



COMMONWEALTH OF  
PUERTO RICO

Government Development Bank  
for Puerto Rico

December 2015

# Economic Activity Index (“GDB-EAI”)

# About the Interpretation of the GDB-EAI

The GDB-EAI is an indicator of general economic activity, not a direct measurement of real GNP. The annual growth rate of the EAI **is not** the same as the annual growth rate of real GNP.

Fiscal Year	GDB-EAI annual growth	Real GNP annual growth estimated using the GDB-EAI	Actual real GNP annual growth
2002	-0.4%	0.2%	-0.3%
2003	1.7%	1.9%	2.1%
2004	2.2%	2.3%	2.7%
2005	1.3%	1.6%	1.9%
2006	0.1%	0.7%	0.5%
2007	-1.5%	-0.6%	-1.2%
2008	-2.3%	-1.2%	-2.9%
2009	-4.0%	-2.5%	-3.8%
2010	-4.5%	-3.0%	-3.6%
2011	-2.8%	-1.6%	-1.7%
2012	-0.1%	0.5%	0.5%
2013	-0.1%	0.5%	-0.2%
2014	-3.6%	-2.2%	-0.9%
2015	-1.5%	-0.7%	

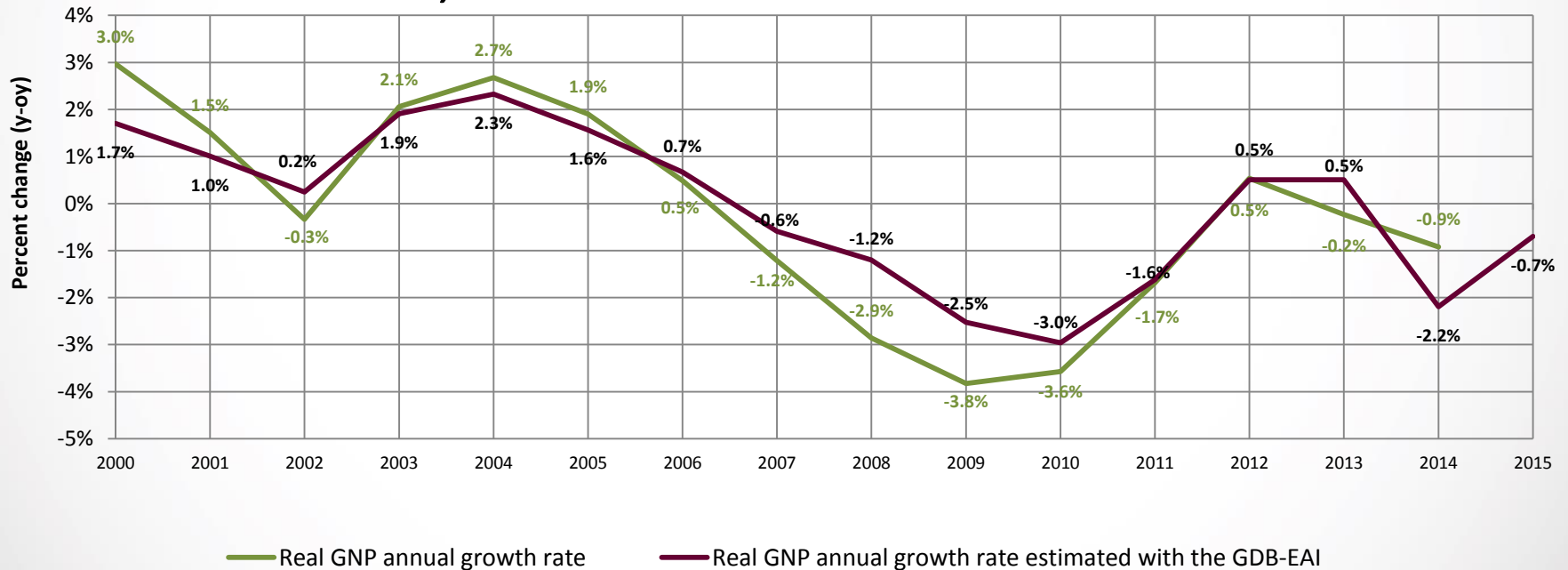
- However, real GNP growth estimates based on the EAI are relatively close, except for a few years, to actual real GNP growth rates.
- Real GNP growth for FY2015 was estimated at -0.7% using a regression equation with the growth of the EAI as the independent variable. The index's annual growth is calculated as the annual percentage change of the twelve-month average.
- For FY2014, the index-based estimate for real GNP growth showed a sharper decline than the actual official measure of the Puerto Rico Planning Board; an indication of the potential margin of error inherent in the procedure.

# About the Interpretation of the GDB-EAI

## (2)

The graph compares actual real GNP growth rates with projected real GNP growth rates based on the GDB-EAI. A high correlation between the two series underscores the value of the index as an indicator of economic activity, although not as a measure of real GNP.

### Annual Growth Rate Comparisons: Real GNP, and real GNP estimated with the GDB-EAI



Real GNP data source: Puerto Rico Planning Board

# Overview- December 2015

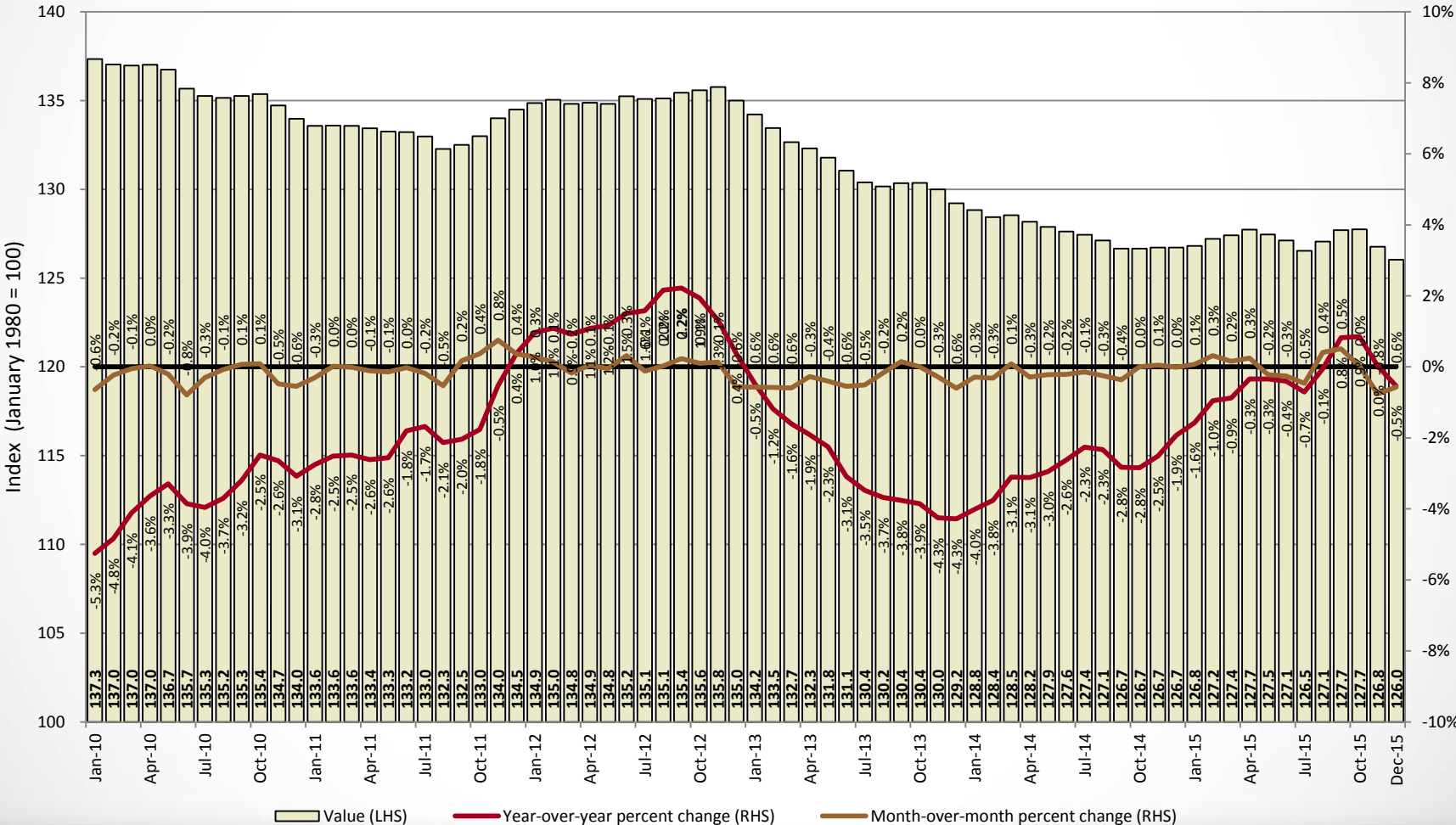
In December 2015, the GDB-EAI decreased 0.5% on a year-over-year (y-o-y) basis and reflected a month-over-month (m-o-m) decrease of 0.6%.

- The December 2015 figure for the EAI was 126.0, a 0.5% decrease compared to December 2014 and a reduction of 0.6% compared to November 2015. On a year-to-date basis (July-December), the EAI was 127.0, a small gain of 0.1% with respect to the like period in the previous year.
- Total non-farm payroll employment for December averaged 931,300, an annual increase of 0.3%.
- The preliminary data for electric power generation for December was 1,710.4 million kWh, an annual rise of 2.4%.
- The preliminary number for gasoline consumption\* in December was 83.5 million gallons, 0.8% below December 2014.
- Cement sales for December totaled 0.96 million bags, registering an annual reduction of 14.9%.

\* The monthly gasoline consumption is estimated by the GDB from the Treasury Department's monthly gasoline excise tax collections paid by importers which are transferred to P.R. Highways and Transportation Authority. These collections fluctuate due to changes in inventories and purchases, which do not necessarily reflect the actual monthly consumption reported by retailers.

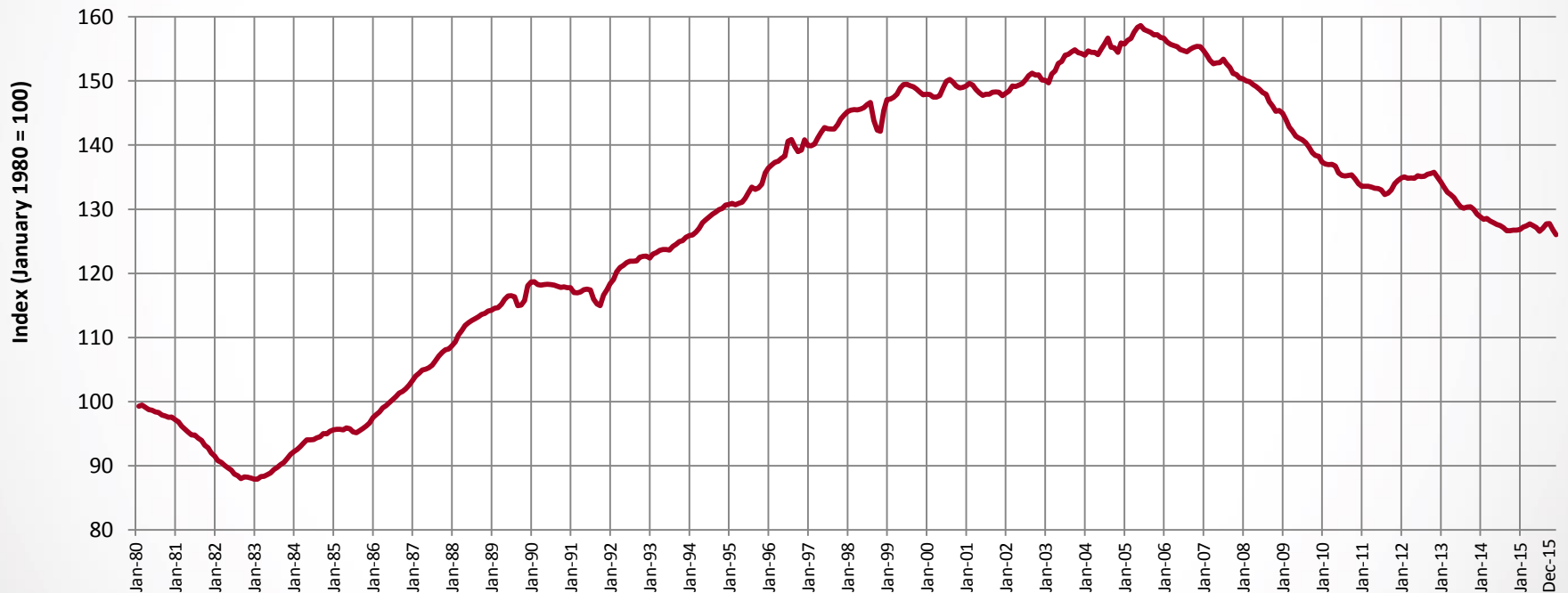
In December 2015, the GDB-EAI decreased 0.5% on a y-o-y basis. On a m-o-m basis, the index declined by 0.6%.

## GDB Economic Activity Index



The complete EAI series, beginning in January 1980, shows the recession of FY1982-FY1983, the mild recession of FY1991, and the recession of 2001. It also shows the downturn in the economy since the beginning of the current recession.

## GDB Economic Activity Index



# GDB Economic Activity Index: Data for the past decade

**PUERTO RICO ECONOMIC INDICATORS**  
GDB Economic Activity Index  
(January 1980 = 100)

**GOVERNMENT DEVELOPMENT BANK**  
ECONOMIC ANALYSIS DIVISION

FISCAL YEAR *	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
JULY	154.7	153.4	148.2	140.8	135.3	133.0	135.1	130.4	127.4	126.5
AUGUST	154.5	152.7	147.9	140.4	135.2	132.3	135.1	130.2	127.1	127.1
SEPTEMBER	155.0	152.1	146.8	139.7	135.3	132.5	135.4	130.4	126.7	127.7
OCTOBER	155.2	151.2	146.0	138.8	135.4	133.0	135.6	130.4	126.7	127.7
NOVEMBER	155.4	151.0	145.3	138.4	134.7	134.0	135.8	130.0	126.7	126.8
DECEMBER	155.4	150.5	145.4	138.2	134.0	134.5	135.0	129.2	126.7	126.0
JANUARY	154.8	150.3	145.0	137.3	133.6	134.9	134.2	128.8	126.8	
FEBRUARY	154.0	150.0	144.0	137.0	133.6	135.0	133.5	128.4	127.2	
MARCH	153.2	149.9	142.8	137.0	133.6	134.8	132.7	128.5	127.4	
APRIL	152.7	149.4	142.2	137.0	133.4	134.9	132.3	128.2	127.7	
MAY	152.8	149.1	141.4	136.7	133.3	134.8	131.8	127.9	127.5	
JUNE	152.9	148.7	141.1	135.7	133.2	135.2	131.1	127.6	127.1	

**YEAR OVER YEAR PERCENTAGE CHANGE**

FISCAL YEAR *	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
JULY	-2.1	-0.9	-3.4	-5.0	-4.0	-1.7	1.6	-3.5	-2.3	-0.7
AUGUST	-2.1	-1.2	-3.1	-5.1	-3.7	-2.1	2.2	-3.7	-2.3	-0.1
SEPTEMBER	-1.7	-1.8	-3.5	-4.8	-3.2	-2.0	2.2	-3.8	-2.8	0.8
OCTOBER	-1.2	-2.6	-3.4	-5.0	-2.5	-1.8	1.9	-3.9	-2.8	0.9
NOVEMBER	-1.2	-2.9	-3.8	-4.7	-2.6	-0.5	1.3	-4.2	-2.5	0.0
DECEMBER	-0.9	-3.2	-3.4	-4.9	-3.1	0.4	0.4	-4.3	-1.9	-0.5
JANUARY	-1.2	-2.9	-3.6	-5.3	-2.7	1.0	-0.5	-4.0	-1.6	
FEBRUARY	-1.3	-2.6	-4.0	-4.8	-2.5	1.1	-1.2	-3.8	-0.9	
MARCH	-1.6	-2.2	-4.7	-4.1	-2.5	0.9	-1.6	-3.1	-0.9	
APRIL	-1.8	-2.1	-4.9	-3.6	-2.6	1.1	-1.9	-3.1	-0.3	
MAY	-1.6	-2.4	-5.2	-3.3	-2.6	1.2	-2.2	-3.0	-0.3	
JUNE	-1.3	-2.7	-5.1	-3.9	-1.8	1.5	-3.1	-2.6	-0.4	

**YEAR OVER YEAR DIFFERENCE**

FISCAL YEAR	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
JULY	-3.3	-1.3	-5.2	-7.3	-5.6	-2.3	2.1	-4.7	-2.9	-0.9
AUGUST	-3.3	-1.9	-4.7	-7.6	-5.2	-2.9	2.9	-5.0	-3.0	-0.1
SEPTEMBER	-2.6	-2.9	-5.3	-7.1	-4.5	-2.8	2.9	-5.1	-3.7	1.0
OCTOBER	-1.9	-4.0	-5.1	-7.2	-3.4	-2.4	2.6	-5.2	-3.7	1.1
NOVEMBER	-1.8	-4.4	-5.7	-6.9	-3.6	-0.7	1.8	-5.8	-3.3	0.0
DECEMBER	-1.4	-4.9	-5.0	-7.2	-4.3	0.5	0.5	-5.8	-2.5	-0.7
JANUARY	-1.9	-4.4	-5.4	-7.6	-3.8	1.3	-0.6	-5.4	-2.0	
FEBRUARY	-2.0	-4.0	-6.0	-7.0	-3.4	1.5	-1.6	-5.0	-1.2	
MARCH	-2.5	-3.4	-7.0	-5.9	-3.4	1.2	-2.2	-4.1	-1.1	
APRIL	-2.8	-3.2	-7.3	-5.2	-3.6	1.4	-2.6	-4.1	-0.4	
MAY	-2.5	-3.7	-7.7	-4.6	-3.5	1.6	-3.0	-3.9	-0.4	
JUNE	-2.1	-4.2	-7.6	-5.4	-2.4	2.0	-4.2	-3.4	-0.5	

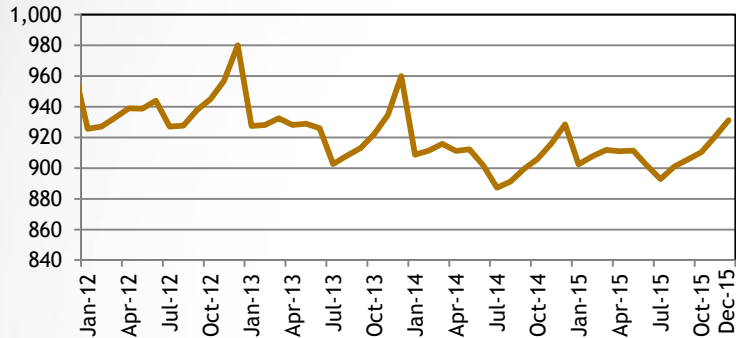
**SUMMARY DATA**

FISCAL YEAR	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
AVERAGE	154.2	150.7	144.7	138.1	134.2	134.1	134.0	129.2	127.1	
DIFFERENCE	-2.3	-3.5	-6.0	-6.6	-3.9	-0.1	-0.1	-4.8	-2.1	
% CHANGE	-1.5	-2.3	-4.0	-4.5	-2.8	-0.1	-0.1	-3.6	-1.6	
JUL-DEC										
AVERAGE	155.0	151.8	146.6	139.4	135.0	133.2	135.3	130.1	126.9	127.0
DIFFERENCE	-2.4	-3.2	-5.2	-7.2	-4.4	-1.7	2.1	-5.3	-3.2	0.1
% CHANGE	-1.5	-2.1	-3.4	-4.9	-3.2	-1.3	1.6	-3.9	-2.5	0.1
CALENDAR YEAR										
AVERAGE	152.6	148.1	141.1	135.9	133.3	135.1	131.3	127.6	127.1	
DIFFERENCE	-2.8	-4.5	-7.0	-5.2	-2.6	1.8	-3.8	-3.8	-0.4	
% CHANGE	-1.8	-3.0	-4.7	-3.7	-1.9	1.4	-2.8	-2.9	-0.3	
JAN-DEC										
AVERAGE	152.6	148.1	141.1	135.9	133.3	135.1	131.3	127.6	127.1	
DIFFERENCE	-2.8	-4.5	-7.0	-5.2	-2.6	1.8	-3.8	-3.8	-0.4	
% CHANGE	-1.8	-3.0	-4.7	-3.7	-1.9	1.4	-2.8	-2.9	-0.3	

# GDB Economic Activity Index Components

## Total Non-Farm Payroll Employment\*

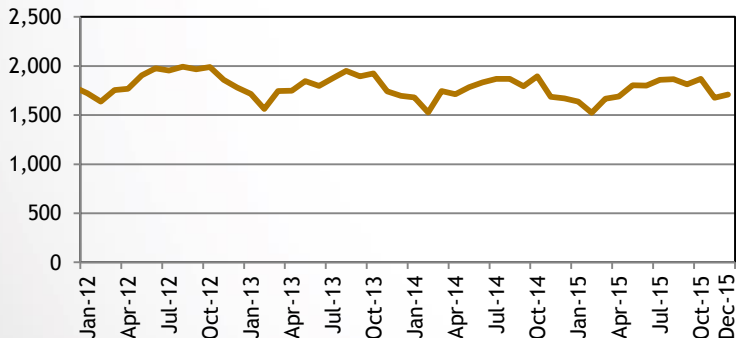
(Thousands)



- Total non-farm payroll employment in December 2015 was 931,300, an annual increase of 0.3%.

## Electric Power Generation\*

(Million kWh)



- The preliminary data for electric power generation for December 2015 was 1,710.4 million kWh, an annual rise of 2.4 %.

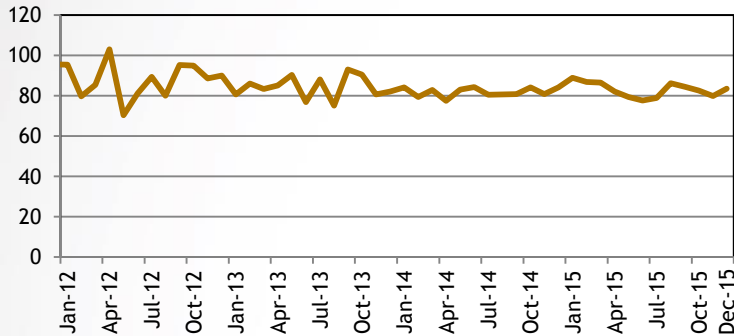
Sources: BLS and PREPA  
\* Not seasonally adjusted.



# GDB Economic Activity Index Components

## Gasoline Consumption\*

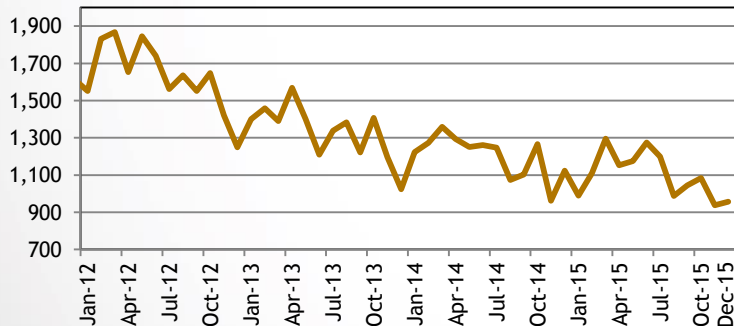
(Million gallons)



- The preliminary estimate of gasoline consumption for December 2015 was 83.5 million gallons, for an annual decrease of 0.8%.

## Cement Sales\*

(Cement bags sold, in thousands)



- Cement Sales for December 2015 totaled 0.96 million bags, an annual reduction of 14.9%.

\*The monthly gasoline consumption is estimated by the GDB from the Treasury Department's monthly gasoline excise tax collections paid by importers which are transferred to P.R. Highways and Transportation Authority.

Sources: PRHTA and GDB  
\* Not seasonally adjusted.

# **Description of the GDB-Economic Activity Index**

# GDB Economic Activity Index Features and Composition

## Advantages of the GDB-EAI:

- Readily available
- Highly correlated to Puerto Rico's real GNP
- Reliable tool to track current activity level in the Puerto Rico economy
- Month-over-month comparisons are reliable

## The GDB-EAI is made up of 4 indicators:

- Total Payroll Employment (Establishments Survey/ Thousands)
- Total Electric Power Generation (Million kWh)
- Cement Sales (Million bags)
- Gasoline Consumption (Million gallons)

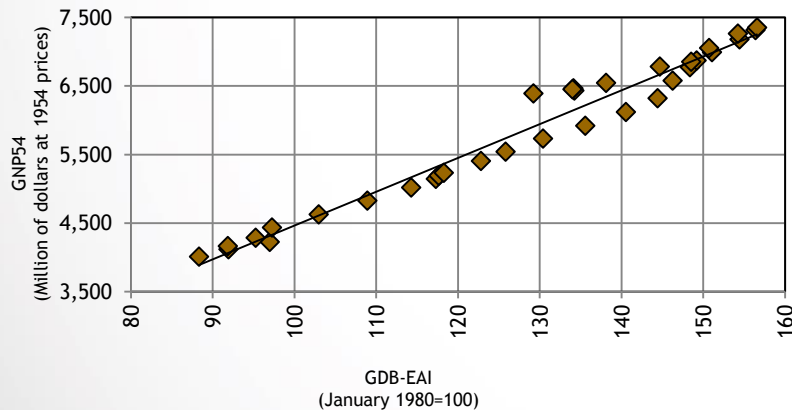
# Description of the GDB-EAI

- The GDB-EAI is a coincident index of economic activity for Puerto Rico. It is highly correlated to Puerto Rico's real GNP in both levels and annual growth rates.
- This index's methodology is similar to that used in The Conference Board's coincident index of the US economy. The methodology follows a standard procedure to adjust the data for seasonality and volatility factors.

## Real Gross National Product as a function of the GDB Economic Activity Index

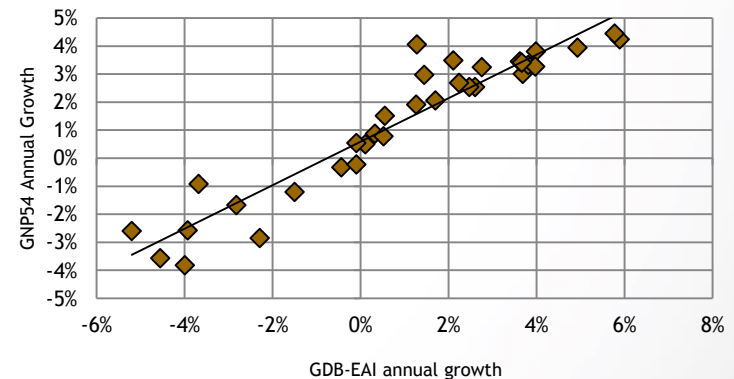
Regression of real GEP on the EAI: FY1981-FY2014

$$y = 49.324x - 469.42 \quad R^2 = 0.9681$$



Regression of Real GNP Growth on EAI Growth: FY1982-FY2014

$$y = 0.7789x + 0.0058 \quad R^2 = 0.8974$$



Sources: GDB

# Disclaimer

The GDB-EAI and its component indicators are subject to revision. While the information comprising the GDB-EAI has been obtained from sources GDB believes to be reliable, GDB is not responsible for any errors or omissions, or for results obtained from the use of this information.