



COMMONWEALTH OF  
PUERTO RICO

Government Development Bank  
for Puerto Rico

March 2014

# Economic Activity Index (“GDB-EAI”)

# General Commentary -March 2014

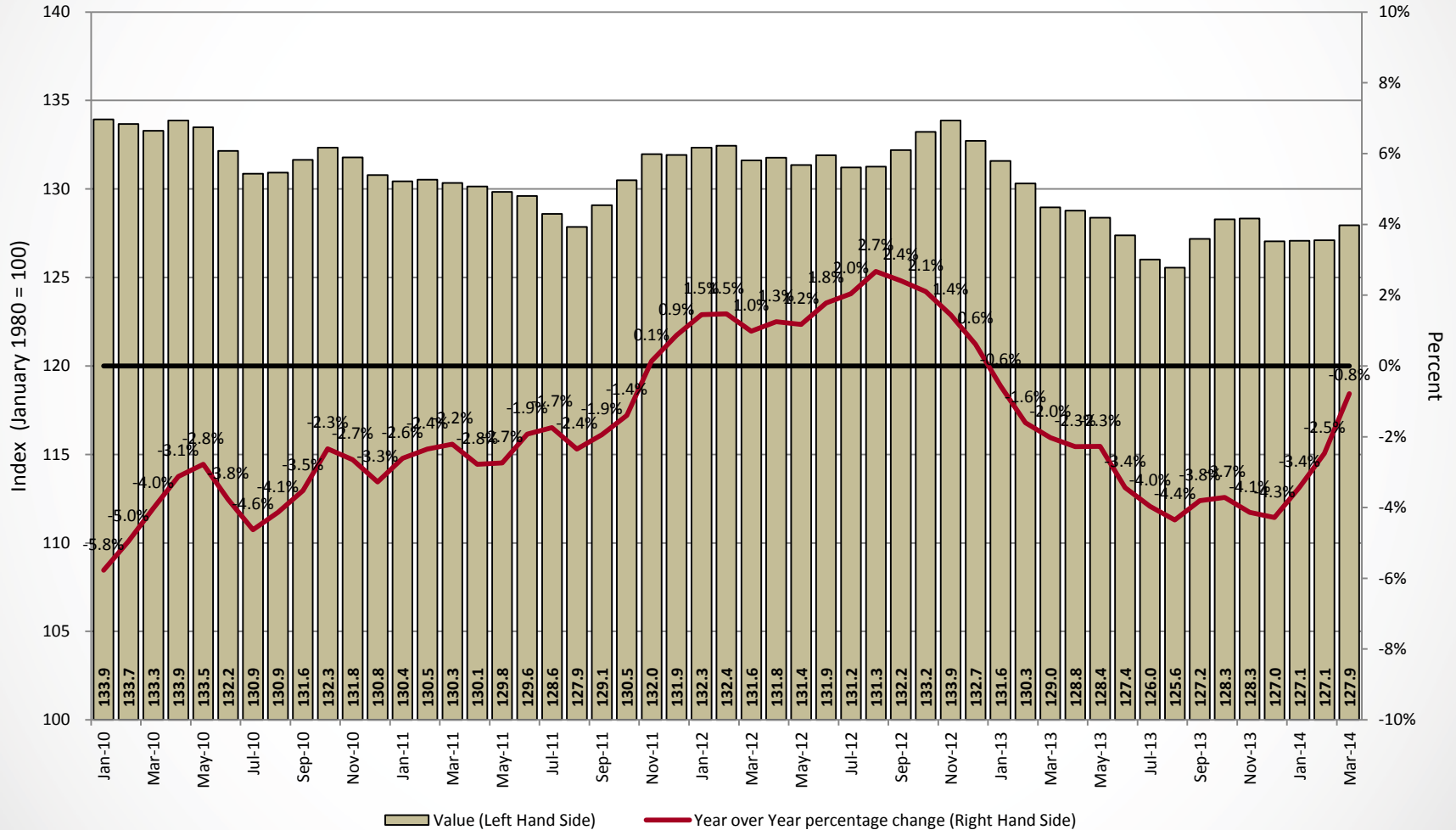
In March 2014, the GDB-EAI registered a 0.8% year-over-year (y-o-y) reduction (the lowest since February 2013), after showing a 2.5% y-o-y decrease in February 2014.

- The March 2014 EAI was 127.9, a 0.8% reduction compared to March 2013. Moreover, the FY2014 YTD (July-March) EAI showed a reduction of 3.4% with respect to the corresponding figure for FY2013.
- Total non-farm payroll employment for March 2014 averaged 928,200, an annual decrease of 0.5%, while FY2014 YTD total non-farm payroll employment showed a 1.7% decrease with respect to the corresponding figure for FY2013. During this month, total private employment increased by 0.8% y-o-y (5,300 jobs), while total public employment decreased by 3.8% y-o-y (9,500 jobs).
- Electric power generation for March 2014 totaled 1,745.7 million kWh, an annual growth of 0.0%. Electricity generation for FY2014 YTD was 3.2% less than during the same period of FY2013.
- The preliminary number for gasoline consumption\* in March 2014 was 100.2 million gallons, 20.2% above March 2013. The FY2014 YTD gasoline consumption number was 0.6% below the corresponding figure for FY2013.
- Cement sales for March 2014 totaled 1.36 million bags, registering an annual reduction of 2.2%. Sales for FY2014 YTD were 14.2% below the figure for the same period of FY2013.

\* 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.

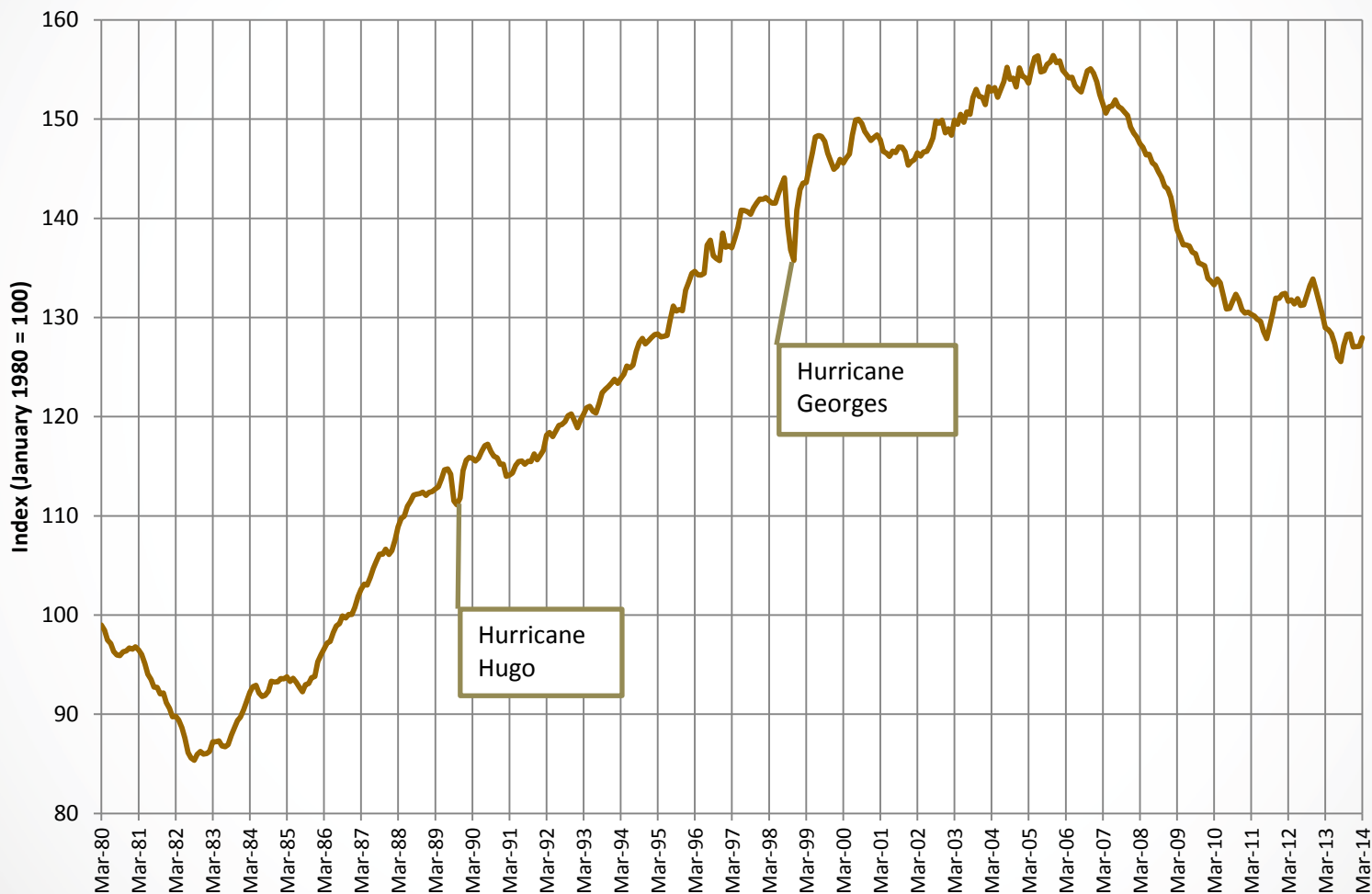
- The GDB-EAI registered a 0.8% year-over-year reduction in March, after showing a 2.5% y-o-y decrease in February 2014.

## GDB Economic Activity Index



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

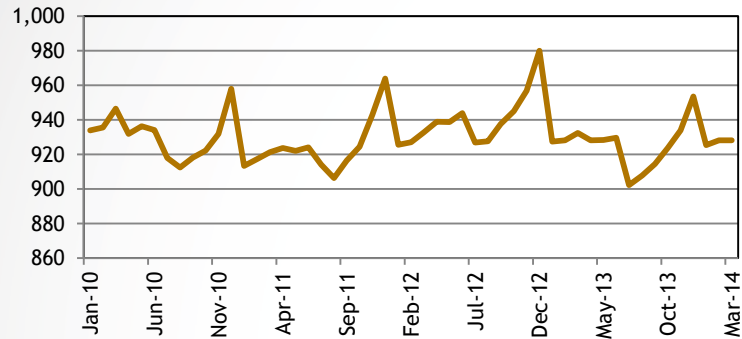
## GDB Economic Activity Index



# GDB Economic Activity Index Components

## Total Non-Farm Payroll Employment\*

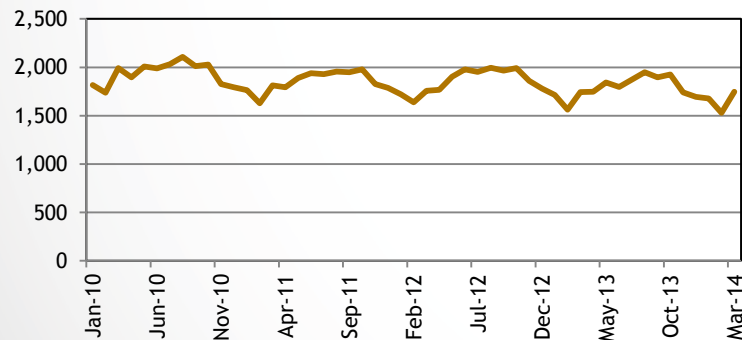
(Thousands of jobs)



- Total non-farm payroll employment for March 2014 averaged 928,200, an annual decrease of 0.5%. During this month, private employment increased by 0.8% y-o-y (5,300 jobs), while public employment decreased by 3.8% y-o-y (9,500 jobs).

## Electric Power Generation

(Millions of kWh)



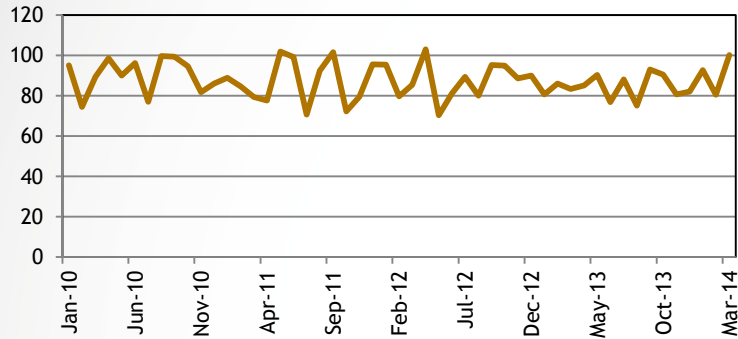
- Electric power generation for March 2014 averaged 1,745.7 million kWh, an annual growth of 0.0%.

Sources: BLS and PREPA  
\* Not seasonally adjusted.

# GDB Economic Activity Index Components

## Gasoline Consumption

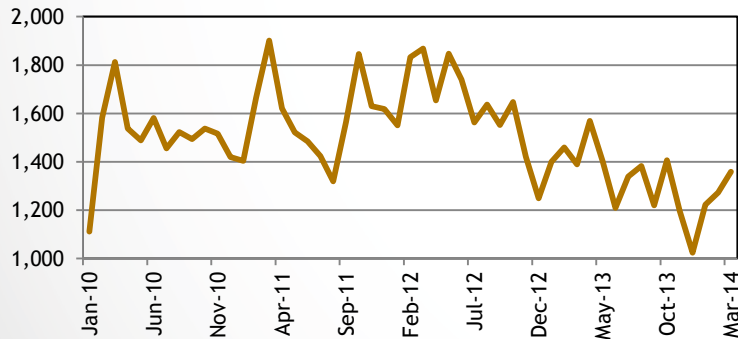
(Millions of gallons)



- The preliminary estimate of gasoline consumption\* for March 2014 was 100.2 million gallons, for an annual increase of 20.2%.

## Cement Sales

(Cement bags sold, in thousands)



- Cement Sales for March 2014 totaled 1.36 million bags, an annual decrease of 2.2%.

\*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.

# Forthcoming changes

The Economic Analysis Division is testing different seasonal adjustment procedures which will be implemented in the April 2014 release.

- In order to further reduce the volatility of the Index, the Economic Analysis Division is testing different seasonal adjustment procedures.
- The change in the current seasonal adjustment procedure would allow more reasonable month-over-month comparisons for the monthly observations of the index.
- The selected seasonal adjustment procedure will be implemented in the April 2014 release.

# **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)

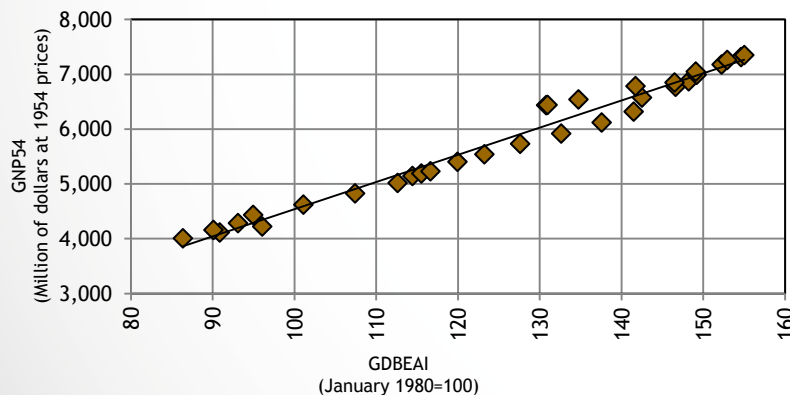
# Description of the GDB-EAI

- 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

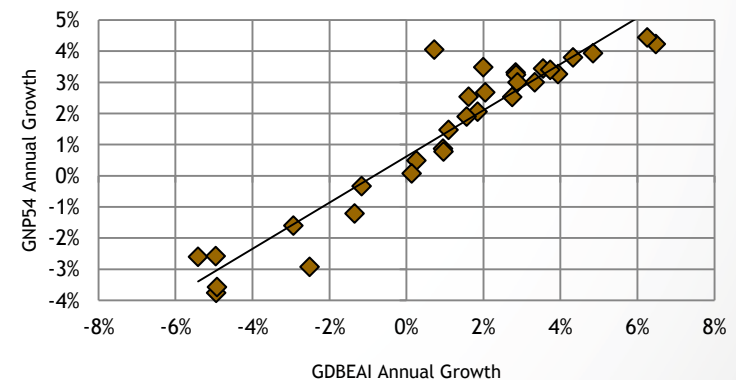
Relationship on the levels: FY1981-FY2012

$$y = 49.495x - 408.29 \quad R^2 = 0.9773$$



Relationship on the growth rates: FY1982-FY2012

$$y = 0.7421x + 0.0062 \quad R^2 = 0.8949$$



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 0.9886, for FY1981-FY2012).
- The annual **growth rates** of both variables are also highly correlated (with a Pearson correlation coefficient of 0.9508, for FY1982-FY2012).
- 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.

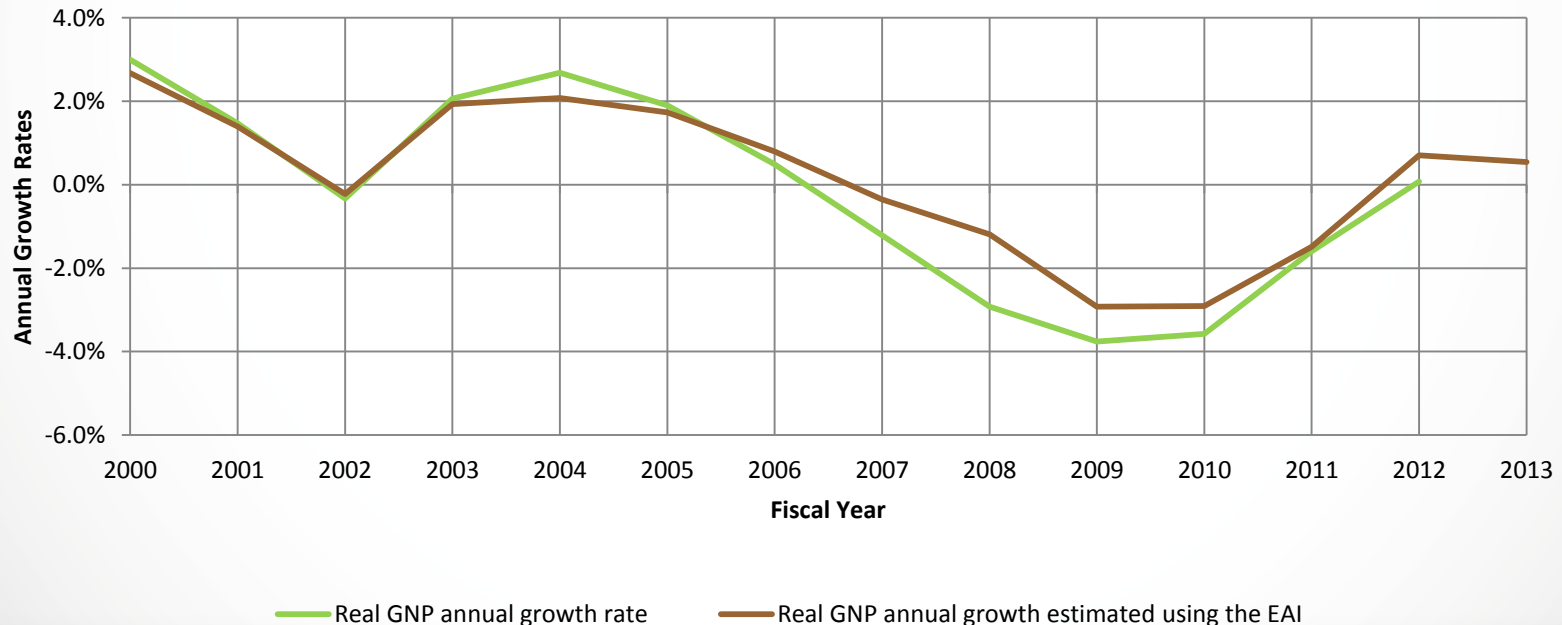
Fiscal Year	EAI Annual growth	Real GNP annual growth estimated using the EAI	Actual Real GNP annual Growth
2000	2.9%	2.7%	3.0%
2001	1.1%	1.4%	1.5%
2002	-1.2%	-0.2%	0.3%
2003	1.8%	1.9%	2.1%
2004	2.0%	2.1%	2.7%
2005	1.6%	1.7%	1.9%
2006	0.3%	0.8%	0.5%
2007	-1.3%	-0.4%	-1.2%
2008	-2.5%	-1.2%	-2.9%
2009	-4.9%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

- 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**



## 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.