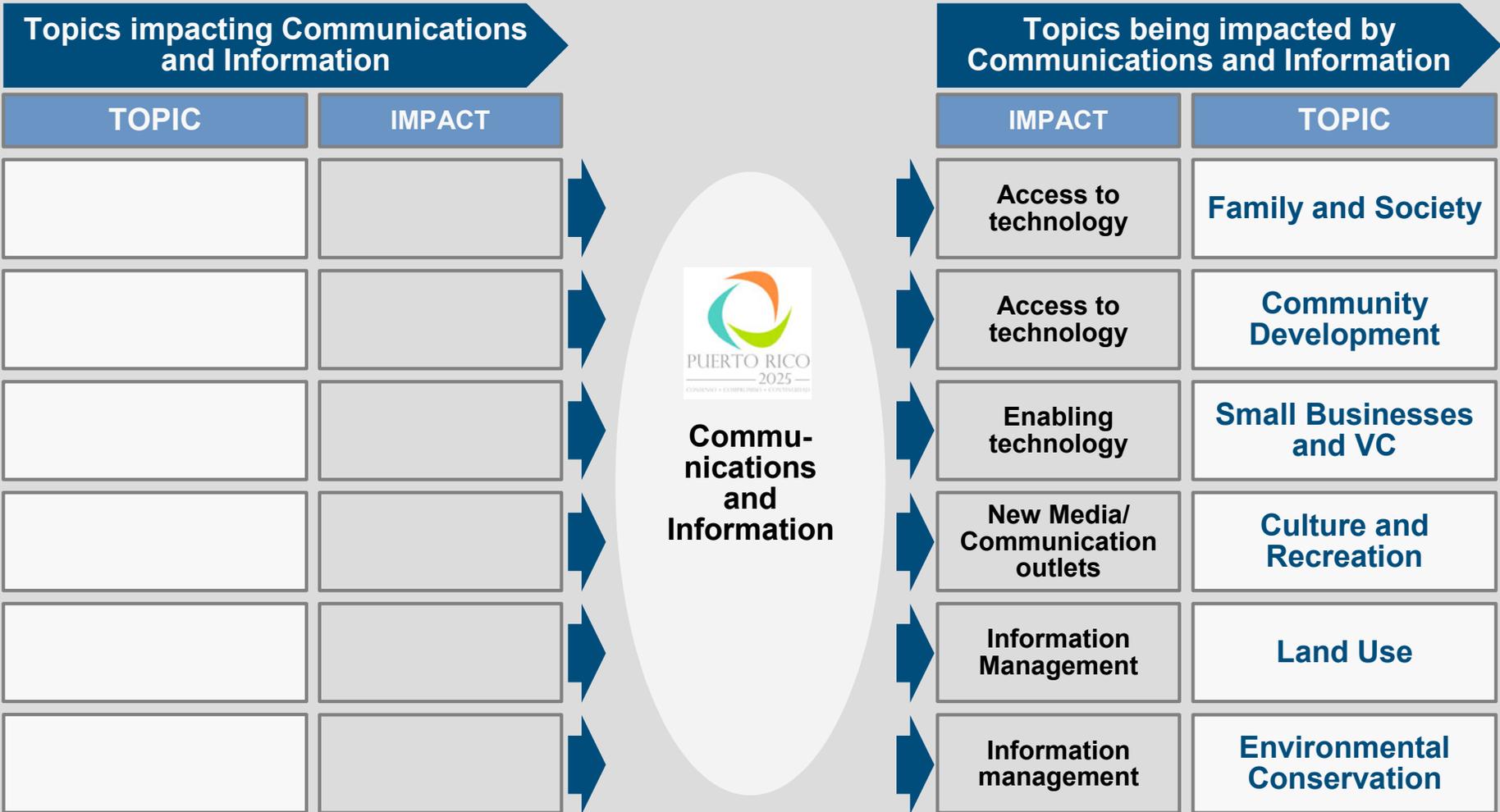


- Lack of competition in fixed line market could slow adoption of new technologies
- Loss of local talent due to lack of sufficiently interesting opportunities in Puerto Rico
- Failure to develop truly innovative local companies will lead to high tech multinationals choosing other locations with better R&D
- Failure to improve technology education will limit growth in the IT/Communications area

Communications and Information infrastructure linkages

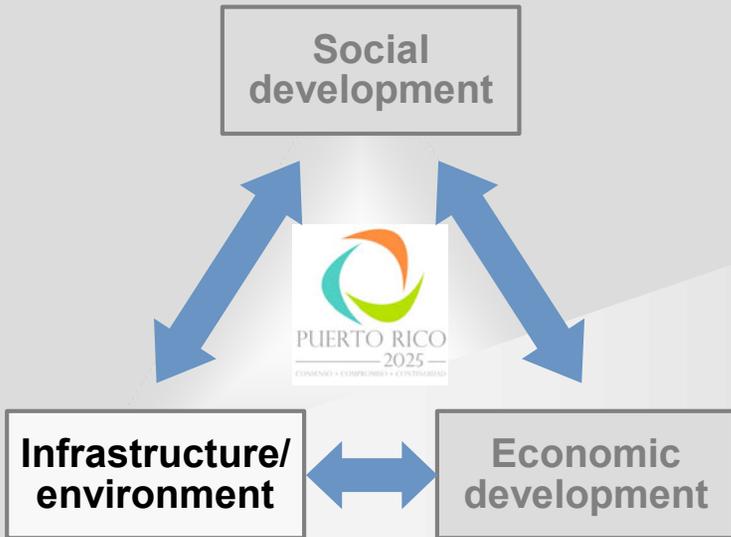


Communications and Information infrastructure linkages (cont.)



Questions for the future

- What does Puerto Rico need to do to become a global leader in telecommunications and information technology?
- What are the right incentives for increasing access to broadband?
- How can the educational system best contribute to the development of the IT infrastructure?
- How can the government best leverage the existing experts in Puerto Rico in developing technology policy?



-  **Energy**
-  **Water and waste**
-  **Land use**
-  **Communication and information**
-  **Transport**
-  **Environmental Quality**

Key Messages – Transport

- Major transport hub for the Caribbean (sea and air)
 - But recently developed ports in the region have lower costs/better efficiency and increasing market shares
- Very dense, congested and relatively poorly maintained road system
- Extremely low rates of public transportation usage
 - Hidden subsidies for drivers (low gas taxes, tolls)
- Environmental impact of transportation

Overview of Puerto Rico's Transportation Infrastructure

Strengths

- San Juan is the largest port in container traffic in the Caribbean region, with geographical and natural advantages
- Luis Muñoz Marín is the air hub for the Caribbean, with the largest cargo and passenger terminal in the region
- Puerto Rico has a good quality highway infrastructure, with an expanding network

Weaknesses

- Compared to international standards, Puerto Rico's port operations are expensive, with low productivity and service levels
- Puerto Rico's low gasoline prices impact highway financing and subsidize the costs of driving
- Limited public transportation options and low gas prices create an incentive for people to drive, leading to high traffic density and congestion

Opportunities

- A number of studies have argued for the benefits of the Port of the Americas, but important obstacles exist
- The Urban Train could offer a viable mass transit alternative for many drivers
- Leverage use of former military infrastructure

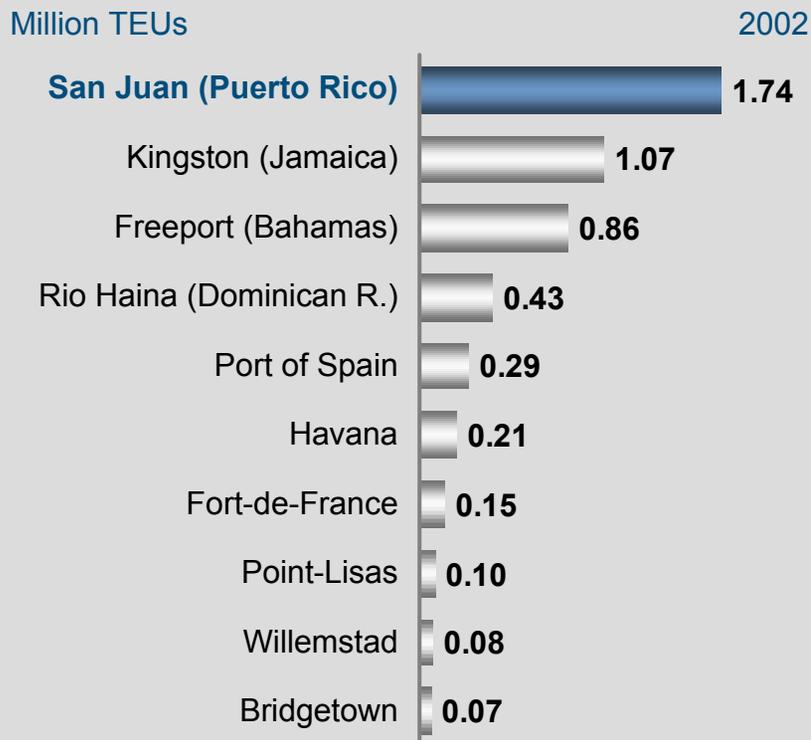
Threats

- Competing ports are strengthening their position in the Caribbean market backed up by significant investments and the management experience of some of the largest global stevedores
- In this context, Puerto Rico must redefine its port strategy to avoid losing competitiveness within the region and its ability to attract future investments
- DTOP faces major financing issues due to the unwillingness to increase costs for drivers
- Despite efforts to increase the availability of public transportation, the "car culture" may threaten the economic viability of investments in this area

San Juan is the largest port in container traffic in the Caribbean region, with geographical and natural advantages

STRENGTHS

Container Traffic in the Caribbean



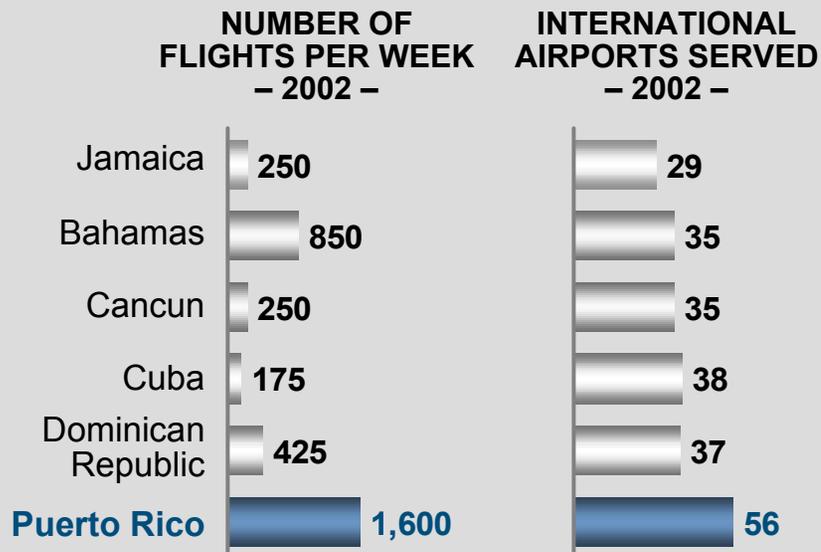
Key Characteristics

- San Juan is the 4th largest port in North America and the 2nd largest port in the US East Coast in terms of container traffic
- Located on **established trade routes** between **North and South America and East and West**, at the center of the Caribbean basin
- **Average shipping times** to North America and Gulf ports are **3 to 4 days**, **10 days** to the North American West Coast and **14 days** to Europe
- Puerto Rico's export orientation and large domestic market represent an **advantage in terms of reaching economies** of scale in port operations

Luis Muñoz Marin is the air hub for the Caribbean, being the largest cargo and passenger terminal in the region



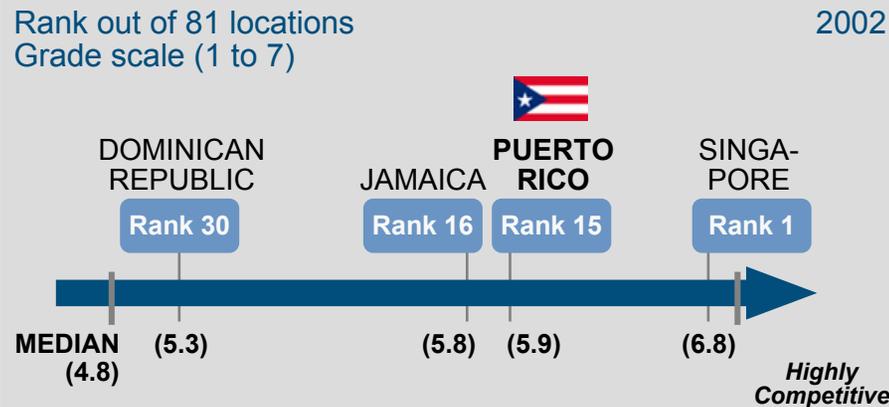
Leading Air Gateway to the Caribbean



Puerto Rico holds 44% market share of all flights to the Caribbean

Quality of Air Transport Infrastructure

– Rank in the Global Competitiveness Report 2002 –



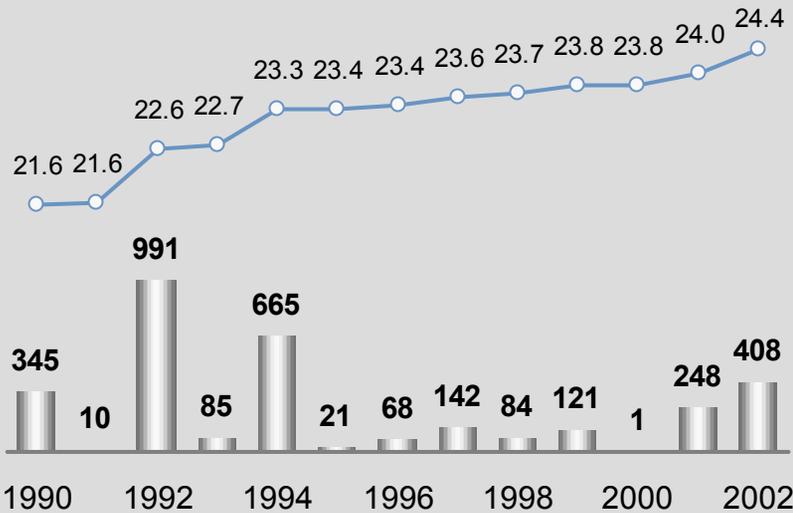
- LMM ranks among the top 40 airports in the US for passengers and top 30 for cargo
- There is still capacity to expand
- Puerto Rico has the most competitive fuel costs in the Caribbean

Puerto Rico has a quality highway infrastructure, with an expanding network



Puerto Rico Investment in the Highway System

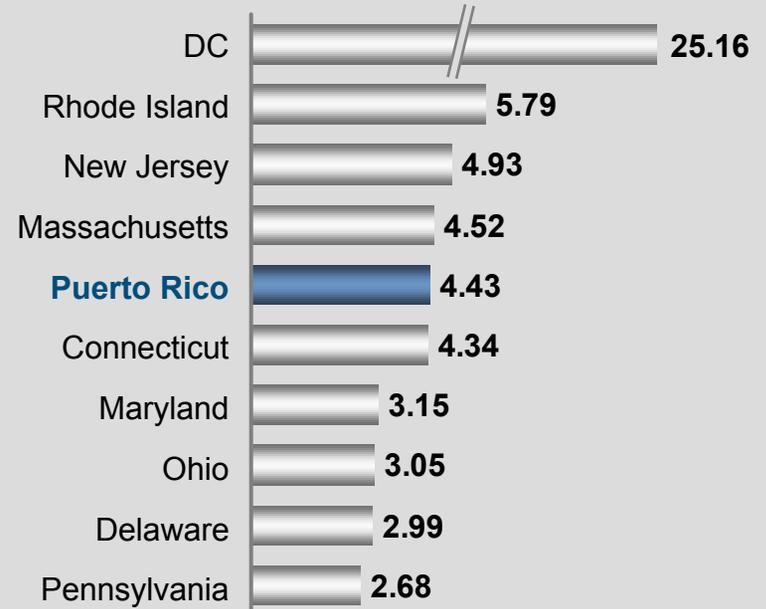
Km of roads 1990 - 2002



 New km of road built in the year
  Total km of road in the network ('000)

Top 10 States in Road Density in the US – Miles of Paved Road per Square Mile –

Miles 2002

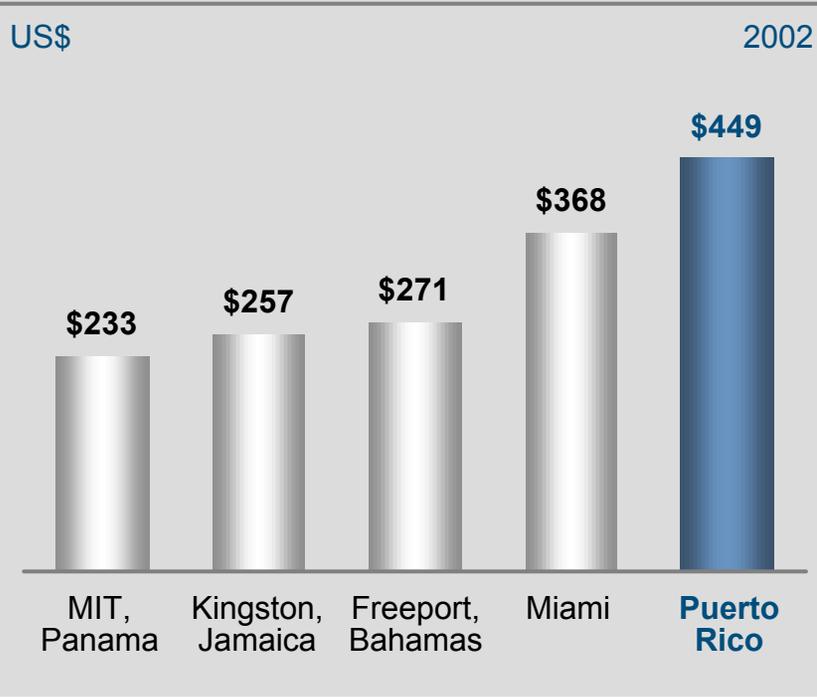


Compared to international standards, Puerto Rico's port operations are expensive, with low productivity and service levels

	WEAKNESSES

Transshipment Handling Costs

US\$ per transshipment container



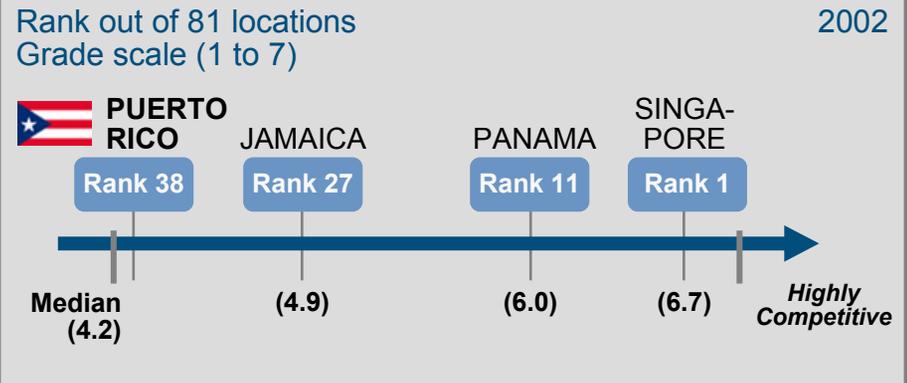
The Penfold Report suggests that a potential new transshipment port in Puerto Rico would need a radically different rate structure in order to be competitive

Examples of Productivity and Service Levels

	San Juan (estimate)	Typical Terminal	Benchmark
Gantry crane productivity (gross moves/hour)	25 to 26	25 to 30	>45
Truck turnaround (min)	40 to 60	30 to 60	10 to 15

Quality of Port Infrastructure

– Rank in the Global Competitiveness Report 2002 –

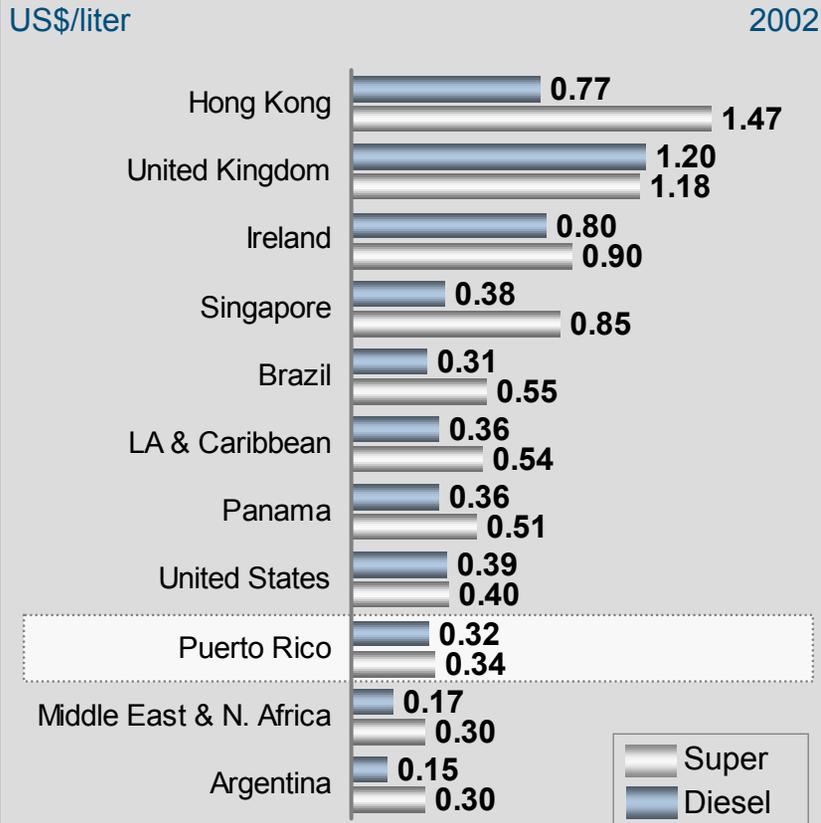


Source: Ocean Shipping Consultants; "Análisis Preliminar de Competitividad de Puerto Rico", Procomp; Global Competitiveness Report 2001-2002; "The Evolution of Ports in a Competitive World" – World Bank; "Measuring Port Performance" – Patrick Fourgeaud – The World Bank; A.T.Kearney analysis

Puerto Rico's low gasoline prices impact highway financing and encourage more driving



Prices for Gasoline



Percentage of Total Taxes in Premium Gasoline Prices



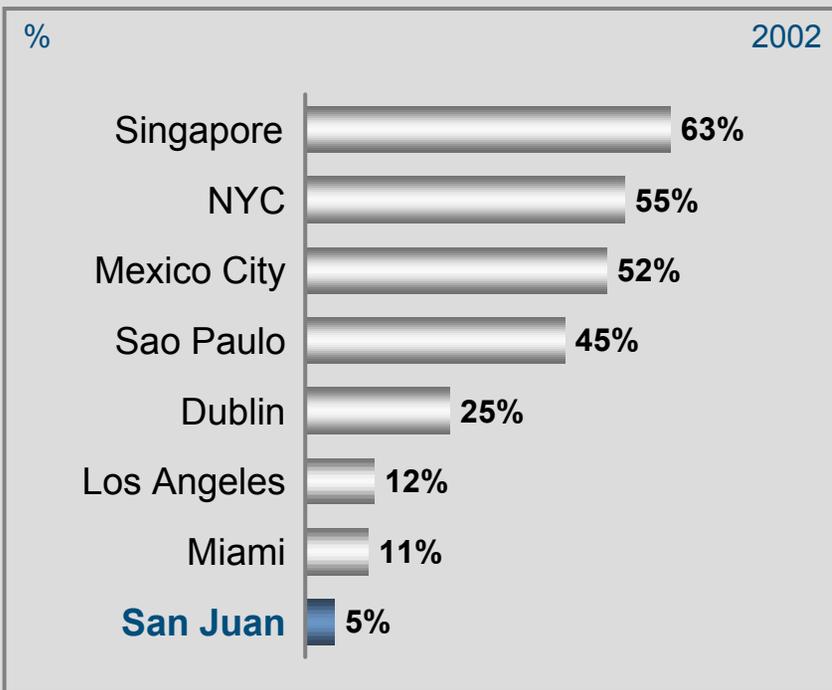
However, low gasoline prices also represent an advantage in terms of cost competitiveness for Puerto Rico



Limited public transportation options and low gas prices create an incentive for people to drive, leading to high traffic density and congestion

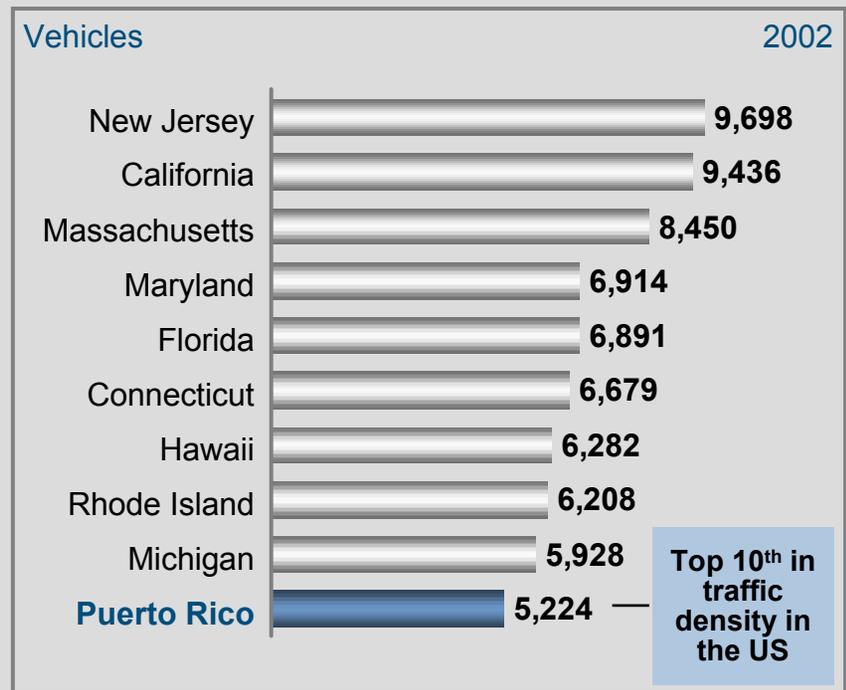
Usage of Public Transportation Compares Poorly to Major Global Cities

– % of workers that use mass transit to go to work –



Puerto Rico Ranks 10th in the US for Traffic Density

– Average Daily Vehicle Traffic per Lane –



Vehicle occupancy in Puerto Rico is very low - according to the US Census, 79% of workers in Puerto Rico drive alone

Source: US Census, Dublin Transportation Office, Secretaria Municipal de Transportes. Interpress Service, Singapore Department of Statistics, Federal Highway Authority; A.T.Kearney analysis

A number of studies have argued for the benefits of the Port of the Americas, but important obstacles exist

Opportunities

- Leverage geographical location and highest container volumes in the Caribbean to tap into the fast growing market for transshipment
- As terminal operations get more capital intensive it is critical to drive volume in order to create economies of scale
- Moreover, higher volume and modern equipment offset higher labor costs through higher productivity
- By improving the efficiency of the port infrastructure, Puerto Rico can increase the competitiveness of industry on the island
- Develop a Value Added Zone to attract transshipment volume

Obstacles to be Overcome

- Puerto Rico naturally has higher costs than other transshipment ports
 - Labor costs
 - Security/ customs costs
 - Jones Act related costs
- If the transshipment port is not in San Juan then scale effects may not be significant (or land transport will increase total costs)
- Other transshipment ports in the region have made major infrastructure investments, signaling that Puerto Rico might be late to the game
- The lack of interest from the global terminal operators signals that the project might face viability issues

Other Opportunities

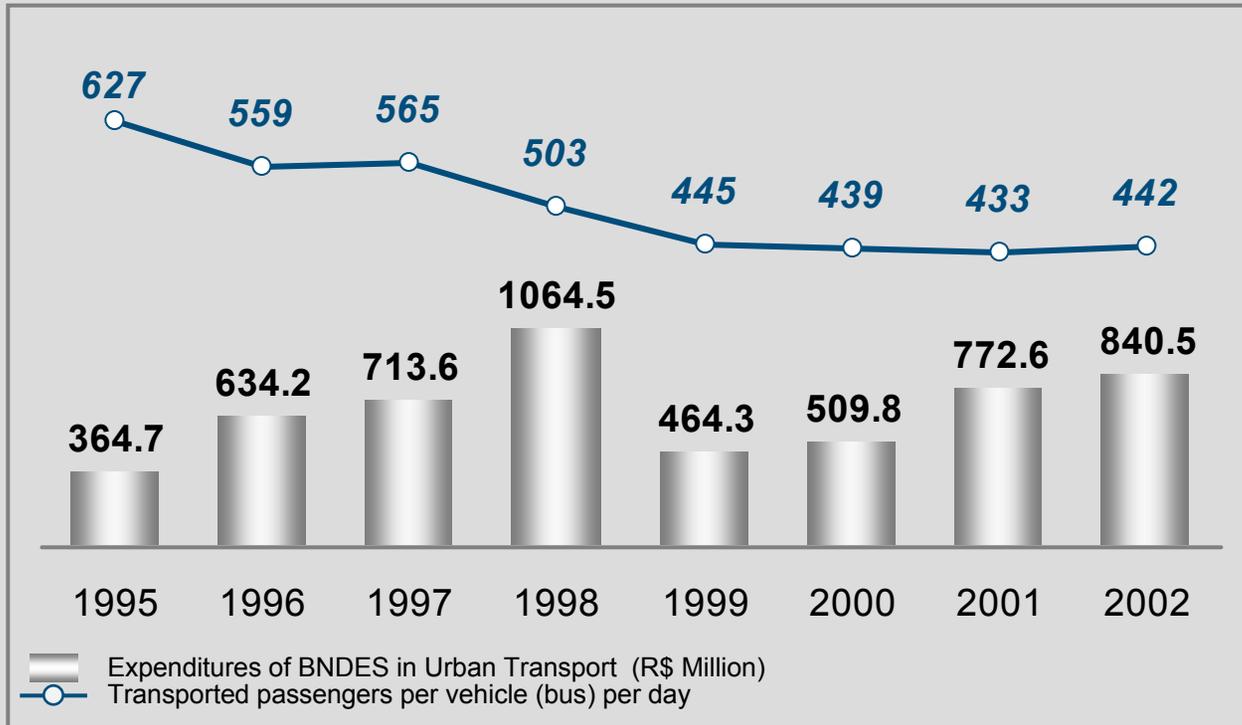
- Integrate transportation needs into land use and development planning
- Quality and capacity of ports and shipping will become even more important in the presence of the Free Trade Area of the Americas (FTAA)
- Use the urban train as a nucleus for the development of intermodal transportation and pedestrian-friendly urban environments and start a change in mindset regarding the “car culture”

Even with investments in public transport, adoption of these services is significantly impacted by other factors



Example – the case of Brazil

Investments¹⁾ vs. transported passengers in major Brazilian cities²⁾



Factors affecting demand for urban transportation

- Motorization trends (linked with economic growth)
- Oscillation in the price of gas
- Competition from illegal or non-official passenger transportation firms
- Restrictions regarding the use of cars in some cities
 - Tolls
 - Traffic control program (rodízio)
- Special taxation on motoring
- Adequacy of itinerary to community dispersion
- “Car culture”

Note: 1) Resources facilitated by BNDES (National Bank of Economic and Social Development) in urban transport – it is a proxy of the overall investments in urban transport in the cities focused by the study

2) São Paulo, R. de Janeiro, Belo Horizonte, Recife, Porto Alegre, Salvador, Curitiba, Fortaleza e Goiânia

Source: NTU – Associação Nacional das Empresas de Transporte Público

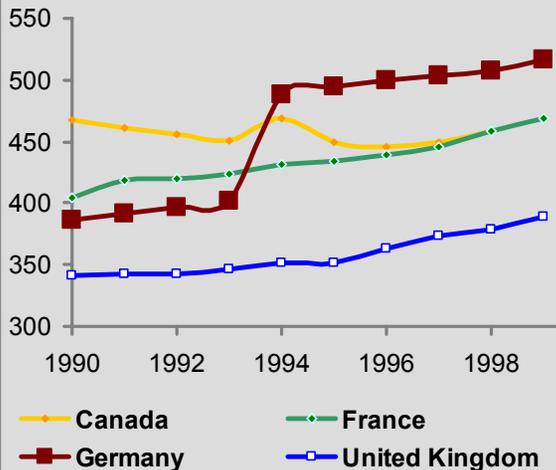
The “car culture” may threaten the economic viability of investments in urban transportation...

THREATS

Points to consider

Motor vehicle ownership is likely to continue growing¹⁾

- In most countries, motor vehicle ownership has historically surpassed population growth
- # of passenger cars per 1,000 habitants



“Do nothing” is hardly an option

- **Hidden costs of automobile dependence**
 - Air pollution
 - Noise pollution
 - Congestion
 - Most importantly, what could be the costs in the future if no initiatives are planned today?
- **Negative spiral of doing nothing**
 - Congestion increase
 - Reduction of average speed of motor public transports
 - Increasing “motorization”
 - Questioning of investments in transport infra-structure due to high motorization rates

Challenging “car culture” has occurred in several forms

- **Generally, countries willing to do so opt for working in one or both sides of the attractiveness equation (motorization vs. public transport)**
 - Taxation
 - Tolls
 - Taxes over gas
 - Prioritization of investments in the aspects considered critical by users
 - Service extent/coverage
 - Affordability
 - Punctuality
 - Cleanliness
 - Safety
 - Other restrictions (e.g., municipal traffic control programs)

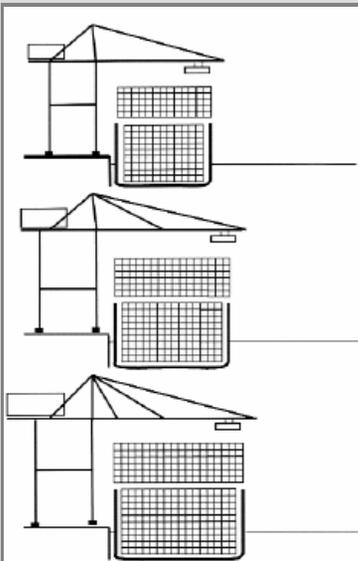
... but it must be considered more as a reason for carefully planning the investments in public transport than one for avoiding the needed investments

Note: 1) Specifically for those geographies with GDP real growth projection
Source: World Bank

Competing ports are strengthening their position in the Caribbean market backed up by significant investments going forward...



Typical Containerships Characteristics



PANAMAX

- Draft: 10.5 to 13.0 meters
- Breadth: 32.2 meters
- Capacity: up to 4,800 TEU
- Crane spanning: 13 rows

POST-PANAMAX

- Draft: 13.5 to 14.0 meters
- Breadth: 43 meters
- Capacity: up to 7,000 TEU
- Crane spanning: 17 rows

SUPER POST-PANAMAX

- Draft: 14.0 meters
- Breadth: 46 meters
- Capacity: up to 9,000 TEU
- Crane spanning: 18 rows

Ports Equipped

– Caribbean Region –

- **SAN JUAN (Puerto Rico)**
- **PONCE (Puerto Rico)**
- RIO HAINA (Dominican R.)
- KINGSTON (Jamaica)
- MIAMI (US)
- CRISTOBAL (Panama)

- KINGSTON (Jamaica)

- FREEPORT (Bahamas)
- KINGSTON (Jamaica)
- MIAMI (US)
- CRISTOBAL (Panama)

Key Planned Investments

– Caribbean Region –

JAMAICA

- US\$ 67.9 MM investment to increase capacity at Kingston terminal and deepening the quay at the North Terminal to 14.5 m
- US\$ 132 MM investment to replace 4 Panamax cranes with 4 Super Post-Panamax cranes.
- Work to be completed by 2004

BAHAMAS

- Addition of 3 Super Post-Panamax cranes
- An 80% quay expansion is intended

DOMINICAN REPUBLIC

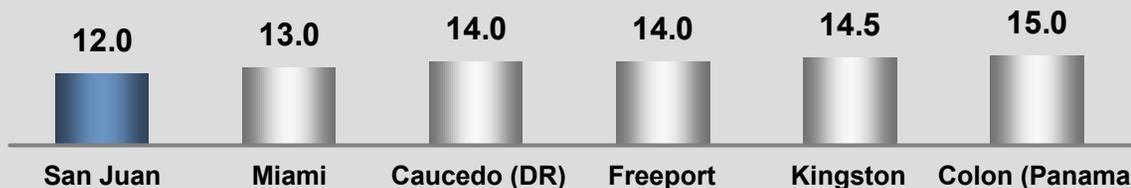
- Operations at new terminal of Caucedo scheduled to start on 2003 – key characteristics include 14 m berth depth with 600 m in length (to be further expanded to 1,100 m)

PANAMA

- Investments include quay expansion and new berths with 15 m of depth at Colon Container terminals
- Future expansion will lead to an additional capacity of 1 MM TEU/year

Controlling Berth Depths (meters)

2000

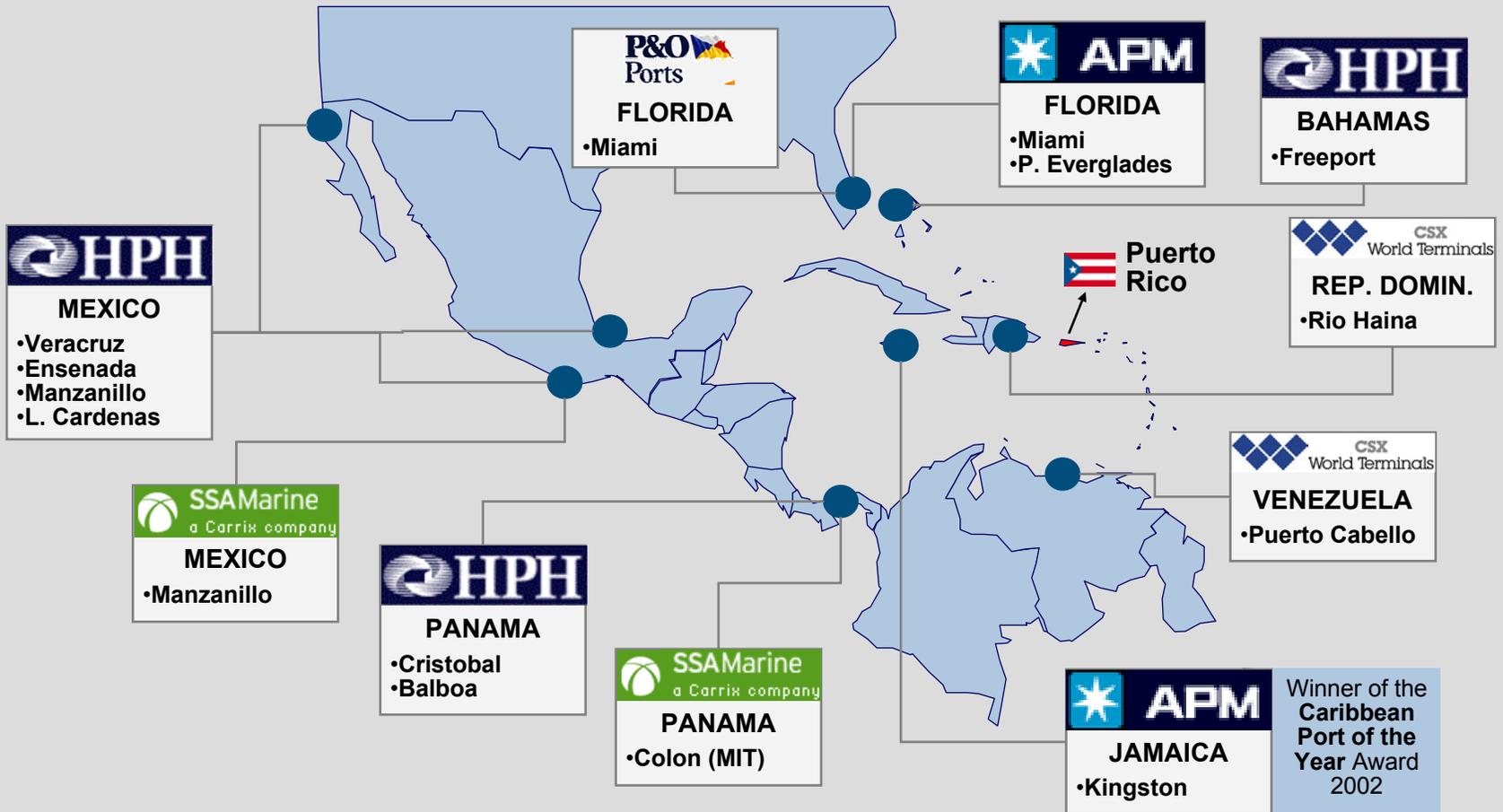


Source: "The Evolution of Ports in a Competitive World" – World Bank; "Frankel Feasibility Report"- Port of the Americas; Ocean Shipping Consultants LTD; A.T.Kearney analysis

...and the management experience of some of the largest global stevedores

	THREATS

Selected Ports Operated by Some of the Largest Global Stevedores



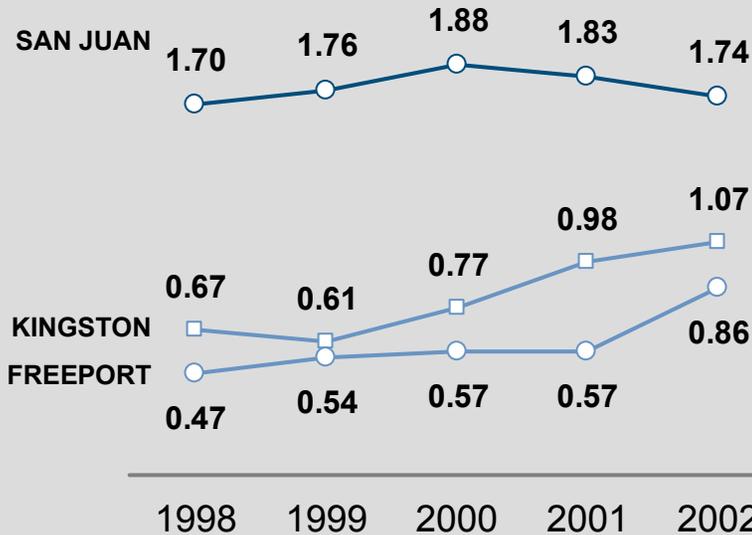
Source: Drewry Shipping Consultants Ltd; Companies websites; A.T.Kearney analysis



In this context, Puerto Rico must redefine its port strategy to avoid losing competitiveness within the region and its ability to attract future investments

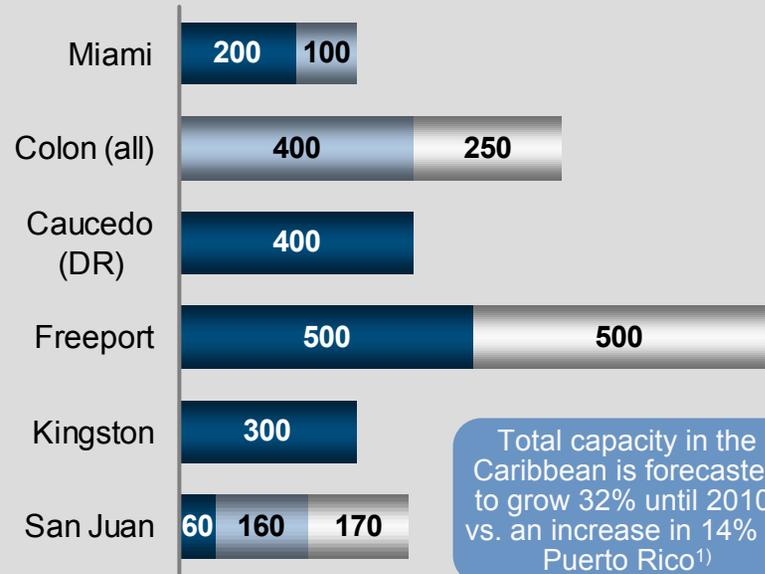
Container Traffic in the Caribbean Region

Million TEUs



Planned Capacity Increase in the Caribbean Region

'000 TEUs



Total capacity in the Caribbean is forecasted to grow 32% until 2010, vs. an increase in 14% in Puerto Rico¹⁾

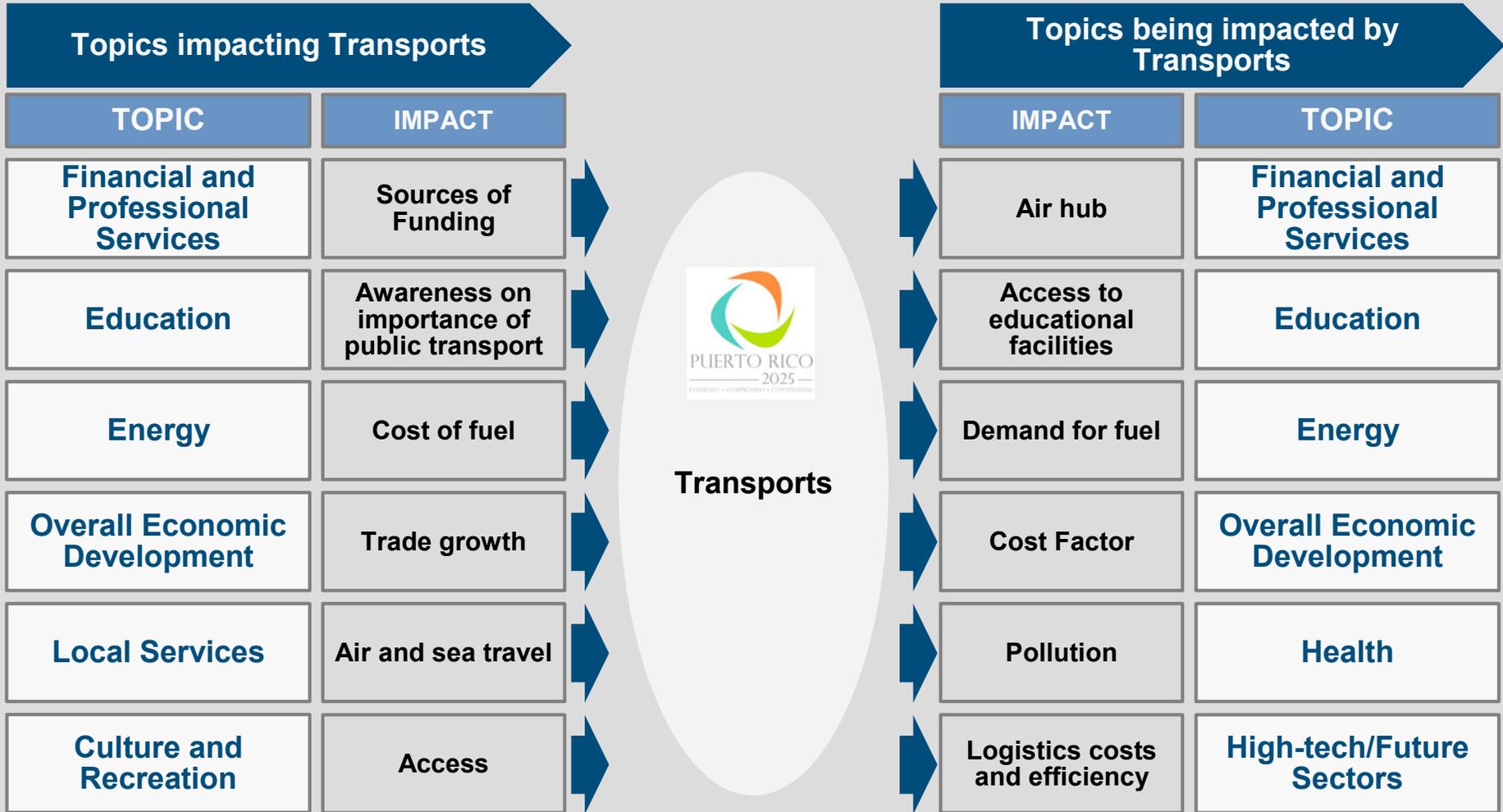
■ Until 2004 ■ 2005 to 2007 ■ 2008 to 2010

Guarantee minimum levels of scale is critical to establish competitive port operations in an increasingly capital intensive environment

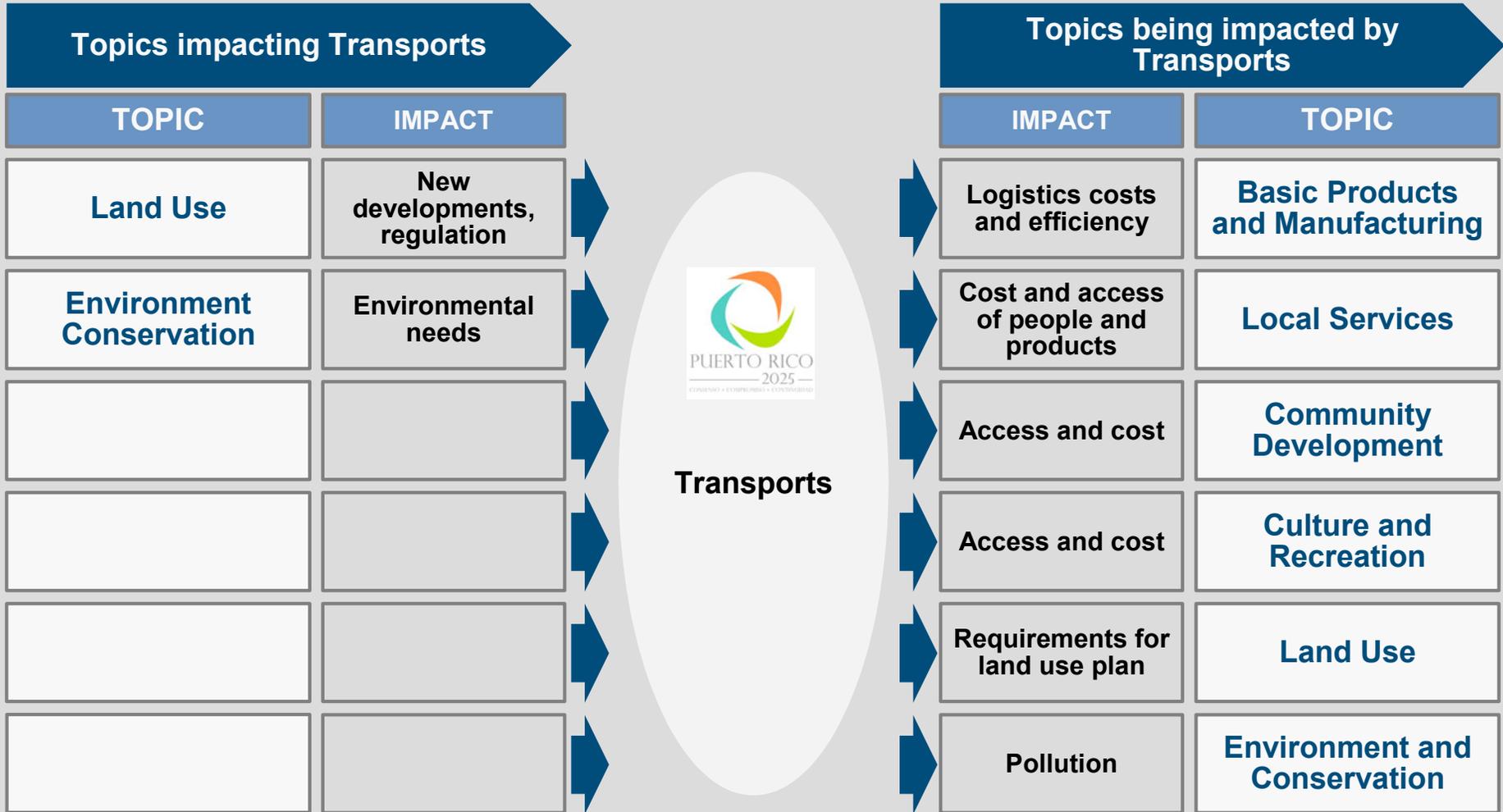
1)Capacity increase in the Caribbean does not consider the Port of Americas in Puerto Rico

Source: Containerization International 2002; American Association of Port Authorities; Ocean Shipping Consultants LTD; Autoridad de Los Puertos – Puerto Rico; A.T.Kearney analysis

Transports infrastructure linkages

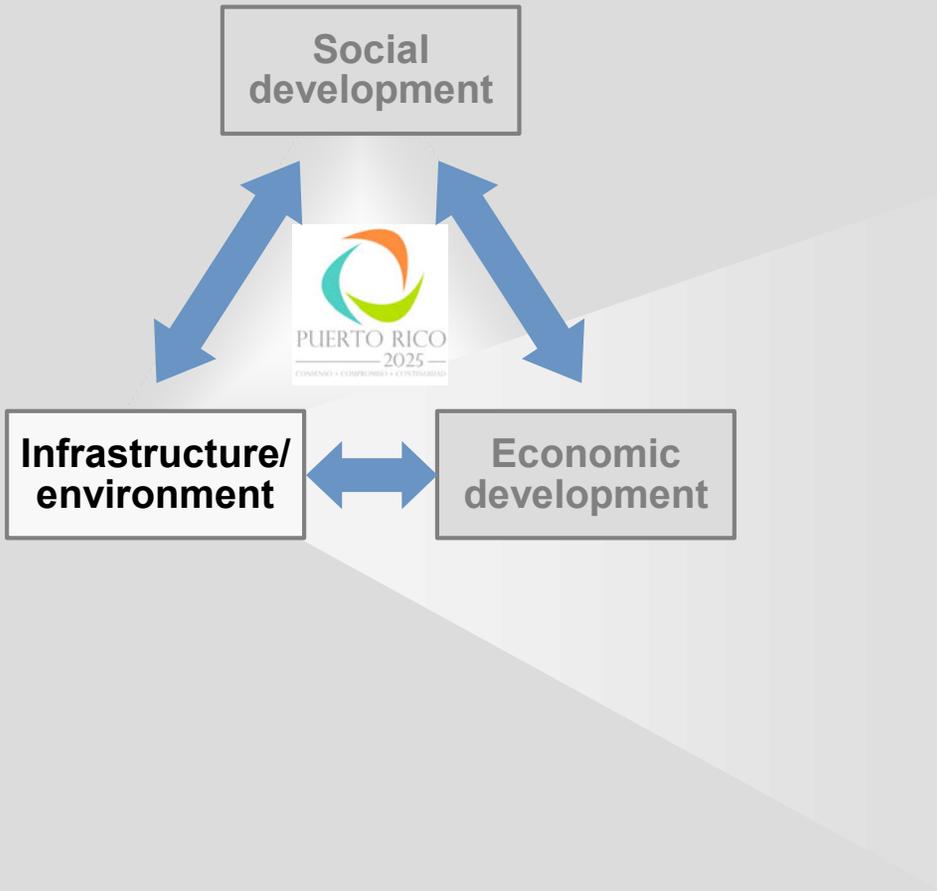


Transports infrastructure linkages (cont.)



Questions for the future

- What incentives are most appropriate to reduce traffic congestion?
- How can former military bases best be leveraged?
- What is the best way to take advantage of Puerto Rico's natural advantages as a port?
- How can San Juan become an air hub for all of Latin America?



-  **Energy**
-  **Water and waste**
-  **Land use**
-  **Communication and information**
-  **Transport**
-  **Environmental quality**

Key Messages – Environmental Quality

- Comprehensive laws and institutions to manage environmental quality (federal and commonwealth)
 - But implementation and compliance are problems
- Increasing environmental awareness/ activism
 - But confrontation predominates over mediation
 - Opportunities for true community participation are still lacking
- Rapid development, high population density, high consumption put stress on environment
 - Development is not sustainable
 - Urban sprawl and unregulated development has major environmental impact
- Poor planning leaves relatively little protected land
 - Water sources have become polluted
 - Sensitive ecosystems have been impacted by development

Overview of Puerto Rico's Environmental Quality

Strengths

- The climate, geography and biodiversity of Puerto Rico make it home to a range of important ecosystems
- There are extensive legal and regulatory institutions to manage environmental quality
- Puerto Rico is estimated to lie on the “clean path” of environmental development
- There is an increasing public awareness and participation in environmental issues
- Universities have a range of programs to analyze environmental issues and promote innovative solutions
- By some measures, environmental quality is improving, with increasing energy efficiency and cleanliness

Weaknesses

- By many measures environmental quality is still unacceptable
- Puerto Rico has one of the lowest percentages of protected land when compared to other locations
- Puerto Rico's high population density increases the impact on the natural environment
- Despite increasing environmental awareness, there is still little consciousness around consumption and waste generation
- Puerto Rico lags US states in spending on environment

Opportunities

- Leverage the current regulations and plans that require the preservation of natural resources, agricultural lands, coastal zones and other sensitive ecosystems
- Leverage environmental institutions and regulations as a selling point for quality of life and competitiveness
- Leverage increased civic and student interest to promote changes in public attitudes to conservation, recycling and waste reduction
- Leverage the fact of being a small island to generate a sense of urgency around environmental issues and become a model of sustainable development

Threats

- Without effective implementation of environmental laws, incentives and education, quality of life will be undermined, competitiveness will be impacted and critical resources will be lost forever
- At the same time, implementation that is inappropriate or inefficient will lead people to ignore the laws and will impact competitiveness

The climate, geography and biodiversity of Puerto Rico make it home to a range of important ecosystems



- **Forests**
 - Cover 44% of the island
 - The only rainforest in the US
 - 16 state forests
 - 90,880 cuerdas are local or federal reserves
 - Dry Forest of Guanica



- **Coral reefs**
 - Estimated 500 square kilometers of reef area



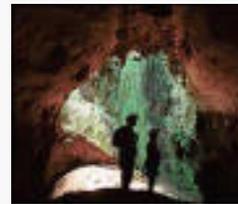
- **Mangroves**
 - 10,200 cuerdas
- **Wetlands**
 - 23,650 cuerdas of coastal wetlands and 81,440 of fresh water wetlands (according to JCA)



- **Bioluminescent bays**
 - Puerto Rico has three of only five bioluminescent bays in the world
- **Karst Region**
 - 550,000 square miles or 16% of the total area of the island

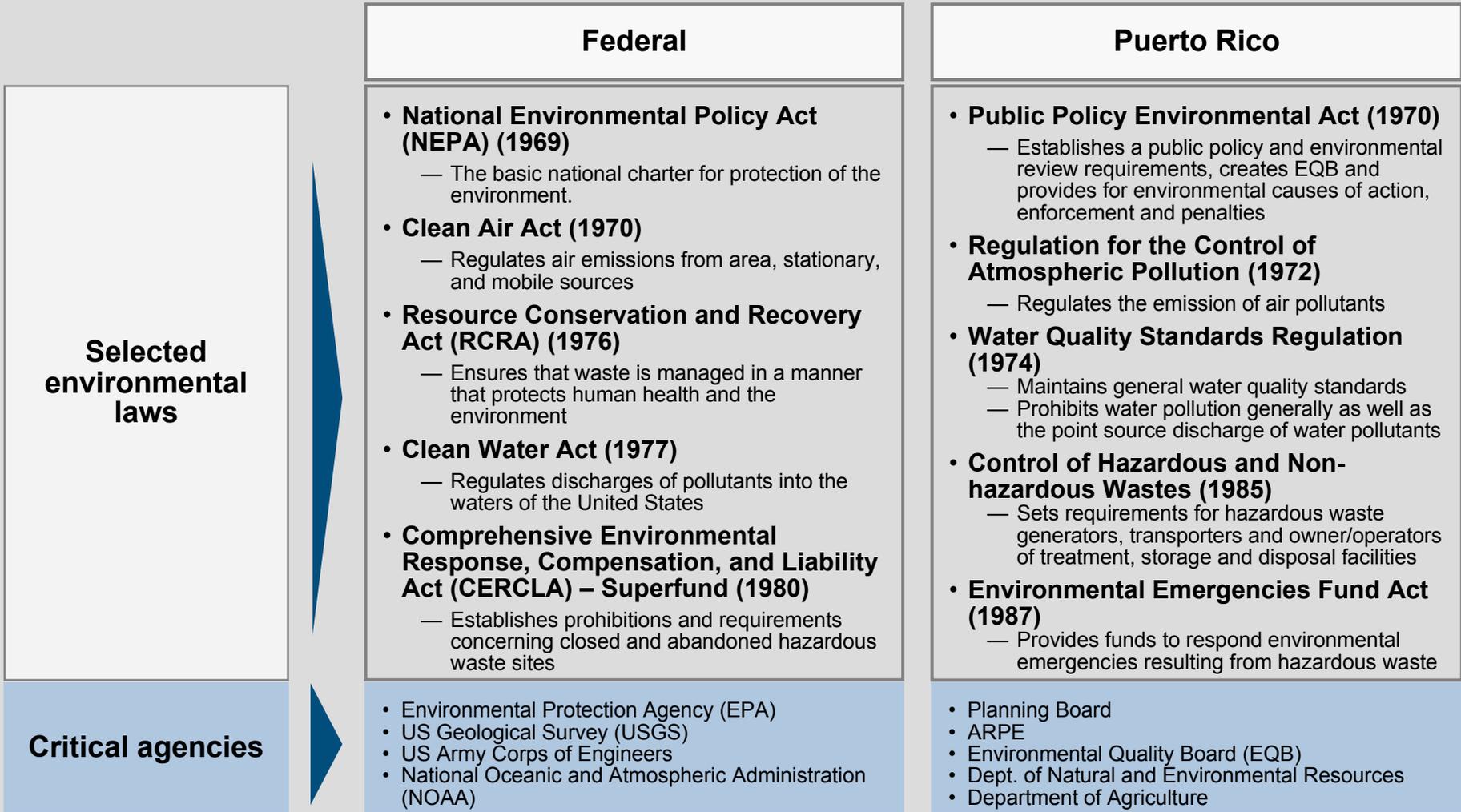


- **Maritime-Terrestrial Zone**
 - 313 miles of coast
 - Coastal zone protected within a mile



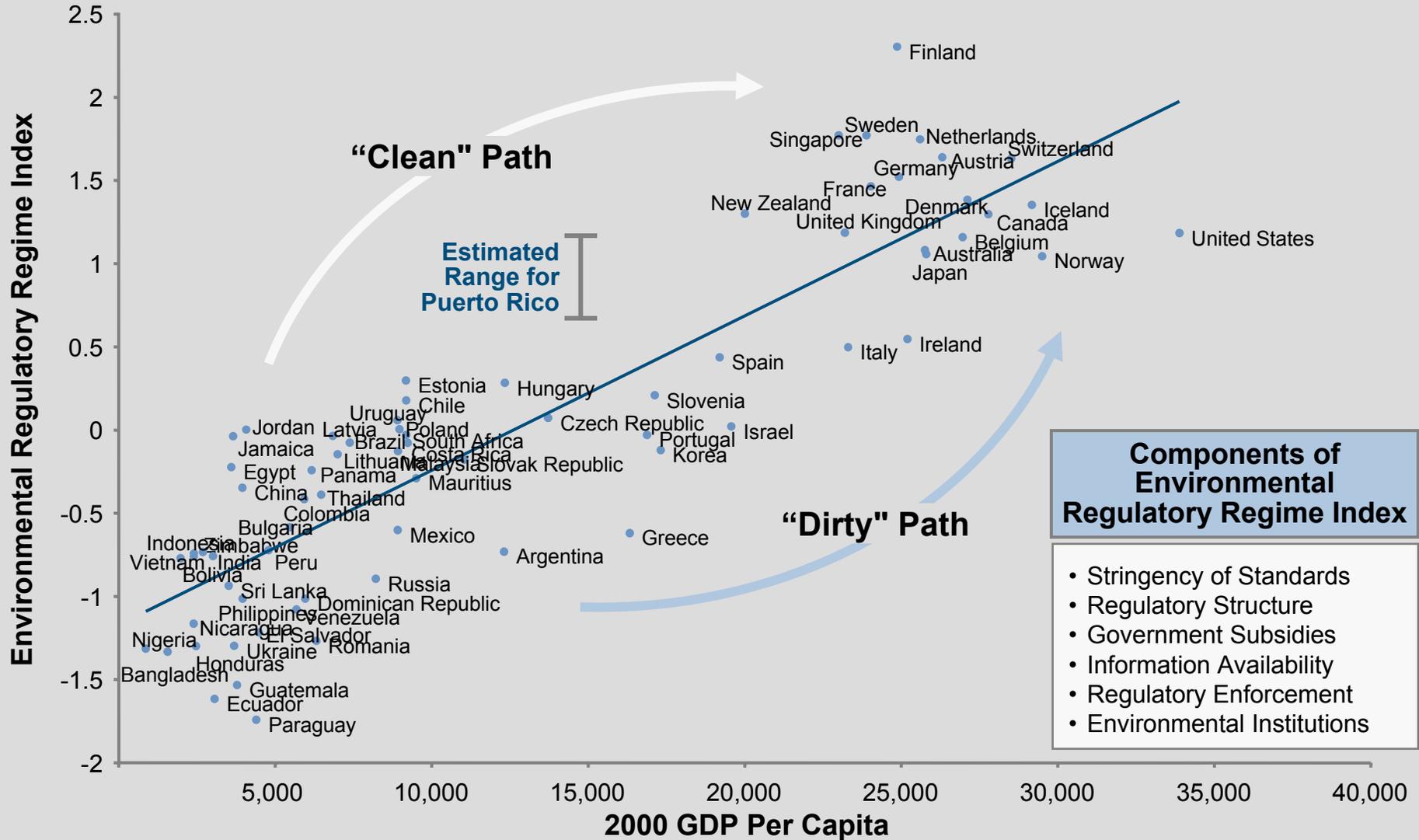
- **Camuy Caves**
 - The world's third largest underground river system

There are extensive legal and regulatory institutions to manage environmental quality



Puerto Rico’s constitution explicitly states that the environment must be protected

Puerto Rico is estimated to lie on the “clean path” of environmental development



Source: GCR, A.T. Kearney analysis

There is an increasing public awareness and participation in environmental issues

Selected Environmental Groups

- A.C.T.O. Ambientalista
- Alianza Ambiental Puertorriqueña
- Asociación Puertorriqueña de Interpretación y Educación
- Casa Pueblo
- Centro de Educación, Conservación e Interpretación Ambiental
- Ciudadanos del Karso
- Ciudadanos en Defensa del Ambiente
- Ciudadanos Pro-Bosque San Patricio
- Comité Pro Desarrollo de Maunabo
- Comunidades Unidas Contra la Contaminación
- CORALations
- Ecoisla
- EkosLOGOS
- Fideicomiso de Conservación
- Frente Unido Pro-Defensa del Valle de Lajas
- Fundación de Historia Natural de Puerto Rico
- Fundación de Investigaciones Espeleológicas del Karso Puertorriqueño
- Fundación Puertorriqueña de Conservación
- Los Guardianes de la Montaña
- Programa COSTAS
- Red Caribeña de Varamientos
- Salón Ecológico
- SIKEO
- Sistema Proactivo de Información Ambiental
- Sociedad Ambiente Marino
- Sociedad Coereba
- Sociedad de Estudios Espeleológicos del Norte
- Sociedad Espeleológica de Puerto Rico
- Sociedad Ornitológica Puertorriqueña
- Surfriders Puerto Rico

Case Studies

- Comunidades Unidas Contra la Contaminación (CUCCo)
 - Represented the inhabitants of Catano, after an acid spill occurred at PREPA's Palo Seco plant in 1995
- Ciudadanos en Defensa del Ambiente (CEDDA)
 - Vital contributions to environmental education
 - Championed the effort to designate Cano Tiburones as a natural reserve and developed a management strategy for it.
 - Developed alternatives for implementation of recycling and composting waste reduction in 15 municipalities in Puerto Rico
- Comité Caborrojenos Pro Salud y Ambiente
 - Successfully harvested 2,160 coral colonies.
 - Reforested the island with native trees and almost 600 mangrove seeds.
 - Promotes sustainable economic development through ecotourism and the support of environmentally conscious enterprises

Universities have a range of programs to analyze environmental issues and promote innovative solutions

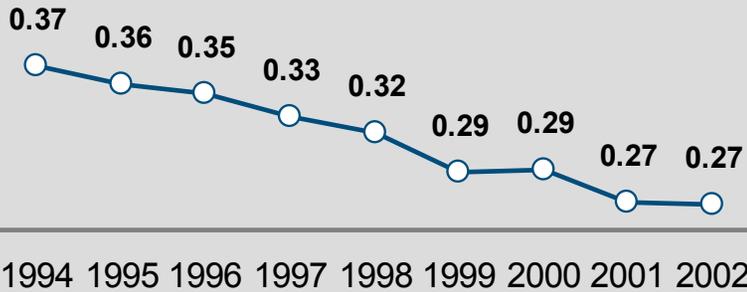


- Metropolitan University- Environmental Affairs Program
- UPR- Rio Piedras- Environmental Sciences Program
- UPR-RUM Desarrollo Costero Comunitario Programa Sea Grant
- UPR-RUM Oficinas Regionales Extensión Agricola
- UPR- RUM Puerto Rico Water Resources and Environmental Research Institute
- Programa de Manejo de Vida Silvestre -UPR Humacao
- Instituto de Dasonomía Tropical
- The Institute for Tropical Ecosystem Studies (ITES) operates as a unit within the Faculty of Natural Sciences of the Rio Piedras campus of the University of Puerto Rico

By some measures, environmental quality is improving, with increasing energy efficiency and cleanliness

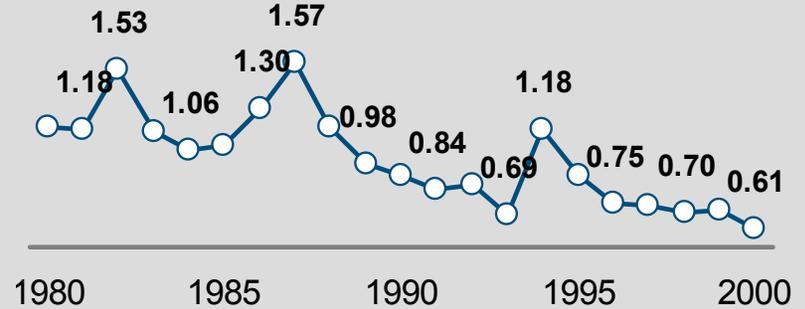
Energy Use per Unit of GDP

kWh per \$ of GDP



Per Capita CO2 Emissions

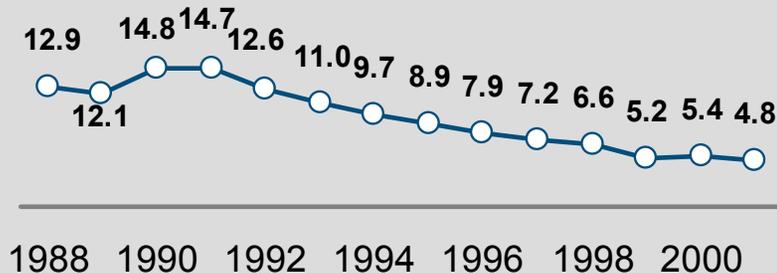
Metric tons of carbon per capita



Total Releases

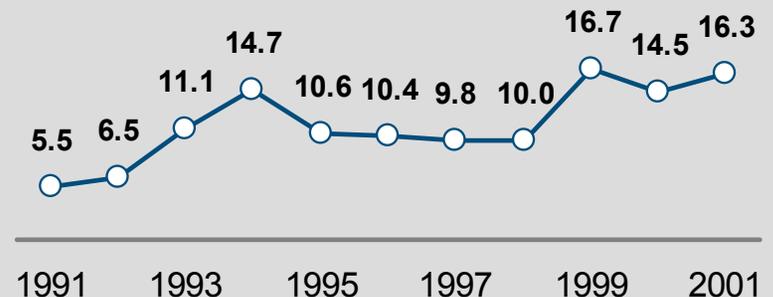
– 1988 Core Chemicals –

Million pounds



Energy Recovery from Waste

Millions of Pounds



By many measures environmental quality is still unacceptable



	Threats	Impact
Water	<ul style="list-style-type: none"> • Construction in watershed areas • Discharge of waste into surface water • Contamination of aquifers 	<ul style="list-style-type: none"> • Less than 20 percent of the population receives drinking water that meets all health-based standards • 40% of surface water does not meet water quality standards • USGS has identified 19 places on the island where the aquifers have severe contamination impeding their use for direct human consumption
Soil	<ul style="list-style-type: none"> • Erosion • Poorly managed landfills 	<ul style="list-style-type: none"> • 27% of landfills are currently in poor condition • More than 33% of landfills closed in 1994 due to inability to meet EPA standards • Large number of covert landfills
Air	<ul style="list-style-type: none"> • Heavy dependence on oil and old facilities for electricity generation • High density of automobiles 	<ul style="list-style-type: none"> • Based on EPA data, many areas receive failing grades for air quality
Beaches	<ul style="list-style-type: none"> • Poor treatment of solid waste • Lack of monitoring 	<ul style="list-style-type: none"> • Contamination of beaches
Coral Reefs	<ul style="list-style-type: none"> • Sewage discharges to ocean 	<ul style="list-style-type: none"> • Estimated decline in coral population

Source: A.T.Kearney analysis

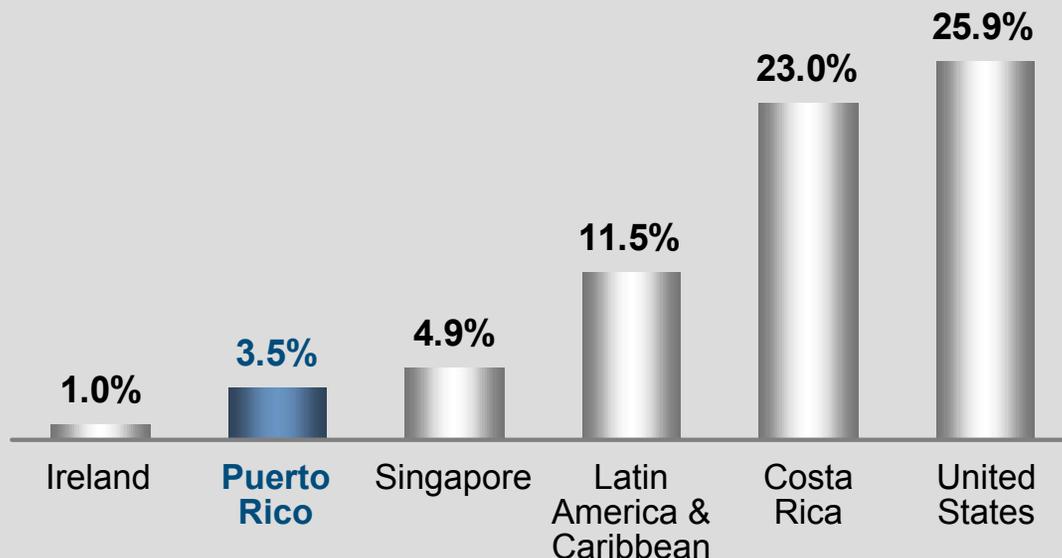
Puerto Rico has one of the lowest percentages of protected land when compared to other locations

WEAKNESSES

Nationally protected areas

% of total land area

2002



Key facts

- Since critical areas were not historically designated for conservation, it is now difficult to prevent development
- One way to achieve this is through the purchase of land by the Conservation Trust. However, they estimate that to protect 12% (the international standard) of all land in this manner would cost \$ 1 billion
- Moreover, 80% of forests are in private hands and have few protections, due to the lack of a comprehensive planning
- Even when plans do exist, such as Coastal Zones and Flood Plans, development still sometimes occurs

Given Puerto Rico's small size and high population density, it is even more important that a significant percentage of land be protected

Puerto Rico's high population density increases the impact on the natural environment



Urban population density

Population per square mile
Primary Metropolitan Statistical Area

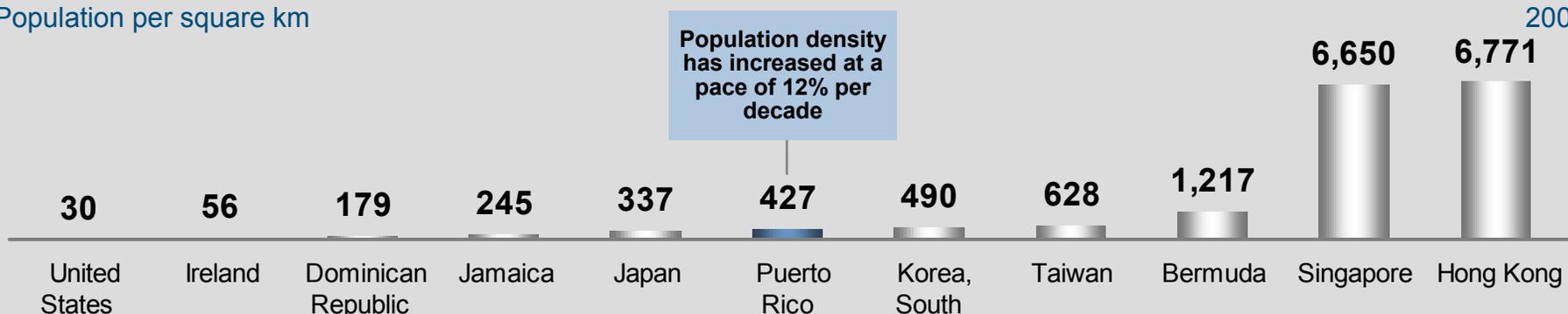
2000



Total population density

Population per square km

2003



Puerto Rico's population also generates more waste per person than the US average twice as much as Western European nations

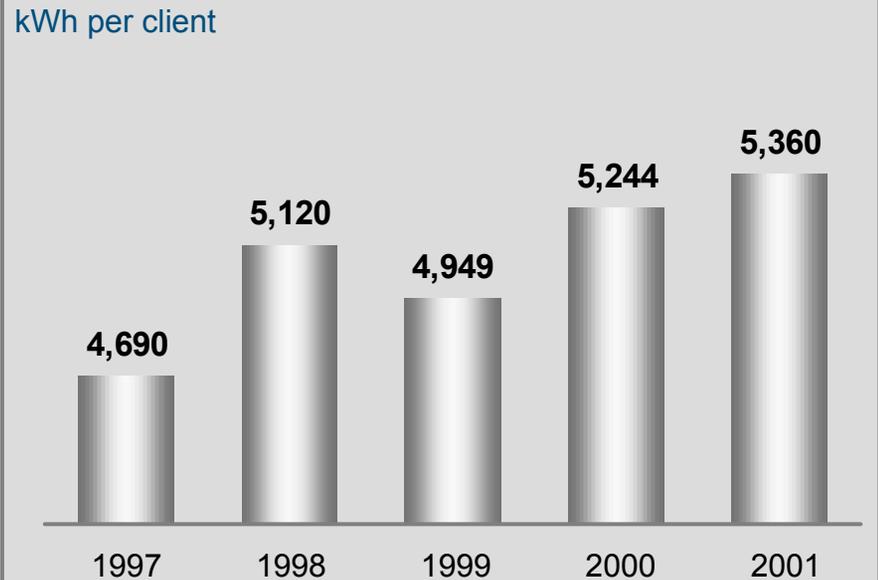
Despite increasing environmental awareness, there is still little consciousness around consumption and waste generation



Waste recycled



Average electricity sales per residential client in Puerto Rico



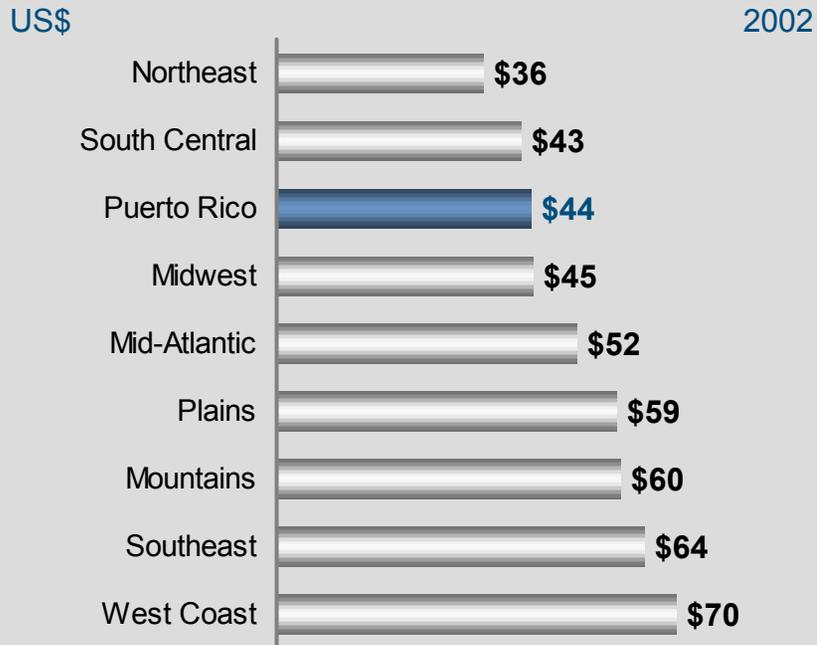
Source: National and state environmental agencies, SWMA; US Census Bureau, CIA World Factbook 2003; A.T.Kearney analysis

Puerto Rico lags US states in spending on environment



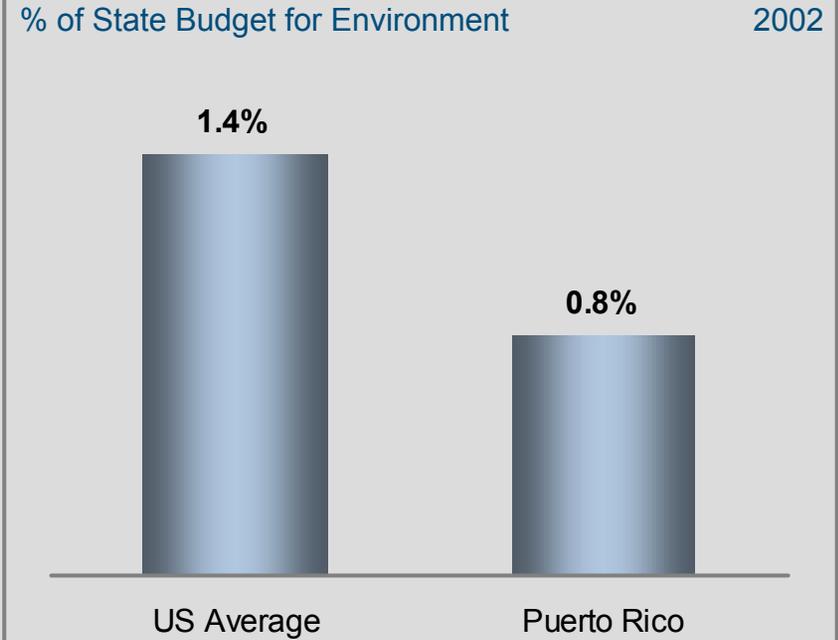
State Spending on Environment

– US\$ per capita –



State Spending on Environment

– As % of Total State Budget –

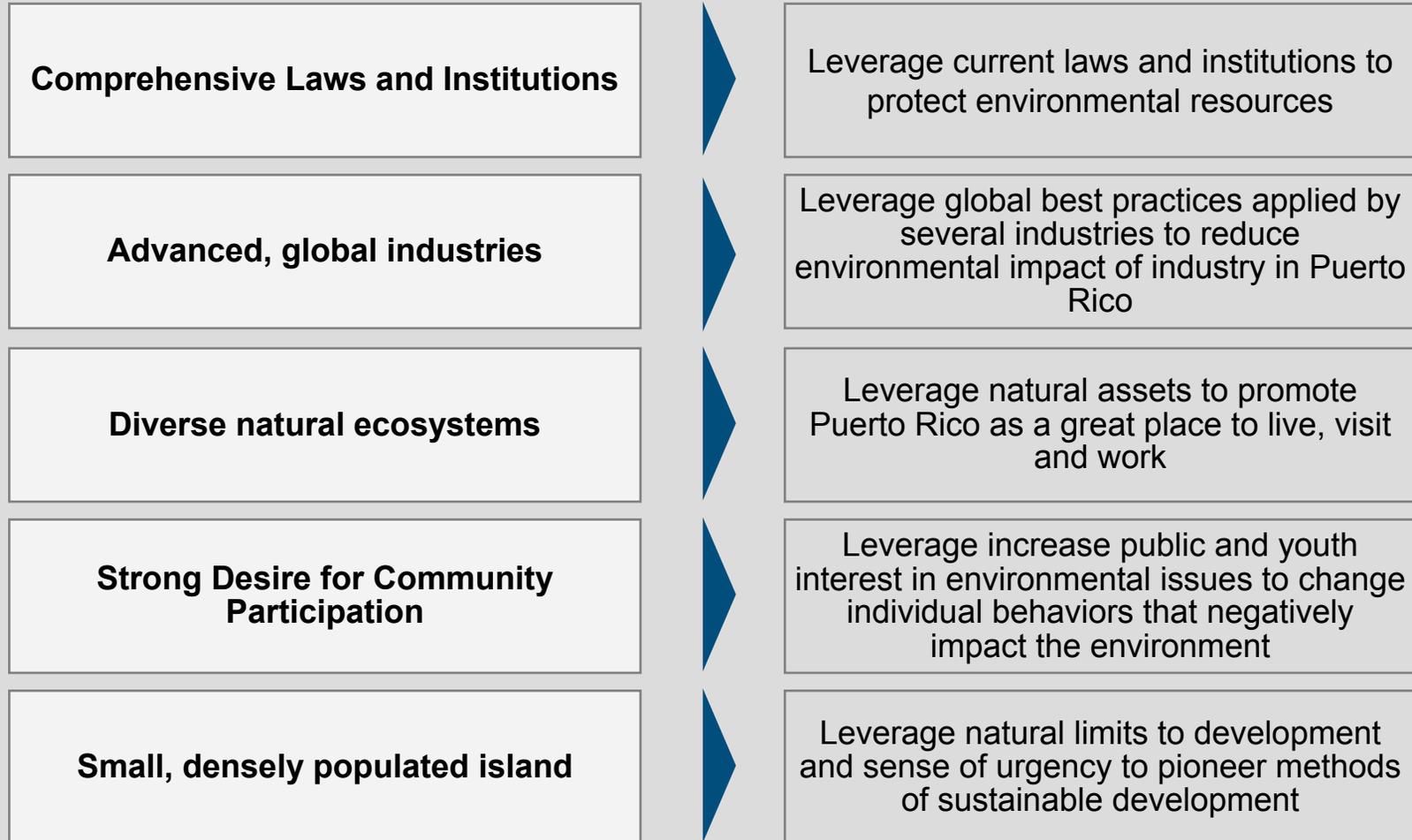


Note: Agencies included for Puerto Rico: Autoridad de Conservacion y Desarrollo de Culebra; Autoridad de Tierras; Junta de Planificacion; Departamento de Agricultura; ARPE; Compania de Parques Nacionales; Departamento de Recursos Naturales y Ambientales; Junta de Calidad Ambiental

Source: ECO States; OGP; A.T.Kearney analysis

Opportunities

KEY ASSETS TO LEVERAGE



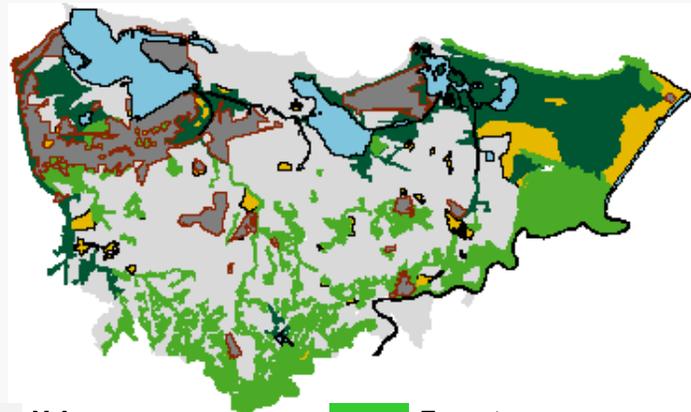
Corporate examples should be used as models of environmental care and action

Example – Hewlett Packard Caribe

- Located in the Municipality of Aquadilla, Puerto Rico
- HP's Puerto Rico site has received the 2003 U.S. EPA Environmental Quality Award for the Business and Industry Category for US EPA Region 2
- 77% of the waste generated at the facility is being diverted from landfilling, representing a monthly average reduction of 179 tons
- The facility has reduced water consumption in its cooling towers by 25,000 gallons per day and recycled over 571 tons of paper and cardboard and 161 tons of metal and electronic equipment in 2002.
- Using a cold flash evaporator system, in addition to energy recovery techniques, the facility was able to cut the amount of non-hazardous waste ink disposed of in landfills over a two-year period by 415 tons.
- Hewlett Packard Caribe was also commended by the Municipality of Aquadilla for its support of the local government's recycling program last year.

The San Juan Bay Estuary Program is an example of the mobilization of key stakeholders to revitalize a critical ecosystem

OPPORTUNITIES



Urban

Commercial/Industrial

Water bodies

Forests

Wetlands ("Humedales")

Mixed use

Key Points on the San Juan Bay Estuary

Characteristics:

- Important for flood control, coastal protection, filtration of contaminants and as habitats for many species
- 8 municipalities with 622,000 people are part of the estuary

Problems:

- Illegal sanitary discharge
- Contamination by nutrients and toxic substances
- Limited capacity for interchange of water
- Inappropriate management of the ecosystem
- Destruction of habitats

Plan:

- Comprehensive Plan for the Management and Conservation of the San Juan Bay Estuary
 - Part of the National Estuary Program of the EPA in 1992
 - Group of stakeholders, representing government, academia, business, community and environmental groups, have worked with EPA to develop a plan to restore, manage, and protect this vital resource.
- EPA and the Commonwealth of Puerto Rico have invested over \$7,000,000 in the development of the San Juan Bay Estuary program

Threats

If planning and compliance do not improve...

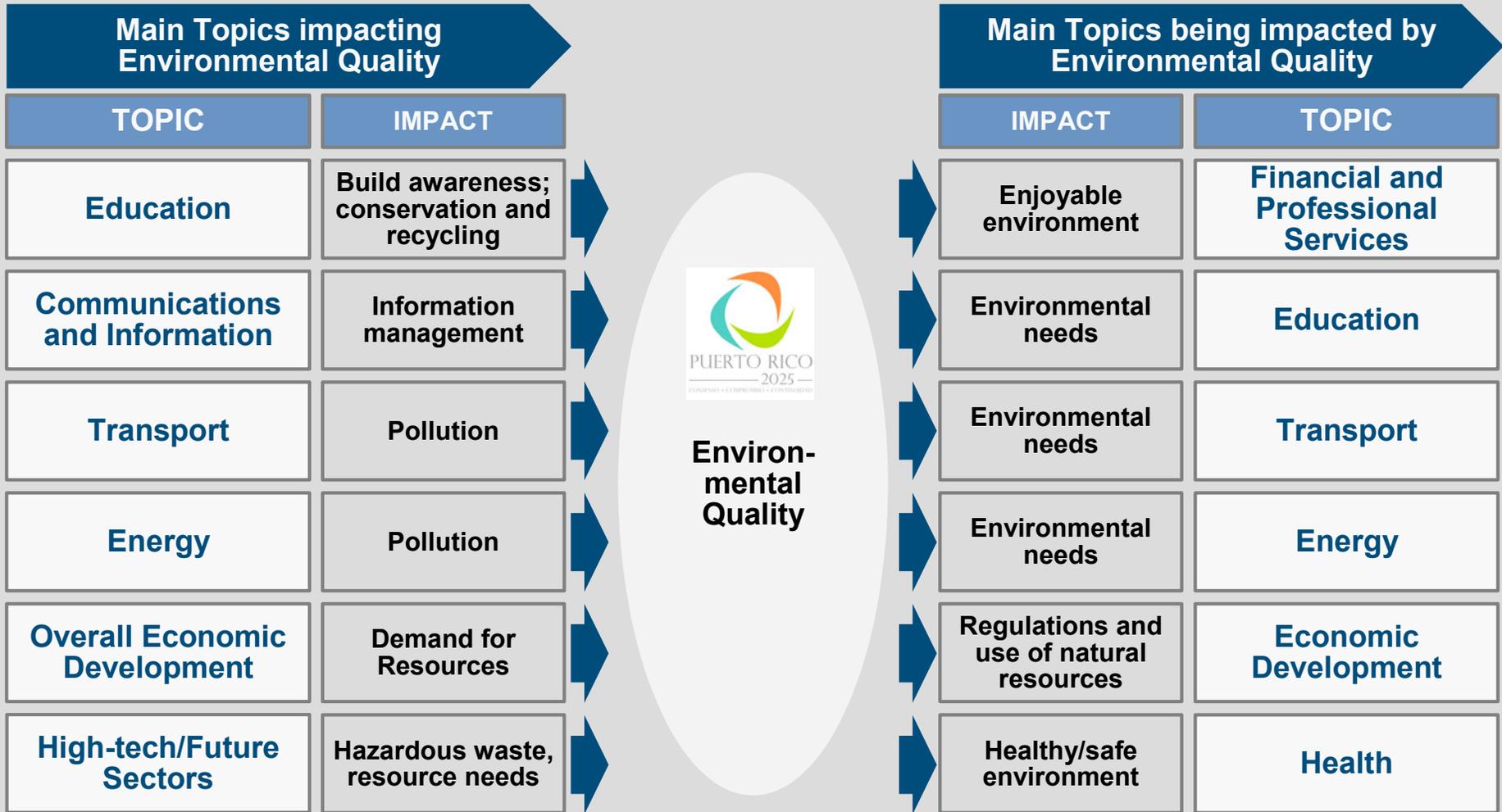
- Water sources will become increasingly polluted
- Landfills will reach capacity and impact the environment
- Unplanned development will continue to strain infrastructure and environmental quality
- The impact of natural disasters such as floods and hurricanes will increase
- The cost of doing business in Puerto Rico will increase
- Puerto Rico will become less attractive as a tourist destination
- Quality of life will suffer

At the same time, if environmental regulations are applied excessively or inappropriately...

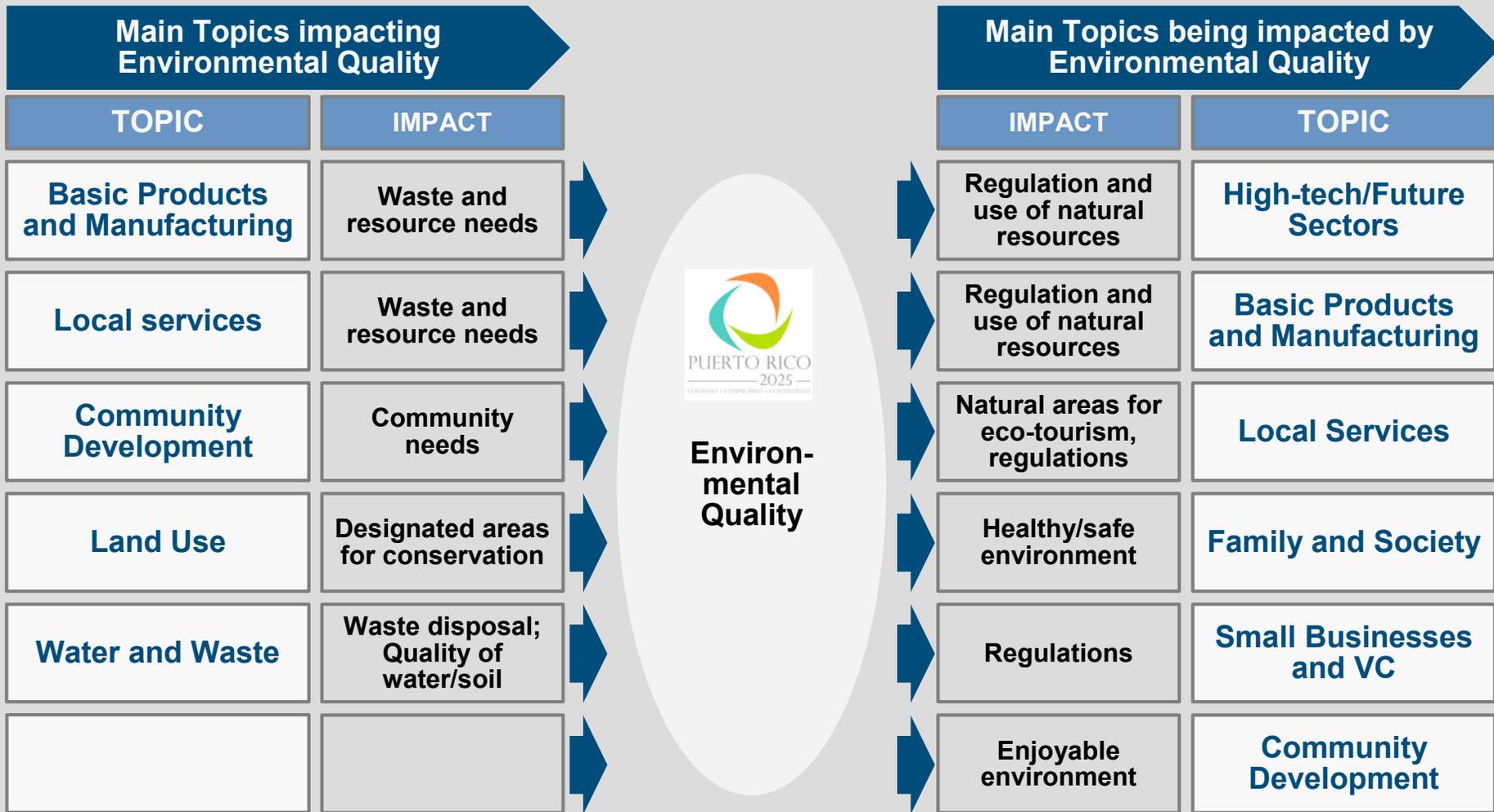
- Citizens and businesses will refuse to comply and violations will increase
- Businesses will face a high cost, unpredictable environment
- The relationship between environmental groups and business will grow increasingly confrontational

Finding appropriate and efficient environmental regulations will be critical for quality of life and competitiveness

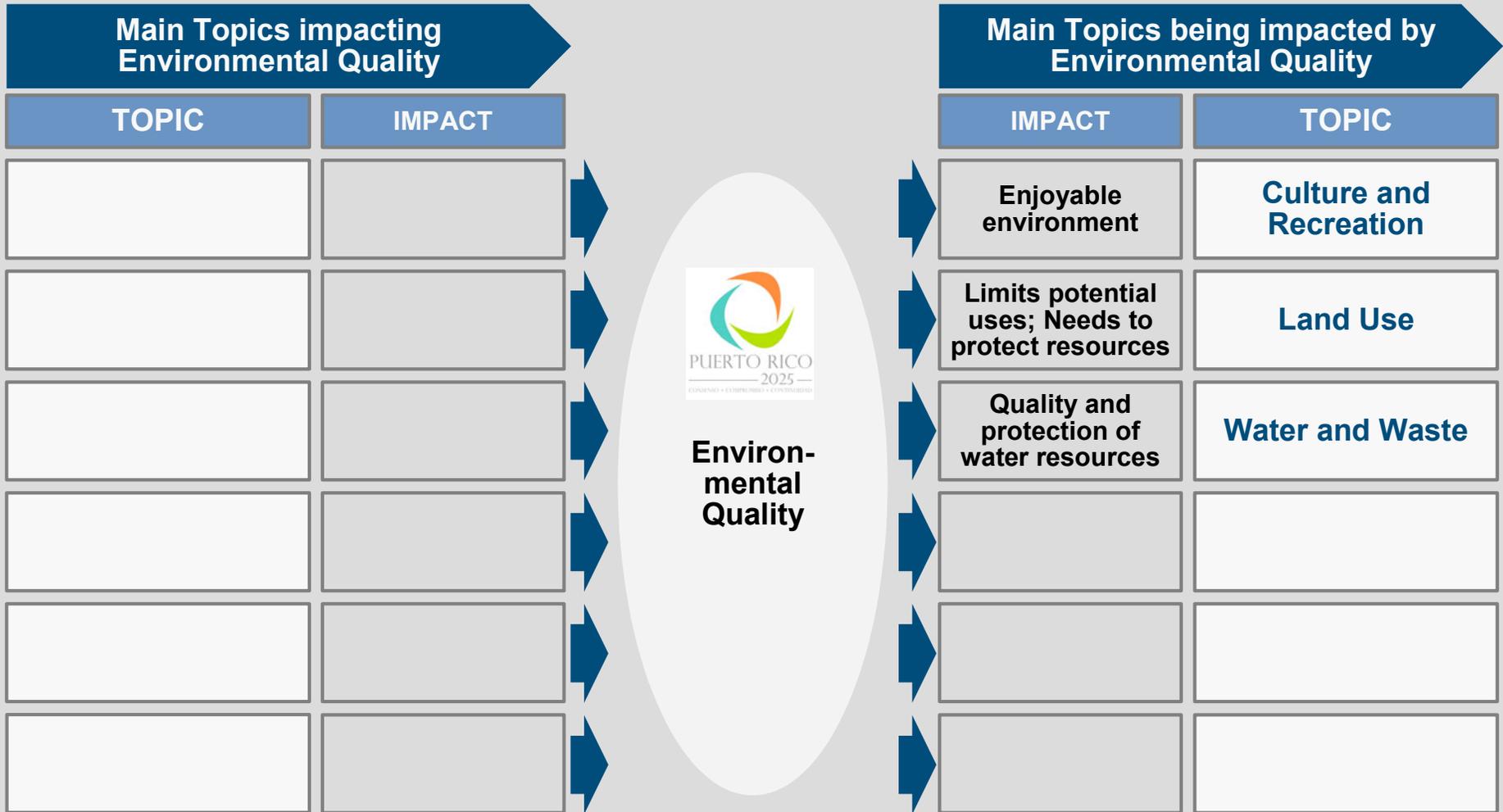
Environmental Quality Linkages



Environmental Quality Linkages



Environmental Quality Linkages



Questions for the future

- How can the processes for protecting environmental quality be made genuinely participative and effective?
- What incentives should be created to foster sustainable development?

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 - Infrastructure and environmental development

- **Appendix B**
 - **List of Interviewees**
 - List of panel members
 - List of reference studies on Puerto Rico

Stakeholders Interviewed

NAME	POSITION
Ada Laureano	President, Colegio de Nutricionistas y Dietistas
Agustin Márquez	Executive Vice President , Pharmaceutical Industry Association (PIA)
Alberto Bacó	Attorney
Alfredo Carrasquillo	Professor, Universidad de Sagrado Corazon
Alfredo Volckers	President, Pavia Hospitals
Anabelle Rodríguez	Secretary, Justice Department
Angel L. Ruiz (Prof.)	Dean, School of Economy and Administration, Interamerican University
Angel Luis Torres Rivera	Resident Doctor, Centro Médico
Angel Rodríguez	CIAPR
Angel Torres	President, Bacardi
Anibal Acevedo Vilá	Resident Commissioner, DC
Anselmo De Portu	Deputy President, Sociedad Puertorriqueña de Planificación
Antonio Faria	President, Economic Development Bank
Antonio García Padilla (Lcdo)	President, University of Puerto Rico
Antonio Sosa Pascual	Executive Director / Administrator, Promoexport / Fomento Comercial
Ariel E. Lugo (DR.)	Director, International Institute of Tropical Forestry at Río Piedras, Puerto Rico
Arturo C. Carrión	Asoc. de Bancos de PR
Bartolomé Gamundi	Vice President, General Manager, Electro-Biology Inc.
Benjamín Negrón	MIDA
Brenda Torres	Attorney, San Juan Bay Estuary
Bruno Haring	President, Research & Research

Stakeholders Interviewed

NAME	POSITION
Carl-Axel P. Soderberg	Director, USEPA Region II Caribbean Environmental Protection Division, Environmental Protection Agency (EPA)
Carlos Muñoz	President (Chair, Health Panel), MCS
Carmen Idalia Colón	Adviser Family, Health and Special Communities
Carmen Martí	Executive Director
Carmen Villanueva	Community leader
César Rey Hernández	Secretary, Department of Education
Clotilde Perez	Vice-President, Corporate Development Officer, V. Suarez & Co.
Cyril Meduña	President, Advent Morro Equity Partners Inc.
Daniel R. Altschuler	(former) Director, Arecibo Observatory Natinal Astromony& Ionosphere Center
David R. Segarra, Jr.	President, Intership
Deepak Lamba	Center for the New Economy
Diego J. Suarez Matienzo	President and CEO, V. Suarez & Co.
Edda Gonzales	Office of Technology, OGP
Eddie Borges	Agent and Producer
Edgar Quinones	Senior Vice President, Eduardo M. Arroyo & Assoc
Edna Jiménez	Colegio de Contadores Públicos Autorizados de PR
Eduardo Bhatia	Former Senator
Eduardo Negrón Navas	Fiddler González & Rodríguez
Efrén Rivera	Dean, School of Law, University of Puerto Rico
Elías R. Gutiérrez	Professor of Economics & Director of the Graduate School of Planning, UPR
Elpidio Rivera Santoni	Asoc. de Contratistas Generales (AGC)

Stakeholders Interviewed

NAME	POSITION
Enrique Cruz	Former General Manager, American Airlines
Enrique Vicens Rivero (Lcdo)	Executive Director, Cardiovascular Hospital of PR
Ernesto Córdova	President, EcoEléctrica
Ernesto Vázquez Barquet	President, Polytechnic University of PR
Federico Rivera Saez	Liga de Cooperativas de PR
Federico Stubbe	Association of Homebuilders
Fernando Zalacain	President, Econométrica
Francisco Javier Blanco	Conservation Trust
Franklin Román Rodríguez	President, Colegio de Agrónomos de PR
Frederick Muhlach	Board Member, Planning Board
Gabriel Rodríguez	President, Strategic Planning, ACT
Gerardo Angulo	President, The San Juan Star
Gerardo Martínez	Vice President for Caribbean, Central America and the Andean Region, Oracle
Gilberto Guasp	Guasp & Guasp
Gisela Murray	Student, UPR Medical school
Guillermo Paz	President, PopuliCom
Haydeé Colón	Citizens Commission to Rescue Caimito
Héctor Mayol	President, Banco Santander Asset Management
Hector Mendez-Vazquez	President, GDB
Héctor Rosario	Director, Electric Power Authority
Heidie Calero	President, H. Calero Consulting Group Inc.

Stakeholders Interviewed

NAME	POSITION
Hiram Ramirez Rangel	Advisor, Economic Development, La Fortaleza
Hugh Andrewes	President, International Hospitality Enterprises, Inc.,
Ileana Echegoyen	Secretary, Department of Housing
Ileana Molina De Bachman	Vice President, Puerto Rico Telephone
Iván E. Colón	Administrador, Hospital Español Auxilio Mutuo de P.R. Inc.
Iván Lugo	Director, INDUNIV
Ivar A Pietri	President, Asoc. de Constructores de Hogares
Jaime Fonalledas	CEO and Chairman, Empresas Fonalledas
Jaime Ramirez	Senior Vice President, CSA Group
Javier Lamoso	President, Clearcom Telecom
Jerry de Córdova	President, Colegio de Contadores Públicos Autorizados de PR
Joel Katz	President, Advisory Council of Construction
Jon E. Slater	President and CEO, Puerto Rico Telephone (Telpri)
Jorge A. Miranda	Securities Industry Association
Jorge Bauermeister	JRT
Jorge Colberg Toro	Managing Director, Ernst & Young
Jorge Colón Nevárez	President, BOD
Jorge Colón Gerena	CEO, WENDCO
Jorge Laboy	Economist, PromoExport
Jorge Pesquera	Executive Director of Convention Bureau
Jorge Rosario Noriega	Secretary, Department of Sports and Recreation

Stakeholders Interviewed

NAME	POSITION
José Alberto Morales	Ex-president, Universidad of Sagrado Corazon and UCP
José E. Rivera Santana	Estudios Tecnicos
José Enrique Fernández	President & CEO , Oriental Financial Group
José Jaime Rivera	President, Universidad Sagrado Corazon
José Joaquin Villamil	President, Estudios Tecnicos
José M. Auger Marchand	Director, Office of the Census, Planning Board (Junta de Planificacion)
José Martínez Laboy	Infrastructure Advisor, PROMOexport
Jose Nadal Power	Director, Resident Commissioner's Office
José R. Marchand Sifre	Colegio de Arquitectos y Arquitectos Paisajistas de PR
José Ramón González	CEO / President, Banco Santander de P.R.
José Rivera Santana	Economist, Estudios Tecnicos
Jose Santana Gonzalez	Department of Education
José Suárez	Executive Director, Department of Tourism
Josén Rossi	President, Aireko Construction
Juan Agosto Alicea	Director, Autoridad de Acueductos y Alcantarillados (AAA) - ONDEO of PUERTO RICO
Juan Lara	Senior Economist; Professor, University of Puerto Rico, Estudios Tecnicos
Julie Maldonado	President, Colegio de Tecnólogos Médicos de PR
Lcdo. Felipe Hernández	Asoc. de Productos de PR
Liliana Cotto Morales	Professor of Urban Sociology, UPR
Lillian Torres Aguirre	Director, Planning Board
Linda Colón	Director, Special Communities Program

Stakeholders Interviewed

NAME	POSITION
Lucy Crespo	General Manager, PR Manufacturing Operation, Hewlett Packard
Ludy Guzmán Piñeiro	Executive Director, Association of Private Schools
Luis Benitez	President- Elect, Estudios Tecnicos, Association of Puerto Rican Economists
Luis Irizarry Ramírez	Executive Director, Colegio de Arquitectos y Arquitectos Paisajistas de PR
Luis Zambrana	Executive Director, Office for the Control of Drugs
Luisa Acevedo	President, Federación Central de Trabajadores
Manuel Calderón	Assurance Advisory Business Services, Ernst & Young
Manuel Casiano	President, Casiano Communications Group
Manuel Cidre	President, Puerto Rican Manufacturers Association (Asociacion de Industriales), PRMA
Manuel Dubon	Dubon & Dubon
Manuel J. Fernós	President, Universidad Interamericana
Manuel Martínez Maldonado	President & Dean of Administration, Ponce School of Medicine
Manuel Reyes Alfonso	PR Manufacturer's Assoc. (PRMA)
Manuel Torres Marquez (Dr.)	Director, Catedra UNESCO
Marcos Rodriguez-Ema	Empresas Fonalledas
María Díaz Olmo	President, Colegio de Farmacéuticos de PR
María Eugenia Santori	Community lawyer
María Fernanda Levis	Salomon Levis Foundation
Marta Bravo Colunga	Sociedad Puertorriqueña de Planificación
Martha Bravo Colunga	President, Sociedad Puertorriqueña de Planificación
Melba Acosta (Lcda.)	Director ,Oficina de Gerencia y Presupuesto (OGP)

Stakeholders Interviewed

NAME	POSITION
Mercedes Rodríguez	Psychologist
Michael Szendrey (Dr.)	VP for Environment, Bacardi Corporation
Michelle Sugden	Former Head of Special Communities program, San Juan
Miguel "Micky" Soto Lacourt	Autoridad de los Puertos (AP)/ Port Authority
Miguel A. Ferrér	President , UBS Paine Webber, Inc. of PR
Miguel A. Pereira Castillo	Secretary, Department of Corrections and Rehabilitation
Miguel Vázquez	Chairman, SSS Insurance
Milagros Rivera Watterson	President, Colegio de Trabajadores Sociales de PR
Milton Cruz	President, San Pablo Hospital
Milton Segarra Pancorbo	Secretary, Department of Economic Development & Commerce
Myrna Hau	Asoc. Dueños de Paradores
Myrna Rivera	President, Consultive International
Neil Watlington	Executive Director, PRIDCO, New York
Nelson Colón	Head , PR Community Foundation
Oscar Rodríguez	President, Association of Physicians
Pedro J. Panzardi (P.E.)	President, ERM-Puerto Rico
Phoebe Forsithe	President, Junta Reglamentadora de Telecomunicaciones de Puerto Rico
Rafael Alonso	Former Judge, Supreme Court
Rafael Hernandez Colon	Former Governor
Rafael Martínez	Economist, Banco Gubernamental de Fomento/Economic Anaylisis Div.
Ramon Cantero Frau	Trustee, Supermercados Amigo, Inc.

Stakeholders Interviewed

NAME	POSITION
Ramon Cao	Economist, Chamber of Commerce
Richard Carrión	CEO/President, Banco Popular de P.R.
Roberto Prats	Senator
Roberto Rodriguez Martinez	Puerto Rico Medical Association
Rodolfo Colberg	President, Ernst & Young
Rosalía de la Fuente	Executive Vice Director, Instituto de Cultura Puertorriqueña
Rosana M. Roig	President, Roma BC
Salvador Santiago Negrón	President, Universidad Carlos Albizu
Sandro Murtos	Advisor, Small Business Development Committee
Sergio Marxuach	Attorney, McConell Valdes
Sila M. Calderón	Governor
Silvia Alvarez Curbelo (Dra.)	Historian, Escuela de Comunicaciones UPR
Socorro Rivas	President and CEO, Triple S
Stefan Antonmattei	UbiComm
Tito Colorado	Former Resident Commissioner in DC
Vanessa Pineiro	Department of Sports and Recreation
Wanda Marrero	Board Member, Planning Board
Wilbert Williams	General Manager, Baxter Healthcare Corporation
William (Bill) Pérez	President, United Way
William Lockwood	Consultant - Economist, Lockwood Financial Advisors Corp.
William Riefkohl	Executive Vice President , Puerto Rico Manufacturers Association (PRMA)
Zoila Levis	President and Chief Operating Officer; Board of Trustees, Puerto Rico Alliance Against Poverty, Doral Financial Corporation

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Basic Products and Manufacturing Panel: Participants

Attendees

- Bartolomé Gamundi, Electro Biology
- William Riefkohl, PRMA
- Luis Ramírez, Avant Technologies
- Angel Torres, Bacardi
- Jennifer Wolf, Comstant Rowland
- Vicente Sánchez, Empresas Barsán
- Gildo Massó, Jr., Empresas Massó
- Carlos Casellas, Flexible Packaging
- Melba Figueroa, Grupo Carmelo
- Mirtha Rubio, International Fashion Center
- Manuel Cidre, Los Cidrines / PRMA
- Manuel L. del Valle, Manuel del Valle, Inc.
- Julio Méndez, Procesadora Campofresco
- Luis Alvarez, Productos La Aguadillana
- Ignacio Pérez Lisaur, Wal-Mart PR, Inc.

Also invited

- Luis Alberto Ferré, El Nuevo Día
- Carlos Unanue, Goya
- Salvador “Chiri” Vasallo, Industrias Vasallo
- Joaquín Viso, Mova Pharmaceuticals
- José González Freire, Pan American Grain
- Frank Stipes, Westerbank
- Manuel Figueroa, Vernet

High Technology Industries Panel: Participants

Attendees

- Lucy Crespo, Hewlett Packard
- Iván Lugo, INDUNIV
- Harry Rodríguez, Abbott Laboratories
- Carlos M. Rodríguez, Advanced Instruments
- Emilio Rivera, Amgen
- Luis Ramírez, Avant Technologies
- Mike Soto, CNE
- Deepak Lamba, CNE
- Jaime J. Ramírez, CSA Group
- Manuel Hormaza, Fomento Industrial
- Germán Torres, Medtronic
- Daneris Fernández, Merck Sharp & Dohme
- Mercedes Rodríguez, PR2025 Exec. Committee
- Miguel A. Rodríguez, St. Jude Medical
- Ema Fernández-Repollet, Universidad de Puerto Rico
- Francisco Montalvo, UPR, PROCOMP
- Manuel Figueroa, Vernet

Also invited

- Luis Abbot, AMO
- Luisa Acevedo, Central Puertorriqueña de Trabajadores
- Bartolomé Gamundi, Electro Biology
- Heriberto Díaz, Guidant
- Germán Torres, Medtronic
- Joaquin Viso, Mova Pharmaceuticals
- Gerardo Martinez, Oracle
- Carlos del Río, Pfizer
- Agustín Marquez, Pharmaceutical Industry Association
- Jorge Rodriguez, Solectron
- Jorge Vélez-Arocho, Universidad de Puerto Rico

Local Services Panel: Participants

Attendees

- Atilano Cordero Badillo, Empresas Cordero Badillo
- Jorge Colón Nevares, Wendco
- Fernando R. Arabía, Arabía & Associates
- Alfonso F. Ballester, Ballester Hermanos
- Pablo Morales, Bithorn Travel
- Ismael Falcón, Falcón & Sánchez
- Saleh Yassin, Farmacias El Amal
- José Texidor, B. Fernández Hnos.
- Alberto L. Toro, Fiddler & González
- José E. López, Merlion Press
- Roberto Segarra, Public/Private/Partners
- Diego Suárez Sr., V. Suárez & Co.

Also invited

- Alaine Tiphaine, Asociación de Hoteles y Turismo
- Rick Newman, Asociación de Hoteles y Turismo
- Myrna Hau, Asociación de Paradores
- Luis Alvarez, Mendez & Co.
- Israel Koppel, Pitusa
- Jorge Pesquera, Puerto Rico Convention Bureau
- Ignacio Pérez Lisaur, Wal-Mart PR, Inc.
- Jorge Colón Gerena, Wendco

Financial and Professional Services Panel: Participants

Attendees

- Jaime J. Ramírez, CSA Group
- Myrna Rivera, Consultiva International
- Jorge Junquera, Banco Popular de Puerto Rico
- Fernando Rabell, CSA/CAA
- Fred Riefkohl, CSA
- José A. Moreno Rivera, CSA Group
- Eduardo Negrón, Fiddler, González & Rodríguez
- Rafael León, Goldman Antonetti
- Heidie Calero, H. Calero
- María de los A. Rivera, Kevane Soto Pasarell
- Roberto Segarra, Public/Private/Partners
- César Montilla, Jr., Spectrum
- Alfonso Ballester, V. Suárez

Also invited

- Arturo Carrión, Bankers Association
- Jaime Vázquez, Bermudez & Longo
- Hector Mayol, Cámara de Comercio
- Emilio Martínez, Colegio de Arquitectos
- Israel Otero Rosario, Colegio de Ingenieros y Agrimensores
- René Campos, Coop Seguros Múltiples
- Rudy Colberg, Ernst & Young
- José Alberto Sosa, Fiddler, González & Rodríguez
- Carlos Nido, Grupo Guayacan
- Pedro Gonzalez, Invesco
- Beba Franco de Bacó, Manpower Temporary Services
- Felipe Bedit, MCS Health Insurance
- Fernando Lloveras, MicroJuris.com
- Gerardo Martínez, Oracle
- Javier Rubo, Popular Asset Management Company
- Edgar Quiñones, PROCOMP
- Carlos García, Santander Securities
- Jorge Padilla, Universal Insurance Group

Small Business and Venture Capital Panel: Participants

Attendees

- José Jaime Rivera, Universidad del Sagrado Corazon
- Hector Mayol, Cámara de Comercio
- Francisco Rodríguez Castro, Banco de Desarrollo Económico
- Manuel Morales, Jr., HQ Business Centers
- Felipe Hernandez, Puerto Rico Products Association
- Carmen Marti, Small Business Development Center (SBDC)
- Alicia Burgos, PRMA
- César Montilla, Jr., Spectrum
- Roberto Segarra, Public/Private/Partners
- Manuel Mejía, Morgan Stanley
- + Others (attendance sheet pending)

Also invited

- Fernandez Alvarez, Abaco
- Carlos Rodriguez, Advanced Instruments
- Cyril Meduña, Advent-Morro Equity Partners
- Emilio Piñero, VP for Small Business, Banco Popular
- Carla Haeussler, Carla's Sweets
- Enid Toro de Baez, Centro Unido de Detallistas
- Luis Velez Boada, Commerce Development Administration
- Fernando Lloveras, MicroJuris.com
- Ilsa Silva, Sagrado Corazon
- Ivan Irizarry, Small Business Administration
- Miguel Antonio Ferrer, UBS Paine Webber
- María Teresa Rodríguez, Unión Independiente de Empleados del Banco Gubernamental de Fomento
- R.K. Asundi, Universidad de Puerto Rico, Mayagüez
- Joy Vilardi, Women's Business Center, Sagrado Corazon

Economic Development Panel: Participants

Attendees

- Elías Gutiérrez, Escuela de Planificación, UPR
- Rafael Martínez, Banco Gubernamental Fomento
- Deepak Lamba Nieves, Centro Nueva Economía
- Ismael Vicenty, Departamento de Hacienda
- Juan Lara, Estudios Técnicos
- José M. Auger, Junta de Planificación
- Manuel Mejía, Morgan Stanley
- Gerardo Martínez, Oracle
- Roberto Segarra, Public/Private/Partners
- Luis E. Santiago, UPR - Escuela de Planificación
- Francisco E. Martínez, UPR - Departamento Economía
- Ramón J. Cao, UPR - Social Sciences

Also invited

- Miguel Vázquez, Triple S
- José Ramón González, Banco Santander
- Hector Mayol, Camara de Comercio
- Miguel Soto, Centro Nueva Economía
- Angel Alvarez, First Bank
- Víctor Gutierrez, Humana
- José Fourquet, Inter American Development Bank
- Nestor Vale, Oriental Bank
- Angel Ruíz, Universidad Interamericana
- Leonardo Santana, Escuela de Administracion Pública, UPR
- Carole Acosta

Health Panel: Participants

Attendees

- Carlos Muñoz, Medical Card Systems
- Anita Ríus, Adm. De Servicios Médicos de PR
- José G. Rigau, Center for Disease Control
- Carlos Fernández, COSVI
- Dalidia Colón, Departamento de Salud
- Alfredo Volckers, Hospital Pavia
- Silvia Arias, NAMI
- Luz T. Amador, Procuraduría del Paciente
- Heriberto Marín, UPR - Escuela de Salud Pública
- Saturnino Peña, Especialista en Salud
- José Figueroa Morales

Also invited

- Oscar Rodriguez, Colegio de Médicos de PR
- Jorge Torres, Asoc. Hospitales de PR
- Enrique Vicéns Rivero, ASES
- Carlos Meléndez, Centro Cardiovascular de PR y el Caribe
- Ana C. García Cintrón, Colegio Profesionales de Enfermería
- Delia Morales, Colegio Profesionales de Enfermería
- Johnny Rullán, Departamento de Salud
- Víctor Gutierrez, Humana
- Miguel Echenique, Junta de Síndicos
- Ivette Piovanetti, Pediatra
- Luis Marini, Triple C
- Socorro Rivas, Triple S
- Roberto Ramírez, UPR - Escuela Salud Pública
- Miguel Vázquez Deynes

Education Panel: Participants

Attendees

- Manuel J. Fernós, Universidad Interamericana
- Diana Rivera, Asoc. Profesores Universitarios
- Alfonso F. Ballester, Ballester Hermanos Inc.
- Adamina Almódovar, Departamento de Educación
- Alejandro Méndez, FCCLA/Depto.de Educación
- Aurora M. Muriente, CAES/Depto. De Educación
- Awilda Palau, Diálogo Nacional
- María S Colón de Marxuach, Escuelas Católicas
- Madeline M. de Melgen, Escuelas Católicas
- Iván Lugo, INDUNIV
- Maritza Ramírez, Oracle
- Javier Almeyda, Universidad de PR - Bibliotecas
- Ana H. Quintero, Universidad de PR

Also invited

- Ludy Guzmán Piñeiro, Asoc. de Educación Privada
- Aida Díaz, Asoc. De Maestros
- Manuel Maldonado Rivera, College Entrance Exam Board
- Ramón A. Cruz, Consejo Educación Superior de PR
- César Rey, Secretario, Departamento de Educación
- Ana María Blanco, Escuela Juan Ponce de León
- Juanita Siaca, Escuela Luis Muñoz Marín
- Rafael Feliciano, Federación de Maestros
- David Bernier, Ofic. Asuntos de la Juventud
- Gerardo Martínez, Oracle
- Carlos H. del Río, Pfizer
- Awilda Santos, Servicios de Educación a la Comunidad
- Nilda Candelario, Univ. Central del Caribe
- Alberto Maldonado Ruiz, Univ. del Este
- Agnes Mojica, Universidad Interamericana
- Antonio García Padilla, UPR
- Ernesto Vázquez Barquette, Univ. Politécnica
- Jorge I. Vélez Arocho

Community Development Panel: Participants

Attendees

- Carmen Villanueva, Coalición Líderes Comunitarios
- Angel L. Meléndez, Comunidad Hill Brothers
- Eric H. Morales, Ofic. Comunidades Especiales de PR
- Gladys Peña, Pres., Asoc. Las Monjas Renace, Inc.
- Haydeé Colón, Líder Comunitaria - Caimito
- Héctor Cortés Ramírez, Proyecto Especiales, Depto. Vivienda
- Juan Capella, UPR, Escuela de Derecho
- Luz Mairyn López, Centro Servicios Comunitarios Vida Plena
- Manuel Torres Márquez, Sociólogo Universidad Interamericana, Catedra UNESCO
- María Eugenia Santori, Escuela de Derecho, UPR
- Maribel Rivera, Banca
- Mario Nuñez Mercado, Coalición Martín Peña en Acción
- Marta Michelle Colón, Doral Financial Corp.
- Mercedes Rodríguez, PR2025 Comité Ejecutivo
- Pablo M. Calero, Líder comunitario
- Zenaida Rivera, Coalición de Líderes Comunitarios

Also invited

- Brenda Torres, Estuario Bahía de San Juan
- Carmen Febres
- Glorín Ruíz, Fondita de Jesús
- Ileana Echevoyen, Dpto. Vivienda
- Ingrid Vila, Subsecretaria de la Gobernación
- José “Chago” Santiago, Consejo Vecinal Peninsula de Cantera
- José Cestero, Autoridad para el Financiamiento de la Vivienda
- Liliana Cotto, UPR
- Linda Colón, Oficina de Comunidades Especiales
- Luis Angel Meléndez, Comunidad Hill Brothers
- Ramón Cantero Frau
- Sonia Señeriz, Fundación Luis A. Señeríz
- Virginia Santiago, Recinto de Ciencias Médicas
- William Pérez, Fondos Unidos
- Zoila Levis, Doral Financial Corporation

Family and Society Panel: Participants

Attendees

- Mercedes Rodríguez, Comité Ejecutivo PR 2025
- María F. Levis, Fundación Goldstein y Levis
- Awilda Palau, Diálogo Nacional
- Gloria M. Cruz, Casa Protegida Julia de Burgos
- Marisol Marchand, Adm. Sistemas de Retiro del Gob. & Judicatura
- Norma Rodríguez, UPR - Escuela Graduada de Trabajo Social
- Rita Córdoba, Instituto de Terapia Familiar
- Yadira Pizarro, Centro Fortalecimiento Familiar, ESCAPE

Also invited

- Idalia Colón Rondón, Asesora, Fortaleza
- Irma Roca, Asoc. de Psicólogos
- Josefina Pantojas, Paz Para la Mujer
- Liz Sosa, Ofic. Estatal AARP
- Manuel Torres Márquez, Univ. Interamericana
- María Dolores Fernós, Procuradora de la Mujer
- María Rebeca Ward, Centro de Ayuda Víctimas de Agresión Sexual
- Milagros Rivera, Colegio de Trabajadores Sociales
- Nilda M. Morales, SER
- Raúl Ocasio García, Procurador, Personas con Impedimentos
- René Muñoz Padín, Asoc. Pensionados del Gobierno
- S.E.R. Roberto González Nieves, Arzobispo
- Wanda Feliú, Asoc. Personas con Impedimento
- Rev. Wilfredo Estrada, Concilio Iglesias Evangélicas
- Yolanda Zayas, Dpto. Familia

Public Safety Panel: Participants

Attendees

- Salvador Santiago Negrón, Universidad Carlos Albizu
- Rafael Alonso, Exjuez del Tribunal Supremo
- Edwin Franqui, Rama Judicial
- Hirám Lozada, Comisión de Derechos Humanos
- José Orlando López, Col. Universitario de Justicia Criminal
- Juanchy Capella, UPR, Esc. De Derecho
- Osvaldo Rivera Cianchini, Ex-Director Ofic. Control de Drogas
- Pascual Merlos, Especialista en drogas ilegales

Also invited

- Coronel Adalberto Mercado, Policía y Seguridad Pública del Municipio de San Juan
- Anabelle Rodríguez, Dpto. Justicia
- Arturo L. Dávila, Colegio de Abogados
- Carmen E. Albizu
- Fernando Picó, UPR - Dpto. Historia
- General Francisco A. Márquez
- Gisela Negrón, UPR - Ciencias Sociales
- José A. Vargas Vidot, Iniciativa Comunitaria
- José A. Andreu García, Tribunal Supremo de PR
- José Taboada de Jesús, Asoc. Miembros de la Policía
- Juan R. Torruella, Corte de Apelaciones Federal
- Luis Zambrana, Oficina para el Control de Drogas
- Mercedes M. Bauermeister, Adm. De Tribunales
- Miguel Pereira, Dpto. Corrección y Rehabilitación
- Pedro Vales, Consultores en Conducta Humana
- Víctor Rivera, Policía de PR
- William Miranda Marín, Municipio de Caguas
- Yolanda Zayas, Dpto. Familia

Culture and Recreation Panel: Participants

Attendees

- Manuel Martínez Maldonado, Presidente del Consejo del Instituto de Cultura Puertorriqueña
- Carlos Rosario, Director Centro de Bellas Artes
- Idalia Pérez Garay, Actriz y UPR - Depto. De Drama
- Irma González de Rieckehoff, Albergue Olímpico
- José Artemio Torres, La Linterna Mágica
- Luis Vigoreaux, Happy Productions
- Marimar Benítez, Directora Escuela de Artes Plásticas
- Marta Michelle Colón, Doral Financial Corp.

Also invited

- Ana Lydia Vega
- Antonio Martorell, Professor and Painter
- Benjamín Torres, El Nuevo Día
- Evangelina Colón, Directora, CAM
- Guillermo Martínez
- Jorge Rosario Noriega, Recreación y Deportes
- Linda Hernández, WIPR
- Luis Alberto Ferré Rangel, El Nuevo Día
- Luis Fonsi, Singer
- Myrna Casas
- Nelson Zambolín
- Noel Luna
- Piculín Ortiz, Baloncelista
- Rubén Arrieta
- Stephanie Taylor, Directora, Teatro La Perla
- Yolanda Vélez Arcelay, Journalist
- Zoila Levis, Doral Financial Corporation
- Teresa Tió, Instituto de Cultura

Land Use and Development Panel: Participants

Attendees

- F. Javier Blanco, F. Javier Blanco y Assoc.
- Joel Katz, Consejo Assessor
- Elpidio Rivera Santoni, Associated General Contractors (AGC) Puerto Rico Chapter
- Ivar A. Pietri, Asociación de Constructores de Hogares
- Lucilla Marvel, Taller de Planificación Social
- Luis del Nido, Aireko Development Inc.

Also invited

- Anibal Sepulveda Rivera, School of Planning, UPR
- Federico F. Sánchez, Interlink Realty
- Federico Stubbe
- Hermenegildo Ortiz Quiñones, School of Planning, UPR
- Jorge Rigau, School of Architecture, Polytechnic University of Puerto Rico
- José Antonio Herrero, Economista, UPR,
- José Molinelli Freytes, Programa de Ciencias Ambientales, UPR - Río Piedras
- Josen Rossi, Aireko Construction
- Juan Vaquer Castrodad, Administración de Terrenos
- Manuel Valdés Pizzini, UPR Sea Grant College Program
- Rafael A. Torrens, Levitt Homes Puerto Rico
- Ramón Lloveras, Banco Popular Puerto Rico

Transportation Panel: Participants

Attendees

- Paul F. Colgan, Perez y Cia de PR
- Adaline Torres Santiago, Autoridad Metropolitana de Autobuses (AMA)/ Metropolitan Bus Authority
- Gabriel Rodriguez, Autoridad de Carreteras y Transportación (ACT)
- Marta Bravo Colunga, Sociedad Puertorriqueña de Planificación
- Miguel "Micky" Soto Lacourt, Autoridad de los Puertos (AP)/ Port Authority
- Phil Olivieri, American Airlines
- Telma Valenzuela, ACT

Also invited

- Enrique Cruz, Bermudez Holding
- David Segarra, Intership
- Fernando Fagundo, Departamento de Transportación y Obras Públicas (DTOP)/ Department of Transportation and Public Works
- Fernando Rivera, Puerto Rico Shippers' Association
- Keith Harrell, American Airlines
- John Emery, Sea Star Line
- Luis Cruz, AMA
- Michael A. Luciano, Delta Airlines
- Miguel Vescavacci, Professor, UPR
- Pedro Fabregas, American Eagle
- Rafael Fernández, Camioneros Cooperativa de Transporte de Carga/Truck Drivers Cargo Transport Cooperative
- Robert Jungkind, Siemens Transit Team Puerto Rico (STTPR)
- Walter J. Kennedy, Arrowpac Inc.

Energy Panel: Participants

Attendees

- Sergio Marxuach, McConnell Valdés
- Ernesto Córdova, Presidente, EcoEléctrica
- Carlos Amador, ERM
- Carlos Reyes, AES Puerto Rico
- Iván Nicolau, Administración de Asuntos de Energía (AAE)
- Javier A. Quintana Méndez, Administración de Asuntos de Energía (AAE)
- Jorge M. El Koury Francisco, Consultant
- Juan Vázquez, Shell Puerto Rico
- Neftalí García Martínez, Servicios Científicos y Técnicos
- Pedro Gelabert, Environmental Protection Agency (EPA)
- Ramón González, PROCARIBE
- Raul Rivera Auila, ChevronTexaco
- Roberto Loran, Universidad del Turabo

Also invited

- Esteban Mújica, EQB
- Francisco Paralitici, ABB Combustion Engineering
- Gennaro Dessy, Demaco Corporation
- Harry Rodríguez, Abbot Puerto Rico
- Héctor Alejandro, Autoridad de Energía Eléctrica (AEE)/Puerto Rico Electric Power Authority (PREPA)
- Jorge Concha, Esso Standard Oil Co. PR
- Jorge Coombs, Washington Group International
- L. Humberto Berríos, Progasco
- Leslie Alvarado, CSA group
- Otto Bustelo, Comité de Energía de la Asociación de Industriales (PRMA)
- Rafael Llompert, Universidad Sagrado Corazon
- Ricardo Santos Ramos, Unión Trabajadores Industria Eléctrica y Riego (UTIER)

Water and Waste Panel: Participants

Attendees

- L.M. Szendrey, Bacardi
- Abel Vale, Ciudadanos del Karso (CDK)
- Brenda Pérez, Municipio de Carolina
- Deborah Rivera Velázquez, Municipio de Carolina
- Jaime Pabón, San Juan Bay Estuary
- Jordi Bofill, CMA Architects & Engineers LLP
- Jorge Fernández Pabón, PROTECO
- Juan Rosario, Misión Industrial de Puerto Rico
- Margarita Dijols, SWMA
- Martha Rivera, Autoridad de Acueductos y Alcantarillados (AAA)/ Puerto Rico Aqueduct & Sewer Authority (PRASA)
- Nelson Reyes, Grupo Comunitario de Reciclaje
- Tere Rodríguez, Environmental Protection Agency (EPA) Region 2

Also invited

- Esteban Mújica Cotto, Junta de Calidad Ambiental/ Environmental Quality Board (EQB)
- Félix Aponte Ortiz, Escuela de Planificación, UPR
- Francisco Martínez, Mayaguez leader, PRASA Union
- Guillermo Riera, Autoridad de Desperdicios Sólidos
- Jorge Rivera-Santos, Puerto Rico Water Resources and Environmental Research Institute
- Jose Ortiz, Water Program Manager, CSA Group
- Juan Rigau, ONDEO
- Luis Rodríguez, Departamento de Recursos Naturales y Ambientales (DRNA)/ Department of Natural and Environmental Resources
- Mariely Córdova, ProNatura
- Rafael Andreu Villegas, Autoridad para el Financiamiento de la Infraestructura (AFI)/ Puerto Rico Infrastructure Financing Authority
- Rios Davila, UPR (court appointed monitor for PRASA compliance verification)
- Rosario Pabón, Gerente General, BFI

Telecom and IT Panel: Participants

Attendees

- Jorge Bauermeister, JRT
- Stefan Antonmattei, UbiComm
- Álvaro Pilar, Centennial
- Luis Ramírez, Avant Technologies
- Luis A. Sánchez, Xapiens Corporation
- Max Trujillo, AARP
- Reyli E. Maldonado, Cingular Wireless of Puerto Rico

Also invited

- Cristina Lambert, Puerto Rico Telephone Company (PRTC)
- Jose Meléndez
- Kary Jordan, Islanet Communications
- Mario Garcia, Cingular Wireless of Puerto Rico
- Patricia Eaves, Sprint, PR
- Ramón Morales, Internet Society of Puerto Rico
- Roberto Pando, Fomento Comercial

Environmental Conservation Panel: Participants

Attendees

- Eduardo Negrón Navas, Fiddler González & Rodríguez
- Jose E. Rivera Santana, Estudios Tecnicos
- Alexis Molinares, Fundación Martí Coll
- Ana Navarro, UPR-RUM Programa Sea Grant
- Augustin Carvo, Fiddler González & Rodríguez
- Ernesto L. Díaz Velázquez, DRNA, Programa de Manejo de la Zona Costanera
- Iván Elías, Ciudadanos en Defensa del Ambiente (CEDDA)
- Luis Jorge Rivera Herrera, Iniciativa Desarrollo Sostenible
- Maria Berio, Fiddler González & Rodríguez
- Nelson Reyes, ERM PR
- Patricio Martínez Lorenzo, Environmental lawyer
- Rosa Hilda Ramos, Comunidades Unidas Contra la Contaminación (CUCCo)

Also invited

- Alexis Massol González, Casa Pueblo
- Ariel E. Lugo, Instituto de Dasonomía Tropical/ International Institute of Tropical Forestry (IITF), USDA Forest Service
- Carl-Axel Soderberg, Environmental Protection Agency (EPA) Region 2
- Carlos Padín, Escuela de Asuntos Ambientales, Universidad Metropolitana
- Marta Quiñones, Prof. (UPR, Arecibo), Ciudadanos en Defensa del Ambiente (CEDDA)
- Pedro Panzardi, ERM
- Pedro Saade, Prof. Of Environmental Law, Clinica de Asistencia Legal, Escuela de Derecho UPR
- Santos Rohena, Escuela de Asuntos Ambientales, UMET
- Fernando Lloveras, Fideicomiso de Conservación de Puerto Rico/ Conservation Trust

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 - Social development
 - Infrastructure and environmental development

- **Appendix B**
 - List of Interviewees
 - List of panel members
 - **List of reference studies on Puerto Rico**

Overall Economic Development

Key reports and other information consulted:

- PRMA/Chamber of Commerce, Commission on the Economic Future of Puerto Rico
- Procomp, Preliminary Analysis of the Competitiveness of Puerto Rico
- McKinsey, Communications and Information Technology Roadmap and Action Plan
- Arthur D. Little, Growing Puerto Rico's External Trade
- Arthur D. Little, Science and Technology Strategy
- U.S. Census Bureau, 1997 Economic Census of Outlying Areas
- Planning Board, Proyecto Puerto Rico 2005
- James Dietz, Puerto Rico: Negotiating Development and Change

High-Tech/Future Sectors

Key reports and other information consulted:

- Science and Technology Alliance, Policy on Science and Technology
- PRMA/Chamber of Commerce, Commission on the Economic Future of Puerto Rico
- Procomp, Preliminary Analysis of the Competitiveness of Puerto Rico
- McKinsey, Communications and Information Technology Roadmap and Action Plan
- Arthur D. Little, Growing Puerto Rico's External Trade
- Arthur D. Little, Science and Technology Strategy
- Planning Board, Proyecto Puerto Rico 2005

Local Services

Key reports and other information consulted:

- Puerto Rico Tourism & Transportation Strategic Plan 2002-2006
- PRMA/Chamber of Commerce, Commission on the Economic Future of Puerto Rico
- Procomp, Preliminary Analysis of the Competitiveness of Puerto Rico
- World Travel & Tourism Council, Puerto Rico and the Caribbean
- Planning Board, Proyecto Puerto Rico 2005
- 1997 Economic Census of Outlying Areas: Wholesale, Retail and Service Industries
- Caribbean Tourism Statistical report
- World Tourism Organization, Compendium of Tourism Statistics 2003
- Informe Económico a la Gobernadora 2002

Basic Products and Manufacturing

Key reports and other information consulted:

- PRMA/Chamber of Commerce, Commission on the Economic Future of Puerto Rico
- Puerto Rico Planning Board, Economic Report to the Governor 2002
- Procomp, Preliminary Analysis of the Competitiveness of Puerto Rico
- McKinsey, Communications and Information Technology Roadmap and Action Plan
- Arthur D. Little, Growing Puerto Rico's External Trade
- Arthur D. Little, Science and Technology Strategy
- U.S. Census Bureau, 1997 Economic Census of Outlying Areas: Manufacturing
- Planning Board, Proyecto Puerto Rico 2005
- James Dietz, Puerto Rico: Negotiating Development and Change

Small Business and Venture Capital

Key reports and other information consulted:

- Puerto Rico Planning Board, Economic Report to the Governor 2002
- Procomp, Preliminary Analysis of the Competitiveness of Puerto Rico
- R.K. Asundi and David F. Muñoz, Entrepreneurship in Puerto Rico
- U.S. Census Bureau, County Business Patterns
- Small Business Administration, Small Business Profile: Puerto Rico
- Arthur D. Little, Growing Puerto Rico's External Trade
- U.S. Census Bureau, 1997 Economic Census of Outlying Areas: Wholesale, Retail and Service Industries
- Planning Board, Proyecto Puerto Rico 2005

Financial and Professional Services

Key reports and other information consulted:

- PRMA/Chamber of Commerce, Commission on the Economic Future of Puerto Rico
- Procomp, Preliminary Analysis of the Competitiveness of Puerto Rico
- New America Alliance, American Latinos in Financial Services
- A.T. Kearney, Where to Locate: Selecting a Country for Offshore Processing
- U.S. Census Bureau, County Business Patterns, Puerto Rico 2001
- Melba Acosta, OGP, gobierno.pr presentation
- The World Bank, Prospects for Information Service Exports for the English Speaking Caribbean
- The World Bank, Prospects for Professional Services Exports for the English Speaking Caribbean
- McKinsey, Communications and Information Technology Roadmap and Action Plan

Social assessments in general

Key reports and other information consulted:

- The study of Economic Development in Puerto Rico: Summaries of major contributions – Estudios Técnicos
- Presupuesto de Puerto Rico – OGP, 2003
- World Development Indicators CD-Rom – World Bank, 2003
- Hacia la Economía Posible – Asociación de Industriales – 2003
- Social Dimensions of Economic Development and Productivity: Inequality and social performance – UN ECLAC (CEPAL), 1999
- Indicadores del Desarrollo Socioeconómico de América Latina y el Caribe – UN ECLAC (CEPAL), 2000
- Agenda para el Nuevo Siglo – Manuel Torres Márquez, 1997-2001
- James Dietz, Puerto Rico: Negotiating Development and Change
- Island Paradox: Puerto Rico in the 1990s

Education

Key reports and other information consulted:

- La educación en PR 1986-2000 (Informe Social) – Puerto Rico Planning Board, 2003
- LATIN AMERICA and the Caribbean - Regional Report – UNESCO, 2001
- Science and Technology Strategy - Phase 3 – Arthur D. Little, 1998

Health

Key reports and other information consulted:

- Health in the Americas 2003, PAHO, 2003
- Situación de Salud en Puerto Rico – Indicadores Básicos, Puerto Rico Department of Health, 2000
- International Health Data Reference Guide 2001 – US Department of Health & Human Services, 2001
- US HIV-AIDS Surveillance Report 2001 – US Department of Health & Human Services, 2001

Public Safety

Key reports and other information consulted:

- Global Illicit Drug Trend 2003, UN Office for Drug and Crime, 2003
- World Drug Report 2000, UN Office for Drug and Crime, 2000
- US Drug Threat Assessment 2003, US Department of Justice, 2003
- Drug trafficking - Caribbean trends 2000-2001 – UN Center for International Crime Prevention, 2001
- Criminalidad en Puerto Rico (Informe Social), Puerto Rico Planning Board, 2003

Community Development

Key reports and other information consulted:

- Compendio de Estadísticas Sociales – Puerto Rico Planning Board, 1998
- Informe Anual de Estadísticas Vitales – Puerto Rico Department of Health, 2000
- Perfil Demográfico de Características Económicas Seleccionadas de Puerto Rico – Puerto Rico Planning Board, 2002
- Perfil Demográfico de Características Sociales Seleccionadas de Puerto Rico – Puerto Rico Planning Board, 2002
- Perfil Demográfico de Características de la Vivienda de Puerto Rico – Puerto Rico Planning Board, 2002
- Census 2000 – Puerto Rico – Puerto Rico Planning Board, 2002
- Memorias 2 da Cumbre Social – Cumbre Social, 2003
- Tiempos de Solidariedad – Manuel Torres Marquez - 1997

Family and Society

Key reports and other information consulted:

- Compendio de Estadísticas Sociales – Puerto Rico Planning Board, 1998
- Informe Anual de Estadísticas Vitales – Puerto Rico Department of Health, 2000
- Perfil Demográfico de Características Económicas Seleccionadas de Puerto Rico – Puerto Rico Planning Board, 2002
- Perfil Demográfico de Características Sociales Seleccionadas de Puerto Rico – Puerto Rico Planning Board, 2002
- Perfil Demográfico de Características de la Vivienda de Puerto Rico – Puerto Rico Planning Board, 2002
- Census 2000 – Puerto Rico – Puerto Rico Planning Board, 2002
- Memorias 2 da Cumbre Social – Cumbre Social, 2003
- Tiempos de Solidariedad – Manuel Torres Marquez - 1997
- Children in Puerto Rico: Results from the 2000 Census – Kids Count, PRB, 2003
- Caribbean Youth Development: Issues and Policies Directions – The World Bank, 2003
- Child and Family Services Reviews (Puerto Rico Statewide Assessment) – Puerto Rico Department of Family, 2003

Culture and Recreation

Key reports and other information consulted:

- Compendio de Estadísticas Sociales – Puerto Rico Planning Board, 1998
- Informe Anual de Estadísticas Vitales – Puerto Rico Department of Health, 2000
- Perfil Demográfico de Características Económicas Seleccionadas de Puerto Rico – Puerto Rico Planning Board, 2002
- Perfil Demográfico de Características Sociales Seleccionadas de Puerto Rico – Puerto Rico Planning Board, 2002
- Perfil Demográfico de Características de la Vivienda de Puerto Rico – Puerto Rico Planning Board, 2002
- Census 2000 – Puerto Rico – Puerto Rico Planning Board, 2002

Energy

Key reports and other information consulted:

- PREPA Annual Reports and Bond Issues
- AEE Strategic Plan
- PRIDCO, Restructuring the Puerto Rico Energy Sector
- John R. Stewart, Running with the Tigers: Benchmarking PR's Competitiveness
- John R. Stewart, The Impact of Rising Petroleum Prices on Puerto Rico's Manufacturing Industries
- John R. Stewart, Renewable Energy and Electric Power Deregulation in Puerto Rico
- Héctor Jiménez Juarbe, La Energía Eléctrica y la Competitividad Industrial de Puerto Rico
- Planning Board, Proyecto Puerto Rico 2005
- Department of Energy (EIA)
- Estudios Técnicos, La Estrategia de la Autoridad de Energía Eléctrica
- PROCOMP, Análisis Preliminar De Competitividad De Puerto Rico

Communications and IT

Key reports and other information consulted:

- McKinsey, Communications and Information Technology Roadmap
- Arthur D. Little, Science and Technology Strategy and Implementation Plan
- Center for the New Economy, Assessing the Industry Cluster Approach to Economic Development
- Mission 2025: 10 Ideas for Technology and Telecommunications (DRAFT)
- Research and Research, State of the Internet in Puerto Rico
- Progressive Policy Institute, A Snapshot of Puerto Rico and the "New Economy": A HEX Confidential Report
- Center for the New Economy/ Nobox, El Perfil de los Usuarios de Internet en Puerto Rico
- PROCOMP, Análisis Preliminar De Competitividad De Puerto Rico
- Puerto Rico Science and Technology Alliance, Puerto Rico's Policy on Science and Technology
- John R. Stewart, Running with the Tigers: Benchmarking Puerto Rico's Competitiveness

Transport

Key reports and other information consulted:

- Planning Board, Puerto Rico 2005
- PROCOMP, Análisis Preliminar De Competitividad De Puerto Rico
- Parsons, Long Range Transportation Plan (Detailed Work Program and Schedule)
- Metropolitan University/ Estudios Técnicos, Puerto Rico en Ruta Hacia Desarrollo Sustentable
- Frankel Report on Port of the Americas
- Penfold Report on Port of the Americas
- Containerization International – World Container Rankings

Water and Waste

Key reports and other information consulted:

- SWMA, EcoFutures Caribe (1994)
- SWMA, Resumen Ejecutivo Plan Infraestructura para el Reciclaje y la Disposición de los Desperdicios Sólidos (1996)
- AAA, Estudio de Necesidad de Producción de Agua para Puerto Rico hasta el año 2050
- USGS, Water Resources Data for Puerto Rico and the Virgin Islands (2001)
- DRNA, Environmental Impact Statement for the Plan Integral de Aguas (2003)
- AAA, Plan Integral de Aguas (2003)
- Planning Board, Proyecto Puerto Rico 2005 (1992)
- EQB, Informe Ambiental (2002)
- San Juan Bay Estuary Program, Management Plan

Environmental Quality

Key reports and other information consulted:

- EQB, Informe Ambiental (2002)
- DRNA, Environmental Impact Statement for the Plan Integral de Aguas (2003)
- Fiddler Gonzalez, Puerto Rico Environmental Law Handbook
- EPA, Region 2 Report
- Governor's Committee on Environmental Issues, Vision Statement
- San Juan Bay Estuary Program, Management Plan
- EPA, Toxic Release Inventory for Puerto Rico
- Planning Board, Informe Sobre El Estado Y Condición Del Ambiente En Puerto Rico Al 2002
- Center for Industrial Ecology of the Yale School of Forestry & Environmental Studies, Puerto Rico: An Island of Sustainability. Activity Report 2001 – 2003

Land Use

Key reports and other information consulted:

- Metropolitan University/ Estudios Técnicos, Puerto Rico en Ruta Hacia Desarrollo Sustentable
- Jose Molinelli Freytes article on Suelo Rustico
- Puerto Rico Planning Board, Mission and Goals for the 21st Century