



COMMONWEALTH OF  
PUERTO RICO

Government Development Bank  
for Puerto Rico

September 2014

# Economic Activity Index (“GDB-EAI”)

# General Commentary - September 2014

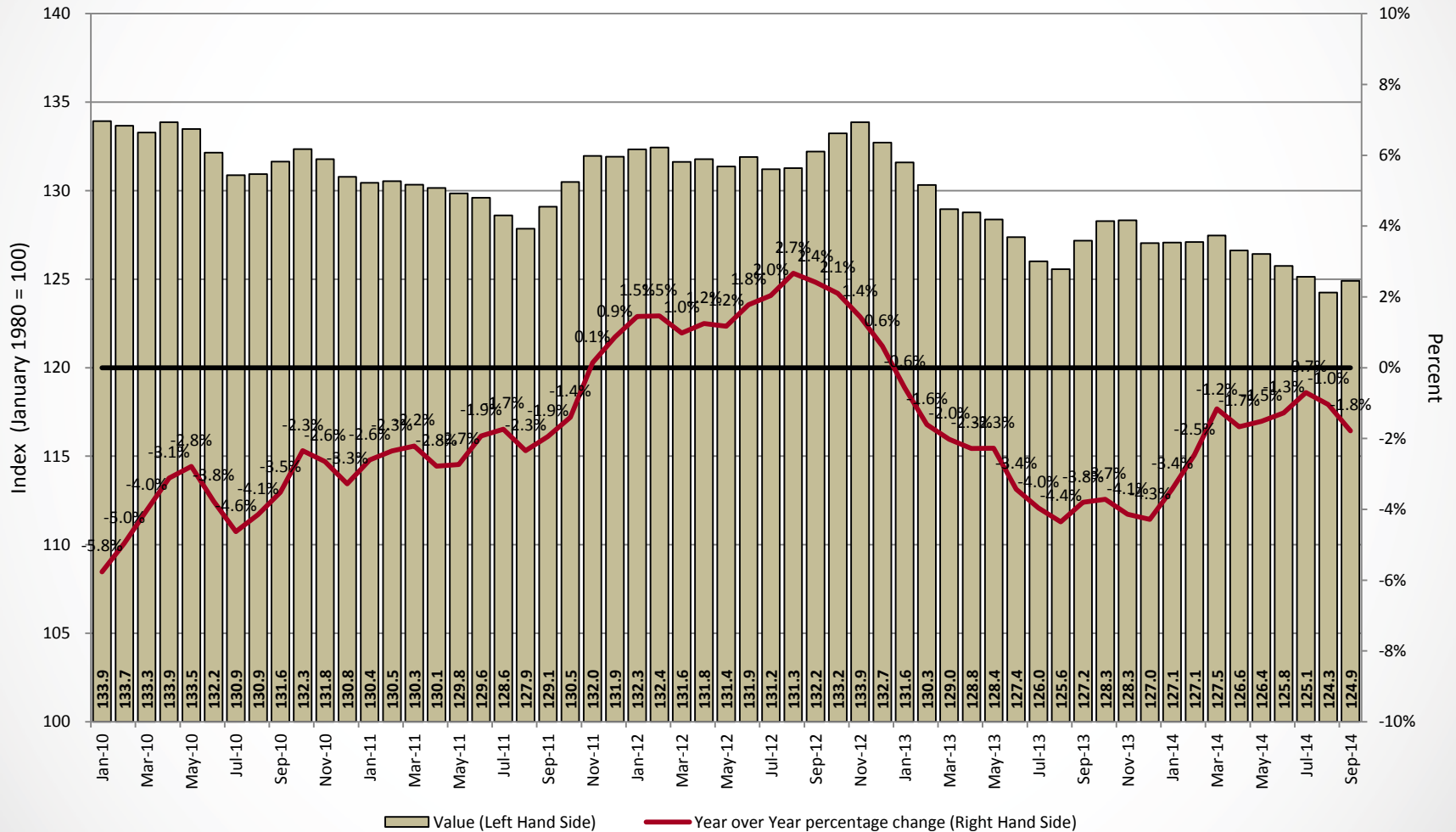
In September 2014, the GDB-EAI registered a 1.8% year-over-year (y-o-y) reduction, and a month-over-month (m-o-m) increase of 0.5%.

- The September 2014 figure for the EAI was 124.9, a 1.8% reduction compared to September 2013, and an increase of 0.5% compared to August 2014.
- Total non-farm payroll employment for September 2014 averaged 916,300, an annual increase of 0.2%.
- Electric power generation for September 2014 totaled 1,795.2 million kWh, an annual decrease of 5.3%.
- The preliminary number for gasoline consumption\* in September 2014 was 85.1 million gallons, 8.6% below September 2013. The monthly figures of gasoline were revised from March to June 2014 which affected the level of the index.
- Cement sales for September 2014 totaled 1.10 million bags, registering an annual decrease of 9.7%.

\* 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.

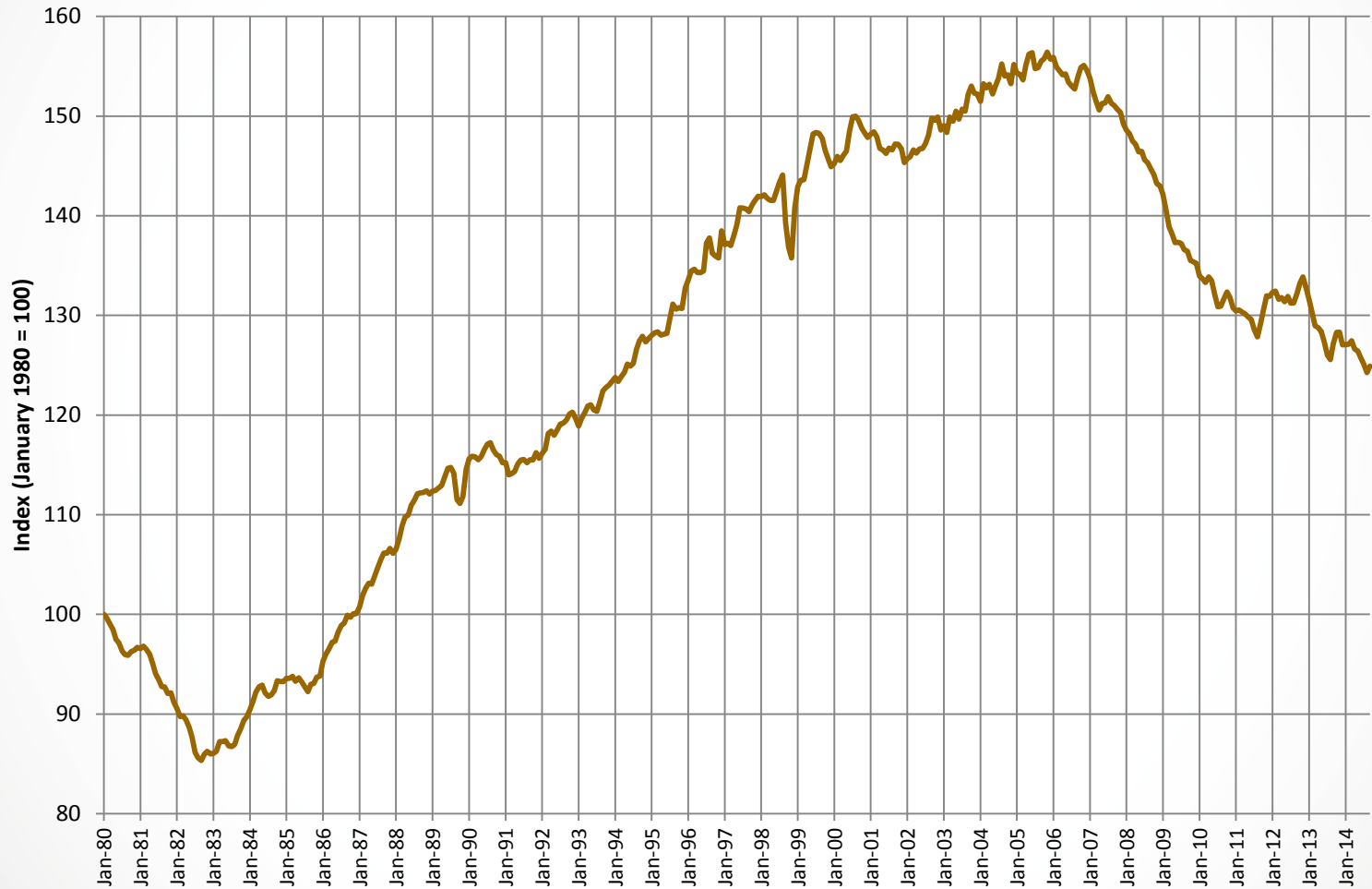
- The GDB-EAI registered a 1.8% year-over-year reduction in September 2014,
- and an increase of 0.5% compared to August 2014.

## GDB Economic Activity Index



- The complete series of the new EAI, which starts in January 1980, shows the recessions of FY1982 and FY1983, and the mild recession of FY1991, the recession of 2001. It also shows the path of the Index since the beginning of the current recession.

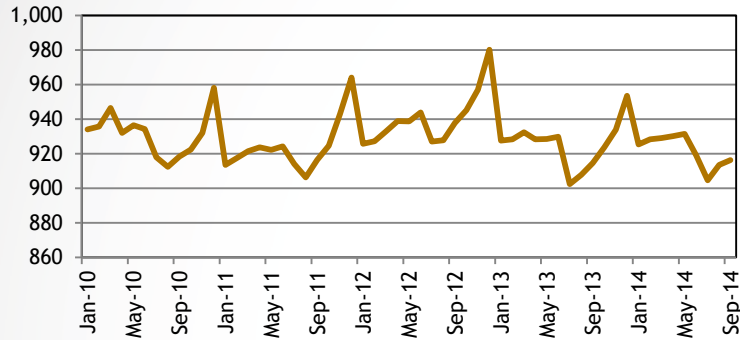
## GDB Economic Activity Index



# GDB Economic Activity Index Components

## Total Non-Farm Payroll Employment\*

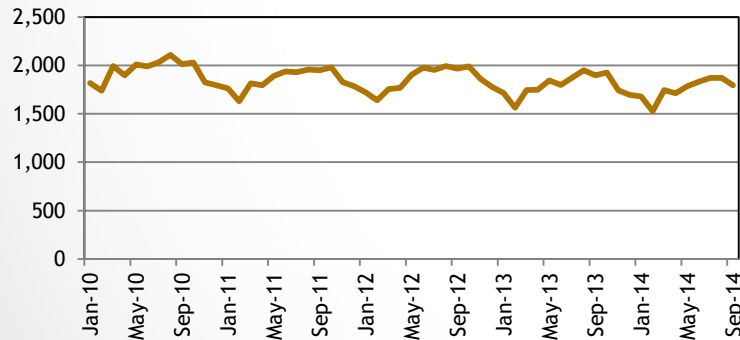
(Thousands of jobs)



- Total non-farm payroll employment for September 2014 averaged 916,300, an annual increase of 0.2%.

## Electric Power Generation

(Millions of kWh)



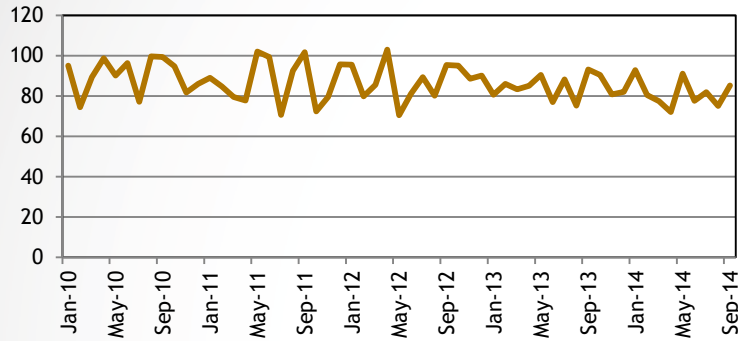
- Electric power generation for September 2014 averaged 1,795.2 million kWh, an annual decrease of 5.3%.

Sources: BLS and PREPA  
\* Not seasonally adjusted.

# GDB Economic Activity Index Components

## Gasoline Consumption

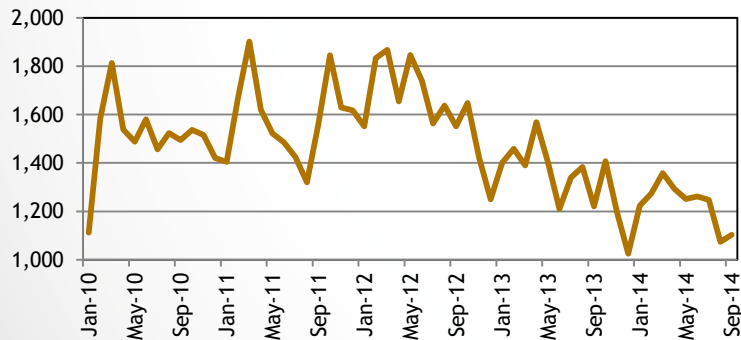
(Millions of gallons)



- The preliminary estimate of gasoline consumption\* for September 2014 was 85.1 million gallons, for an annual decrease of 8.6%.
- The monthly figures of gasoline were revised from March to June 2014 which affected the level of the index.

## Cement Sales

(Cement bags sold, in thousands)



- Cement Sales for September 2014 totaled 1.10 million bags, an annual decrease of 9.7%.

\*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 economy

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

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



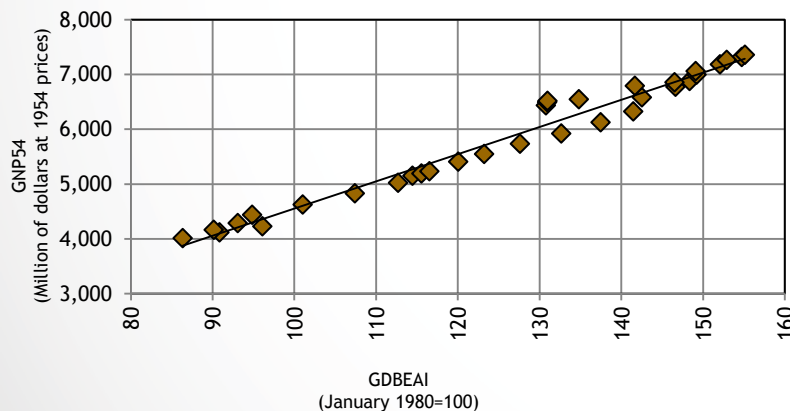
# Description of the GDB-EAI

- The GDB-EAI is a coincident index for the economic activity of Puerto Rico. It is highly correlated to Puerto Rico's real GNP not only on the levels, but also on the annual growth rates.
- This index was developed following the methodology similar to that used by The Conference Board in their coincident index. 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

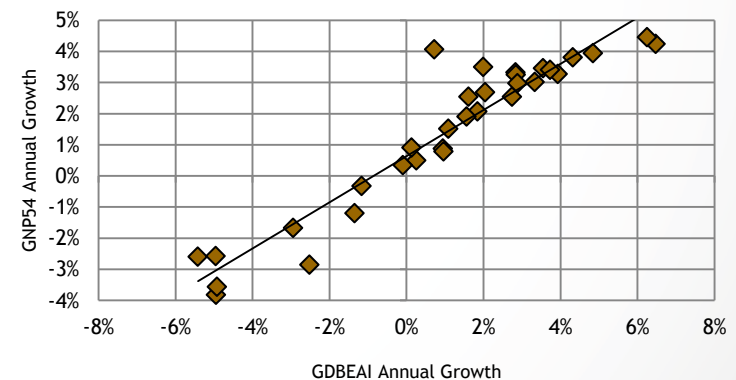
Relationship on the levels: FY1981-FY2013

$$y = 49.65x - 413.16 \quad R^2 = 0.9718$$



Relationship on the growth rates: FY1982-FY2013

$$y = 0.7419x + 0.0064 \quad R^2 = 0.8974$$



Sources: GDB

# Appendix

# Clarification about the interpretation of the GDB-EAI figures

The GDB-EAI is an indicator of the general economic activity, not a direct measurement of the real GNP. Moreover, the GDB-EAI annual growth rates are not the same as the real GNP growth rates, because the former are more volatile than the latter.

- When it is annualized, the level of the EAI is highly correlated with the **level** of the real GNP (with a Pearson correlation coefficient of 0.9858, for FY1981-FY2013).
- The annual **growth rates** of both variables are also highly correlated (with a Pearson correlation coefficient of 0.9473, for FY1982-FY2013).
- Nevertheless, the annual growth rate of the EAI **IS NOT** the same as the annual growth rate of the real GNP. Being highly correlated does not mean being equal.
- In order to approximate real GNP growth from the EAI annual growth, we estimate a linear regression model relating both variables.
- Plugging in the EAI annual growth rates into the resulting equation we obtain estimates for the annual growth rates of the real GNP.
- This transformation generates an approximation of the actual real GNP growth figures.

# Clarification about the interpretation of the GDB-EAI figures (2)

Here is a comparison of the annual growth rates of the GDB-EAI with the actual real GNP figures. There are also estimates of the annual growth of the real GNP using the figures coming from the GDB-EAI.

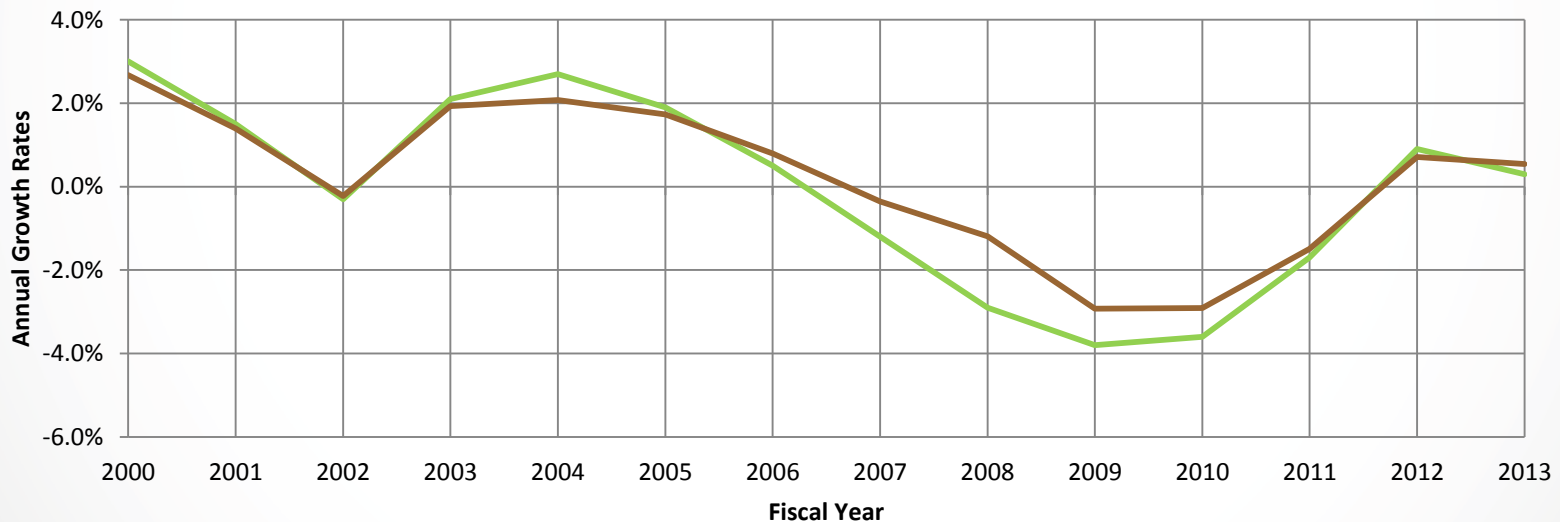
Fiscal Year	EAI Annual growth	Real GNP annual growth estimated using the EAI	Actual Real GNP annual Growth
2000	2.9%	2.8%	3.0%
2001	1.1%	1.4%	1.5%
2002	-1.2%	-0.2%	-0.3%
2003	1.8%	2.0%	2.1%
2004	2.0%	2.2%	2.7%
2005	1.6%	1.8%	1.9%
2006	0.3%	0.8%	0.5%
2007	-1.3%	-0.4%	-1.2%
2008	-2.5%	-1.2%	-2.9%
2009	-4.9%	-3.0%	-3.8%
2010	-4.9%	-3.0%	-3.6%
2011	-2.9%	-1.5%	-1.7%
2012	0.1%	0.7%	0.9%
2013	-0.1%	0.6%	0.3%

- Notice that the real GNP growth estimates coming from the EAI are relatively close to the actual real GNP growth figures.

# Clarification about the interpretation of the GDB-EAI figures (3)

Here is a comparison graph of the actual real GNP figures and the estimates of the annual growth of the real GNP using the figures coming from the GDB-EAI.

**Growth Rates Comparisons:  
Real GNP, and real GNP estimated with the GDB-EAI**



— Real GNP annual growth rate — Real GNP annual growth estimated using the EAI

# 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.