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Centro Gubernamental Minillas, Edif. Norte  
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13 de abril de 1987

**FUNCIONARIOS CUENTAS NACIONALES, PROYECCIONES  
INSUMO-PRODUCTO, AYUDANTES Y CONSULTORES**

  
Ing. Patria G. Custodio  
Presidente

**REUNION DISCUSION INFORME PARKER  
miércoles, 15 de abril de 1987  
Saión de Vistas Públicas  
Piso 14, 3:00 pm**

Los invito a discutir las recomendaciones e implicaciones del informe sobre las cuentas nacionales de Puerto Rico preparado por el Sr. Robert P. Parker, Director Asociado de las cuentas nacionales del Departamento de Comercio de Estados Unidos. El mismo responde a su visita durante el pasado mes de marzo.

Espero sea ésta una oportunidad para conversar sobre nuestros objetivos y prioridades de trabajo.

Anejo

*Julane Parker  
(1987)*

Recommendations for Future Directions  
of the National Accounts of Puerto Rico

Summary

The preparation of timely and useful national accounts results from the combined efforts of several groups of individuals and/or organizations --the national income accountants who prepare the accounts; the executive and legislative branches of government who provide financial resources; the businesses and individuals who complete the various report forms that provide the source data that underlie the accounts; and the users, both government and private, who rely on the accounts for decision making and for research and analysis of economic issues.

This report, prepared at the request of the Puerto Rico Planning Board, provides recommendations for the future direction of the national accounts for the Commonwealth of Puerto Rico. In preparing these recommendations, I have reviewed both the needs and concerns of users of the accounts and the source data and estimating procedures currently used to prepare the accounts by the Bureau of Economic Analysis (BEA), an agency of the Planning Board. Overall, I found that these estimating procedures are appropriate and make effective use of the available source data. Consequently, I have focussed my recommendations on how BEA can provide monthly and/or quarterly estimates of the accounts. I also have some suggestions that should improve the annual estimates, and that changes are needed outside of BEA in order to implement these recommendations.

In my opinion, with additional source data it will be feasible for BEA to prepare timely and adequate quarterly estimates of gross national (GNP) and of personal income, although it will take several years of experience before a final system is in place. I strongly recommend against the preparation of monthly estimates until sound quarterly estimates are

available. Quarterly estimates will provide a current measure of economic activity and can be used to provide improved preliminary annual estimates. Revised annual estimates also should be improved.

The ingredients of the improvements consist of the following:

o A new quarterly survey of businesses to provide source data for quarterly national accounts estimates;

o A system to produce selected quarterly and preliminary annual national accounts estimates;

o An effort to improve the quality of the existing annual surveys conducted by BEA;

o An expansion of the information tabulated from tax returns;

o A centralized statistical coordinating office to assist BEA in obtaining the necessary source data;

o An ongoing program to identify the major source data needs for the accounts;

o A high-level effort to obtain more accurate and timely statistics on Puerto Rico now being prepared by various U.S. Government agencies, and

o A set of improvements in several areas related to the preparation of the accounts, including additional training.

#### Detailed Recommendations

1. Implement with some modifications the proposed BEA quarterly survey of receipts, inventories, and wages and salaries, and using its results and other available data, prepare quarterly estimates of GNP

by type of expenditure in current and constant dollars and of personal income and its disposition. The modifications I propose are as follows:

① First, drop the monthly detail on wages and salaries because it would not be available for the preparation of a timely monthly series, and monthly wages and salaries can now be estimated from existing employment and earnings data. ② Second, add a question on expenditures for new plant, machinery, and equipment. (If the present semiannual construction surveys are converted to quarterly surveys, add only a question on expenditures for new machinery and equipment.) This additional information would provide source data for a direct measure of the machinery and equipment component of GNP. Such a direct measure would be more accurate than one derived from the commodity flow method used annually because the commodity flow method requires detailed inventory change and margin data not available on a quarterly basis. Finally, the samples used for the new quarterly survey should be largest, and most representative in terms of size and legal form of the firms in an industry, for those industries whose responses would be used to estimate the expenditures components of GNP. These industries are retail trade and services, whose data would provide extrapolators for personal consumption expenditures, and manufacturing and wholesale trade, whose inventory data along with those of retail trade cover most inventories. Sales of manufactured machinery also would be used in an abbreviated commodity flow method as a crosscheck for the direct estimate of machinery. The wage and salary data for all industries would be used to estimate that component of personal income and as an extrapolator for the supplements component; sales data for all industries would be used in estimating the income of unincorporated enterprises.

Although data from existing surveys or records will provide estimates for the other major components of GNP and of personal income and its disposition, no provision is made for the direct collection of property income of persons. In large part, this omission reflects both the difficulties of collecting such information quarterly and the limited analytical usefulness of separate quarterly estimates for each component of the national accounts. However, because disposable personal income is a key economic indicator, procedures will be needed to estimate the missing items of property income. I recommend a procedure in which the sum of business profits, rental income of persons, net interest, business transfer payments, and depreciation is derived as the difference between GNP and the other components of value added for which direct estimates, more or less, can be prepared. This sum can be disaggregated using various allocation procedures to obtain estimates of the missing components of personal income.

For GNP, there also is a lack of source data for the services component of net exports, and it may be feasible only to calculate gross domestic product (GDP). Having only GDP should not be considered a serious problem. Except for the United States and Japan and a few other countries, most countries prepare only estimates of GDP because it is more relevant to most policy applications and because GDP is invariant to changes in tax laws of other countries.

Because the techniques needed to prepare both the actual quarterly estimates and the projections are significantly different than those used for annual estimates, it is further recommended that the U.S. Bureau of Economic Analysis be asked to provide training in Puerto Rico in the

quarterly techniques. This training also should cover the development of a computer system for preparation and analysis of the estimates.

2. Quarterly GNP (or GDP) and personal income estimates can be completed about 50 to 60 days after the end of the quarter. (It will take about 30 days to obtain the survey responses, 10 to 15 days to process the responses and prepare tabulations, and another 10 to 15 days to prepare the GNP and personal income estimates.) When these estimates initially become available, it may not be advisable to publish them. Because the best test of their reliability will be to compare the sum of the four quarters of the fiscal year to the final annual estimate for that year, it will be several years before one can adequately evaluate their accuracy. Also, for the first 5 to 7 years, it will only be possible to prepare estimates unadjusted for seasonal variation; estimates that can be misleading without some judgmental interpretation of the impact of seasonality.

In addition to providing quarterly measures of economic activity, these quarterly GNP and personal income estimates also should be used to derive corresponding preliminary fiscal year estimates immediately after the end of the year. These annual estimates would be based on actual estimates of the first three quarters of the fiscal year plus a projection of the fourth quarter. Revised annual estimates would be prepared 3 months later to reflect actual quarterly estimates for the entire fiscal year and newly revised annual estimates for the prior fiscal year. The latter estimates will be the first reflecting the annual data on detailed income and expense items collected by BEA.

A key part of this recommended system is the projections for the last quarter of the fiscal year. Standard procedures for these estimates will have to be developed; perhaps it should be a joint effort of the BEA and other government economists. Once a system for projections is in place and there is a sufficiently long historical series, consideration should be given to prepare an even earlier version of annual estimates -- one based on actual estimates for the first two quarters of the fiscal year plus projections of the remaining quarters. This annual estimate could be prepared in late February and used to prepare the Governor's budget that is submitted in March.

For the annual estimate to be prepared by October 1, an effort should be made to provide a more complete set of national accounts, than prepared in July. However, it may be advisable not to prepare estimates of GNP by sector until the semifinal estimates are prepared a year later.

Finally, to improve the accuracy of both the annual and quarterly estimates, comprehensive or benchmark revisions are needed periodically to make use of more accurate source data that have become available since the final annual estimate was completed. Such revisions should be prepared at regular intervals.

3. The quality of the existing annual BEA income and expense surveys needs improvement, primarily in the response rate. Using the new quarterly estimates to prepare the preliminary annual estimates should provide more time to process these surveys, but additional resources may be necessary to introduce a more intensive followup program and to perform computerized editing. However, if these actions do not result in significantly improved quality, it may be necessary to make the annual surveys

mandatory. (In the United States, similar annual surveys are mandatory and the related monthly surveys are voluntary.) The procedures used to convert the survey data to universe totals are adequate, however special tabulations of firms not covered by the ES-202 program should be prepared to ensure coverage of these very small firms (see number 4 below).

4. To improve the quality of the present final annual estimates, the tabulations by BEA of information from income tax returns should be expanded substantially. It is recommended that BEA review the items collected on these returns and suggest to the Treasury Department the addition and deletion of items as appropriate. Items should be added that would provide information needed to calculate an inventory valuation adjustment. Items whose national accounts estimates are based on other government agency reports, such as Social Security taxes, could be deleted if not needed by other government agencies. In terms of tabulations, special tabulations of firms with no paid employees -- that is, firms not covered by the ES-202 program -- are needed to ensure complete coverage of all estimates. Also, components of supplemented labor costs such as contributions to pension plans and health insurance should be tabulated and the results used in the accounts. Another possible use of tax return tabulations in the accounts is for the receipts of professional services. Finally, adequate staff to perform statistical editing of the returns and the use of computer in editing and tabulating are needed to maximize the use of tax return data in the accounts. The lack of computerization must be eliminated.



5. Because source data for the accounts are provided by several departments in the government, a centralized statistical coordinating office is needed to ensure that the needs of the national accounts are recognized in the design of existing and new programs. This office would approve all statistical and administrative forms. This office would be charged not only to eliminate unnecessary duplication by government agencies in collecting data and the use of minimum statistical standards in the design of the forms and the underlying samples (if sampling is involved), but also to ensure adequate source data for purposes of estimating the national accounts or other important economic statistics.

6. To assist this office, which should report directly to the Governor, BEA should prepare a multi-year improvement plan. Improvements can include such items as new surveys, additions to existing surveys, more timely preparation of information already collected, and quality improvements to existing source data. Suggested priorities for this plan are identified later in this report, but special emphasis is needed on the collection of price data. To keep the plan up-to-date, BEA needs to continuously review the survey forms as well as its own procedures in formulating recommendations for changes that would improve the quality of the accounts. However, the final recommendations also should take into account the cost both to the government and/or to the respondent of the form.

7. In my discussions with BEA staff, it became evident that statistical agencies in the United States have reduced their cooperation with BEA in providing accurate data. I recommend that the Governor's office explore this situation to see if improvements can be made. If no improvement can be made, the Governor may want to suggest that the U.S. Government cease these collection activities and turn over the funds and

authority to the Governor. Similar exploration is needed with U.S. administrative agencies, such as the Social Security Administration.

8. I recommend improvement in several areas related to the preparation of the national accounts.

The structure/contents of the accounts should be reviewed, but no substantial changes should be made until the United Nations (UN) has completed its review of the System of National Accounts in 1990. More critical to the accounts of Puerto Rico is the need to update the valuation period underlying the constant-dollar estimates. The present valuation period is 1954 -- it should be 1982, as in the United States or 1985 as recommended by the UN. However, the U.S. practice of shifting forward the valuation period and revising all estimates for prior years has some serious shortcomings, which are the subject of intensive review in the United States. The results of this review should be available by the end of this year and should be studied carefully before a final decision is made as to either which year to select as the base year or how far back to revise the estimates.

Alternative estimating procedures should be studied for some parts of the accounts. Several areas of deflation need additional research. These areas include the lotteries and gambling components of personal consumption expenditures; the price indexes used to deflate machinery and equipment, which should be consistent with those used with the corresponding items in imports; for construction put-in-place, a more complete list of inputs should be developed, perhaps using private sector assistance; and deflation should be performed at more detailed levels, even if only for the final estimates. It is fully appropriate to use more detail in this estimate than is used for preliminary estimates.

For estimating methodologies, those for bad debts, imputed interest and rental income of persons should be reviewed, and the advice of experts at the U.S. Bureau of Economic Analysis sought in reviewing these very complicated methodologies. In connection with the interest estimates, I did study the treatment of interest flows related to so-called "Section 936" corporations and found that the procedures appear to be correct. The negative net interest component indicates that persons, and not businesses, are the borrowers of the new funds.

An alternative to the present approach to preparing estimates of constant-dollar gross output by sector by deflating current-dollar estimates also should be studied. In one alternative approach, the constant-dollar output measures are derived by extrapolation using constant-dollar measures of production.

For interpolation, the Kaitz-Liebenburg program should be replaced by the program used in the United States, which I will provide to BEA.

For projections, extrapolation procedures based on constant-dollar series should be used wherever possible, especially if deflation is not done by the technicians in charge of specific components.

Finally, I have several recommendations concerning resources available at BEA. This agency is well-managed and staffed by very competent personnel. The small evaluation and audit staff is making an important contribution to the review of estimating procedures and to documenting them. However, improvements should be made. The most critical resource need of BEA appears to be computers. Increased computerization will help process survey results and tabulate tax return data. Special programs are needed to process source data, hopefully in machine-readable form,

and to derive the corresponding accounts estimates. While separate programs are needed for the individual components, other programs are needed to combine these estimates into the accounts. A resulting "master file" can then be used both for the review and analysis of the estimates and to prepare the actual publication tables. Another area where additional resources are needed is in the preparation of the input-output accounts. These accounts, even if available later than desired, provide valuable information in the structure of the economy and an independent verification on the accuracy of the regular national accounts estimates.

#### Conclusion

The present national accounts system of the Commonwealth reflects in virtually all cases the maximum use of available data sources and appropriate estimating procedures. To expand the system to quarterly estimates or to improve the annual estimates, more source data are needed.