



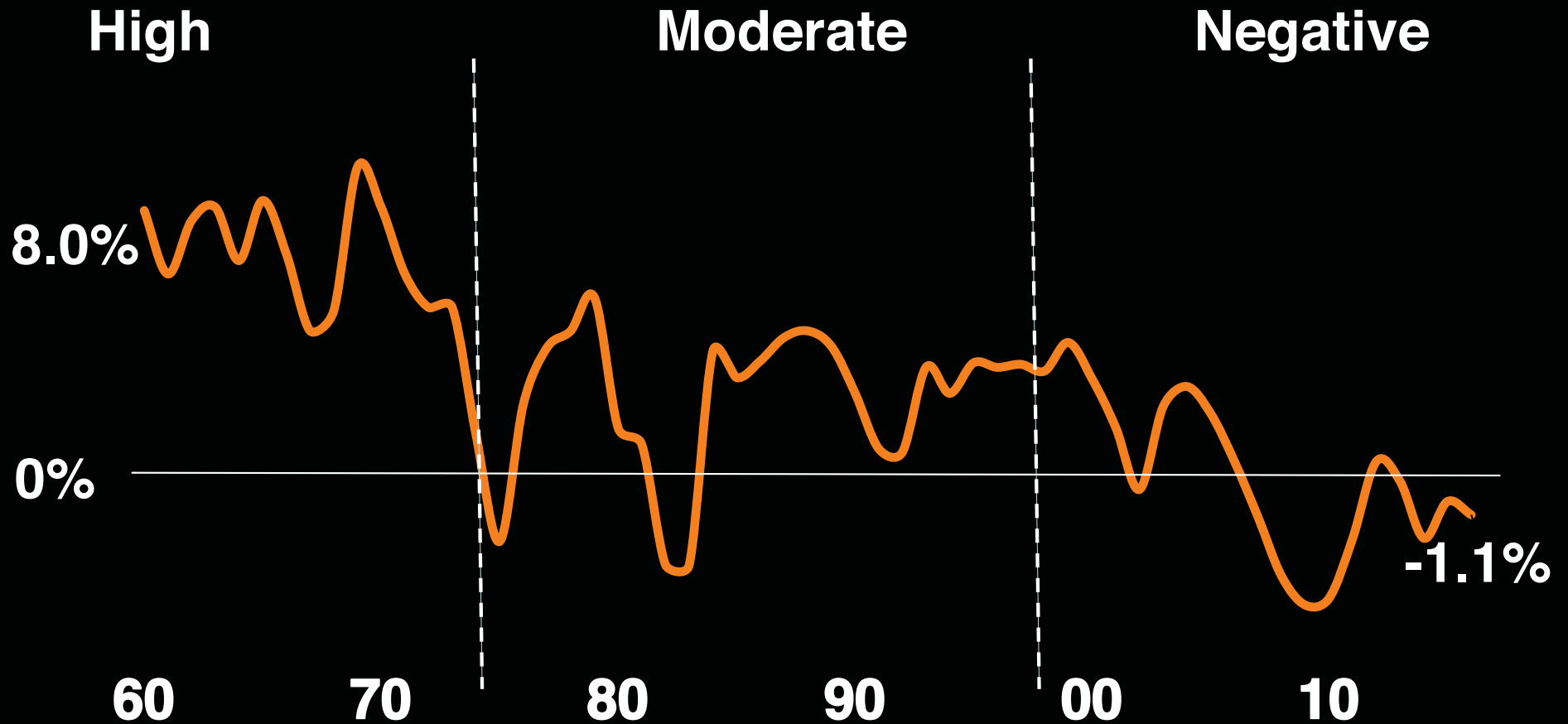
H. Calero
Consulting Group, Inc.

How Maria Forges PR's Future

Assessment and Forecast

An economy in recession...

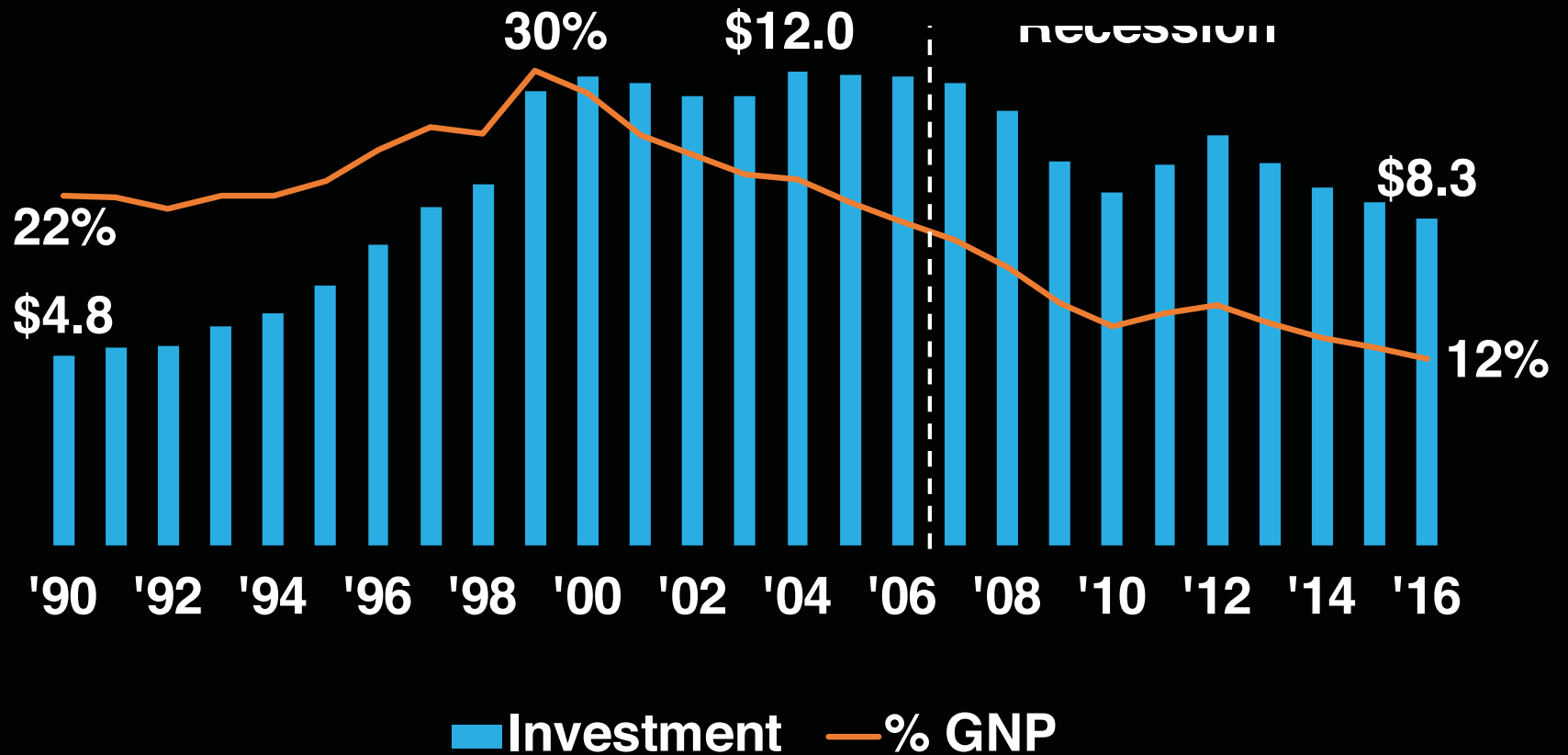
Real GNP growth, %



Source: PR Planning Board

... with investment going down

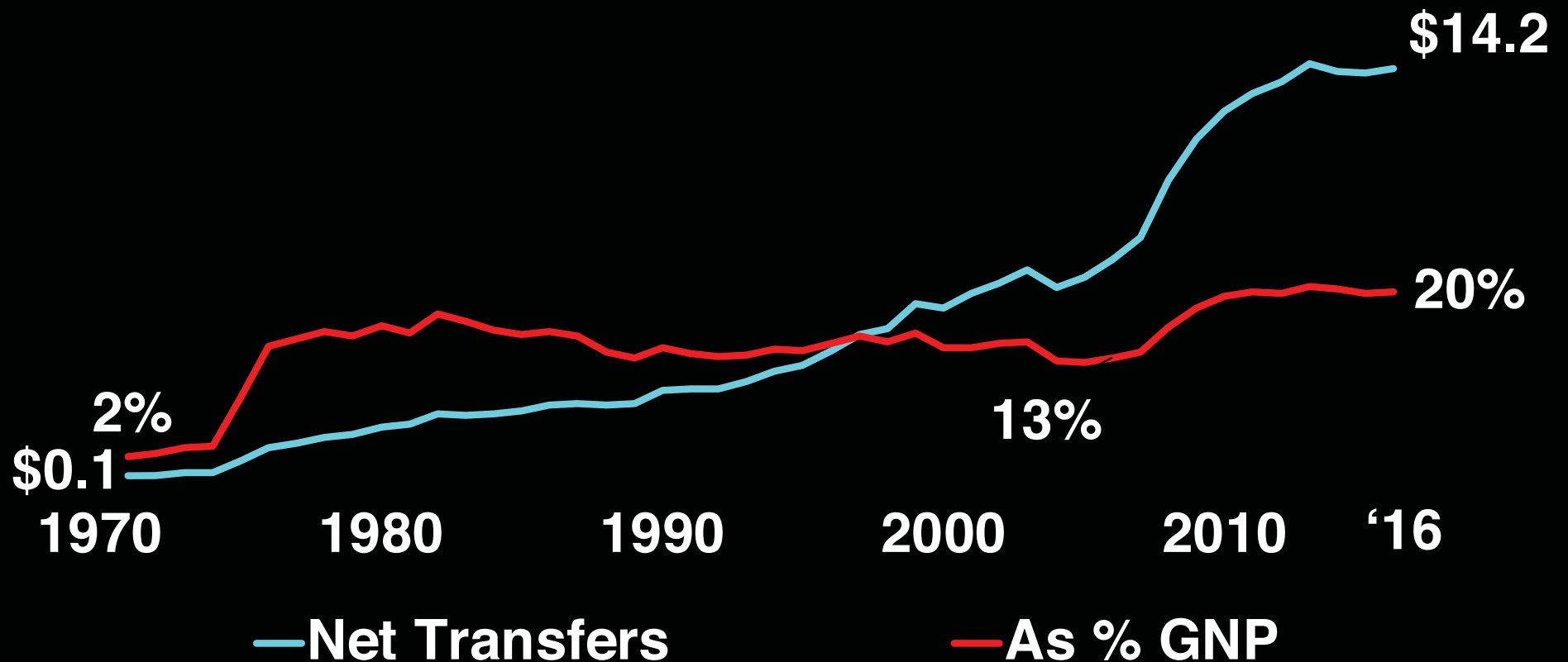
Investment, \$ billion and % of GNP



Source: PR Planning Board

Federal funds as a driving force

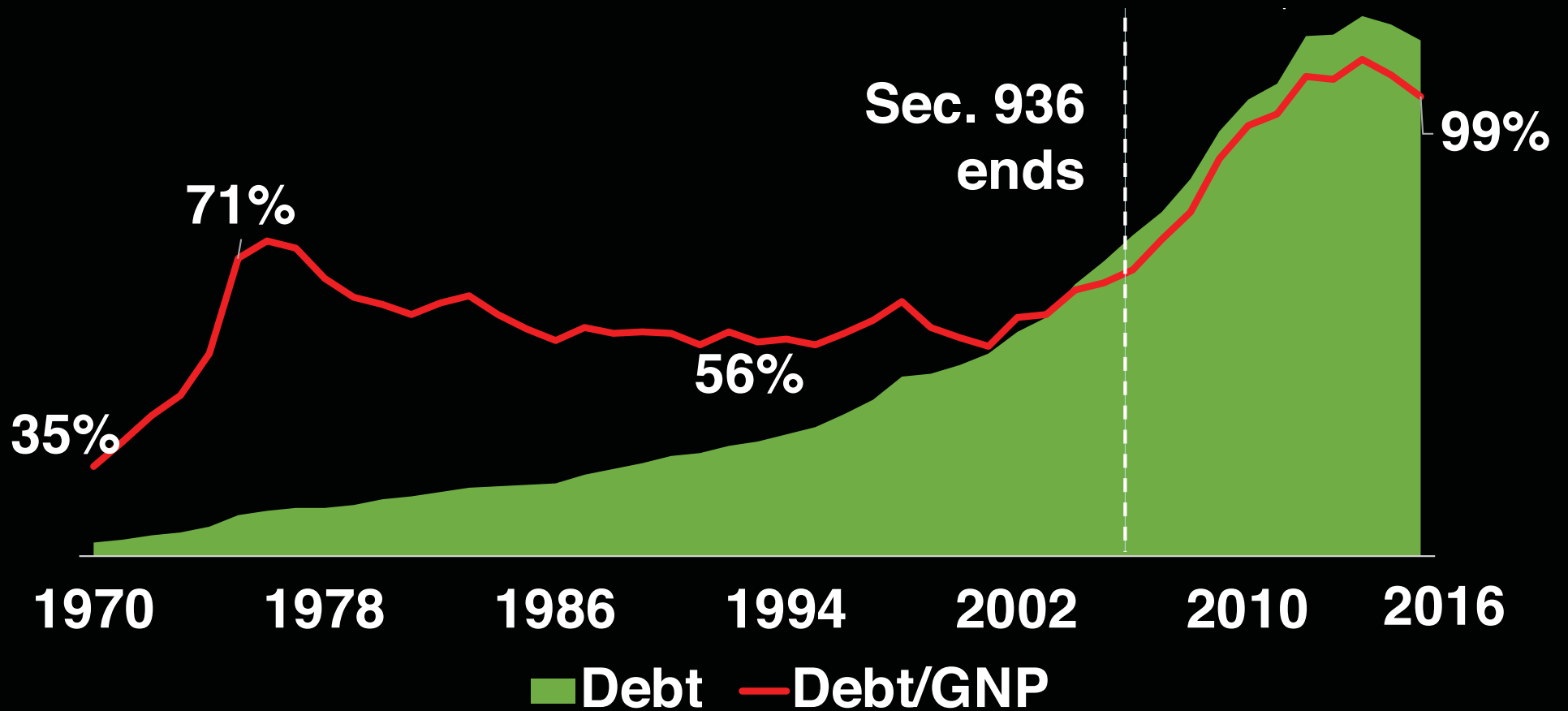
\$billion



Source: PR Planning Board

Trouble with public debt

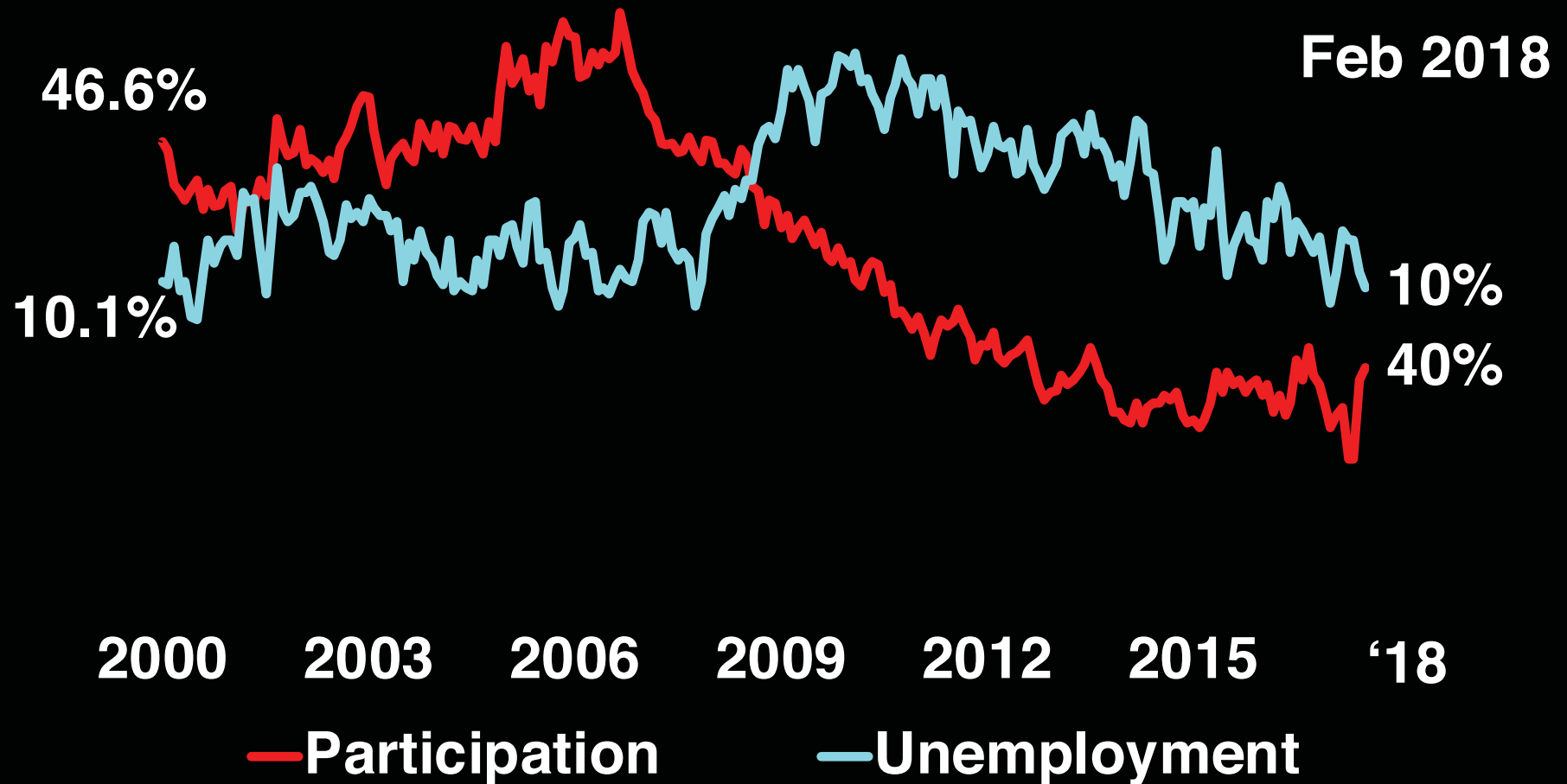
\$ billion



Source: PR Planning Board

The job challenge

Low participation still a major problem

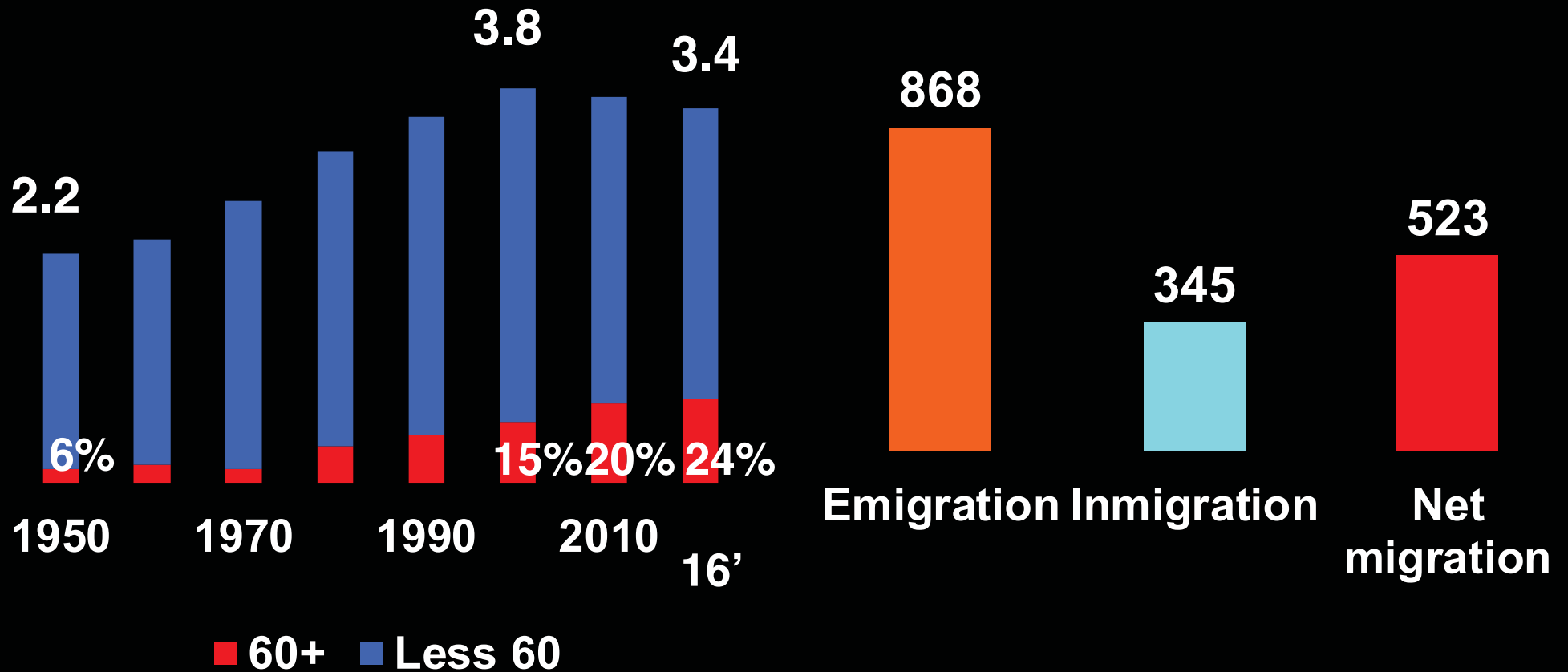


Source: PR Department of Labor

Demographic time bomb in PR

PR population, million

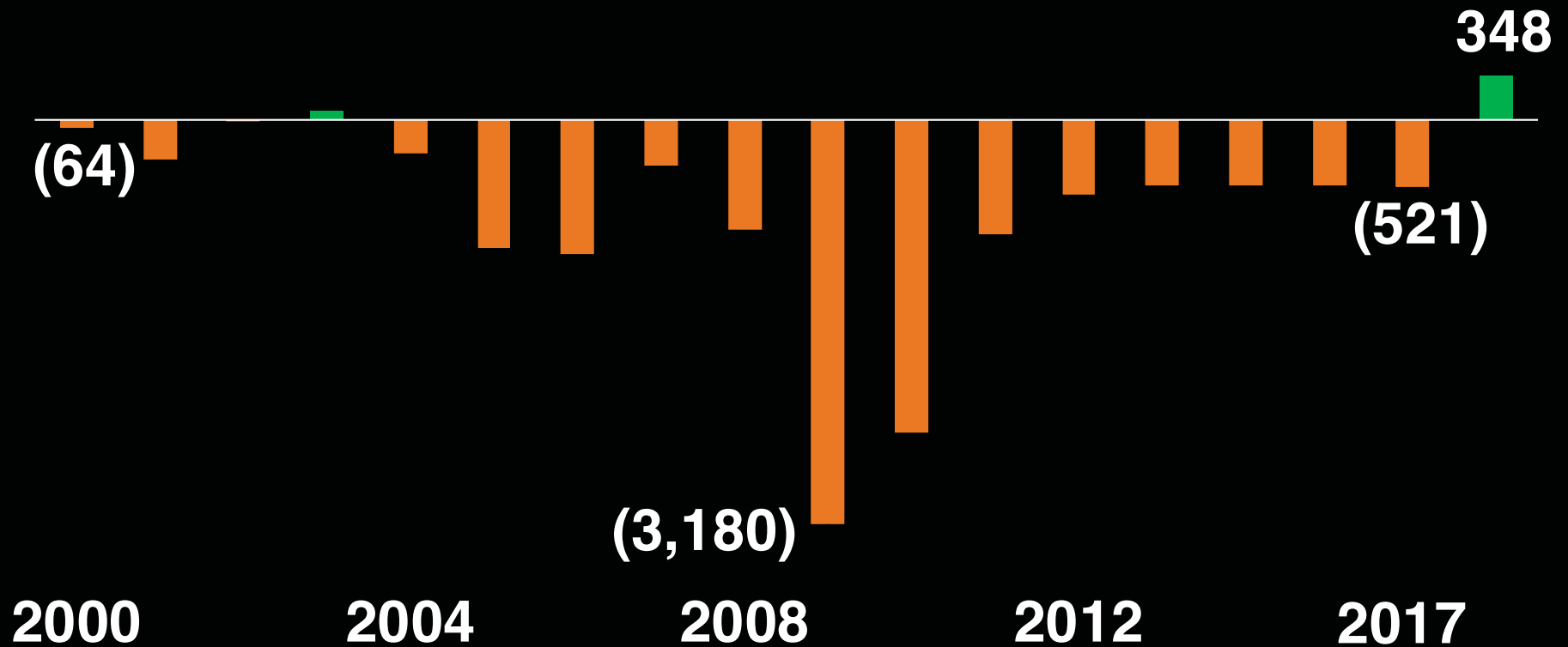
2005-2016, 000s



Source: US Census Bureau

Recurrent fiscal deficits

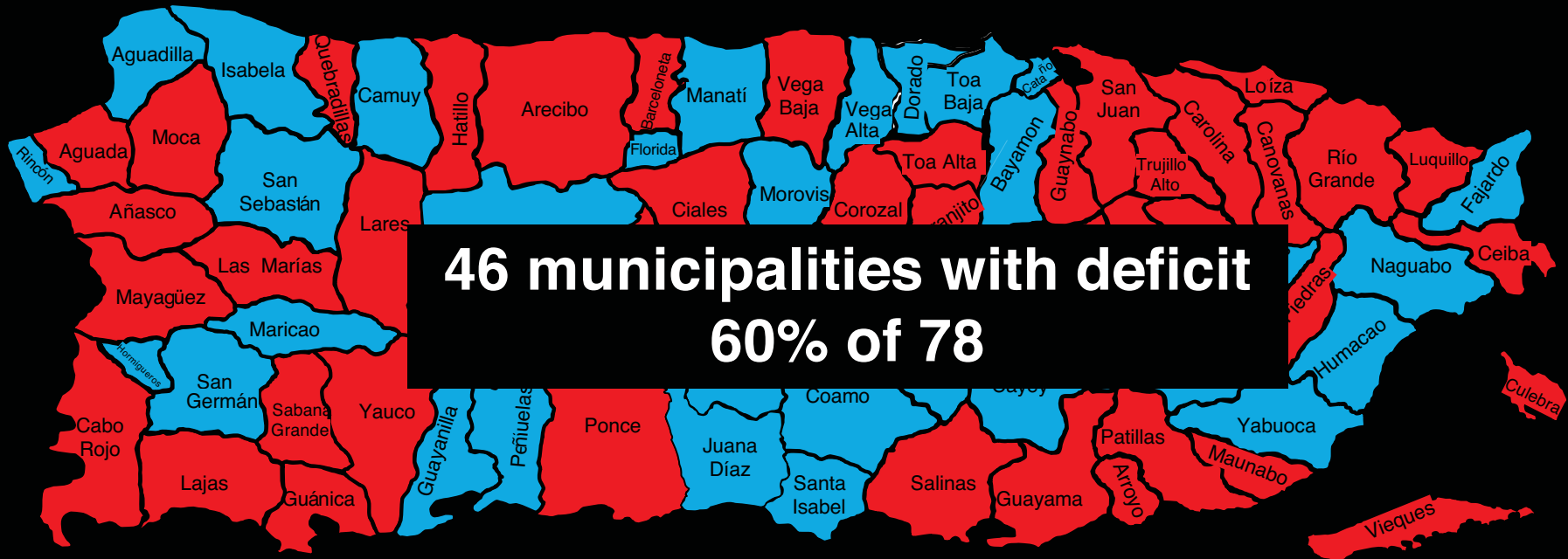
GF net revenues – GF budget, \$ million



Source: PR Planning Board

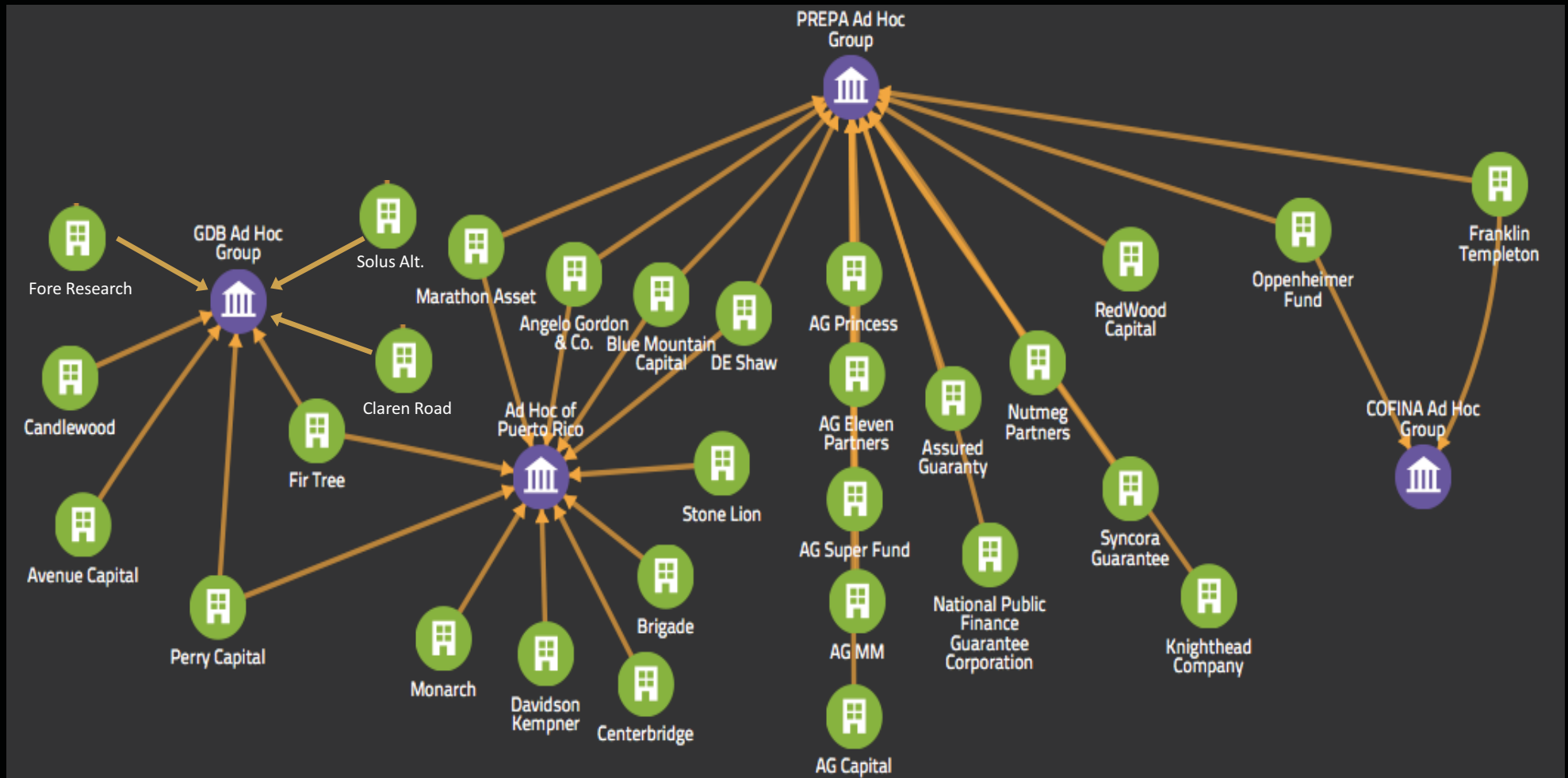
Municipalities also with deficit

Deficit FY 2016



■ Surplus ■ Deficit

PR debt – The end game

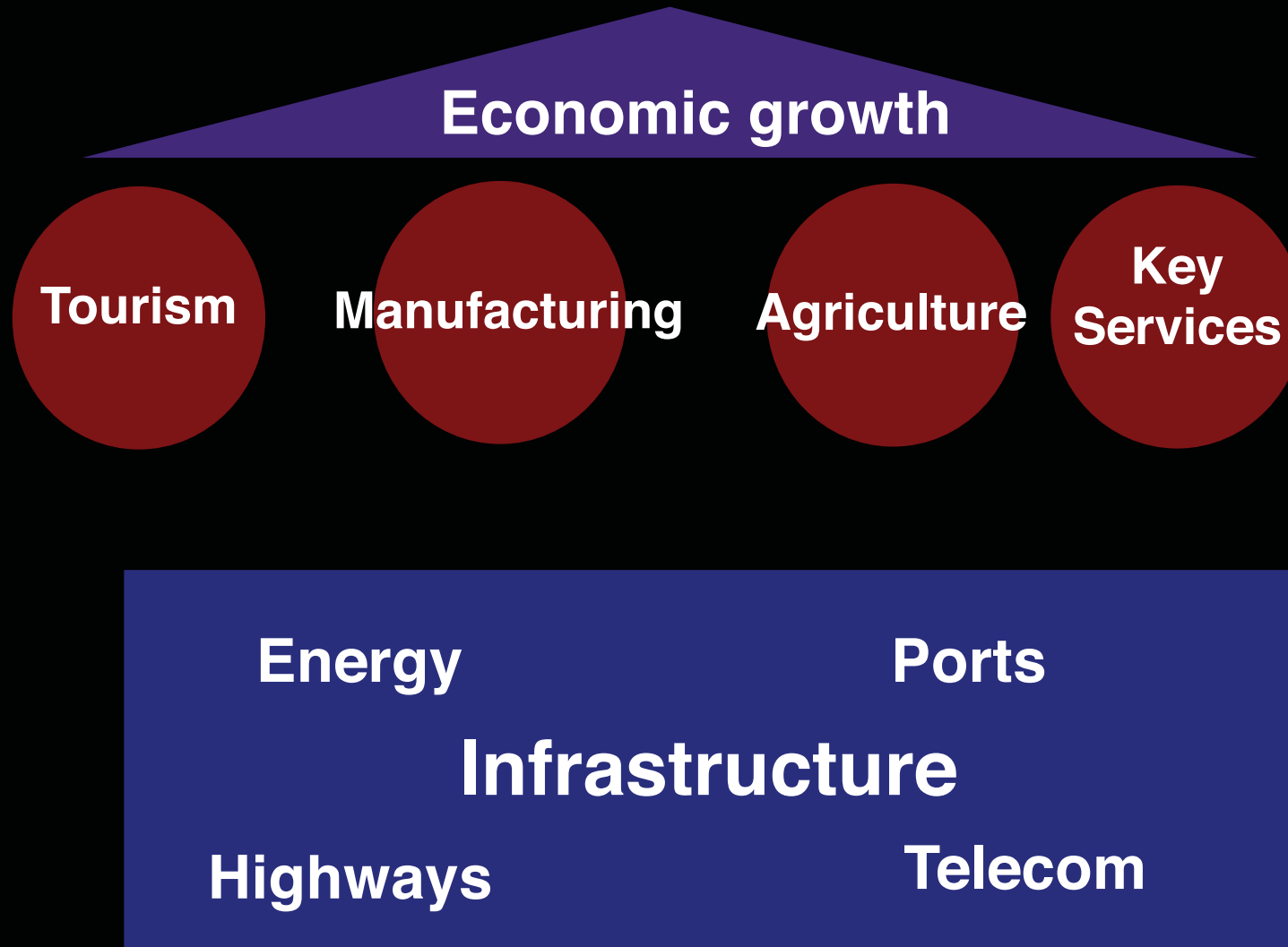


US takes action with PROMESA

Restructure debt with Court	✓
Approve fiscal plan & budgets	✓
Obtain financial audited statements	✓
Freeze or reduce pension benefits	✓
Issue bonds	✓
Review Acts of Legislature	✓
Exclude 25yr old from min. wage	✓
Subpoena powers	✓
Prohibit public strikes	✓
Establish new personnel system	✓
Not subject to Judicial review	✓

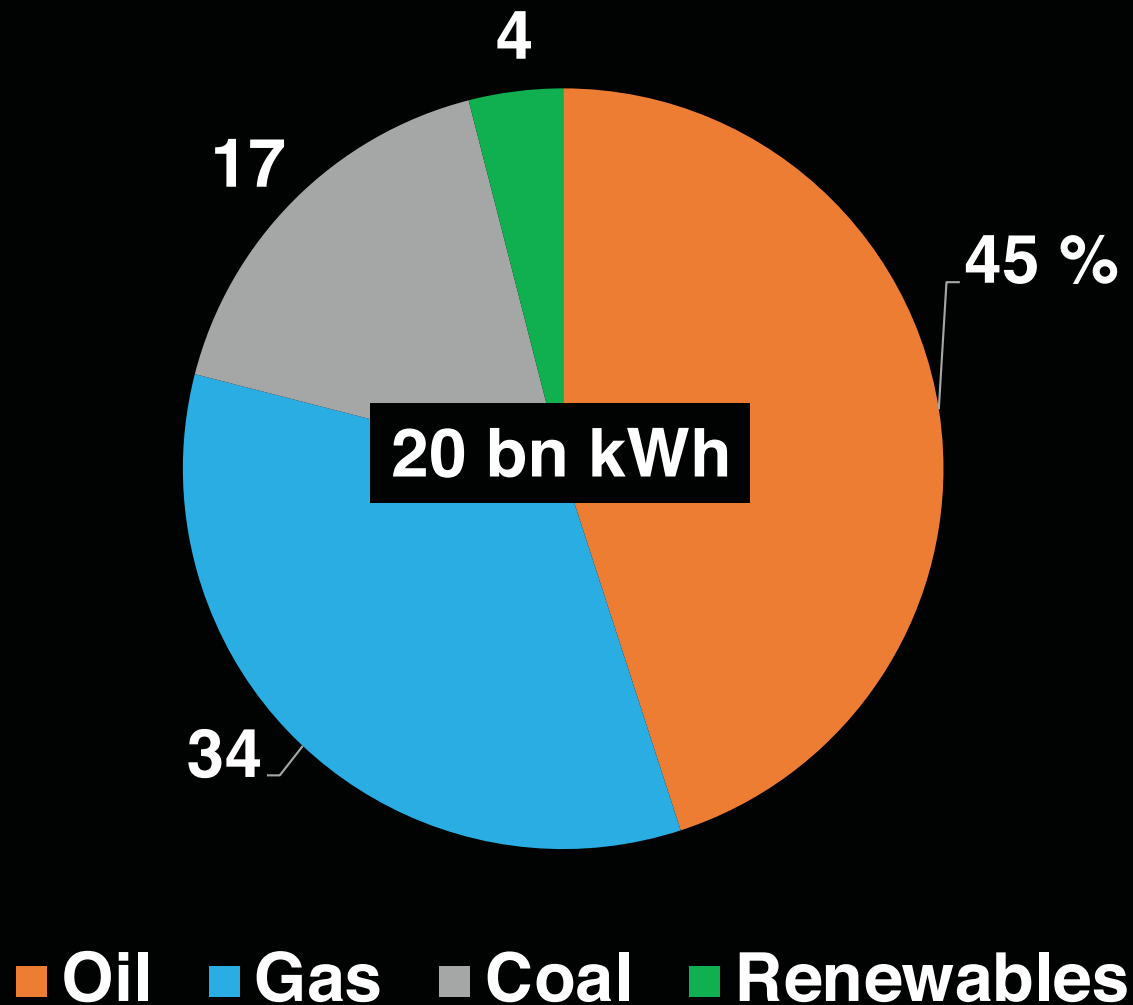
A conceptual growth plan

Investment opportunities



A dated infrastructure

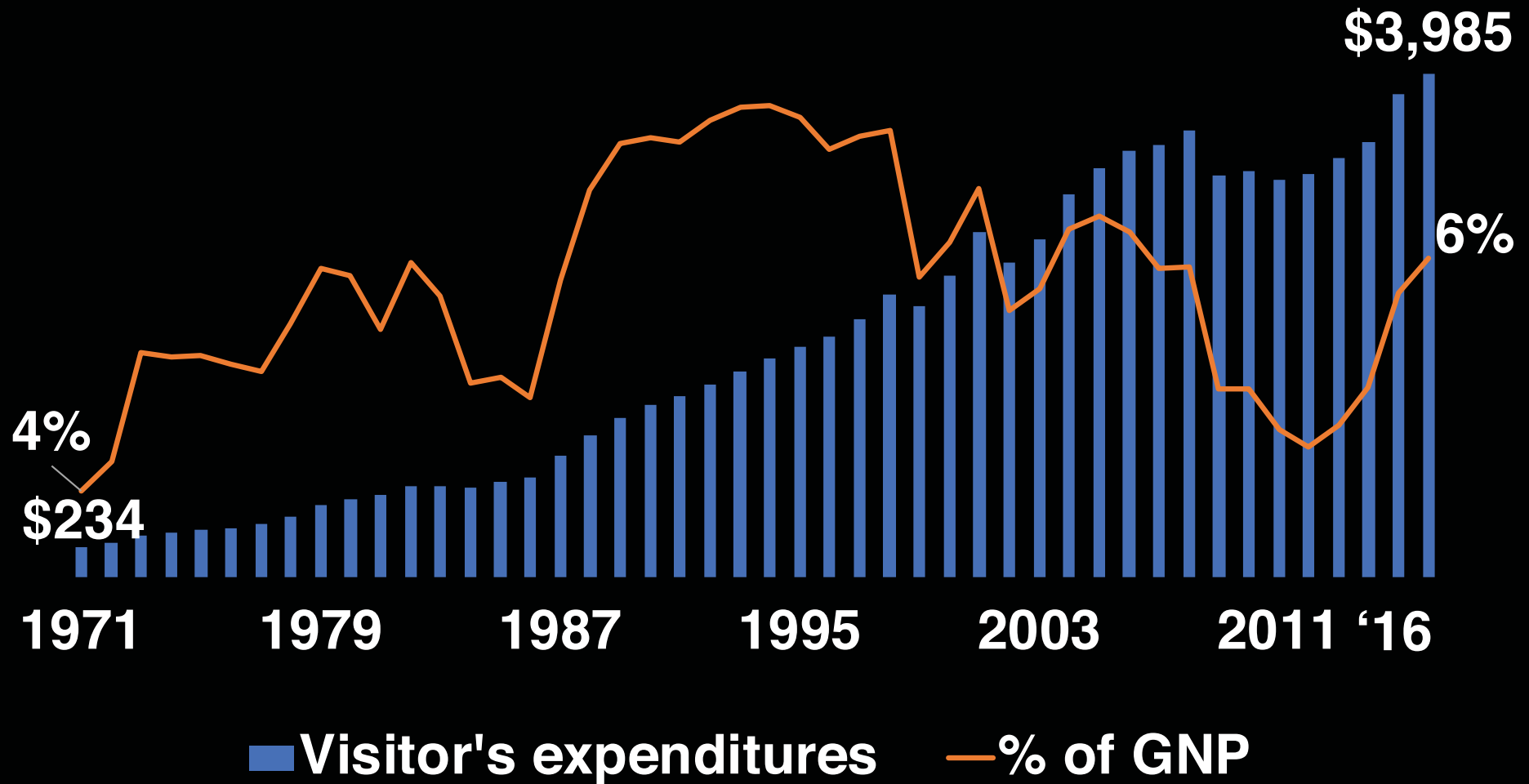
Electricity generation by source, 2017, %



Source: PREPA

Untapped potential of tourism

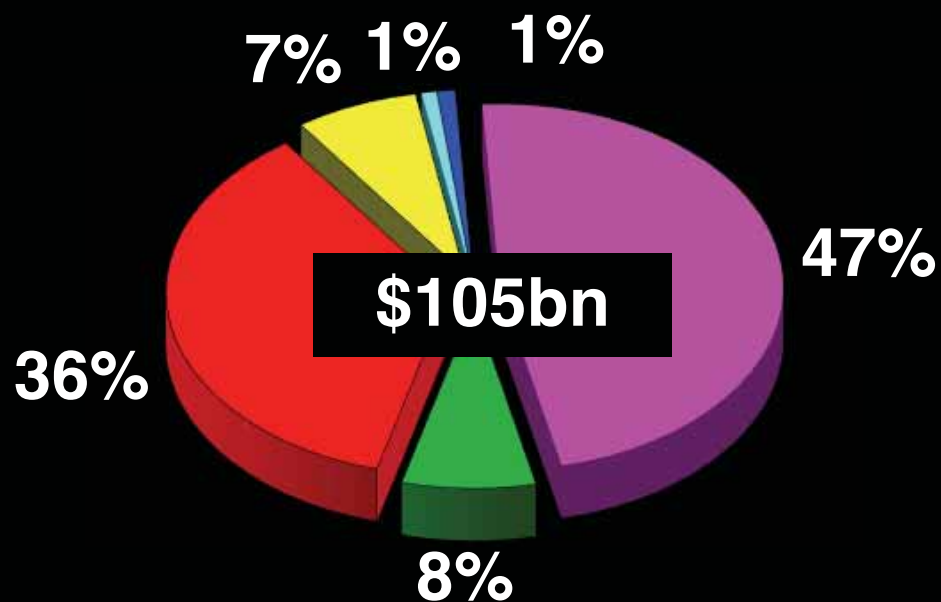
Visitor's expenditures, \$ million



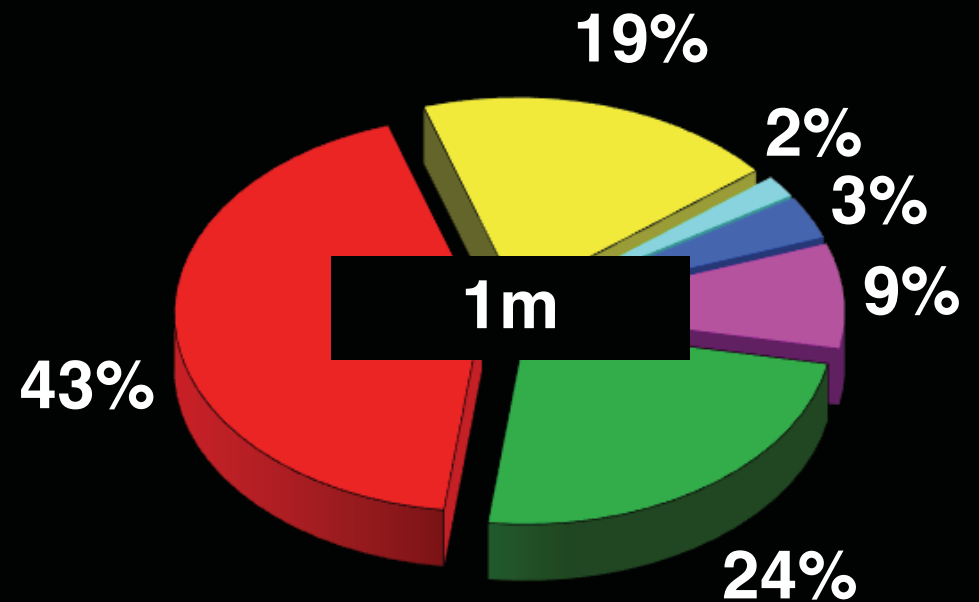
Source: HCCG

Manufacturing dominates in GDP but not in jobs, 2016

GDP



Jobs

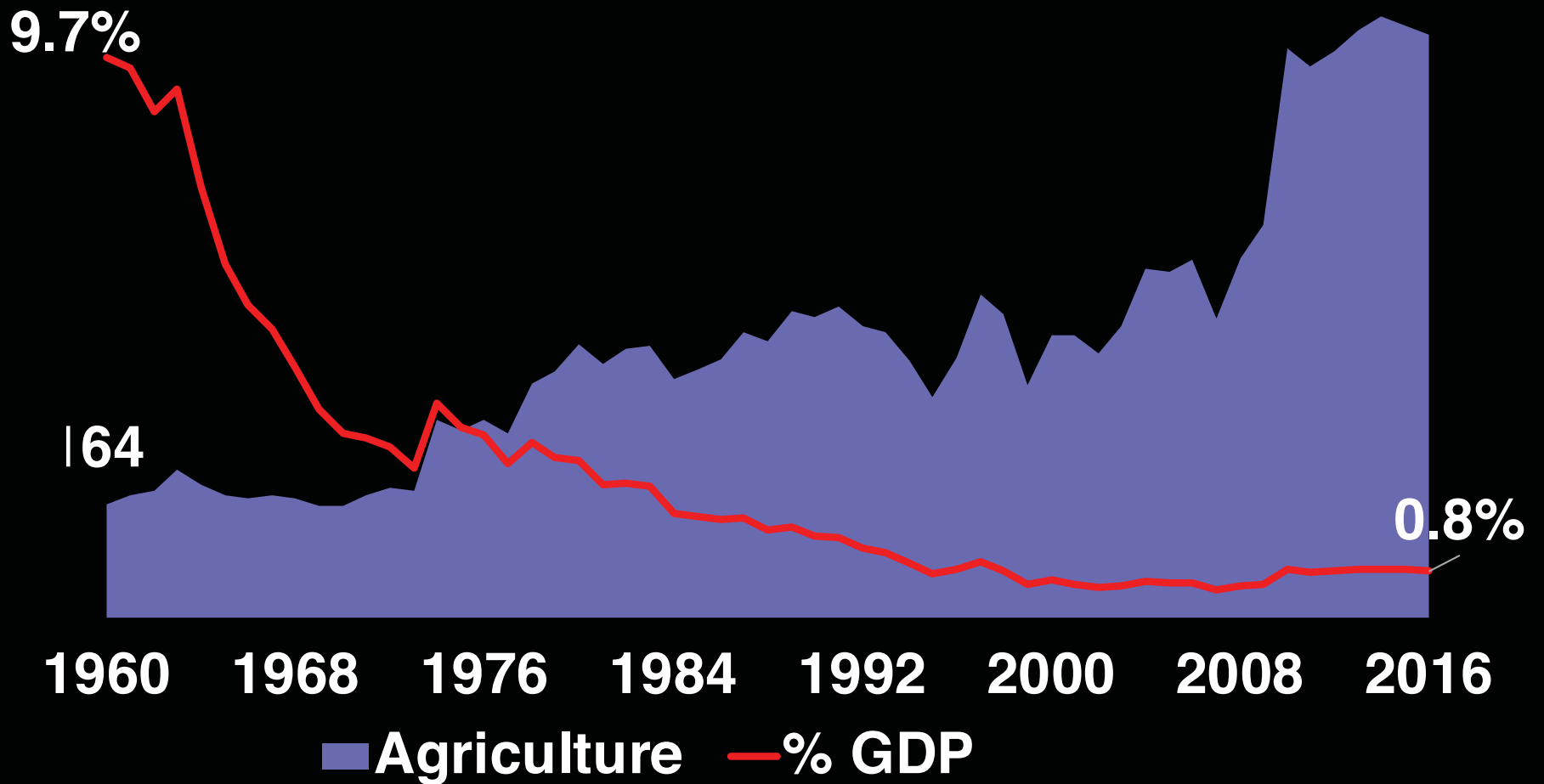


■ Agric/Min ■ Constr. ■ Mfg. ■ Trade ■ Services ■ Gov

Source: PR Planning Board, PRDLHR

Agriculture is dormant

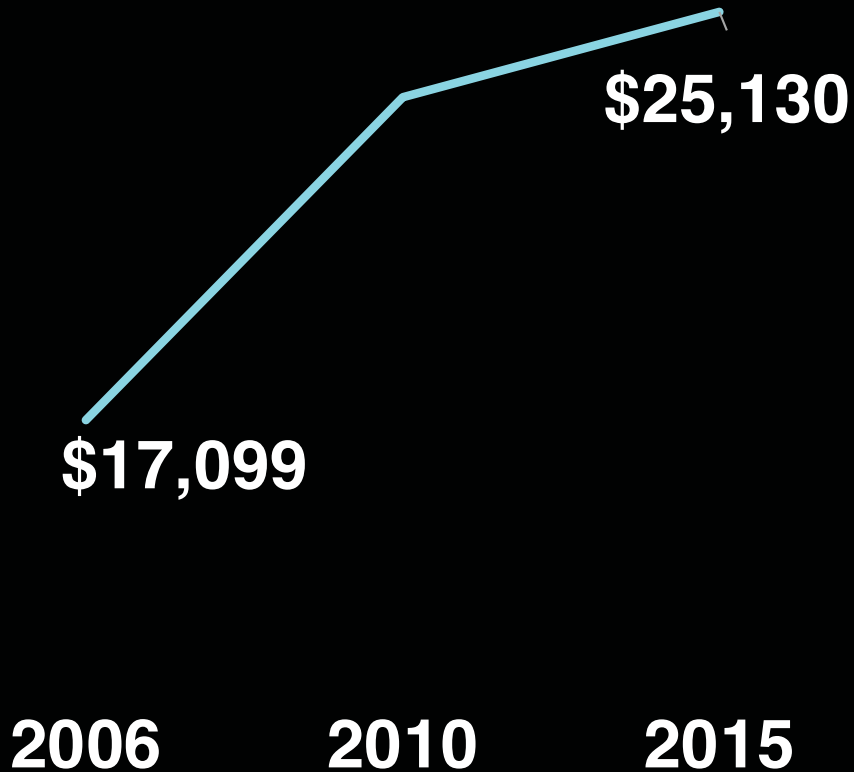
\$ million



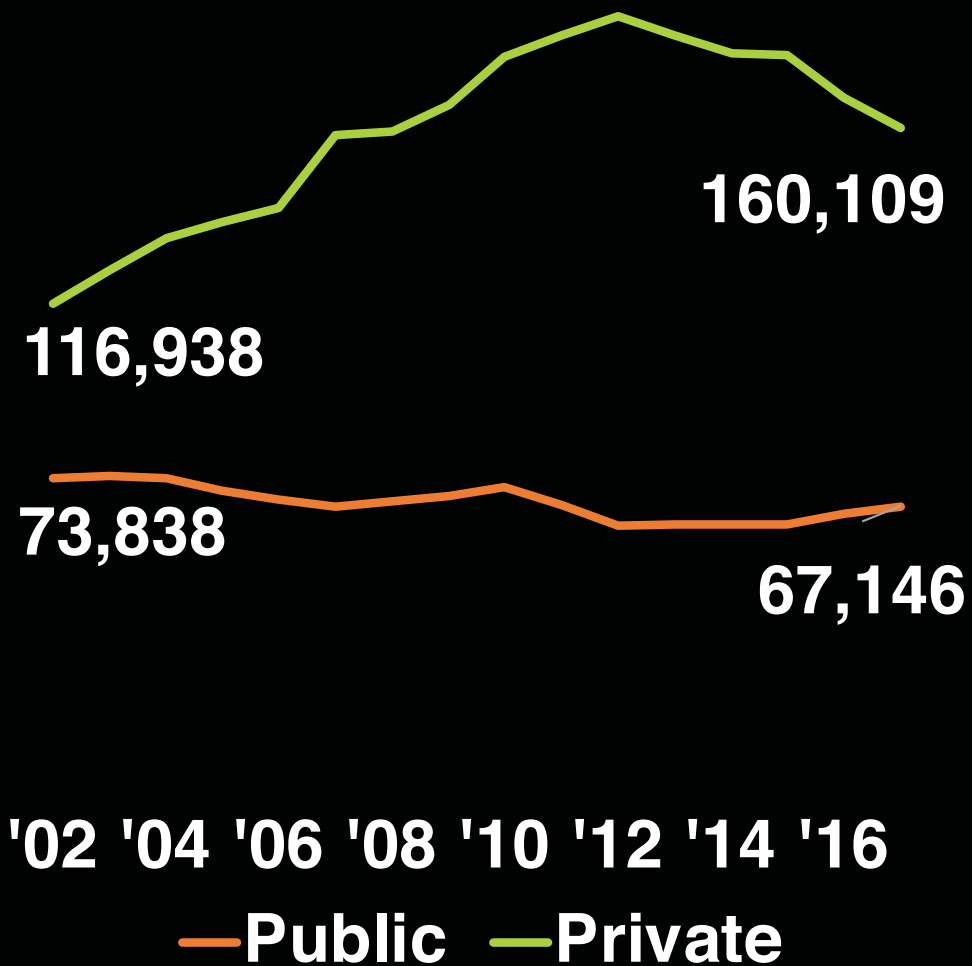
Source: PR Planning Board

Higher education in transition

Expense per university student, \$



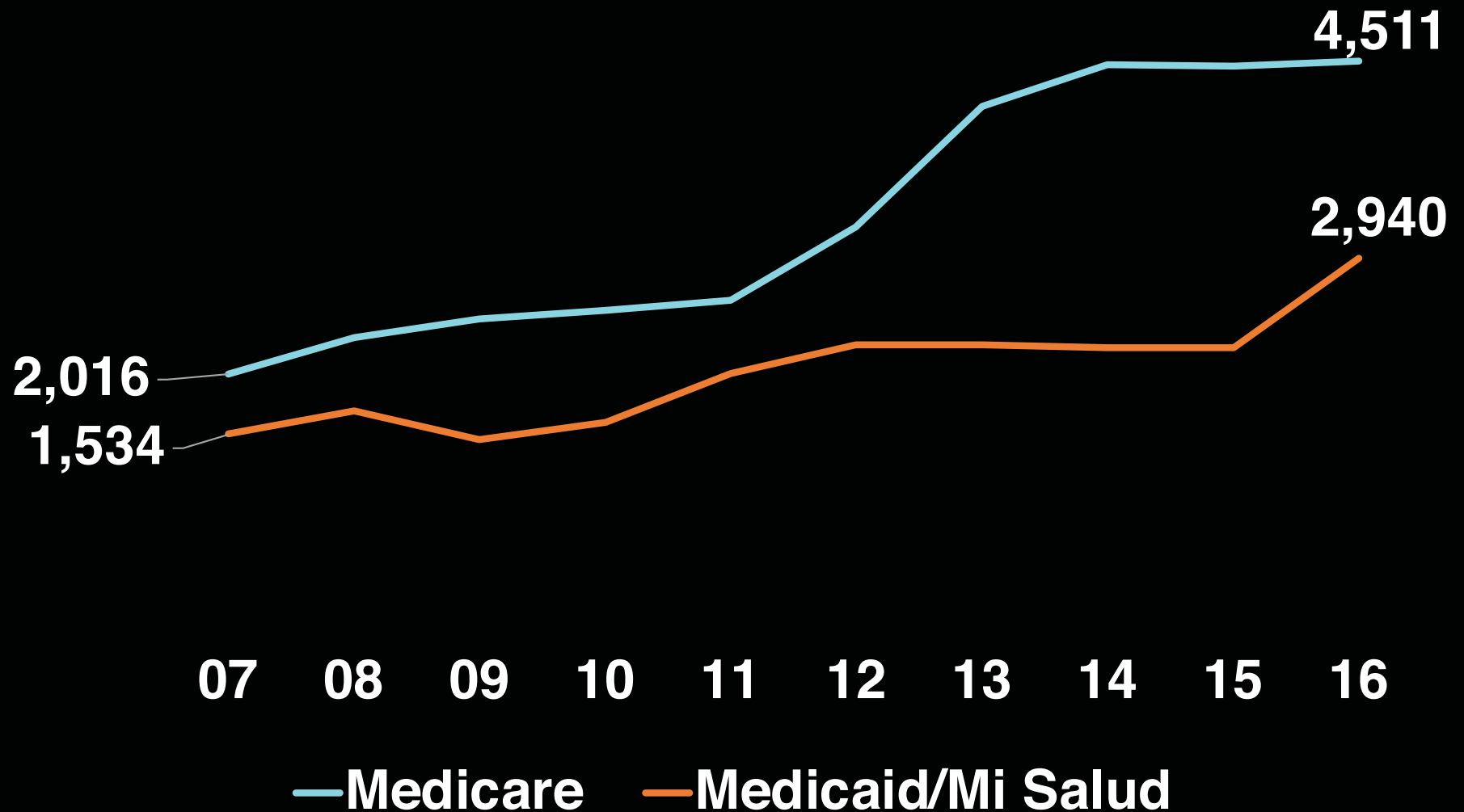
University enrollment trend by sector



Source: PR Council on Higher Education

Healthcare keeps going up

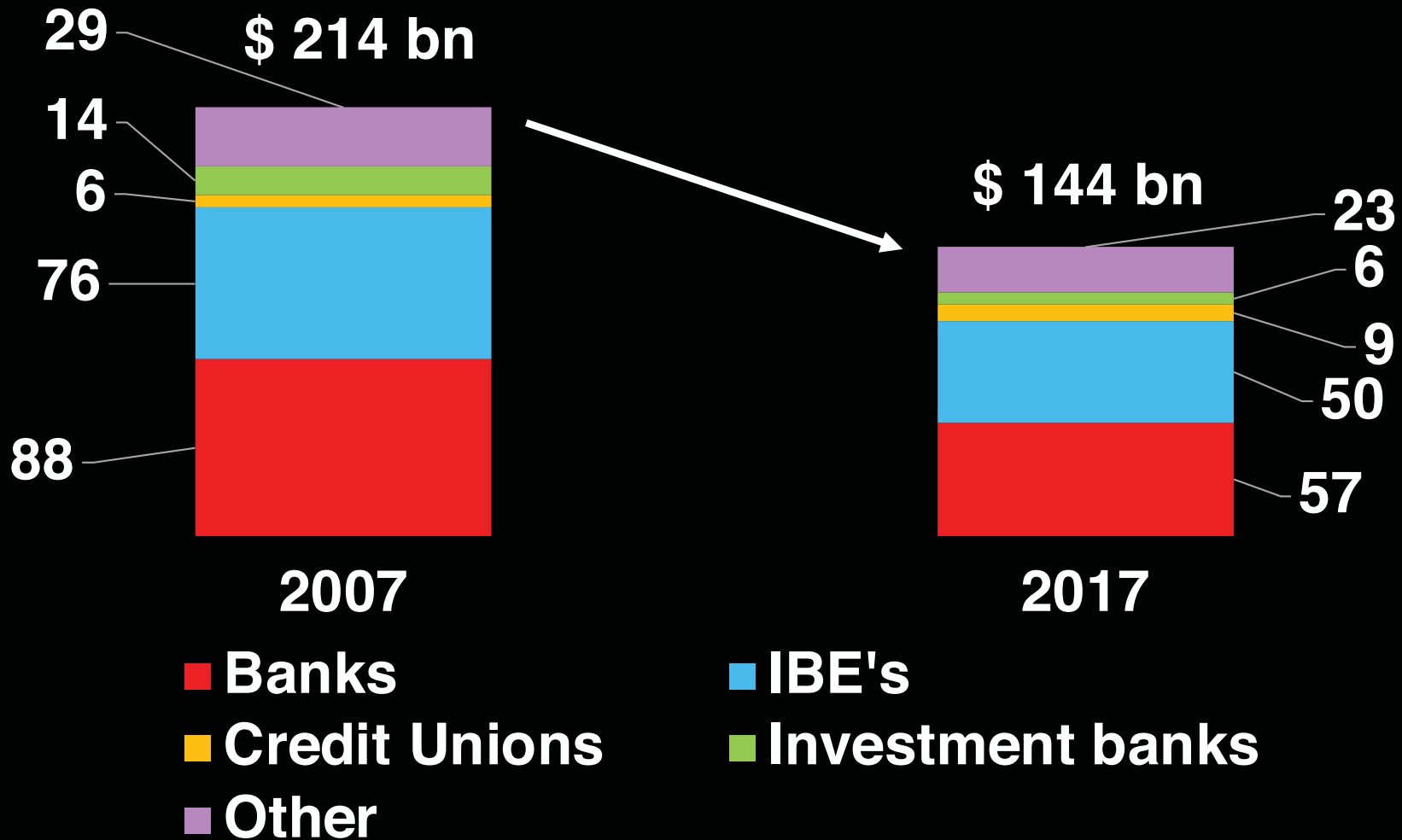
Government funds for healthcare, FY, \$ million



Source: PR Planning Board, PR OMB

Financial system is diversified

PR financial system assets, \$ million



Source: PR Department of Labor

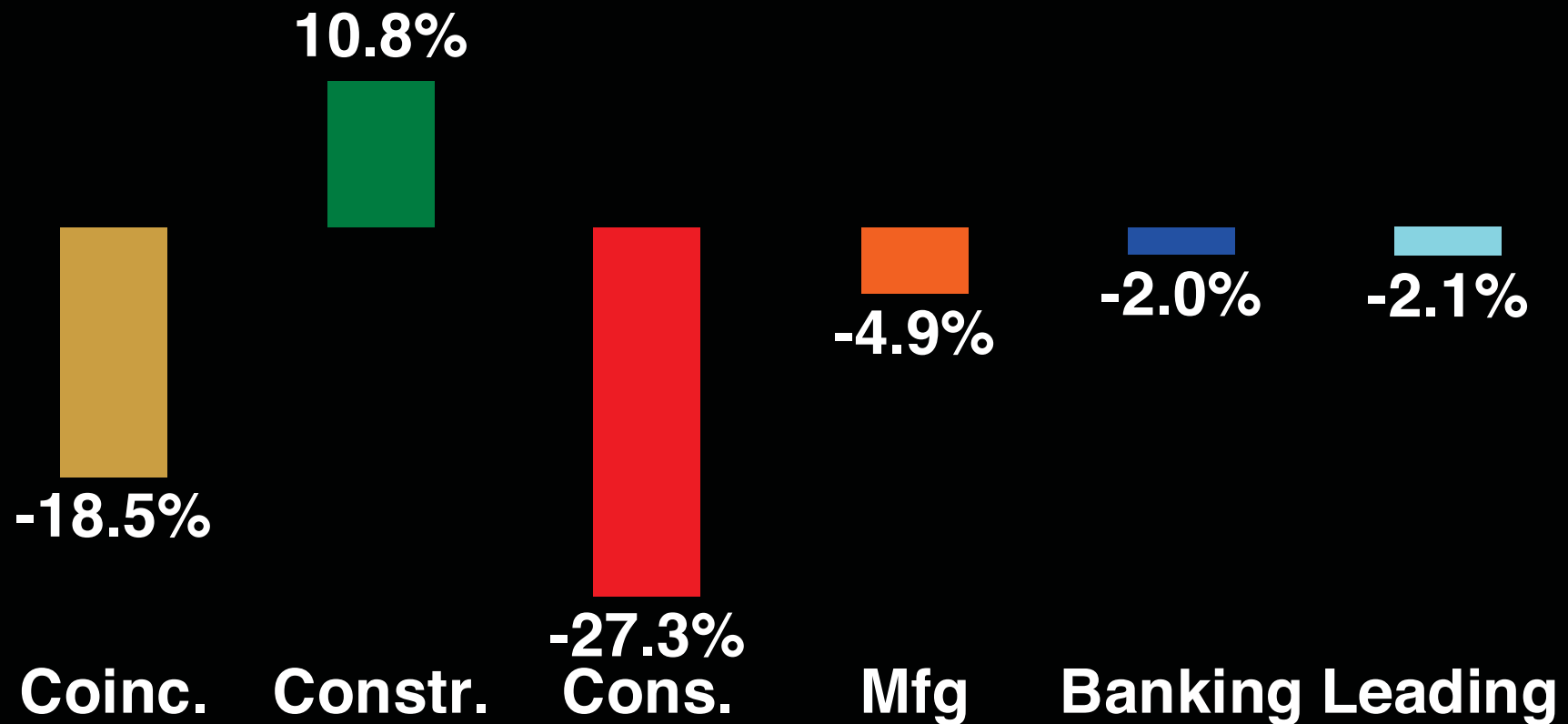
Where is Puerto Rico today?



Source: PR Planning Board, US Census Bureau, PR Department of Labor.

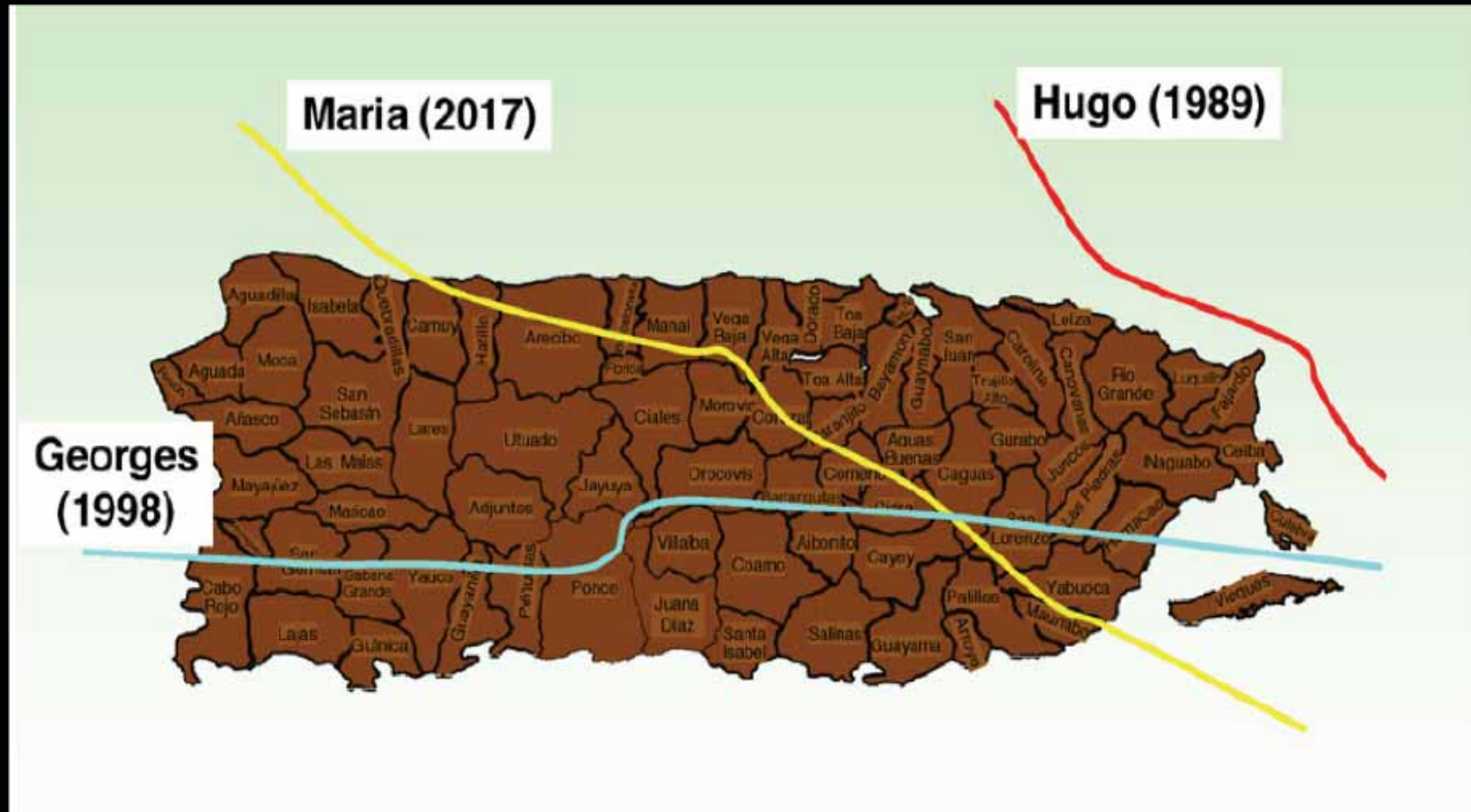
Economic activity after Maria

HCCG quarterly indices,
% change over previous year, 4Q-2017



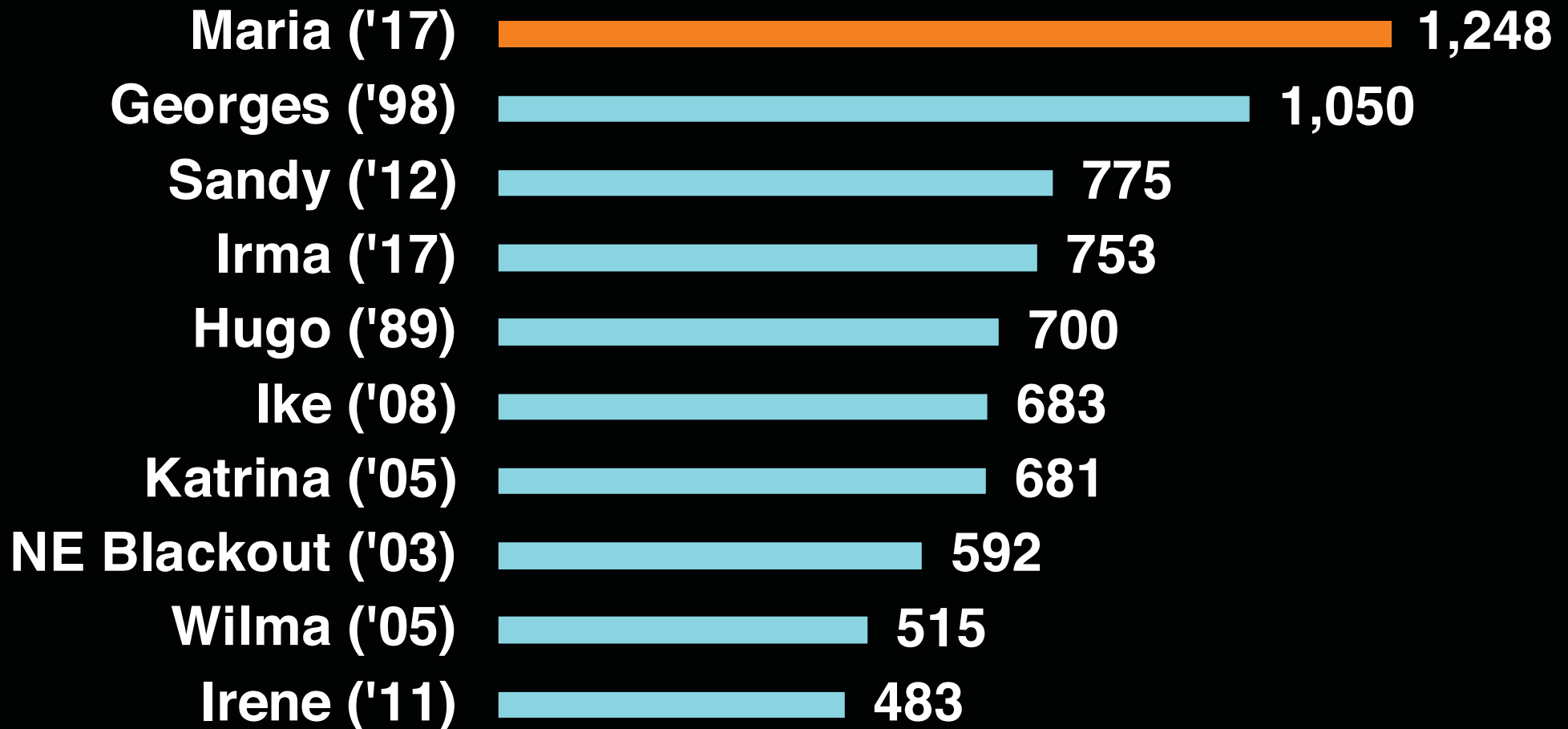
Destruction path of hurricanes

Recent hurricanes in Puerto Rico



Ten biggest blackouts in US history

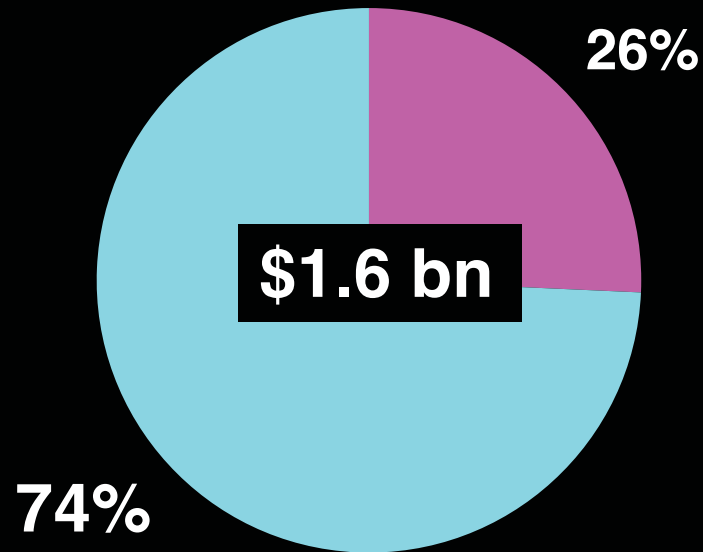
Million customer hours of lost electricity service



Where does the money go

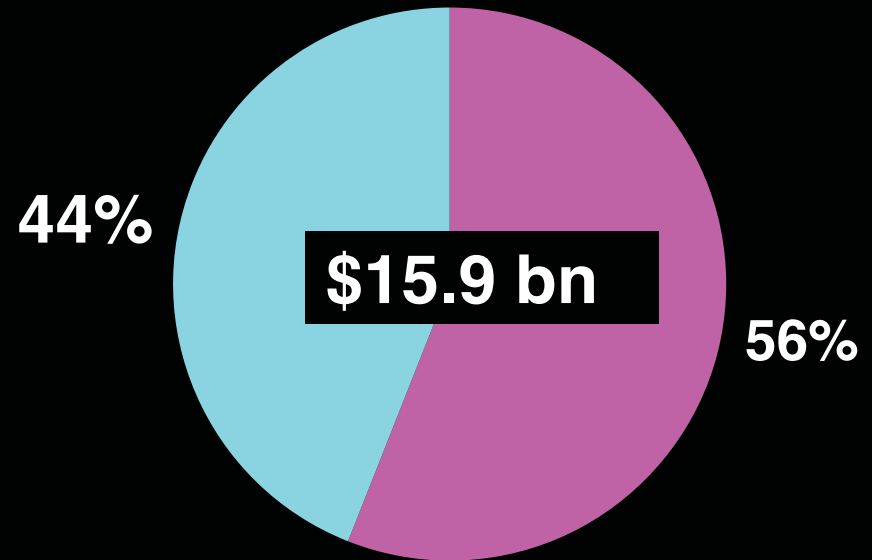
FEMA budget hurricane María, federal FY, \$ billion

FY 2017



■ Assistance

FY 2018



■ Operations & administrative

Methodology of damages

Nordhaus:

Elasticity between:

- Wind speed
 - Nominal GNP
- } = Damages

Strobl:

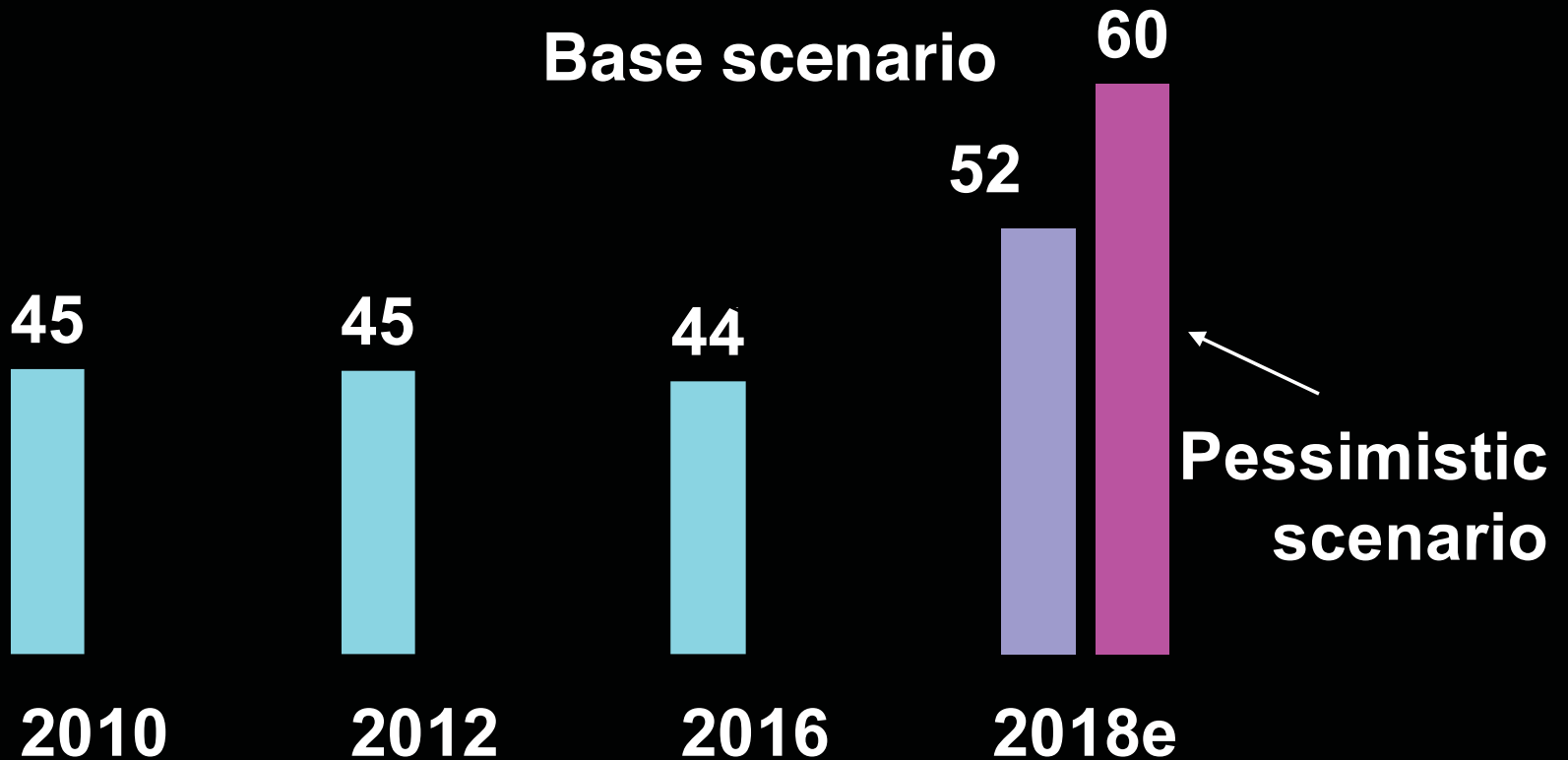
Model with:

- Population
 - Wind speed
 - Investment
 - Openness
- } = GNP growth

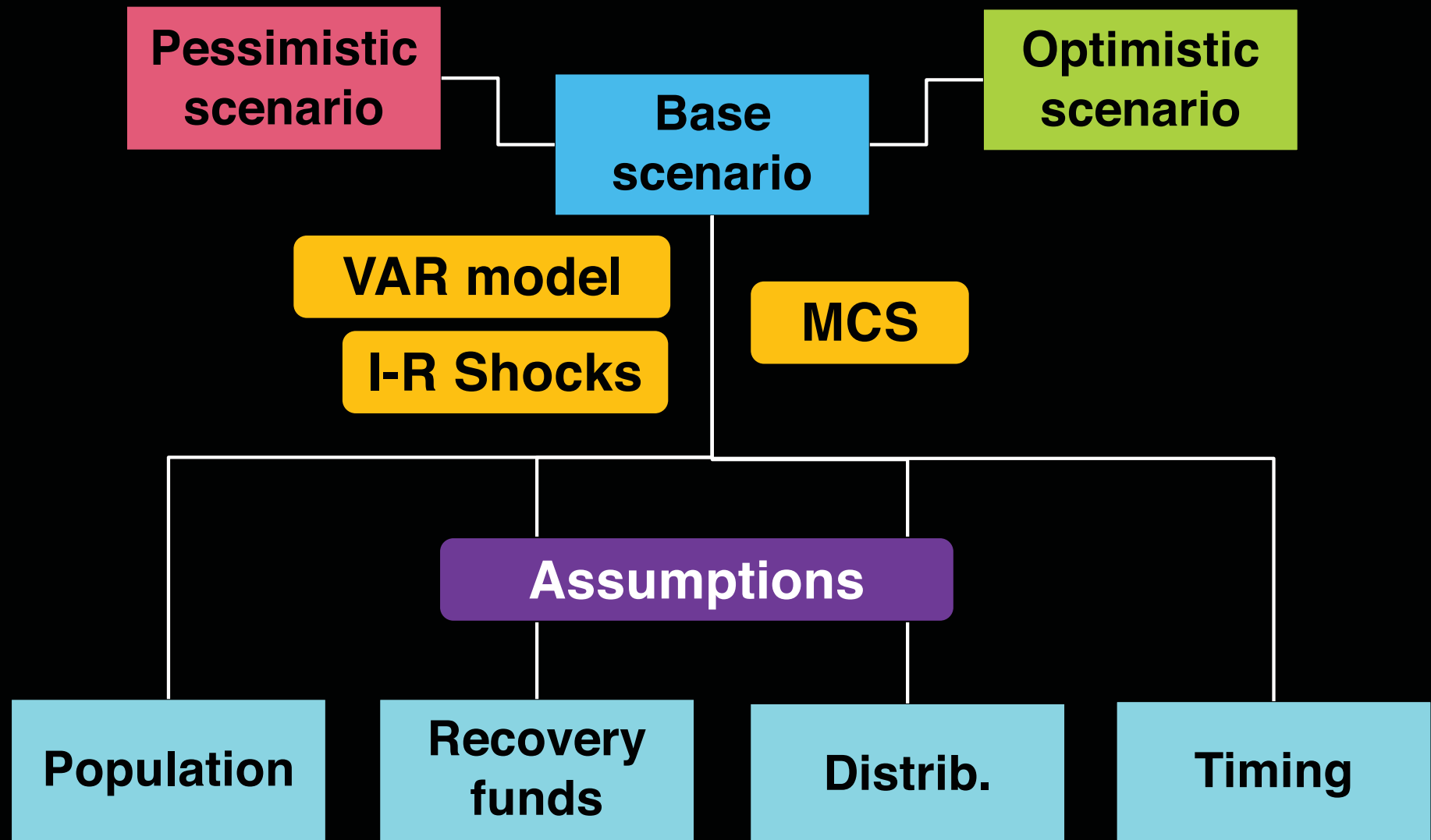
The study quantifies damages by specific sectors

Maria set to increase poverty by 8% to 16%

% of population below poverty level



Shock reaction model



Scenario definitions

Assumptions	Base	Optimistic	Pessimistic
Population (2035)	Moderate loss (2.6 mn)	Smallest loss (3.0 mn)	Significant loss (2.4 mn)
Recovery funds	Most funds in govt. outlays & investment	> investment	> consumption
Funds available	\$23.8 bn	\$30.2 bn	\$16.7 bn
Timeline	Most funds FY2019 & FY2020, then taper off gradually	> Funds FY2019 & FY2020	< Funds FY2019, constant funds during FY2020 - FY2023

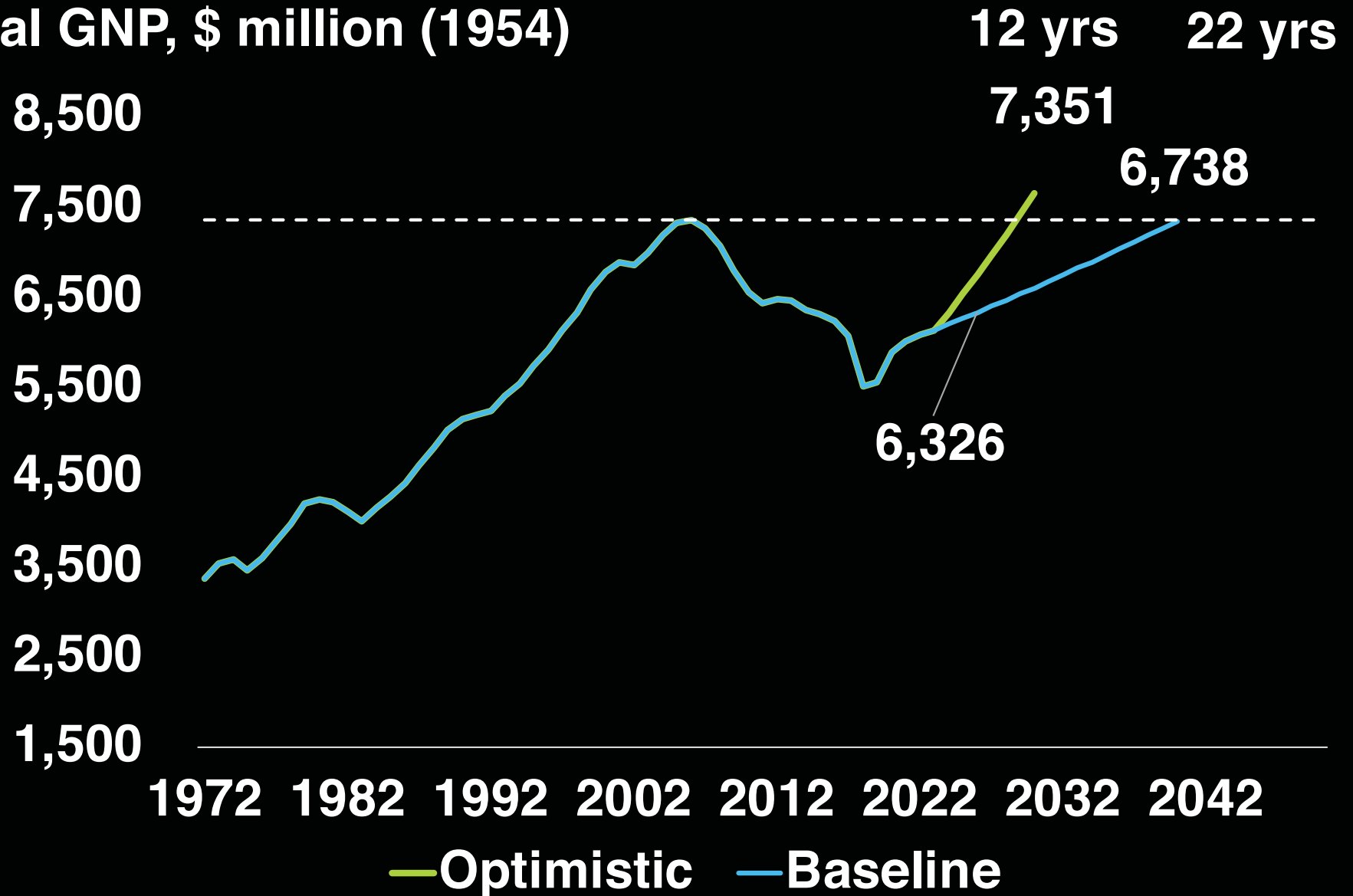
Forecast scenarios

The study provides:

- ✓ real GNP growth forecasts
- ✓ from 2018 thru 2023
- ✓ Base, Optimistic, and Pessimistic scenarios

Economic recovery will be slow

Real GNP, \$ million (1954)



Source: HCCG

Two sides after Maria



On one hand

- Severe fiscal austerity
- Long debt renegotiation
- Outward migration

On the other hand

A new socioeconomic fiber

Private sector in new emerging activities

Access to a high income US market

Reconstruction funds to rebuild infrastructure

The study identifies specific opportunities in tourism, agriculture, manufacturing, and services.

Second chance after Maria

- **To transform the economy**
- **To make reforms**
- **To rebuild infrastructure**
- **To restructure public debt**
- **To change the role of PROMESA Board**
- **To halt migration**



How Hurricane Maria forges PR's Economic Future

By: H. Calero Consulting Group, Inc.

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CONSULTING GROUP, INC.

**Orders for the
study thru
website
hcalero.com**