

Puerto Rico Economic Data Problems

March 2010

Good economic policy by government and effective decisions by investors depend on accurate, extensive, timely, and readily accessible data. Unfortunately, data on the Puerto Rican economy are not up to this standard.

Failure to substantially improve the Puerto Rico economic data will have substantial costs because:

- Policy makers are hampered by the lack of a full and clear picture of the situation they are trying to affect.
- Investors, without thorough information on economic conditions, are, at best, reluctant to act and are likely to look elsewhere for opportunities.
- Rating agencies and authorities in Washington are in a poor position to make appropriate decisions about Puerto Rico's economic affairs.
- Any research or analysis, which is needed to provide a foundation for policy and a context for investors' understanding of the Puerto Rican economy, cannot be reliable because of the poor quality of the data.

Perhaps the most outstanding and egregious example of the deficiencies in Puerto Rican economic data is that prices of 1954 are used to present aggregate data (GNP, GDP and their components) in constant prices by the Junta de Planificación de Puerto Rico. This use of 1954 prices to calculate aggregate data in constant prices calls into question both the general reliability of the Puerto Rican data and the meaningfulness of any analyses based on these data. (The particular problems with these aggregate data and other data problems will be discussed below.)

The data deficiencies of Puerto Rico are no secret, and various steps are underway to bring about improvements. These steps include work at the Instituto de Estadísticas, efforts at the Departamento del Trabajo y Recursos Humanos to improve the Consumer Price Index, and a broad project at the Junta de Planificación, sponsored by the Banco Gubernamental de Fomento, to improve both a broad range of data and economic forecasting models.

However, these steps, while useful and important, are precarious. Their success and the success of additional efforts in other realms of the Puerto Rico economic data problems, will require substantial political support and substantial additional resources. The costs of action are not small, but the costs of inaction would be much greater.

Following are brief descriptions of some of the Puerto Rico data problems that deserve high priority. These descriptions illustrate the overall situation.

1. *The Use of 1954 Prices in the Presentation of Aggregate Data.* As already noted, when the Puerto Rican government adjusts aggregate data for inflation to present “real” figures, the adjustments are made using 1954 prices. Because prices, the composition of production, and the composition of demand change so greatly over a half century, basing inflation adjustments on 1954 makes the resulting figures all but useless.

The practice produces strange results that illustrate its severe deficiencies. When the Puerto Rican government presents data in “real” terms (i.e., using the 1954 prices to adjust for inflation), both disposable personal income and personal consumption expenditures appear to grow substantially more rapidly than GNP. This incongruity results, apparently, from the government’s use of very different price indexes for GNP, on the one hand, and disposable income and consumption, on the other hand. The difference between the two indexes is so great that not only is the difference implausible in itself, but, in addition, component aggregates (personal income and consumption expenditures) are shown in real terms as much larger than GNP. For example, for 2008, the Junta de Planificación data show current dollar GNP as \$60.8 billion and personal consumption expenditures as \$54.4 billion; but when presented in 1954 dollars, the GNP figure is \$6.7 billion and the personal consumption expenditures figure is \$9.5 billion. Moreover, the current dollar and constant dollar values of personal consumption imply roughly a 20% price increase between 1996 and 2005. Yet, the Puerto Rican government’s consumer price index shows an increase of almost 90% in this period. Both figures seem highly questionable.¹ (It is of course theoretically possible that personal income and personal consumption could be larger than GNP, and in the data presented the figures are balanced by the very large trade deficit. But as a picture of the “real” situation, these results are neither meaningful nor plausible.)

2. *The Consumer Price Index (CPI).* Closely connected to the meaningless data on “real” aggregates, the Puerto Rico CPI is clearly inaccurate. The

¹ The data are available at <http://www.jp.gobierno.pr/>. The 2008 figures used here to illustrate problems are reported as “provisional,” but that does not explain the problems; the same inconsistencies exist for other, earlier years where the data are not provisional. An additional related problem with the aggregate data is pointed out by the authors of a March 2008 article published by the Federal Reserve Bank of New York: “...the exact amount of exports from Puerto Rico to the United States – as well as the computation of the island’s gross product and income – is dependent on the valuation of products and services imported for use as inputs in section 936 facilities. During the time this rule was in force, incentives existed to undervalue these imports so as to boost the product and aggregate income numbers.”

CPI for Puerto Rico shows a great deal of inflation in recent years. For example, since 1984, while the U.S. CPI has doubled (i.e., risen by about 100%), the Puerto Rico CPI has quadrupled (i.e., risen by about 300%). In the period from December 2006 to April 2009, the Puerto Rico CPI rose by about 15.9%, an annual rate of about 6.4%, roughly twice the U.S. rate. This recent rapid increase in the Puerto Rico CPI supposedly took place despite the apparent recession that was emerging in those years.

There is no reason to expect that the inflation rate would be the same in all parts of the U.S. economy, and the loose connection of the Puerto Rican economy to the rest of the U.S. economy could allow substantial price change differences. However, the size of the differences over a long period and the rapid price rise shown in the most recent years of recession are not plausible and indicate the inaccuracy of the Puerto Rican index. Furthermore, independent estimates of the Puerto Rico CPI (one carried out at Estudios Técnicos and one at the Instituto de Estadísticas) show it moving fairly close to the U.S. CPI over most periods. The Puerto Rico CPI must overstate the rate of inflation on the island – probably by a substantial degree.

3. *Measuring Employment.* There are large discrepancies between employment data based on different surveys reported by the Junta de Planificación. The two surveys are the household survey and the establishment survey. The household survey data for 2008 show total employment as 19.3% greater than do the data from the establishment survey. This is not a problem in itself because the household survey picks up self-employed persons and the establishment survey does not. I am told, however, that when a correction is made based on estimates of the self-employed, the figure obtained from the establishment survey is still smaller than the figure obtained from the household survey. Yet, since the establishment figure counts positions and the household survey counts people employed, the former should be larger than the latter because some people hold more than one position.

Also, aside from the total employment figures obtained in each survey, there is a substantial discrepancy in the employment growth obtained from each of these surveys. While the household survey data indicate that total employment grew by 6.6% between 1999 and 2008, the establishment survey indicates that total employment rose by 1.6% in this period. With regard to one of the more important points regarding employment – namely the decline of employment in manufacturing – the two surveys yield similar, though different, outcomes; the enterprise survey shows that manufacturing's share of total employment declined from 14.5% in 1999 to 10.1% in 2008, while the household survey shows a decline from 13.9% to 10.6%.

The many substantial differences between the data sets from the two surveys raise questions about the reliability of the government's employment figures. It is likely that part of the problem is accounted for by the role of the "informal economy" – that is, economic activity that is not properly registered, avoiding taxes and various regulations. (See below.)

4. *Measuring Output (Value Added) in Manufacturing.* An important problem appears in the difference between data used in the 2006 GAO report and data available from the Junta de Planificación.² The GAO report, apparently on the basis of data from the U.S. Bureau of the Census, states that between 1997 and 2002 value added in manufacturing remained roughly constant. Yet the Junta de Planificación data show a substantial increase in value added in manufacturing in this period, an increase in real terms of about one-third (though, as the point noted above regarding 1954 prices indicates, "real" data from the Junta de Planificación are hardly meaningful). So something is significantly amiss, either with the GAO or Junta data (or both). The difference is quite important in accounting for the generally recognized decline of manufacturing employment; the two sets of data have very different policy implications.
5. *Retail Sales Activity.* U.S. Census Bureau data, covering retail sales activity, show implausible declines of sales and employment in retail food stores between 1997 and 2002.³ (Comparable data for more recent periods were not available at this writing.) The Census data show a decline of 3% in current dollars in food stores' sales between these two years. When Junta de Planificación price data are used to adjust the sales data for inflation, the results indicate that retail food sales declined in real terms by 22.4% between 1997 and 2002. People need to eat, and there is no reason to believe that they were off-setting this recorded decline by either growing their own food or eating to such a greater extent in restaurants – though the latter may be part of the explanation. Similarly, the same set of data shows a large decline, 20.7% in current dollars, in retail sales of furniture and home furnishings between 1997 and 2002. While prices changes might explain the decline in value of sales in current dollars, a fall off of similar magnitude appears in employment in these activities. The data are certainly questionable.
6. *The Informal (or Underground) Economy.* Lack of information about the size and nature of the informal or underground economy is a glaring problem, exacerbating several aspects of the general deficiencies in the Puerto Rican economic data. There have been efforts to estimate the

² The GAO report is *Puerto Rico: Fiscal Relations with the Federal Government and Economic Trends during the Phaseout of the Possessions Tax Credit*, May 2006, available at <http://www.gao.gov/new.items/d06541.pdf>.

³ The data are from the 1992 *Economic Census of Outlying Areas*, the 1997 *Economic Census of Outlying Areas*, and the 2002 *Economic Census of Island Areas*.

overall size of the informal economy, but these estimates do not provide information on the sectoral composition of informal activity. Moreover, these estimates are often derived from official data, which, as explained above, are of questionable reliability. It is clear that informal activity is substantial in Puerto Rico, and without knowledge of its extent and its detailed characteristics, it is not possible to formulate effective policy on everything from taxes to employment stimulation.

7. *The “New Economy” and the School System.* A recent report on science and engineering indicators issued by the U.S. National Science Foundation (NSF) under the guidance of the National Science Board comments, “Although data for Puerto Rico are reported whenever available, they frequently were collected by a different source, making it unclear whether the methodology used for data collection and analysis is comparable with that used for the states.”⁴ If Puerto Rico is to develop effective policies for “new economy” activity and if the island is to obtain support from the federal government in this effort, it must expand the collection of appropriate data *that are comparable to data for the states*. (When the NSF report does provide data for Puerto Rico, those data show a relatively poor science and engineering.)

While the problem is quite widespread, it is especially severe with regard to data on the schools. Data on the Puerto Rican school system are very limited; the information that does exist is difficult to obtain; and the data that are available are sometimes highly questionable or simply wrong. The limited extent and poor quality of the school data make accountability virtually impossible.

- For example and important, there is the lack of systematic data on students’ performances. The ongoing introduction of the mathematics component of the National Assessment of Educational Progress (NAEP) is promising but only a first step. Moreover, assessment by testing, while not useless, is increasingly recognized to be an insufficient basis for appraisal of either students’ or schools’ performances. (The preliminary administering of the NAEP in Puerto Rico provided disheartening results.)⁵

⁴ *Science and Engineering Indicators 2008*, page 8-7, available at <http://www.nsf.gov/statistics/seind08/start.htm>.

⁵ In 2005, NAEP math score averages for the states were 237 (4th graders) and 278 (8th graders), and the averages for students in low-income schools in the states were 225 (4th graders) and 261 (8th graders). In Puerto Rico, the average scores were 183 (4th graders) and 218 (8th graders). No state had lower scores. If we are to know what progress Puerto Rican public schools make on this dimension of performance, more comprehensive data will be needed. (Scores on the NAEP can range from 0 to 500.)

- As to data that are quite clearly wrong, for 2003-2004 the Puerto Rican Department of Education has reported a percentage of 9th to 12th graders who drop out of school each year of 1%. The figure is patently unbelievable; it is lower than the figure for any state and one-quarter of the reported national average. Independent estimates indicate that between 25% and 30% (or more) of high school students do not graduate in four years, suggesting an annual dropout rate of 7% or higher.
- Even basic information on enrollments appears to be faulty. While it is generally known that a large (compared with the states) percentage of students in Puerto Rico K-12 attend private schools, the data on private school enrollment are unreliable – for example, showing increases of over 50% in some years. Public school enrollment data are also questionable.⁶

While there may be obvious problems in the Puerto Rican schools that can be attacked without a well-developed data base, any lasting and extensive reform of the schools requires high quality analysis; and high quality analysis requires timely, good data. Moreover, the data that do exist within the Department of Education and other Puerto Rican institutions have not been readily available to independent investigators. Unless independent investigators have access to the full array of data on the schools, there is little likelihood that effective analyses will be forthcoming.

⁶ School enrollment data are usefully provided on the last page of the “Comprehensive Annual Financial Report of the Government of Puerto Rico,” which is available on line at: http://www.hacienda.gobierno.pr/downloads/pdf/cafr/FINANCIAL_REPORT_2007.pdf.