



GOVERNMENT OF PUERTO RICO
Government Development Bank for
Puerto Rico



Economic Activity Index (“GDB-EAI”)

May 2017



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.

- When it is annualized, the **level** of the **EAI** is highly correlated with the **level** of **real GNP** (with a Pearson correlation coefficient of 0.9760, for FY1981-FY2016).
- Annual **growth rates** of both variables are also highly correlated (with a Pearson correlation coefficient of 0.9547, for FY1982-FY2016).
- Nevertheless, the annual growth rate of the EAI **IS NOT** the same as the annual growth rate of real GNP. Being highly correlated does not mean being equal.
- In order to approximate real GNP growth from EAI annual growth, we estimate a linear regression model relating both variables.
- Plugging in EAI annual growth rates into the resulting equation, we obtain estimates for the annual growth rates of real GNP, which approximate real GNP annual growth figures published by the Planning Board.

About the interpretation of the GDB-EAI (2)

The GDB-EAI is an indicator of the 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.

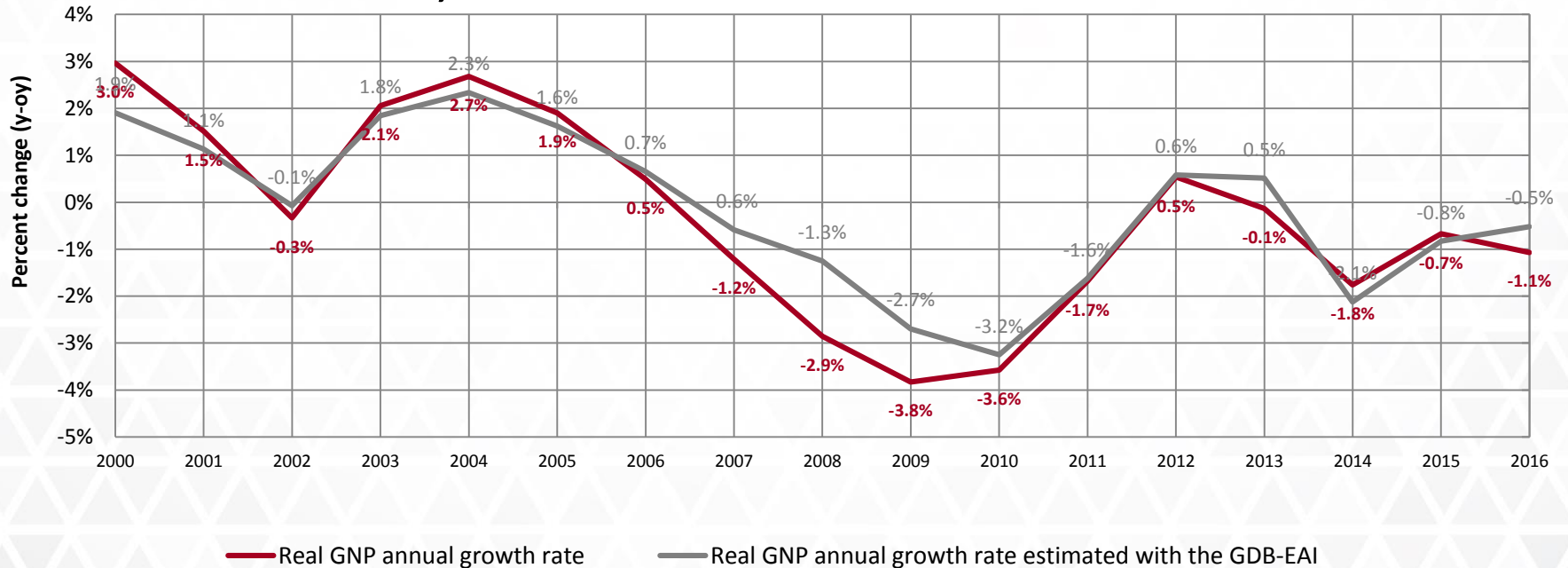
Fiscal Year	GDB-EAI annual growth	Real GNP annual growth estimated using the GDB-EAI	Current real GNP annual growth
2003	1.6%	1.8%	2.1%
2004	2.3%	2.3%	2.7%
2005	1.4%	1.6%	1.9%
2006	0.1%	0.7%	0.5%
2007	-1.5%	-0.6%	-1.2%
2008	-2.3%	-1.3%	-2.9%
2009	-4.2%	-2.7%	-3.8%
2010	-4.9%	-3.2%	-3.6%
2011	-2.8%	-1.6%	-1.7%
2012	0.0%	0.6%	0.5%
2013	-0.1%	0.5%	-0.1%
2014	-3.4%	-2.1%	-1.8%
2015	-1.8%	-0.8%	-0.7%
2016	-1.4%	-0.5%	-1.1%

- However, real GNP growth estimates based on the EAI are relatively close (**although not identical**) to actual real GNP growth figures.
- Real GNP growth for FY2016 was estimated at -0.5% using a regression equation with the growth of the EAI as the independent variable, while the Planning Board reported a decline of 1.1%. The index's annual growth is calculated as the annual percentage change of the twelve-month average.
- On average, the index-based estimates for real GNP growth were close to the current estimates of the Planning Board.

About the interpretation of the GDB-EAI (3)

The graph compares actual real GNP growth rates with projected real GNP growth rates based on the GDB-EAI.

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



Real GNP data source: Puerto Rico Planning Board



Overview – May 2017

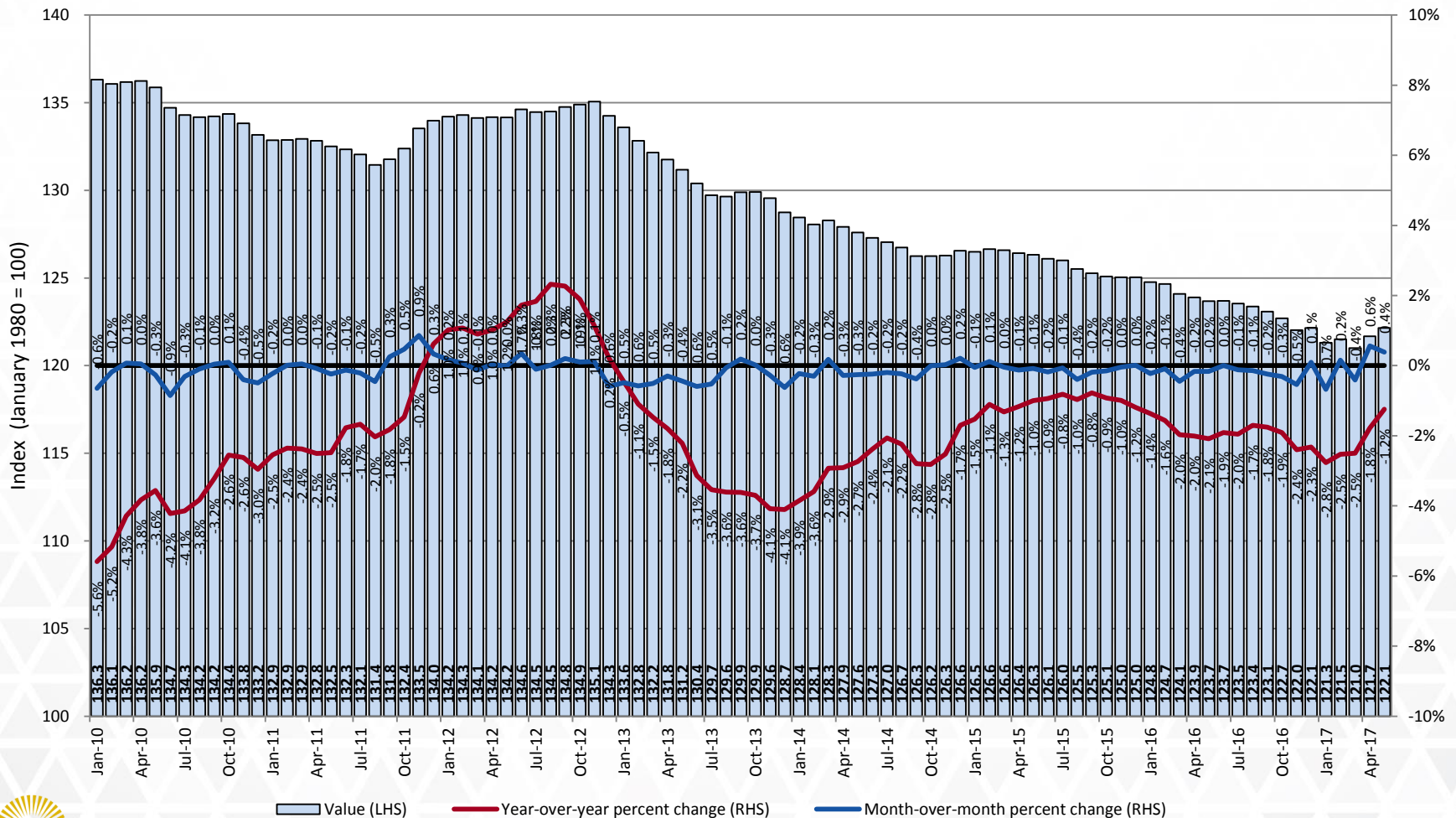
In May 2017, the GDB-EAI registered a reduction of 1.2% y-o-y, and an advance of 0.4% in a m-o-m basis.

- The May 2017 figure for the EAI was 122.1, a 1.2% reduction compared to May 2016, and an increment of 0.4% compared to April 2017. On a year-to-date basis (July 2016 to May 2017) the decline was 2.1% with respect to the same period of the previous fiscal year.
- Total non-farm payroll employment for May 2017 averaged 882,500, an annual decrease of 1.0%.
- Electric power generation for May 2017 totaled 1,746.5 million kWh, an annual decrease of 2.8%.
- The preliminary number for gasoline consumption* in May 2017 was 85.3 million gallons, or 3.7% above May 2016.
- Cement sales for May 2017 totaled 1.07 million bags, registering an annual increase of 7.2%.

* 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.

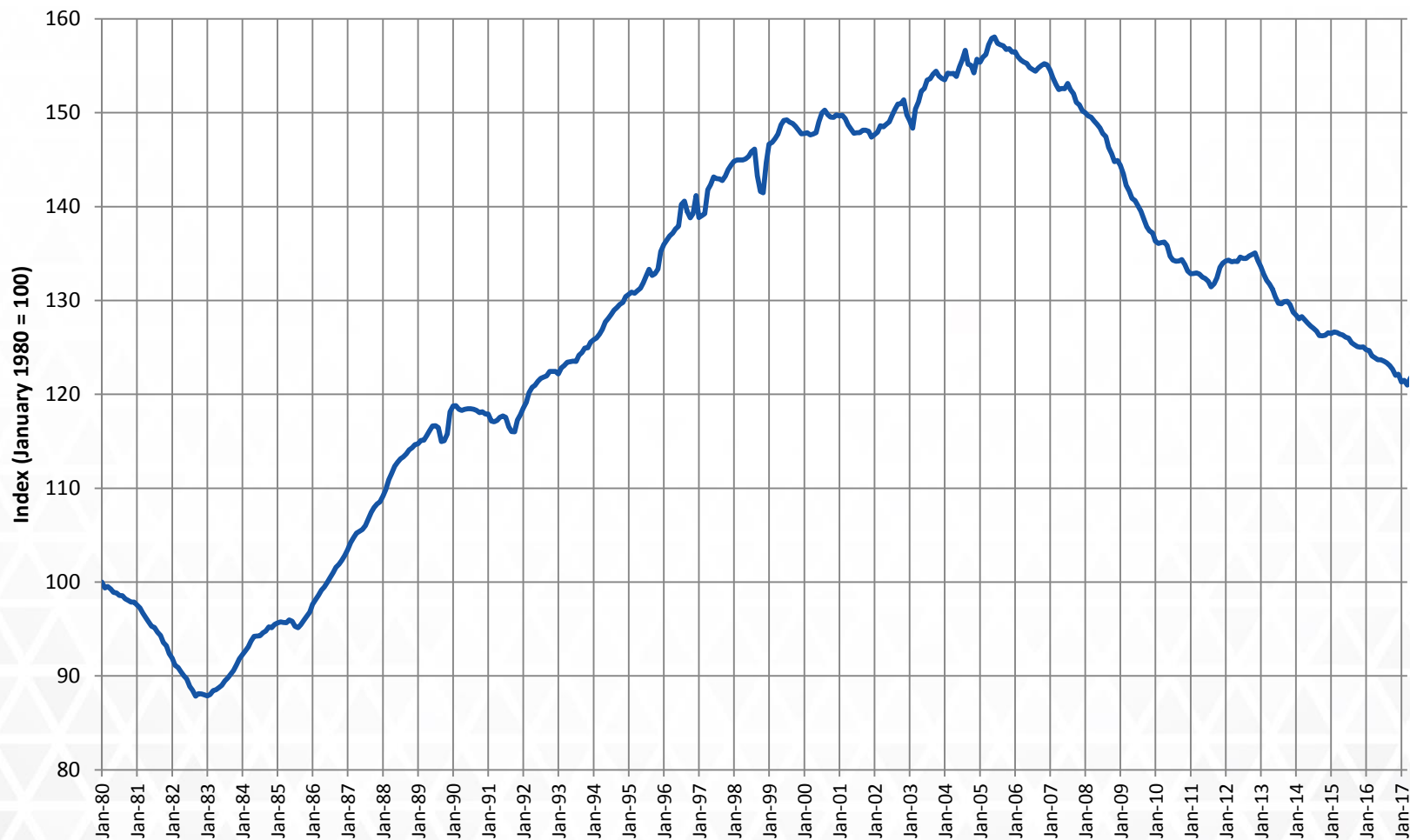
In May 2017, the GDB-EAI registered a 1.2% y-o-y reduction, and a 0.4% increase on a m-o-m basis.

GDB Economic Activity Index



The complete series of the new EAI, which starts in January 1980, shows the recessions of FY1982 and FY1983, the mild recession of FY1991, and the recession of 2001. It also shows the downward path of the Index 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)				Go to Index		GOVERNMENT DEVELOPMENT BANK Economic Analysis Division				
FISCAL YEAR *	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
JULY	153.1	147.8	140.1	134.3	132.0	134.5	129.7	127.0	126.0	123.5
AUGUST	152.5	147.5	139.5	134.2	131.4	134.5	129.6	126.7	125.5	123.4
SEPTEMBER	152.0	146.3	138.7	134.2	131.8	134.8	129.9	126.3	125.3	123.1
OCTOBER	151.1	145.6	137.9	134.4	132.4	134.9	129.9	126.2	125.1	122.7
NOVEMBER	150.8	144.8	137.4	133.8	133.5	135.1	129.5	126.3	125.0	122.0
DECEMBER	150.2	144.9	137.2	133.2	134.0	134.3	128.7	126.5	125.0	122.1
JANUARY	150.0	144.4	136.3	132.9	134.2	133.6	128.4	126.5	124.8	121.3
FEBRUARY	149.6	143.5	136.1	132.9	134.3	132.8	128.1	126.6	124.7	121.5
MARCH	149.5	142.3	136.2	132.9	134.1	132.1	128.3	126.6	124.1	121.0
APRIL	149.1	141.7	136.2	132.8	134.2	131.8	127.9	126.4	123.9	121.7
MAY	148.8	140.9	135.9	132.5	134.1	131.2	127.6	126.3	123.7	122.1
JUNE	148.4	140.6	134.7	132.3	134.6	130.4	127.3	126.1	123.7	
YEAR OVER YEAR PERCENTAGE CHANGE										
FISCAL YEAR *	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
JULY	-1.0	-3.5	-5.2	-4.1	-1.7	1.8	-3.5	-2.1	-0.8	-2.0
AUGUST	-1.3	-3.3	-5.4	-3.8	-2.0	2.3	-3.6	-2.2	-1.0	-1.7
SEPTEMBER	-1.8	-3.8	-5.2	-3.2	-1.8	2.3	-3.6	-2.8	-0.8	-1.8
OCTOBER	-2.5	-3.6	-5.3	-2.5	-1.5	1.9	-3.7	-2.8	-0.9	-1.9
NOVEMBER	-2.8	-4.0	-5.1	-2.6	-0.2	1.1	-4.1	-2.5	-1.0	-2.4
DECEMBER	-3.2	-3.5	-5.3	-3.0	0.6	0.2	-4.1	-1.7	-1.2	-2.3
JANUARY	-2.9	-3.7	-5.6	-2.5	1.0	-0.5	-3.9	-1.5	-1.4	-2.8
FEBRUARY	-2.6	-4.1	-5.2	-2.4	1.1	-1.1	-3.6	-1.1	-1.6	-2.5
MARCH	-2.3	-4.9	-4.3	-2.4	0.9	-1.5	-2.9	-1.3	-2.0	-2.5
APRIL	-2.2	-5.0	-3.8	-2.5	1.0	-1.8	-2.9	-1.2	-2.0	-1.8
MAY	-2.5	-5.3	-3.6	-2.5	1.2	-2.2	-2.7	-1.0	-2.1	-1.2
JUNE	-2.7	-5.2	-4.2	-1.8	1.7	-3.1	-2.4	-0.9	-1.9	
YEAR OVER YEAR DIFFERENCE										
FISCAL YEAR *	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
JULY	-1.5	-5.3	-7.7	-5.8	-2.2	2.4	-4.8	-2.7	-1.0	-2.5
AUGUST	-1.9	-5.0	-8.0	-5.3	-2.7	3.0	-4.9	-2.9	-1.2	-2.1
SEPTEMBER	-2.8	-5.7	-7.6	-4.5	-2.5	3.0	-4.9	-3.6	-1.0	-2.2
OCTOBER	-3.9	-5.5	-7.8	-3.5	-2.0	2.5	-5.0	-3.7	-1.2	-2.4
NOVEMBER	-4.4	-6.0	-7.4	-3.6	-0.3	1.5	-5.5	-3.3	-1.2	-3.0
DECEMBER	-4.9	-5.3	-7.7	-4.1	0.8	0.3	-5.5	-2.2	-1.5	-2.9
JANUARY	-4.5	-5.6	-8.1	-3.5	1.4	-0.6	-5.2	-2.0	-1.7	-3.5
FEBRUARY	-4.1	-6.2	-7.4	-3.2	1.4	-1.5	-4.8	-1.4	-2.0	-3.2
MARCH	-3.5	-7.3	-6.1	-3.2	1.2	-2.0	-3.9	-1.7	-2.5	-3.1
APRIL	-3.4	-7.5	-5.4	-3.4	1.3	-2.4	-3.8	-1.5	-2.5	-2.2
MAY	-3.8	-7.9	-5.0	-3.4	1.7	-3.0	-3.6	-1.3	-2.6	-1.5
JUNE	-4.2	-7.7	-5.9	-2.4	2.3	-4.2	-3.1	-1.2	-2.4	
SUMMARY DATA										
FISCAL YEAR *	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
AVERAGE	150.4	144.2	137.2	133.4	133.4	133.3	128.7	126.5	124.7	
DIFFERENCE	-3.6	-6.2	-7.0	-3.8	0.0	-0.1	-4.6	-2.3	-1.7	
% CHANGE	-2.3	-4.2	-4.9	-2.8	0.0	-0.1	-3.4	-1.8	-1.4	
JUL-MAY										
AVERAGE	150.6	144.5	137.4	133.5	133.3	133.6	128.9	126.5	124.8	122.2
DIFFERENCE	-3.5	-6.1	-7.1	-4.0	-0.2	0.3	-4.7	-2.4	-1.7	-2.6
% CHANGE	-2.3	-4.1	-4.9	-2.9	-0.1	0.2	-3.5	-1.8	-1.3	-2.1
CALENDAR YEAR										
AVERAGE	147.7	140.3	134.9	132.6	134.5	130.8	127.2	125.9	123.5	
DIFFERENCE	-4.7	-7.4	-5.4	-2.3	1.8	-3.7	-3.6	-1.4	-2.4	
% CHANGE	-3.1	-5.0	-3.8	-1.7	1.4	-2.7	-2.7	-1.1	-1.9	
JAN-MAY										
AVERAGE	149.4	142.5	136.1	132.8	134.2	132.3	128.1	126.5	124.2	121.5
DIFFERENCE	-3.8	-6.9	-6.4	-3.3	1.4	-1.9	-4.2	-1.6	-2.3	-2.7
% CHANGE	-2.5	-4.6	-4.5	-2.5	1.1	-1.4	-3.2	-1.2	-1.8	-2.2

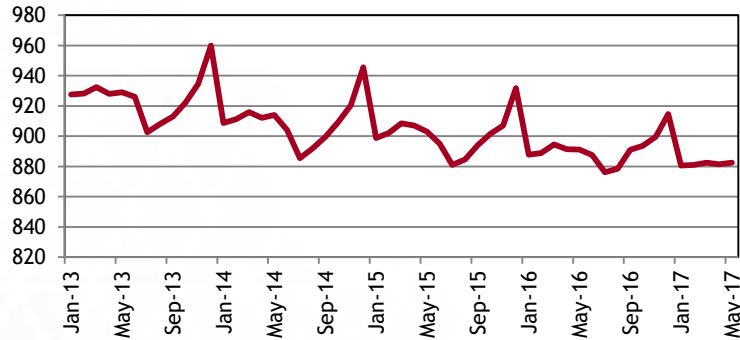
* Runs from July of the previous year to June current year.
Variable: EAIBGF_TS

• Source: Government Development Bank for Puerto Rico

GDB Economic Activity Index Components

Total Non-Farm Payroll Employment*

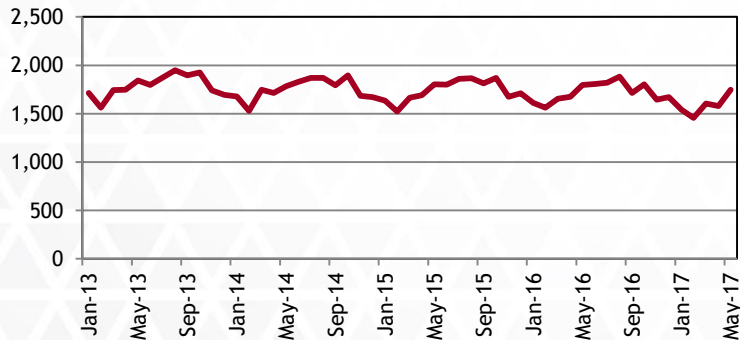
(Thousands of jobs)



- Total non-farm payroll employment for May 2017 averaged 882,500, an annual decrease of 1.0%.

Electric Power Generation*

(Millions of kWh)



- Electric power generation for May 2017 averaged 1,746.5 million kWh, an annual decrease of 2.8%.

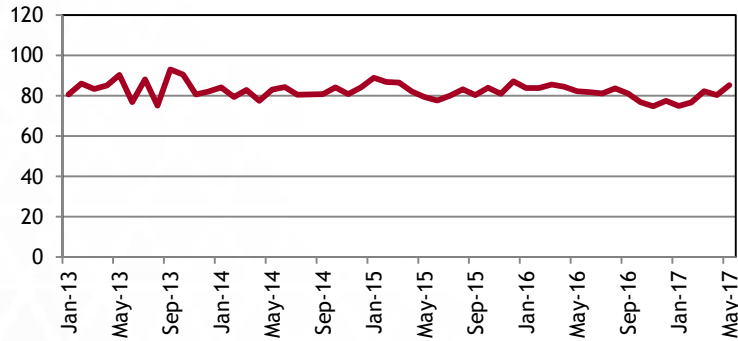


Sources: BLS and PREPA
* Not seasonally adjusted.

GDB Economic Activity Index Components

Gasoline Consumption*

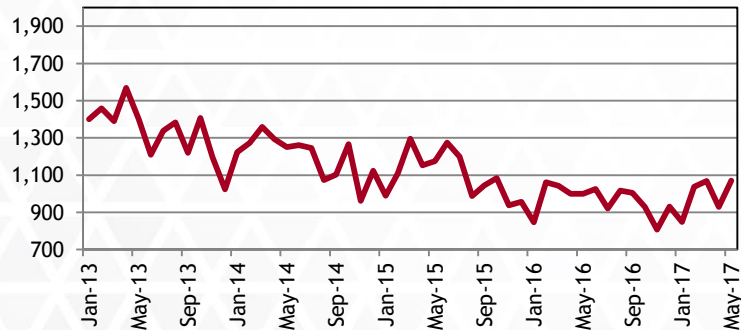
(Millions of gallons)



- The preliminary estimate of gasoline consumption for May 2017 was 85.3 million gallons, for an annual increase of 3.7%.

Cement Sales*

(Cement bags sold, in thousands)



- Cement Sales for May 2017 totaled 1.07 million bags, an annual increase of 7.2%.

*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-EAI Highlights and Composition

GDB Economic Activity Index Highlights

Advantages of the GDB-EAI:

- Readily available
- Highly correlated to Puerto Rico's real GNP
- Reliable tool to monitor actual trend of Puerto Rico's economy

The GDB-EAI is made up of 4 indicators:

- Total Payroll Employment (Establishment Survey/ Thousands of employees)
- Total Electric Power Generation (Millions of kWh)
- Cement Sales (Millions of bags)
- Gas Consumption (Millions of gallons)

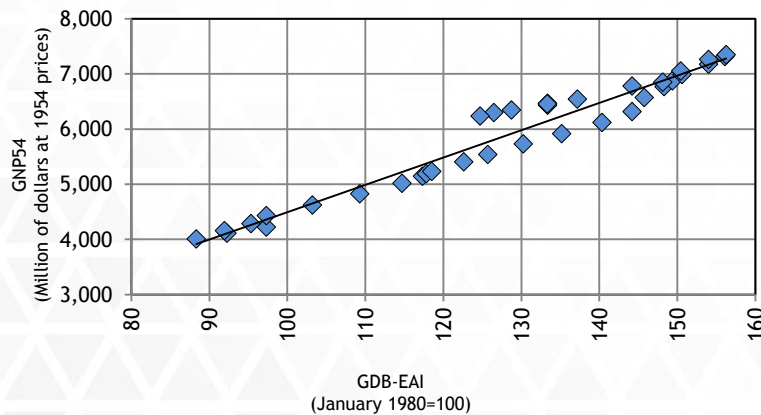
Description of the GDB-EAI

- The GDB-EAI is a coincident index for the economic activity of 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. This 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

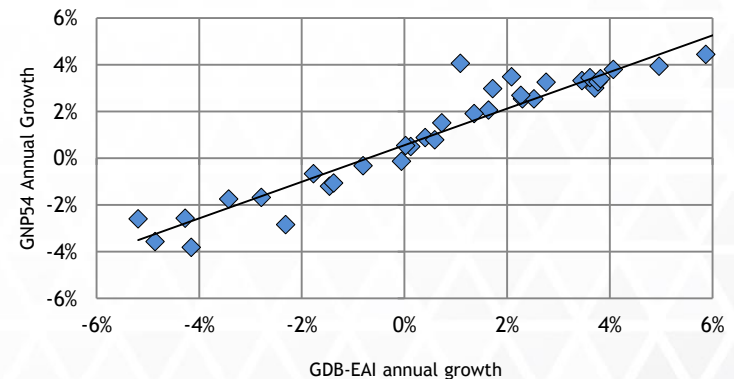
Relationship on the levels: FY1981-FY2016

$$y = 49.588x - 467.8 \quad R^2 = 0.9526$$



Relationship on the growth rates: FY1982-FY2016

$$y = 0.7836x + 0.0056 \quad R^2 = 0.9114$$



Sources: GDB



Disclaimer

The GDB-EAI and its indicators are subject to revisions. 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 the results obtained from the use of this information.