



**Estudios
Técnicos
Inc.**

The Study of Economic Development in Puerto Rico: Summaries of Major Contributions

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INTRODUCTORY ESSAY

Concern with Puerto Rico's slow pace of economic development has produced a steady stream of studies on the subject over the past three decades. Every government administration since that of Rafael Hernández Colón in 1973-76 has authored or commissioned at least one major document seeking to identify the fetters holding back economic progress and to lay down a blueprint for swifter economic and social transformation. U.S. government agencies have also contributed to the wealth of studies on Puerto Rico's economy, as have various private sector organizations, the labor movement and a large number of academic economists and professional consultants. A summary and review of this literature is needed, lest much useful research be lost and policymakers end up wastefully rediscovering what is already well trodden ground.

Not surprisingly, the studies vary a great deal in focus, scope, method and intent; but there are also many shared themes, other than the dissatisfaction with the economic status quo that marks their common starting point. A number of key issues keep coming up in this literature, most notably the following:

- What are the advantages and shortcomings of the economic strategy centered on manufacturing, and what is the appropriate and feasible role for incentives, federal and local, in that strategy.
- Why has local capital remained subsidiary to external capital, and what policies, measures and incentives can be applied to produce the desired synergy between the two.
- What can be done (if anything should be done) to improve basic macroeconomic balances such as savings-investment, production-consumption, imports-exports.
- Is there a (non-marginal) role for agriculture in Puerto Rico's economic future; and, if so, what is required to make it happen.
- How can the government do a better job of promoting development. What should be the roles of government procurement, tax policies and spending priorities. How can regulatory and permitting functions be made more efficient and cost-effective.
- How can Puerto Rico turn its physical and non-physical infrastructure into a source of competitive advantage, instead of its being a hindrance to development.
- What improvements are required in the institutional setup to support economic development.

- What is needed to make science and technology a key driver of Puerto Rico's economic development.
- How fair and equitable has development been thus far, and what can be done to improve the equity dimension of development in the future.

Each of these broad issues branches out into numerous specific questions, many of which are pursued in the literature, to a greater or lesser extent. More recently, other broad issues have also come to the fore, such as the need to harmonize development with the environment and the governance concerns arising from the alarming increase in the number of corruption cases in the 1990s.

Among other things, these studies show that before competitiveness became a household word, Puerto Ricans were already worried about it. It was the recognition that labor intensive manufacturing was approaching its limits that led Fomento, under Teodoro Moscoso, to propose a petroleum-based economic strategy for the 1970s. Not many years later, the famous Tobin Report—produced by renowned economist James Tobin for the Hernandez Colón administration—also dwelt on the erosion of manufacturing's competitive edge. The same note was sounded in the Kreps Report (U.S. Department of Commerce, 1979) the Carrión Report (Comité para el Desarrollo Económico de Puerto Rico, 1984), and several others that ran a common thread of concern through a succession of politically alternating government administrations.

There is little room to disagree as to the causes of the loss of competitiveness in manufacturing and other sectors of the economy. Operation Bootstrap rested on three major pillars: low-cost labor, tax incentives and unparalleled access to the U.S. market. These three pillars were buttressed by a number of programs and initiatives undertaken in the context of a sweeping modernization drive, including the rapid deployment of modern infrastructure, large investments in human capital (especially education and health care), and a titanic effort of institution-building in such areas as business law and regulation and public administration. With the benefit of hindsight, it is clear that Puerto Ricans should have provided for a transition from a strategy based on the three pillars of the industrialization program to one resting primarily on the other elements of the modernization drive. Effecting this transition is still the single most important precondition for Puerto Rico's continued development, as the pressures of a globalizing world economy continue to gnaw away at the original three pillars.

This basic diagnosis guides the remedies proposed in most of the studies. The literature is rich in recommendations, ranging from the general to the very specific and covering almost every facet of economic policy and economic activity. This introductory essay is intended primarily as a commented summary of the major findings and

recommendations in the literature, emphasizing the most important contributions.

Any collection of studies such as this one is necessarily selective, although one of the guiding rules in the assembling of this volume was to err on the side of inclusiveness rather than that of exclusiveness. Not considered for review were studies dating before 1970, because any research predating the first crisis of Puerto Rico's modern economy—the recession of the mid-1970s— is of limited relevance today, its value being mostly historical. The only exception to this rule is the landmark book by Harvey S. Perloff, published by The University of Chicago Press in 1950.

Also excluded from this collection were several major studies undertaken in the late 1980s and early 1990s on the significance of Section 936 of the U.S. Tax Code to the Puerto Rico economy. Section 936 was struck down in 1996 and its remnants will be fully phased out by 2006, so that there is little object in revisiting its benefits to the Island. A useful feature of the 936 studies is that they present a detailed description of the manufacturing sector, but that is also available in other studies already included in the collection.

A total of 27 studies are summarized in this volume. For each study, there is a concise summary in a standard three-part format: *Objectives, Methodology* and *Conclusions and Recommendations*. Given the large number of entries, and the intended use of the volume as a quick and easy reference, brevity is of the essence in these reviews.

The very nature of the volume dictates that the bibliography be presented at the beginning, contrary to customary practice, because in this case it doubles as the table of contents. In addition, a full bibliographical reference is provided for each entry, including the location (library, agency, etc.) where a copy of the particular document may be found if the reader wishes to examine it in full. The bibliography is organized under four major headings: 1) Reports of Puerto Rico Government Agencies; 2) Reports of U.S. Government Agencies; 3) Studies commissioned by the Puerto Rico Government or by Puerto Rico non-government entities; and 4) Studies by individual researchers. Under each heading, individual entries are presented chronologically.

The Role of Manufacturing

Given its central role in Puerto Rico's economic transformation in the second half of the 20th Century, it is no surprise that manufacturing receives a great deal of attention in almost all the studies reviewed. It is generally recognized that the sector was facing serious difficulties by the 1970s, only two decades after the launching of Operation Bootstrap. The Kreps Report warns that labor intensive manufacturing could be adversely affected by minimum wage increases scheduled for the early 1980s, and predicts that tax incentives will become increasingly critical to the industrial promotion program following the enactment of Section 936 in

1976. In the Carrión Report, manufacturing is diagnosed with serious problems due in great measure to high operating costs on the Island, including those of labor and energy. Along the same lines, two U.S. academics (Goldsmith and Vietorisz, 1979) emphasize that during the 1970s the local economy became increasingly constrained by a decline in external investment, wage increases, competition from Asian exports of light manufactured goods, and other maladies. The Tobin Report (Comité para el Estudio de las Finanzas de Puerto Rico, 1976) goes as far as to suggest a deliberate policy of wage restraints in the public and private sectors.

Section 936 provided some breathing space for manufacturing in the late 1970s and throughout the 1980s, but it was eventually eliminated. However, even in the heyday of Section 936, many studies were critical or at least skeptical of a policy of heavy reliance on tax incentives. Tobin recommended applying cost-benefit analysis to investment projects before granting incentives, and directing such incentives as were provided to the reinvestment of profits in employment generating activities. Lester Thurow, in a study for the Planning Board (1970) argued for wage credits in preference to reductions in profit taxes. Even a study for the third Hernández Colón administration (Consejo Asesor Económico del Gobernador, 1989) contains a veiled criticism of the tax-driven strategy of industrial promotion. And a stronger critique is found in the New Economic Development Model (NEDM) of the Pedro Rosselló administration (Consejo de Productividad Económica, 1994), which presents itself as a model to replace tax incentives as a core element in development programs. On the other hand, several studies support a role for incentives, even as they acknowledge the difficulties facing the manufacturing sector. The Carrión report highlights the value of Section 936, and two local economists (Ruíz and Zalacain, 1996) stress the need to implement new incentives promptly following the section's demise.

A point raised in many of the studies is the scarce development of linkages between export-oriented U.S. manufacturing operations on the Island and the rest of the local economy. This is often tied in the literature to two other related issues: the limited involvement of local capital in the manufacturing sector and the desirability of some type of import-substitution program. Using input-output analysis, Ángel Ruíz concluded that not enough interindustry linkages have been created to promote economic development (1982). Ruíz and Zalacain (1996) argue that import-substitution policies should be a fundamental part of any new package of tax or non tax incentives, a view articulated earlier by many other analysts, including Weiskoff (1985), Goldsmith and Vietorisz (1979) and Murray (1977).

More recent studies have emphasized science and technology and export promotion as fundamental underpinnings of the future of manufacturing industries in Puerto Rico. A study for the External Trade

Board (ADL, CARANA, Estudios Técnicos, Inc., McConnell Valdés and Price Waterhouse, 1995) lays down a strategy for external trade emphasizing exports by local capital firms, and another study, this one commissioned by the Department of Economic Development and Trade, outlines a strategy for science-and-technology based industrial promotion (ADL, 1999). The latter study stresses the development of clusters of industrial and related activities in high-tech manufacturing and services. The idea is that such clusters will become attractors for research and development operations that have thus far proved difficult to bring to Puerto Rico.

A different tack was taken by Michael Piore (1978), a distinguished MIT economist. He recommended focusing on the promotion of small and medium size firms and suggested that such firms should be linked to larger entities through subcontracting arrangements. Piore emphasized culture as a factor in development, and argued that Puerto Rican culture favored self-employment and small business units.

The Role of Government

Besides industrial promotion, there are many government activities that influence the course of economic development. Many of the studies, especially those of Tobin and Kreps, pay special attention to fiscal policies and public finances. Tobin's charge was precisely to evaluate Puerto Rico's public finances at a time of crisis (those were the days of New York City's default), and he proposed a fiscal austerity program reminiscent of stabilization arrangements designed by the International Monetary Fund. But many of his recommendations are quite sensible even in the absence of a crisis, like pricing public services (e.g. electric power) so as to generate operating surpluses, improving the coverage and enforcement of the property tax, and keeping the growth of government debt within the limits set by law.

The Kreps Report noted that public spending and employment had grown very rapidly for several years and questioned whether public-sector demand could continue to be a growth leader in the local economy. It warned that the growth of federal government support for Puerto Rico programs could not be expected to continue at the high rates of the second half of the 1970s, while recognizing that it was up to the Puerto Rican people to decide how much of their GNP should be allocated to government functions. The report also recommended that the government budget process should focus explicitly on economic policy goals, such as increased savings and capital formation.

In the Carrión Report, which presents a private-sector viewpoint, the government's role and the fiscal system are seen as obstacles to development, in particular the tax system. The report recommended an immediate reduction in marginal tax rates for individuals and suggested the introduction of a modified flat tax rate later on (this was before the tax

reforms of the late 1980s and mid 1990s). It also proposed lowering corporate marginal tax rates and eliminating inheritance and gift taxes, while at the same time expanding the excise tax base by eliminating exemptions.

The study by the Governor's Economic Advisory Council (1989) in the last Hernández Colón administration proposed reorienting government investment toward improving productivity and efficiency through selective privatization and the application of private-sector approaches to government activities. It also suggested limiting the overall growth of expenditures.

In the fiscal area, the New Economic Development Model (NEDM) of the Rosselló administration was particularly concerned with designing a more balanced and simplified tax system. However, in the broader aspects pertaining to the government's role, the NEDM emphasized privatization and market friendly policies.

Stewart (2002) points out that in the 1970s and 1980s Puerto Rico adopted policies "that failed to adjust the economy to the realities of increasing global competition and, in some cases, moved the economy even further away from competitiveness". An example of such policies is the growth of government consumption, which as Stewart points out is larger in Puerto Rico, as a percent of GNP, than in Ireland, Singapore or Malaysia.

The Roles of Savings and Investment

A leitmotif in writings about Puerto Rico is the weakness of domestic savings and the excessive reliance on external financing. Both the Kreps and the Tobin reports devote many pages to this subject, but hardly any study goes without at least a reference. For example, Curet (1986) argues that public sector deficits throughout the 1950s and 1960s could have been avoided and personal dissavings could have been considerably reduced by sound fiscal policies and management. Kreps and Tobin emphasize the role of tax policies in promoting personal and corporate savings, and Tobin particularly stresses the need to generate savings in public corporations.

Perhaps the best known feature of Puerto Rico's development experience is that external capital has been paramount in financing investment on the Island, both through direct external investment and through portfolio investment in local government debt instruments. The latter has paid for much of the infrastructure, while the former has footed the bill for a great deal of the existing productive capacity in manufacturing and services.

Developing a more "local" local economy necessitates not only a native entrepreneurial class, but also a greater flow of domestic savings to finance internal investment. Along these lines, there have been frequent

calls for the development of local capital markets, which are still today fragmented and undernourished. The most comprehensive study in this respect was produced in 1994 by Arthur D. Little, Estudios Técnicos, Inc. and independent consultant William Lockwood, but the subject was raised years earlier in the 1989 report of the Governor's Economic Advisory Council, and even earlier in the Tobin Report. The study by ADL *et al* emphasized removing disincentives that prevent privately held firms from going public, and leveling the playing field regarding tax treatment of investments to remove distortions in the relative attractiveness of different debt and equity instruments. A fairly long list of specific actions to achieve these goals is presented in the study.

A Vision of the Future

Notwithstanding the differences among these studies, when read as a collection they elicit in the reader a vision of the future. What should Puerto Rico strive for in the coming decades? Focusing the many strands in the literature into a set of converging positions, the following points may be highlighted:

- Manufacturing has a key role to play in the continued economic development of Puerto Rico, but it should increasingly concentrate on innovation-intensive industries, and the sector's input-output linkages in the domestic economy must be strengthened. The role of domestic capital and management talent in the sector must continue to increase.
- Tax incentives, both local and federal—will continue to play a role in industrial promotion, but the attraction of new activities should increasingly depend on sound fundamentals (infrastructure, human capital, supportive institutions and quality of life). There will need to be greater flexibility in tailoring incentives to particular policy goals.
- Although truly balanced growth is probably unfeasible within the first two decades of the new century, non-manufacturing industries must increase their share of GDP. Exportable services other than tourism must be developed (but without detriment to tourism), and also high-value exportable agricultural goods. Puerto Rico need not produce exactly what it consumes, but its domestic industries should be competitive both in the domestic and world markets.
- Domestic savings must play an increasingly important role in financing economic development, and should grow synergistically with local entrepreneurship, but without detriment to external investment.
- The Government will become increasingly professional, streamlined, and focused on policy, diligent regulation, and the preservation of sound economic fundamentals. An equitable and efficient tax system must evolve, and social policy must be effective in palliating

inequality in the short term and reducing dependency in the medium term.

The challenges are manifold, but the vision can be realized. It is worthwhile recalling Harry Perloff's tentative conclusion as he pondered Puerto Rico's economic future:

The energy, the imagination, and the political maturity which characterize the present efforts of the Puerto Rican people to provide a better and richer life for themselves would seem to make past projections of the island's economic future obsolete. These elements give a new dimension to Puerto Rico's economic potential.

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Reports of Puerto Rico Government Agencies

1973 **Toward and Industrial Development Policy for the 1970's: The Key Role of the Petroleum Base Project.**

Administración de Fomento Económico. (1973). Toward an Industrial Development Policy for the 1970s: The Key Role of the Petroleum Base Project.

Objectives

To make recommendations to redirect and intensify Puerto Rico's economic development program in the 1970s with a focus on petroleum based industries.

Methodology

Flow charts and analysis of numerical documentation are used. Some tables and graphs are used to facilitate the analysis.

Conclusions and recommendations

It is impossible to accelerate industrial development in the seventies with the patterns of the past, which were based on light industry.

Labor costs have been rising very sharply because of rapid increases in mandatory Federal minimum wage rates applied to Puerto Rico;

Labor intensive industries in Puerto Rico and the United States are competing principally against foreign imports.

Light industry could be competitive in the seventies only if the costs of raw materials and supplies are reduced.

Development of oil-refining capacity can supply low-cost materials for local industry while also reducing the Island's energy dependence.

Puerto Rico must either expand its refining capacity or rely on external sources for a large percentage of its residual fuel and probably for all of its low sulfur oil.

Dependence on outside sources would prove risky and more costly in terms of higher prices and higher license fees.

The Petroleum Base Project is the proposed solution to this dependence.

The key to the Petroleum Base Project is a protected deep water marine port and terminal capable of handling simultaneously four or more very large crude oil carriers.

Only with a port capable of accommodating large tankers the establishment of the large new refineries needed to support and diversify petrochemical production and to expand materials based for light industry could be secure.

New power intensive industries would be located near to the three existing refineries;

The Petroleum Base project will produce the fuels needed to meet Puerto Rico's energy crisis. (*Note: this is a reference to the 1970s energy crisis*)

The delivered price of imported crude should be somewhat lower in Puerto Rico than any point in the United States.

By enabling an ample supply of relatively low cost electric power, this Project will reduce the need for increases in electric power rates to consumers, facilitate industrial promotion generally and probably enable the promotion of power intensive industries like aluminum which will broaden the Island's raw materials base.

The new refineries have to meet or exceed emission standards established by Federal and Commonwealth environmental authorities and the project should be located where there is minimum risk of environmental damage.

1974 Los Talleres del Nuevo Puerto Rico

Junta de Planificación de Puerto Rico. (1974). Los talleres del nuevo Puerto Rico.

Objectives

Governor Hernández Colón's objective was to focus the government's actions towards dealing with policy issues in a number of key areas, including: cost of living, job creation and education, recreation, social planning, urban development and housing and fiscal and economic policies. The results of the effort were to be coherent policy initiatives.

The rationale for putting together the effort was the realization in 1973 that the economy was running into serious problems, due mainly to two factors: a changing competitive framework and a very fragile fiscal situation due, in great measure, to significant increases in the government's debt in the previous four year period.

Methodology

The workshops included government agency heads and other officials and met throughout 1973 to discuss working papers prepared by a technical support group based in the Planning Board. These working papers have unfortunately been lost and what remains are the summary reports published in 1974.

Sub-committees were created in each area to deal with specific issues and these included private sector representatives.

In each case and with the logical variations to be expected, trends were presented and projections made assuming these trends were to be maintained. Thus, for example, projections were made on expected unemployment rates by the end of the decade based on job creation trends and expected increases in the size of the labor force. The results correctly anticipated a major jump in rates to near 20%.

Conclusions and recommendations

Although difficult to summarize due to the variety of issues dealt with, some major conclusions and recommendations which resulted from the effort were the following:

Employment - renewed efforts to reduce population growth, including stimulating out migration; retention programs for schools, more emphasis on technical and vocational education, use of part time employees in government agencies.

Recreation and leisure - control advertising aimed at stimulating consumption, flexible work schedules, use daylight savings time, install recreational facilities in industrial parks, involve the communities in recreational programs.

Social planning - after identifying social ills such as loss of traditional values, poverty and overpopulation, among others, the report recommends the formulation of social policy to incorporate solutions to these problems, as well as the preparation of social indicators to be in a position to gauge progress.

Urban growth - mostly dedicated to dealing with housing issues, the report calls for increased activity by the Housing Bank as well as creating incentives for the private sector to become more involved in social interest housing. The report also calls for implementation of the Planning Board's land use policy.

Fiscal and economic policy - create an economic development bank to supplement the existing GDB, improve Planning Board statistics and analytical capabilities, generate flow of funds accounts and establish policies to assure that government funds are invested in Puerto Rico.

Cost of living - the report dealt mainly with food prices and called for strengthening the Justice Department's antitrust department, establishing a clear antitrust policy and using the recently create Import and Distribution Corporation as an instrument to break what the existing quasi-monopolistic conditions in the food market.

The main contribution of the Talleres del Nuevo Puerto Rico was to generate an awareness of major policy issues in areas such as economic development and land use. With respect to the latter, for the first time an assessment was made that indicated how serious the land supply constraints had become by 1973.

1984 Informe al Gobernador

Comité Asesor Sobre Política Económica. (1984). Informe al Gobernador. Informe final al Hon. Carlos Romero Barceló, Gobernador de Puerto Rico.

Objective

The Committee was charged with developing policy initiatives to stimulate economic growth in a difficult economic context.

Methodology

The Committee, composed of business and academic representatives, met on a number of occasions and staff carried out interviews with industrial leaders as well as government officials. This resulted in recommendations for the various sectors generally arrived at in an informal manner.

Conclusions and Recommendations

The Report does not incorporate a detailed analysis of prevailing conditions but rather devotes itself to making recommendations. There is no description of prevailing conditions, which support the recommendations made. These are many and detailed, and include:

- Adopting a growth rate for the period 1985-1995 of 3.6% annually in real terms and an annual increase in productivity of 2.0%.
- Achieving a social contract aimed at facilitating the substitution of economic activities, which have lost their competitiveness.
- Maintaining manufacturing as the key economic activity, supported by increased attention to the services sector, tourism and agriculture.
- Eliminating the Minimum Wage Board, since Federal minimum wage legislation applies to the Island.
- Approving the Bank Holding Act, subsequently approved.
- Creating a Trust Fund for Education to invest in new programs.
- Applying a flat rate tax.
- Promoting longer term investment patterns by 936 companies and seeking legislation in the US Congress that would make Section 936 permanent.

- Creating demonstration farms as part of an effort to modernize the sector.
- Privatizing most agricultural activities, including the sugar industry.
- Lowering income tax rates to US rates and up-dating the property tax assessments.
- Analyzing the issues arising from the distribution of tax income between municipalities and the central government.
- Providing tax incentives to enable Puerto Rico to become an international financial center.
- Upgrading the primary and secondary educational systems and imposing more stringent requirements.
- Creating a policy board for the university system with responsibility for addressing policy issues.
- Stimulating more research at the university level.

The report was not widely used. 1984 was an election year and the government changed in 1985. There were minority dissenting opinions, which are not available.

1984 Informe del Sub-Comité para el Desarrollo Económico de Puerto Rico

Comité para el Desarrollo Económico de Puerto Rico, Inc., Informe del Sub-Comité para el Desarrollo Económico de Puerto Rico, San Juan, 1984.

Objective

The report incorporates a private sector response to the economic crisis confronting Puerto Rico in the early eighties. It sought to respond to the situation by proposing concrete measures in five major areas: energy, manufacturing, tax policy, agriculture and tourism.

Methodology

The Report is divided into two volumes, a diagnosis of the situation is incorporated in the first volume and a second volume includes the recommendations. The first volume is a fairly straightforward enunciation of problem areas and a description of the crisis as reflected in the unemployment rate, economic contraction in years 1982 and 1983, and loss of competitive advantage due to higher labor and energy costs. There is substantial empirical work underlying the analysis of the actual and projected economic situation. The recommendations are presented at two levels: strategies and specific action items, of which there are 53.

Conclusions and Recommendations

Among the major conclusions of the report are the following:

- A deteriorating employment situation, the economy having lost 50,000 jobs in the previous two years.
- The energy crisis is recognized as a major factor in the economic situation.
- Federal transfer payments are not growing and thus will not contribute to economic growth or to mitigating the serious economic difficulties.
- High interest rates were also considered as critical, with the prime rate at over 15.0%.
- The manufacturing sector is diagnosed with serious structural problems due in great measure to high operating costs in Puerto Rico, including labor and energy.

- Agriculture is a minor player with serious difficulties in its leading sectors, such as sugar.
- Government's role and the fiscal system are both seen as obstacles to development, particularly the tax system.
- Tourism has serious structural difficulties due to high labor and energy costs, a lackluster promotional campaign, deteriorating amenities and high transportation costs.

Based on the above, the Committee made 53 specific recommendations, the most important of which are the following:

- Diversify energy sources (including non-conventional sources such as windmills and biomass), improve the Power Authority's efficiency through administrative restructuring, eliminate energy subsidies and promote co-generation.
- Put in place the necessary incentives to convert Puerto Rico into a research center on solar energy.
- Establish a tax on corporate income on new firms established in Puerto Rico on the basis of a number of conditions, including location and jobs created.
- Provide partial exemptions on property taxes and municipal franchise taxes to new manufacturing plants.
- Promote scientific research through a number of incentives and the creation of an institutional infrastructure.
- With respect to labor costs a number of proposals were made such as eliminating minimum wages on certain types of labor and reducing the excessive number of holidays and a moratorium on new fringe benefits.
- Modify the Jones Act with respect to maritime transportation issues.
- Increase budget allocations for the International Trade Center and establish a Free Trade Zone in San Juan as efforts related to improved exporting capabilities.
- Promote a concerted effort by the Executive Branch, the Legislature and the private sector to lobby in Congress for long term stability for 936.
- Create the Economic Development Bank.

- Lower marginal tax rates for individuals immediately and, in the longer term, consider a modified flat rate tax.
- Lower marginal rates in corporate taxation, eliminate inheritance and gift taxes and provide for accelerated flexible depreciation.
- Increase duties on gasoline and use proceeds to finance the Economic Development Bank and road construction.
- Eliminate exemptions to the general duties ("arbitrio general").
- Close the Sugar Corporation and limit incentives in agriculture to those that promote productivity.
- With respect to tourism, the principal recommendation was for the preparation of a long term strategic plan for the development of the sector.
- Improve the technical and professional qualifications of those responsible for the implementation of the public policy on tourism.
- A number of incentives were recommended, including lowering energy tariffs, tax incentives, financial guarantees and others.

1989 Estrategia para el desarrollo económico de Puerto Rico

Consejo Asesor Económico del Gobernador. (1989). Estrategia para el desarrollo económico de Puerto Rico: hacia la segunda transformación económica. San Juan, P. R.

Objectives

The principal objective of the report was to design a new development strategy based on the recognition that the original model used in the fifties and sixties was no longer functional with global economic conditions. A new approach based on endogenous growth concerns was seen as required for positioning Puerto Rico as an effective competitor.

Methodology

The approach followed was based on four phases: defining development objectives, elaborating a vision for Puerto Rico's economic development, identifying strategies that would achieve the vision and recommending specific instruments to implement the strategies.

Conclusions and Recommendations

The report makes a very precise and detailed analysis of the demise of Puerto Rico's economic development strategy based on low costs, tax incentives and the attraction of investment from abroad. It is particularly critical of the dependence on federal transfer payments to achieve stability during the crisis of the seventies. It calls attention to the role of government as producer and employment generator and to the fact that the Island's manufacturing sector was made up of "subsidiaries" and thus lacked the autonomy required for decision making.

Attention is drawn to the changes in the global economy and, particularly, to a much more competitive environment in which the rules of the game had changed. Although not explicitly stated there is an underlying criticism of the tax driven economic development model. The report was never adopted by the Governor and thus had little impact on policy.

The recommendations were grouped under eight major strategies, as follows:

- Reorient government investment towards improving productivity and efficiency, by promoting selective privatization, limit increases

in the government's budget, bring to bear private sector approaches to government.

- Improve infrastructure by strengthening the infrastructure agencies' capacity to plan effectively, improved inter-agency coordination and by assigning responsibility for coordinating infrastructure issues to the Planning Board.
- Create industrial centers of excellence, eliminate subsidies to inefficient sectors and diversify the sources of investment. The report called for targeting specific sectors based on their competitive advantages, strengthening programs dealing with local firms and creating a department of industry and commerce.
- In education, emphasize learning capacity, basic skills and flexibility by expanding the number of instructional hours, creating new programs in the areas of science and mathematics, improving quality controls, peg teachers' salaries to productivity, create special programs for retraining of workers and for dealing with children with learning disabilities.
- Develop an efficient risk capital system in Puerto Rico by improving the Economic Development Bank's capital base, and generate the capacity to increase high risk investments through joint ventures and other means.
- Improve technological capabilities and modernize technologically backward private firms, creating an R&D program emphasizing commercialization of new products, improve ties between academia and the business sector, require public corporations to fund R&D activities, introduce changes to the Agricultural Experimental Station and the Extension Service and improve technology transfer capabilities in areas such as tropical resources, telecommunications and flexible manufacturing systems.
- Identify markets abroad with great potential and generate the capacity to market local products abroad, by establishing a commercial intelligence program, creating an integrated export promotion program which incorporates financing, technical assistance and marketing, establish the Economic Development Bank as the local representative for the Ex-Im Bank and create a private trading company.
- Achieve greater integration with the Caribbean region by strengthening the Commonwealth's capacity to sign international agreements, promote Puerto Rico as a service and technology transfer hub for the region. collaborate with regional institutions

such as the Caribbean Development Bank and modernize transportation and communications infrastructure.

1991 Economic Development Strategy, EDB Workshop.

Banco de Desarrollo Económico para Puerto Rico. (1991). Economic Development Strategy, EDB Workshop. Estudio preparado por Robert J. Allio & Associates, Inc., Consultants to management.

Objectives

The major objective of the project was to develop a strategic plan for Puerto Rico's economic development utilizing, among others, Michael Porter's approach. Much of the work was carried out by local subcontractors since the Allio firm had no experience in economic development or macro-economic studies. The effort was never concluded and resulted in no policy shifts.

Methodology

The study utilized a number of different approaches including:

- Econometric model simulations carried out by Estudios Técnicos, Inc.
- Case studies of successful local firms developed by Estudios Técnicos, Inc. and other local consultants
- Benchmarking with other jurisdictions with respect to incubator development and on the macroeconomics of development
- Trend analysis of the Puerto Rican economy, carried out by local economists

Conclusions and recommendations

The study put forth a number of conclusions based on studies by local firms and economists, concerning the Island's competitiveness in the various sectors, including the following:

- Loss of competitiveness in the manufacturing sector due to high costs, poor infrastructure, environmental constraints and uncertainty regarding Section 936.
- In tourism, increased competition from other Caribbean destinations, image problems, increased costs pose serious problems.
- A complex maze of entities is seen as a major constraint for agricultural development, as are fragmentation and increased competition from lower cost producers.

- An overall assessment of infrastructure is made at a very general level with the conclusion that in practically every area deficiencies exist which need to be corrected.

A large number of recommendations were incorporated in the study, including:

- Emphasize high tech manufacturing and strengthen science and technology infrastructure.
- Convert Puerto Rico into a services hub for the region.
- Explore export potential in health related services, consulting and construction.
- Create an entity for export promotion.
- Focus Economic Development Bank activity on activities with export potential.
- Diversify tourism markets, improve internal transportation, define a clear strategy and simplify government procedures related to tourism.
- Concentrate on high value added agricultural products and eliminate many government run programs.
- Establish an incubator program. Move away from exclusive dependence on tax incentives.

1994 Nuevo modelo de desarrollo económico, San Juan, P. R

*Consejo de Productividad Económica, Oficina del Gobernador.
(1994). Nuevo modelo de desarrollo económico, San Juan, P. R.*

Objectives

The New Economic Development Model (NEDM) sought to devise approaches to economic development to substitute for tax driven incentives which had characterized previous efforts. In many ways, and without indicating explicitly that this was the theoretical framework, the NEDM used an endogenous growth theory conceptual framework.

The rationale for developing the NEDM was the poor performance of the economy over the previous fifteen years, when growth rates had decreased substantially, a changed competitive environment and increasing social tensions arising from a poorly performing economy.

Its purpose was to "set forth the guidelines for decision-making and the objectives and strategies that will provide the framework for decisions in the various sectors. To the extent that the external context changes, modifications will be required. Thus, it should be considered a flexible instrument for policymaking."

Methodology

The development of the NEDM took place over a one year period and involved meetings with a substantial number of private sector individuals, workshops with government officials and meeting of the Productivity Council, from which a working group was designated made up of government and private sector representatives. The Planning Board was mainly responsible for the drafting of the report, with support from other agencies. Its Chairperson acted as Coordinator.

Benchmarking with other countries and states was used to gather information on successful experiences.

The NEDM's structure includes: objectives, guiding principles, strategies for eight different areas and short term measures.

Conclusions and Recommendations

The major objectives of the NEDM included: achieving competitiveness in the global context, promoting productivity, grow at higher rates, strengthen entrepreneurial capacity, generate jobs for the

Island's youth and promote a more stable economy through diversification.

Three guiding principles were adopted: the market will be the principal instrument for mobilizing and allocating resources; competitiveness and productivity will be the principal objectives, not short term job creation, and social policy will be integrated in the NEDM.

Eight strategies were delineated in the following areas:

- Promotions - basically depending on improved infrastructure, science and technology capabilities and a highly trained labor force.
- Regulatory framework - called for transparency in drafting and application of new legislation and regulations and cost effectiveness evaluations of new ones. The focus of the strategy was to conceive of the government as facilitator.
- Financial resources - called for reform of Puerto Rico's capital markets as well as establishing the conditions for Puerto Rico to become an international financial center.
- Fiscal system - its principal aim was to produce a more balanced and simplified tax system.
- Infrastructure - called for improvements in the traditional infrastructure sectors as well as the new infrastructure, conceiving education and health services not only as social services but as part of the economic infrastructure. Science and technology capabilities are explicitly mentioned as part of the new infrastructure.
- Human resources - the strategy called for a major reform of the educational system, including the drafting of a public policy statement on university education and generating competition among university level institutions.
- Social issues - essentially calls for better services in health and education, but also establishes the need for empowerment and decentralization and an increased emphasis on community based organizations.
- Institutional framework - calls for three major thrusts: establishing coherent and precise guidelines for privatization, creating "umbrella departments" in the government and incorporating the Cooperative Movement in the development process.

Specific actions were recommended in key sectors and the NEDM incorporated the concept of strategic projects as those which are considered necessary for economic development, and whose failure would have severe impacts. Among those included in this category were the urban train, the privatization policy and the implementation of an energy policy with a strong cogeneration component.

In addition, the NEDM called for rapid implementation of fourteen measures aimed at stimulating the economy. Among them: the creation of a program to rehabilitate urban centers, changes to the tax system, including eliminating taxes on dividends, utilizing the AFICA mechanism to pool loans to small and medium size companies, creation of a program for the development of local entrepreneurship among others.

Subsequently, a system of performance measures was developed to gauge the progress achieved in implementing the NEDM.

1995 La importancia de la Industrialización en el desarrollo económico de Puerto Rico

Administración de Fomento Económico. (1995). La importancia de la industrialización en el desarrollo económico de Puerto Rico. Oficina de Asuntos Económicos, División de Análisis Económico.

Objectives

To present a brief report on Puerto Rico's past and present, as well as perspectives about its economic development, highlighting the role of manufacturing as the main instrument.

Methodology

A descriptive and evaluative approach has been utilized in the appraisal of the country's performance. The methodology is chronological, including quantitative information as support.

Conclusions and recommendations

At the beginning of the twentieth century, agriculture was not considered an activity in Puerto Rico capable of solving the country's existing problems of unemployment and lack of economic development.

The 1940's marks the Island's transformation from an agrarian to an industrial economy. The forties are remembered as an era when Puerto Rico created many organizations, such as the Puerto Rico Industrial Development Company (PRIDCO), the Planning Board and the Government Development Bank, to manage and develop the economy. Other public corporations created were the Electric Power Authority, Water and Sewer Authority and the Transportation Authority.

In order to stimulate industrial development, the government sponsored a group of manufacturing plants dedicated to the production of cement, glass, coal, leather and ceramics. Once the plants reached acceptable production levels, they were sold to private organizations. This was the spin-off for "Operation Bootstrap" (Operación Manos a la Obra), where manufacturing was the main activity directed to reduce unemployment and the poverty level. Other complementary efforts included the construction of industrial buildings for rent or sale to prospective manufacturing tenants, as well as an aggressive promotional program to bring in new industries and to export Puerto Rican rum. This decade also marks the beginning of the tourism industry.

The early years of the 1950's saw the creation of the Economic Development Administration (EDA), in charge of the research and

promotional activities previously performed by PRIDCO. The incentive program developed by EDA included: tax exemption, incentives based on location, ready to use facilities, labor training, technical and financial assistance. In the early fifties, the garment industry was among the most dynamic in terms of job creation. Nevertheless, the economic impact wasn't long lasting or strong enough due to the fact that the factories were integrated to the US economy and were not linked to the development of Puerto Rico. This economic vulnerability induced the government to refocus the industrialization program in order to attract higher salary industries with more stability and resistance to economic fluctuations. The decade of 1950 experienced the movement from an agrarian to an industrial and diversified economy. During the decade, total production of goods and services increased from \$775 million to \$1,656 million, and the per capita income grew from \$278 to \$526. Total value of exports increased from \$235 million to \$622 million. Manufacturing employment augmented from 55,000 in 1950 to 81,000 in 1960.

In the 1960's, promotional efforts were directed to attract heavy, capital-intensive industries such as oil, chemical and metallurgical plants. A new incentive law was approved in 1963 with the objective of establishing high salary industries with longer production chains. In spite of these efforts, the unemployment rate remained at 13% at the end of the decade. The Tourism Company was created in 1970.

Total manufacturing production increased from \$366 million to \$1,169 and the income per capita moved from \$576 to \$1,353 in the decade. Manufacturing jobs climbed to 132,000 and "Fomento" was able to establish 1,644 factories with 101,000 jobs. At the same time, agriculture and traditional industries kept losing employment. At the end of the decade, 72% of total exports were products manufactured by the plants promoted by "Fomento" and the remaining 28% were traditional products.

At the beginning of the 1970's, the economy continued to grow driven by the manufacturing sector. Nevertheless, by 1975, the extraordinary increases in oil prices promoted an inflation that skyrocketed costs of energy and transportation. In addition, the incipient petrochemical industry was severely affected by high prices and shortage of raw materials. The unemployment rate hit its maximum level of 22.1% in 1977. In October, 1976, the US government approved Section 936 of the Internal Revenue Code, providing a tax break for the US manufacturing corporations operating in Puerto Rico, and therefore attracting the expansion and opening of new plants. At this time the promotional approach was revised in order to stimulate complementary manufacturing concerns. The new incentive law approved in Puerto Rico was also directed at promoting agribusiness and the service sector. Industries promoted were classified in two groups: Light modern, labor intensive with reasonable salaries; and High tech, high productivity with high growth potential.

During the 1980's, the government created the Economic Development Bank, and the Infrastructure Financing Administration. In addition, the Caribbean Basin Initiative was formalized, in order to promote the twin plants program in the region. After the 1982-83 crisis, the Island's economy began to regain momentum, with the manufacturing sector leading the drive. But this time, efforts were in favor of a more balanced equation looking also for the development of the Puerto Rican industry. During the second half of the decade, the annual growth rate of the economy reached the 4% mark.

The beginning of the 1990's was characterized by globalization trends, the slow pace of the economy and world competition for investment dollars. During fiscal year 1994, the Manufacturing Gross Domestic Product increased 7%. The manufacturing sector experienced structural changes, where labor intensive players lost ground to high tech industries. In 1994, manufactured products represented 99% of Puerto Rico's total exports. The leading segments of these efforts were chemical and pharmaceutical products, computers, as well as professional and scientific instruments. Even though total manufacturing labor had gone down, the higher productivity of technological industries enabled the economic growth of the sector. Puerto Rico was not able to elaborate a Research & Development program at par with competitive nations such as Ireland, Korea or Singapore.

During the second half of the decade, Puerto Rico faced the challenges of the North America Free Trade Agreement (NAFTA), with the corresponding increase in competition for the US market. Needless to say, it also faced the loss of Section 936. The new model was intended to transform the Island by year 2000, into a diversified, balanced, dynamic and globally competitive economy in terms of productivity, infrastructure, and quality of life.

2002 Running with Tigers: Benchmarking Puerto Rico's Competitiveness

John R. Stewart, Jr. (2002). Running with Tigers: Benchmarking Puerto Rico's Competitiveness. Department of Economic Development and Commerce, San Juan, May.

Objective

The report aims to compare Puerto Rico with Singapore, Ireland, Malaysia and Tucson, Arizona with respect to those variables which determine competitiveness: labor and energy costs, R&D spending, labor availability, and taxes.

Methodology

Economic convergence theory is used as the basic conceptual framework for making the comparisons.

Conclusions and recommendations

A major conclusion of the report is that "Puerto Rico's economy was converging with the US until 1971 but has shown divergence since then. One can postulate that the failure of the Puerto Rican economy to maintain a convergent path was due to Puerto Rico's implementation of policies that failed to adjust the economy to the realities of increasing global competition, and in some cases, moved the economy even further away from competitiveness." Among these policies was the increased role of government in the economy, an increasing share of government consumption, acquisition of major firms by the government (a shipping company and the local telephone company) in the sixties and early seventies.

Specific comparisons are made with each of the four economies:

Per capita incomes in Puerto Rico grew at less than half the rate in Singapore, Ireland and Malaysia (between 4.0% and 5.0%) and below Arizona's 2.6% rate.

Labor costs in Puerto Rico are not significantly different from those in Ireland and Singapore, but exceed Malaysia's. Labor strife is not a problem.

Puerto Rico's low labor force participation rate compared to the other four units suggests that labor availability might be an advantage, although federal minimum wages would imply an artificially high cost for unemployed labor.

Puerto Rico's technological capabilities lag behind those of the others, measured in terms of R&D investment as a percent of GNP. Malaysia is the exception. In terms of telecommunications, Puerto Rico appears to lag behind the others with the possible exception of Malaysia.

Government consumption as a percent of GNP is higher in Puerto Rico than in the other jurisdictions.

Quality of life indicators, such as crime rates, seem to indicate that Puerto Rico is unfavorably positioned (no figures were obtained for Malaysia).

Although Puerto Rico compares favorably with respect to tax incentives, it appears that Ireland and Singapore have invested considerably larger sums in direct grants for certain targeted activities. It also appears that incentives are targeted to specific sectors and activities much more in Singapore (Life Sciences), Arizona (Optics, IT, etc.) and Malaysia (Multimedia Super Corridor) than they are in Puerto Rico.

The report makes no specific recommendations.

Reports of U.S. Government Agencies

1979 Economic Study of Puerto Rico

U. S. Department of Commerce. (1979). Economic Study of Puerto Rico. Vols. 1 & 2, U. S. Government Printing Office, Washington, D. C.

Objective

The report had four major objectives:

- To provide a macroeconomic overview of Puerto Rico containing a description and analysis of production, income, employment, external trade, inflation, investment, and the role of government;
- To bring together in one place an analysis of the characteristics and effects of federal programs and policies in Puerto Rico;
- To provide a proper sense of direction to policy;
- To report on all programs significant to Puerto Rico.

Methodology

This study was organized principally on a sectoral basis. The bulk of the study is an analysis of the following nine sectors:

- Manufacture;
- Agriculture, Food and Rural Living;
- Tourism;
- Housing and Construction;
- Transportation;
- Energy;
- Commercial Banking;
- Employment, Wage Structure, and Migration;
- Social Conditions and Human Services.

Maps, time series tables and graphs, and single-equation regressions were used. The first part introduces new estimates of the capital stock.

measurements of the rate of return to capital and approximations of the marginal and average productivity of capital.

Conclusions and recommendations

Economic growth potential

- If construction in both the private and the governmental sectors expands with less vigor than during the investment boom years, the stimulus for income and employment growth coming from construction would likewise be moderated;
- Except in the recession, public spending and employment have grown very rapidly for several years and helped to boost private sector activity. A more conservative expenditure policy in the public sector in the future would have a moderating effect on economic growth;
- The rate of real growth will be affected by the intentions of outside investors regarding the expansion of their present facilities of Puerto Rico and development of new sectors in the economy.

The Unemployment Problem

- The economy had failed to absorb satisfactorily Puerto Rico's rapidly growing labor force. The manufacturing sector under Bootstrap similarly failed to open up enough jobs;
- The high level of unemployment in Puerto Rico is a serious challenge to policy formulation;
- Increased employment can be encouraged by more flexible use of tax incentives.
- Tax incentives could be extended in consideration of the employment generated by an enterprise.

Structural Unemployment

- The drop in agricultural employment was due in part to the inability of Puerto Ricans farmers to keep up with technological progress;
- Labor intensive manufacturing could be adversely affected by labor cost inflation which might be exacerbated by further minimum wage rate increases schedule for the next years;

- Unemployment is a structural problem and its elimination will call for elective rather than macro policies;

External Trade

- Greater diversification of export destinations could help insulate Puerto Rico from the concentration of influences coming from the economic forces of the United States;
- Cost-push factors contributed significantly to the loss of competitiveness, particularly in some labor-intensive industries where increases in real wages exceed productivity gains;
- The heavy dependence on imported goods suggests that import substitution policies might be worthy of careful consideration.

Inflation

- Inflation was an issue at the time, and the study concluded that cost-push pressure was the dominant factor of the nature of the inflation;
- Labor cost inflation and total cost-push inflation are closely parallel;
- The main internal inflationary impact came from intensive construction demand which lasted more than a decade;

Government Sector

- The rate of growth of Federal Government support for Puerto Rican programs cannot be accepted to continue;
- It is up to the Puerto Rican Government to decide how large a share of its GNP could be allocated to government functions;
- Section 936, enacted in 1976, and the weakened economic environment have increased the value of the tax concessions.

Investment

- There is no apparent short run alternative to an extensive reliance on outside savings for financing Puerto Rico's investment;

- Puerto Rican personal saving has been consistently low or negative, making virtually no contribution to capital accumulation;
- In order to reduce the island's reliance on outside capital, the government could encourage savings with appropriate tax incentives;
- There is a strong trend towards more capital-intensive production techniques in industry;
- With significant innovation accompanying future capital input, even faster growth rates could be achieved;
- The Government budget process —specifically the allocation of expenditures and the provision of tax incentives— should focus explicitly on economic policy goals, such as increased savings and capital formation. Fiscal policy should be used actively to pursue well-defined economic development goals.

Studies Commissioned By Puerto Rico Government Agencies and Non-Government Entities

1970 Puerto Rican Industrialization Incentives for the 1970's and 1980's

Lester C. Thurow, Puerto Rican Industrialization Incentives for the 1970's and 1980's, Puerto Rico Planning Board, San Juan, December 1970.

Objective

The report seeks to generate a different set of industrial incentives to attain "full employment and the equalization of standards of living between the mainland and the island of Puerto Rico".

Methodology

The report analyzes the present system which the author argues favors profit maximization and not employment generation. He then proceeds to argue that a system based on wage subsidies would produce results more in line with the stated objectives since "Profits are created by the relative costs of labor, materials, land, and transportation and by the relative productivity of the Puerto Rican work force. If these factors are unfavorable, profit tax exemptions cannot create incentives to locate in Puerto Rico". He argues that "unit labor costs in Puerto Rico have been rising relative to those in the mainland", supporting the view that profit related incentives are not effective.

Conclusions and Recommendations

The author makes a strong recommendation that wage credits are a more sensible alternative given the above. An option to the labor cost differential alluded to is to improve productivity at an even faster rate than experienced up to then. He argues that there are inherent limitations to this option given the fact that Puerto Rico attracts firms that are "footloose" and that will choose locations where costs are lower in absolute terms ("Puerto Rico attracts industries that are not tied to particular locations"). These incentives are effective only for those industries which are highly capital intensive but which generate few jobs, such as petrochemicals.

In a comment related to the need for increased productivity the author argues that: "In the end the development of Puerto Rico will depend upon those skills. Puerto Rico will reach mainland living standards only if the skills of the Puerto Rican labor force equal or exceed those of the mainland labor force. These skills are Puerto Rico's only long term

industrial resource." He then argues that incentives should be drafted that stimulate improvement of these skills.

The author proposes two options. If employment maximization is the social objective then a wage credit should be extended to workers up to a certain income level and above the minimum wage. Should a balance between productivity increases and employment generation be sought, the incentives would be divided into two components, job creation and income generation.

A number of specific measures are introduced to assure the effective implementation of the measure such as safeguards against labor pirating (shifting from non-subsidized to subsidized employment) and others.

In addition to the recommendation for a wage credit, the author introduces a set of recommendations for improving profit based incentives. He indicates that "A one year delay now exists between the time that a firm officially applies for a tax exemption and the time when the exemption is officially awarded.... Reductions in this delay constitute the major avenue for improving the efficiency (drawing power) of tax exemptions."

His recommendations include the following: eliminate exemptions in excess of ten years, penalties should be instituted for plant closings, stricter benefit-cost criteria should be utilized, linkages among activities should be analyzed carefully before granting tax incentives based on the assumption that significant downstream activities will be generated, and lists of potentially attractive industries are provided based on different criteria (employment maximization, income maximization).

The report incorporates a major section on land availability as a restraint on economic development, concluding that: "...speculation and land price increases can completely vitiate the locational incentives of any incentive system." He argues that land price increases will halt economic development "at much lower levels of economic development (than the mainland) because of its dense population and very limited land area."

A number of measures are recommended to deal with the problem, including higher taxes on speculative earnings, but the main recommendation is for stricter land use planning.

1976 Informe al Gobernador del Comité para el Estudio de las Finanzas de Puerto Rico

Tobin, James. (1976). Informe al Gobernador del Comité para el Estudio de las Finanzas de Puerto Rico, Editorial Universitaria, UPR, Río Piedras.

Objective

To present an analysis of the amount of investment in productive capital associated with the growth of economic activity and employment in Puerto Rico and its internal and external sources of finance.

Methodology

A chronological and narrative analysis of several economic and financial variables using tables, and time series graphs. Some data were extrapolated using linear trends.

Conclusions and Recommendations

There are some general recommendations for the basic constituents of a policy program:

1. Limiting government consumption expenditures and pay increases;
2. Increasing tax revenues;
3. Development of operating surpluses in government expenditures;
4. Straightforward marketing of Puerto Rico bonds;
5. Measures to employ Puerto Rican youths;
6. General restraint on wages;
7. Incentives for investment and employment by tax-exempt firms;
8. Job-creating investment in private industry.

Specific recommendations

I. Investment

- The use of social cost-benefit analysis for project appraisal. This methodology is recommended to be used for all major public investment projects and subsidies of the private sector.

- Public wages and fringe benefits should be frozen for three years. Then they should grow as mainland wages for a period of five years. The government should try to implement this also in the private sector.
- A revision of the tax incentives policy to reward reinvestment of profits in employment generating activities;
- Private tax-exempt companies should contribute with substantial new real investments to revitalize growth;

II. Internal Private Sources of savings

- To improve savings rates marginally, there should be a gradual removal of special personal income tax deduction for interest paid on taxpayers' personal indebtedness and a prompt resumption of employer's contributions to the public pension funds.
- Consumption of luxuries should be taxed directly.

III. Public savings

Public enterprise pricing policies should be reviewed comprehensively;

- Public enterprises that sell services to the public should generate some surplus.
- Property tax and better enforcement of the tax laws should be the top priority in tax reform.
- Public expenditures cannot grow as they have in the past;

IV. External Inputs to Growth

- Budget planning is a must.
- External direct investment should make a net contribution. To be sure of that, there has to be some screening of investments. Social cost-benefit analysis is recommended.

V. Puerto Rico's External Debt

- The rate of issue of new debt must be curtailed.
- The risk of investors should be lower. This could be possible with effective policy measures.
- Do not circumvent existing legal limits to external borrowing.

VI. The financial system and monetary policy

- The government should develop a more active local equity market.

VII. Economic Dependence

- Trade policies should have potential for accelerating growth, but this potential is probably not very substantial.
- Pro-cyclical patterns of borrowing and spending have to be avoided.

VIII. Policy and Policy Making for the Long Run

- Puerto Rico should take control over the federal monies disbursed on the island;
- Puerto Rico does not have to rely heavily on outside consultants;
- A research institute should be organized to meet the basic research needs of the government.

1977 The Development of Import-Substitution Industries in Puerto Rico

Bryce, Murray. (1977). The Development of Import- Substitution Industries in Puerto Rico. A report presented to the Puerto Rico Economic Development Administration, Office of Economic Analysis.

Objective

The study has as its principal objective the drafting of recommendations that would make possible the development of import substitution industries in Puerto Rico. No specific recommendations are made in terms of particular activities. Rather, the report drafts the parameters that should guide the framing of the import substitution policy.

Methodology

The study does not apply any analytical techniques and there is no well defined methodological approach. It is rather informal in the manner in which it reaches its conclusions and recommendations. There are no references and no attempt to empirically test the propositions made.

Conclusions and Recommendations

The study concludes that Puerto Rico's employment problem will not be resolved by manufacturing investment from abroad, that Puerto Rico faces serious problems regarding absorption of the labor force due to increased population pressures, and that this will require the creation of at least 30,000 jobs per annum. He points out that EDA has created 4,000 jobs per annum and that the number has decreased in recent years.

He also points to the fact that Puerto Rico has lost its attractiveness as a location for labor intensive industries due to higher labor costs. Although not clearly supported by empirical analysis, he estimates that the potential number of jobs to be created by import substitution could be as high as 150,000.

He recommends the establishment of an import substitution program emphasizing activities which are labor intensive. focused on the local market and centered on activities which are growing. He estimates that a subsidy will be required and suggests the figure of \$3,000 per job created and a wage subsidy of \$100 per month. The rationale is that labor is a "free resource" which is not contributing to production and that any initiative which increases net income over and above the subsidy, is positive.

The study recommends a screening process to identify potential import substitution activities and potential firms that could satisfy the local market. Essentially the system is a card with information on products.

which exhibit some potential, brands in the market, total size of the market and growth potential.

The author recognizes that there are a number of obstacles in the way towards implementing the import-substitution strategy and he recommends a number of measures aimed at resolving major problems. One is the financing of import-substitution activities for which he recommends the creation of an industrial development bank and a special guarantee program for the purpose of facilitating financing of new activities.

He concludes that the import substitution program will cost \$126 million over a five year period but should generate \$675 million in net income. There is no empirical support for this conclusion, which is reached in an informal, intuitive manner.

1978 Youth Unemployment and Economic Development Strategy in Puerto Rico

Michael J. Piore, Professor of Economics at MIT. (1978). Youth Unemployment and Economic Development Strategy in Puerto Rico A Report to the Government Development Bank.

Objectives

To evaluate the nature and causes of youth unemployment in Puerto Rico and to make recommendations to address this problem. In addition, to evaluate Puerto Rico's economic development strategy and make recommendations for its refocusing and improvement. [This summary focuses on the second of these objectives.]

Methodology

The author analyzed trends in youth unemployment in Puerto Rico and compared those to trends in the United States and other countries. He also analyzed the demographics of the local labor market and compared that to U.S. labor market demographics.

In the evaluation of Puerto Rico's economic development strategy, the author studied local economic trends and reviewed the existing literature on the subject, in particular the Tobin report. He also conducted interviews with key informants on labor market and economic development issues.

Conclusions and Recommendations

At the time of the study, a number of new federal government programs to address youth unemployment were being introduced in Puerto Rico. For that reason, the author recommended that no new policy initiative be introduced until the federal programs had been absorbed and their results assessed.

Regarding the economic development strategy, the author recommends a substantial refocusing emphasizing local capital and small and medium size enterprises. This, he argues, is more in tune with Puerto Rico's cultural and social context. He also warns that traditional competitive advantages are being eroded, particularly low labor costs, and predicts that the operation bootstrap model will soon be outdated.

The following conclusions and recommendations are worth highlighting:

“Puerto Rico's position as a low-wage enclave within the American economy has been eroded by rises in relative wages on the Island and

appears doomed by the most recent amendments to the Fair Labor Standards Act which abolish the differential between Puerto Rican and continental minimums.”

“Recent developments in the thinking of professional economists suggest, however, that the analytical assumptions of the old development strategy were too limited. The most important development in this regard has been the discovery that the structure of production varies substantially among industrial countries and appears much more responsive to each country’s particular cultural traits and social structure than was previously believed.”

“...the successful economic development of a country may be basically dependent upon the invention or discovery of modes of organization and institutional forms consistent with prevailing cultural traits and have relatively little to do with the exploitation of such advantages as low wages, superior educational achievement or the like...”

“The other important change in thinking about development is the discovery of the continuing importance of small enterprises in the economic structure of advanced industrial societies.”

“Interviews with managers and with Puerto Rican workers suggest that Puerto Ricans work best ... when they are working in small enterprises in which they have a proprietary interest... This suggests that a new development strategy should emphasize reliance upon smaller units...”

“The basic policy recommendation which emerges from the report is then a shift toward an economic development strategy centered around organizational forms most compatible with Puerto Rican culture. Special emphasis is placed on the development of small enterprises linked to larger organizations through subcontracting arrangements but only as an element in this broader strategy.”

“The strategy might involve certain changes in governmental programs and institutions. These include a revision of the tax-exemption program and the creation of a special promotional unit in Fomento.”

1994 Puerto Rican Capital Markets; Recommendations for Their Expansion

*Arthur D. Little, Estudios Técnicos, Inc. and William Lockwood (1994):
Puerto Rican Capital Markets; Recommendations for Their Expansion*

Objectives

To propose a blueprint for the encouragement of capital formation and the development of capital markets in Puerto Rico. To identify existing obstacles to capital markets and to propose the legal, regulatory and institutional means to surmount them. To propose incentives to promote the issuance of capital market instruments by Puerto Rico businesses and to encourage individual and institutional investors, local and external, to purchase such instruments.

Methodology

The consultants reviewed documentation on the legal, regulatory and financial aspects of capital markets in Puerto Rico; conducted in-depth interviews with key informants in industry and government; and analyzed data on savings and investment flows on the Island by sources and uses. The consultants also studied the interactions of Puerto Rico's capital markets with the broader U.S. market.

Conclusions and Recommendations

One of the major findings of the study is that Puerto Rico not only lacks proper incentives to develop capital markets, but actually has created over the years a number of disincentives that hinder the issuance of capital market instruments and the demand for such instruments. It was found that government policies have encouraged:

- businesses to remain privately held
- private projects to tap financing at rates below market
- public sector entities to continue postponing restructuring
- regulatory and tax barriers to investment to persist

In addition, public policy has resulted in:

- the development of capital markets for its securities on the mainland
- providing low-cost funds and tax exemptions to Puerto Rican businesses

- limiting the development of private sector capital markets in the process
- fragmented policy making and monitoring, and inadequate information gathering.

The key recommendations are:

1. Privatization of business activities to create new publicly-held corporations able to issue substantial volumes of new capital market instruments
2. Commence the privatization of various government sponsored venture capital initiatives.
3. Allocate a portion of Puerto Rico government pension funds to investments in socially and economically desirable projects on the Island.
4. Establish simplified procedures for offshore investors to apply for exemption from withholdings of revenues generated in Puerto Rico.
5. Encourage a positive attitude by regulatory authorities toward mergers and acquisitions.
6. Design an investment (export) promotion program for local corporations.
7. Equalize Puerto Rico's taxes on investment income received from different classes of securities and investment instruments
8. Eliminate the capital gains tax
9. Establish Employee Stock Ownership Plans
10. Remove securities from the definition of assets subject to the municipal property tax
11. Expand the types of investments permitted to be held in IRA accounts
12. Change the regulations governing eligibility for private placements
13. Exempt Puerto Rican securities from the ordinary income definition for distributions from private pension funds to beneficiaries
14. Limit the scope of activities for which AFICA bonds can be used

These measures are meant to make it more attractive for privately-held local companies to become public companies, thus increasing the supply

of local capital instruments. On the demand side, these measures would make more attractive to investors to increase the share of Puerto Rico capital instruments in their portfolios.

1995 A Strategic Plan for External Trade

Estudios Técnicos, Inc.; Arthur D. Little, Inc.; CARANA Corp.; McConnell Valdés; and Price Waterhouse. (1995). A Strategic Plan for External Trade. A report prepared for the Puerto Rico External Trade Board.

Objective

To design a strategy to promote external trade and to define future possibilities for the External Trade Board.

Methodology

The study is divided in four Phases. In Phase I, the authors present an analysis of the actual situation of Puerto Rico's business conditions, legal and regulatory framework for trade, support programs, infrastructure for trade, and export experience, in a narrative form. Phase II covers major trends in the global economy and defines potential opportunities for Puerto Rico as a diagnostic exercise. Phase III identifies and prioritizes strategic options for Puerto Rico's external trade in a narrative form. Phase IV presents the action-oriented components of the External Trade Strategic Plan.

Conclusions and Recommendations

The strategies and action plans are focused on six areas:

1. Product strategies
2. Market strategies
3. Resource strategies
4. Promotional strategies
5. Institutional strategies
6. Financial strategies

and are defined by their scope, key elements and short, medium and long-term actions.

The top ten priorities in the action plan are:

1. Begin implementation of the organization structure proposed in the Plan.
2. Start transfer of responsibility for Puerto Rico offices abroad to PROMOEXPORT.
3. Start setting up the trade information and intelligence system proposed in the Plan.

4. Initiate targeting of actual/potential traders in the local manufacturing sector.
5. Initiate targeting of actual/potential traders in services activities.
6. Use existing offices abroad to launch a general information campaign about Puerto Rico, creating awareness of our capabilities and communicating a serious commitment to external trade.
7. Initiate intensive information campaign in Puerto Rico to rally support for and familiarize all sectors with all the elements of the External Trade Strategic Plan.
8. Launch "branding" campaign for Puerto Rico products.
9. Start developing an integrated and coherent program of trade missions.
10. Begin targeting of international distribution firms for development of a regional trading center in Puerto

1998 Puerto Rico: The Economic and Fiscal Dimensions

Hexner, J. Tomas y Glenn Jenkins(1998). Puerto Rico: The Economic and Fiscal Dimensions. Prepared for the Citizens Educational Foundation.

Objectives

The major objective of this study by a private consultant and a Harvard Law professor and member of the HIID was to explore the implications of Puerto Rico's status on its economic wellbeing. It was commissioned by an entity created to support Puerto Rico's statehood movement. The rationale for the study is that, according to the authors, the status issue has been looked at as a political and not an economic issue.

Methodology

The study focuses on the impact which statehood would have on the Puerto Rican economy by attempting to measure its impact on such variables as tax revenues, federal transfer payments, wages and salaries and overall economic growth. Hawaii is used as a benchmark to support the conclusion that statehood will generate convergence with the US economy as a whole.

The authors utilize convergence growth theory to reach their conclusion that full integration into the US economy will lead to higher growth rates: "As one economy begins to converge toward another wealthier economy, it will initially experience higher growth rates as it "catches up" and lessens the gap in per capita income levels between itself and the more developed economy." They also indicate that: "When a territory becomes a state, its economy becomes much more integrated with the other states than it could have been as a territory. Thus, ..., it can expect additional economic expansion on the basis of becoming a state."

Other than using Hawaii's and Mississippi's experience as benchmarks, there is little analysis on why convergence would in fact take place.

Conclusions and recommendations

The authors conclude that far from being a model of economic growth, Puerto Rico's economy "has been beset with slow growth, high unemployment, and little advance in productivity", that Commonwealth status results in a drain on the US Treasury, that the present status has actually held back economic growth and that statehood would represent a major boom for the Island's economy. The authors contend that repeal of Section 936 has had no impact on economic growth. In fact, they argue that growth in GDP and employment has continued and government finances have improved.

Although the authors are highly critical of a CBO 1990 study which showed very different results from their analysis, even after making adjustments to the CBO report, their results still show a very unfavorable economic impact from statehood.

In addition to an obvious support for statehood ("...only statehood will enable Puerto Rico to optimize its growth potential in the long run."), the report does not propose any additional recommendations, although it discusses the Rossello Administration's initiatives in four areas: privatization, investment, reform of government and tax reform. The authors support these initiatives as alternatives to the tax based approach to stimulating economic growth.

Additional comments

The Hexner report is obviously tailor made to provide ammunition to the political debate on status. It has been incorporated in the bibliography to illustrate the manner in which status and economics are linked in Puerto Rico. There is a substantial number of status related reports that have been prepared over the years, which have not been included. These deal essentially with two subjects, the economic implications of a change in status and the impact of eliminating Section 936.

1999 Science and Technology Strategy, Puerto Rico Science and Technology Council

Arthur D. Little, Inc.. (1999). Science and Technology Strategy, Puerto Rico Science and Technology Council. Report prepared for the Department of Economic Development and Trade.

Objective

The report is the culmination of a two year effort whose aim was to propose to the Government of Puerto Rico an implementation plan for developing a technology and innovation based economic development strategy for Puerto Rico. The primary goal of the program was to create a climate of innovation by identifying and implementing mechanisms and structures needed to foster the development of a competitive and formidable research base, fuel product and business creation and propel economic expansion.

Methodology

The study utilized a number of different approaches, including benchmarking with other jurisdictions, interviews with key individuals from industry in Puerto Rico and abroad, and analyses of existing literature and documentation. The report is based on the use of the cluster approach to industrial policy and from the need to develop retain, attract and grow strategies.

Conclusions and Recommendations

- Five major clusters were identified: Communications and Information Technologies, Life Sciences, Health Care, Pharmaceuticals and Manufacturing processes.
- The value chains of a number of sectors were analyzed and the conclusion arrived at is that although the manufacturing component is strong, both the product development and marketing dimensions were weak.
- The former requires much more attention to export promotion strategies and the latter to the development of science and technology capabilities.
- The clusters were selected on the basis of criteria which included the potential contribution to the Island's economic growth, areas where Puerto Rico has competitive differentiators, areas which present value chain expansion opportunities and areas which are considered strong enablers.

- For each cluster innovation centers were recommended. These included: software, e-commerce, applied marine biology, plant products, cell biology/genetics research, health care information systems and telecommunications, advanced manufacturing systems and technologies, packaging centers and a center for research on plastics, polymers and composite materials.
- A number of incubators were also recommended, as well as a coordinating councils for each of the clusters, to be headed by a champion for the cluster.
- The Innovation Centers were described as providing the means for international networking, attraction of intellectual capital, promoting collaboration among academia, government and the private sector.
- Grants were to be made to proposals responding to RFP's prepared by local and off-island experts, who would make up the evaluating panels.
- Two panels were recommended: International Technology Advisory Panel and an International Industry Advisory Panel. The former would draw its membership from well known scientific organizations and leading R&D practitioners. The latter would include venture capital and industry specialists.
- The technology Corridor was recommended as "a rallying point" for S&T development.
- The report recommended the creation of the Office of Science and Technology as the lead entity in implementing the S&T Strategy.
- The implementation plan calls for three interconnected initiatives: cluster formation, development of a strong S&T infrastructure and integrating these with an export promotion strategy.
- The Science and Technology Council would have overall responsibility for policy and strategic guidance.

Addendum

In a subsequent project, ADL was given the task of securing agreements from leading firms to participate in the various cluster initiatives. This resulted in securing MOUs and Letters of Intent from a number of leading firms interested in participating in innovation centers in Puerto Rico as well as other initiatives. One of these was the establishment of a logistics center for the pharmaceutical industry. This second engagement resulted also in recommendations on PRIDCO's organization to more clearly correspond to the S&T based economic development strategy, including the need to formally assign responsibility to an entity charged with cluster

development. It also called for deal making capabilities to be strengthened as well as industry specific knowledge on the part of PRIDCO staff.

Studies By Individual Academic Researchers and Professional Consultants

1950 Puerto Rico's Economic Future

Perloff Harvey S. (1950). Puerto Rico's Economic Future. The University of Chicago Press.

Objective

To give a detailed analysis of the social and economic situation of Puerto Rico to see if the island can make real and long-lasting improvements in its social and economic structure.

Methodology

A descriptive and comparative analysis with the use of graphs and time series tables in a chronological and narrative form was developed in this book. Each chapter discusses a specific topic, to give a detailed analysis of the social and economic structure of the island.

Conclusions and Recommendations

In spite of social, economic and political problems, the author emphasizes that the Puerto Rican people "have displayed a noteworthy political maturity as characterized by their ability to evolve an essentially sound and balanced development program in the face of inordinately difficult conditions. There is every reason to believe that, with a certain amount of external assistance which would permit and increased tempo of development at the crucial points, coupled with a persistent and expert administration of the programs which have been initiated, Puerto Rico can make real and lasting improvements in its social and economic structure."

1979 Operation Bootstrap, Industrial Autonomy, and a Parallel Economy for Puerto Rico

Goldsmith, William W. and Vietorisz, Thomas. (1979). "Operation Bootstrap, Industrial Autonomy, and a Parallel Economy for Puerto Rico". International Regional Science Review, Vol. 4, No.1.

Objective

This article is a summary of a project undertaken by the two authors to provide Puerto Rico with an alternative economic development strategy in view of the stagnation that became evident after 1970. The paper and the project from which it is derived "proposes a policy for the development of autonomous exports and import substitution entailing moderate structural reorganization of the economy. However, this policy, ..., is fraught with difficulty. Therefore, the development of a parallel economy is proposed in order to reduce unemployment, increase productivity, and encourage a restructuring of the economy."

Methodology

The authors make a detailed inventory of the constraints facing Puerto Rico's economy in the seventies, including the following: decline in private external investment, wage increases, falling exports for the Island's labor intensive industries faced with Asian competition, an intractable government labor force, lower ratios of private to public investment and investment to GNP. The above lead to high unemployment rates (20% in 1974), severe poverty and faltering GNP growth.

Part of the report is an evaluation of the Tobin Report, which is severely criticized by the authors, who claim the its recommendations were: inconsistent with the objective of attracting investment; impractical because they did not take into account the political realities of the Island, particularly the influence of government employees, and regressive, in that the recommendations would impact the lower income groups in a disproportionate manner.

Other than a detailed recounting of the difficulties facing the economy and the critique of the Tobin Report, the authors did not utilize any analytical techniques to sustain their arguments and recommendations.

Conclusions and recommendations

Although not explicitly stated, the authors conclude that Operation Bootstrap will not recover the effectiveness which characterized it in the fifties and sixties and propose a policy based on greater autarky within the US sphere of influence. This approach would entail import substitution.

together with a renewed effort to attract "new, major corporate operations". The authors also emphasize the need to develop "higher skilled and higher technology manufacturing operations". Interestingly they argue for promoting activities in which the value chain is more complete, "enterprises...which produce complete product lines and have their own marketing and distribution networks on the U.S. mainland." They also call for technological autonomy through the promotion of research institutes and related activities.

Although not totally discarded by the authors, these policy recommendations are held to be highly complex and very difficult to implement. In any case, they argue that even if implemented, higher unemployment would still be a problem and recommend the establishment of a parallel economy to generate jobs "outside the bounds of the market economy".

Their proposal is for "a tightly integrated set of cooperative enterprises, based on farming communities managed by young participants, aimed at a partially isolated and self supplying economy." The Hernández Colón Administration actually created such a program in 1976, but the program was subsequently terminated when the Administration changed. The authors describe in detail the operations of the cooperatives, each of which would include some 500 individuals who would study and work simultaneously while living in an egalitarian community.

Note: One of the authors, Thomas Vietorisz, was the author of an internal memo prepared for Fomento in the early sixties, which was responsible for the petroleum based strategy adopted in the mid sixties. The memo was subsequently expanded into a book co-authored with Walter Isard, *Industrial Complex Analysis and Regional Development*, MIT Press, 1965.

1982 Economic development of Puerto Rico

Ruiz, Angel. (1982). "Desarrollo económico de Puerto Rico: Evaluación de una estrategia de desarrollo basada en importación de capital y tecnología", Ensayos y monografías. Unidad de Investigaciones Económicas. No (25).

Objective

To evaluate the economic development experience of Puerto Rico.

Methodology

An empirical evaluation using time series analysis, an econometric model and input-output matrices.

Conclusions and recommendations

1. Interindustrial linkages has not been created for a real economic development;
2. The lack of local integration among the diverse economic sectors has kept employment, income and production multipliers, at low levels;
3. Transnational companies have accumulated billions of dollars in tax exempt earnings, little of which is reinvested locally in physical capital;
4. Puerto Rico is of great value for North American companies;
6. The existent pattern of development in Puerto Rico should not be emulated by other developing countries.

1985 Cambio y desarrollo en Puerto Rico: la transformación ideológica del Partido Popular Democrático

Navas, Gerardo (ed). (1985). Cambio y desarrollo en Puerto Rico: la transformación ideológica del Partido Popular Democrático, Ed. UPR, Río Piedras.

Objective

To contextualize the economic policy decisions taken at the end of the 1940s, and to examine how these conditioned the economic, political and cultural characteristics of Puerto Rico.

Methodology

Narrative, graphic, sectoral data and economic series analysis of the economy of Puerto Rico.

Conclusions and recommendations

1. Puerto Rico depends 100 percent on imported petroleum for its energy needs;
2. Starting in 1952, it began to increase the capital-output ratio (decrease of capital's productivity) due to an industrialization policy based on tax concessions, low wages and the establishment of heavy industries;
3. In the 1960s and 1970s, Puerto Rico attained a growth acceleration which it wouldn't be able to sustain in the future;
4. Under the structure at the time the book was written, and assuming that Puerto Rico could maintain a rate of external financing similar to that of earlier years, it would be very difficult to solve fundamental problems (such as unemployment and poverty) based on the existing development policies;
5. To maintain the trajectory taken by the economy of Puerto Rico before 1973 would require increasing quantities of capital year after year.

1985 Factories and Foodstamps

Weisskoff, Richard. (1985). *Factories and Foodstamps: The Puerto Rico Model of Development*. John Hopkins University Press.

Objective

To provide an analytical description of Puerto Rico's economic development model (as it was in the early 1980s); to build a formal mathematical representation of the model; and to simulate scenarios of alternate routes for Puerto Rico's future economic development.

In particular, to understand the roles of tax-exempt manufacturing firms and the foodstamps program in Puerto Rico's economy, with special reference to their effects on economic growth and income distribution.

Methodology

Weisskoff developed a model based on input-output matrices expanded with data on the size distributions of income to families by sectors and the patterns of consumption by income classes. Besides developing his model, he carried out a careful study of written materials and statistical information on the Puerto Rico economy.

Using his model, Weisskoff examined various scenarios, including an import substitution scenario which he favors over the others.

Conclusions and recommendations

"External investment, government transfers, and foreign demand for its exports, determine the general growth of Puerto Rico, but the workings of the internal economy determine how and how much of this external final demand is retained and how much leaks out again via imports."

Weisskoff concludes that Puerto Rico is an extremely "leaky" economy, losing too much of the external demand impulse through an unduly large domestic demand for imported goods. This "leakiness" results from the insufficiency of internal supplier-purchaser linkages between "enclave" manufacturing industries and domestic economic activities. In the language of input-output, Puerto Rico's input-output matrix is riddled with empty cells. Puerto Rico may be said to have an economy rich on the edges and empty inside.

The main solution is efficient import substitution. "When the results of an import substitution strategy were compared to an export promotion strategy, it became obvious that the economy first had to be closed before the benefits of expanding exports could be fully realized. These intricate calculations demonstrated the difficulties that a small, open economy encounters when it seeks to expand exports without first restricting its own imports. Such an economy finds itself on a perpetual treadmill. The

constant danger of losing its export industry to other regions implies that these promoted enclaves, in the absence of import substitution, do not connect fully with other branches of the economy.” (emphasis added)

Weisskoff also proposes planning consumption instead of leaving it entirely in the hands of marketing strategists. This doesn't mean having the government choosing for consumers, but rather applying fiscal and agricultural policies in such a manner as to encourage a healthier pattern of consumption and savings that also creates demand for domestic output. “It is present consumption, with its addiction to overeating and television, that creates functional illiterates. Consumption knowledge means simply better management of consumer needs, simplifying them, and satisfying them as much as possible with local products and services.”

A strong emphasis is placed on modernizing and developing agriculture. Revitalize agriculture, supply more of your own food needs, fight the “conventional wisdom” according to which Puerto Rico cannot have a competitive agricultural sector. He proposes reconnecting the people to its economy through food production and consumption: “...connecting its stomach to its hand through its head.”

Indeed, Weisskoff goes as far as to argue for agricultural self-sufficiency as being technically and economically within reach for Puerto Rico. To this effect he quotes at length from various studies.

1986 Puerto Rico: Development by Integration to the U.S

Curet, Eliezer,. (1986). Puerto Rico: Development by Integration to the U.S., Editorial Cultural, Río Piedras.

Objective

To explain and evaluate the nature and causal factors of the rapid rate of economic growth which Puerto Rico experienced from 1950 to 1974, and the slowdown observed since then.

Methodology

An econometric model was built, consisting in a multiple regression with the GDP annual growth rate as a dependent variable. The explanatory variables are the real annual growth rate of labor inputs, domestic capital inputs, external capital flows, exports, tourism, and food stamps; a labor cost differential between Puerto Rico and the U.S., and the average value of crude oil imports.

The investigation was conducted in the context of contemporary development theories and taking into consideration the Latin America development experience. There was also a review of the economic development literature since the Second World War to bring into focus the theories and policies that are relevant to the study.

Conclusions and recommendations

Economic growth has produced great benefits, as well as created some serious problems to the people of Puerto Rico.

Achievements

1. The strategy of importing of capital, entrepreneurs, technology, and other productive resources from the U.S., with production oriented towards exports to the U.S. market, has made it possible to attain the basic goals of economic development, which are the transformation of the economic structure and an increase in real per capita output.
2. The structure of production has been transformed. The manufacturing, construction, and tourism sectors became the most important activities and provided the driving force for development. Manufacturing has been the most dynamic sector, bur. after 1974, the construction sector collapsed and tourism slowed down;
3. Infrastructure in communications, energy installations, water and sewer services, as well as education and health facilities have been broadened, strengthened and improved;

4. Overall annual growth rates have been impressive, among the highest for developing countries;
5. The level of living has risen substantially in terms of those aspects which can be measured by family income and consumption, schooling, health, and housing;
6. Family income has improved and has become more equitable over time;
7. Economic development has produced a substantial growth in the number of persons employed.

Failures

1. One of the most obvious deficiencies of economic development has been the deterioration of agriculture.
2. The magnitude of capital investment that has been required to attain Puerto Rico's development has been so great that it could not have been possible to realize that growth by relying on domestic capital alone.
3. The public sector deficits could have been avoided and personal dissavings considerably reduced by sound fiscal policies and management.
4. Puerto Rico's economic development has been based on a growing dependence on the United States.
5. A broad base of Puerto Rican owned enterprises has not been created.
6. In spite of the substantial increase in production and employment the problem of unemployment has not been alleviated.
7. Financing of infrastructure and public works is done almost exclusively by public debt issues instead of by internal savings;
8. the renovation of the physical production plant has slackened considerably so that industry is becoming technologically obsolete. This tends to curtail the economy's future production capacity;
9. The building up of the economic infrastructure has been virtually stopped so that the road network, energy installations, water supply, sewer facilities and housing have become overburdened and insufficient to support further economic development.

1990 Development Strategies as Ideology: Puerto Rico's Export-Led Industrialization Experience

Pantojas, Emilio (1990). Development Strategies As Ideology: Puerto Rico's Export-Led Industrialization Experience, Boulder/San Juan: Lynne Rienner/UPR Press, Río Piedras.

Objective

To illustrate how development strategies, as ideological constructs, articulate class interests. To argue that development strategies are the ideological representation of class interests as rational economic models purporting to be neutral sets of development policies of the state.

Methodology

A narrative and descriptive analysis using an interpretative method grounded in class analysis and historical sociology. It applies theoretical concepts from economics, sociology and political science to explain the sociopolitical dynamics of the capital-importation/export-processing development strategy of Puerto Rico. Some tables and graphs are used in support of the book's argument.

Conclusions and recommendations

This work disputes the technocratic notion that development strategies are sets of neutral policies promoted by the state for the benefit of all society, or a series of technical and scientific principles that serve to guide the process of economic development of a country.

Shifts in patterns of capital accumulation lead to changes in social and economic structure, class coalitions, in the ideology of development itself, and in the intensification of political conflicts. The author also argues that "developmentalism" provides the unifying substance that has permitted the continuity of capitalist development and that the contradictions of capitalist development can be resolved to the benefit of the dominant coalition.

The implementation of a particular development strategy is a function of the interests of whatever group or class coalition holds political and economic power. The book does not propose any particular orientation for development strategies in Puerto Rico.

1996 Algunas sugerencias encaminadas a la reestructuración de nuestra economía en la era post-936

Ruiz, Angel L. y Fernando Zalacaín. (1996). Algunas sugerencias encaminadas a la reestructuración de nuestra economía en la era post-936. Unidad de Investigaciones Económicas, Departamento de Economía, Facultad de Ciencias Sociales, Universidad de Puerto Rico, Recinto de Río Piedras.

Objective

To provide recommendations for sound economic performance after the derogation of Section 936.

Methodology

An empirical analysis of key economic variables in a chronological and narrative form. Some sectoral information is used to explain some findings.

Conclusions and Recommendations

1. That new industrial incentives be adopted as soon as possible independently of political orientations;
2. The package of incentives should include measures designed to promote local saving as an important source for the financing of investment and measures that help promote new local and external industries;
3. Stimulate retirement funds (private and public) to increase their participation in local ventures offering appropriate incentives;
4. Expand the types of investments that can be carried out using IRA accounts;
5. Government funding should be used to finance research and development at local universities;
6. The tax system should be overhauled jointly with the industrial incentives program;
7. Provide a wage credit of 60%, or at least of 40% for an indefinite period, starting in 2001, to existing and new companies;
8. Import substitution policies should be a fundamental part of any new package of tax or non tax incentives.

1986 Economic History of Puerto Rico: Institutional Change and Capitalist Development

Dietz, James L. (1986). Economic History of Puerto Rico: Institutional Change and Capitalist Development. Princeton University Press.

Objective

The book's objective is to rewrite and reinterpret Puerto Rico's economic history. At the time the book was published there was no economic history of the Island covering the period between the seventeenth century and post Second World War Puerto Rico. He seeks to provide an integrated approach to understanding Puerto Rico's evolution by framing recent development in the context of the world capitalist economy, extending back to its beginnings in the seventeenth century. The book was quite influential in academic circles and was subsequently translated into Spanish.

Methodology

The book is based primarily on secondary sources, particularly in the early periods covered, although the author did primary research on the later periods. It is a historical recounting of the Island's evolution for the most part based on Marxist approaches. For the purpose of this review, the most relevant part of the book is the final chapter in which the author deals with what he calls the failed development policies of the fifties and subsequent decades. Again, there is no specific methodological approach, except that his conclusions derive from a particular ideological perspective.

Conclusions and recommendations

Although recognizing that Puerto Rico's economic and social indicators had improved in the period 1950-1985, the author classifies Operation Bootstrap as a failure due in great measure to the fact that it generated a fragmented economy, and one which depended excessively on federal transfer payments to avoid a major social upheaval. He indicates that the model was based on five conditions: (1) local tax exemption, (2) increases in public sector employment, (3) federal transfer payments, (4) increases in government debt and (5) migration of a substantial proportion of the population. These conditions make it improbable that Puerto Rico's model could be applied elsewhere and point to its inherent weaknesses.

Although the book did not include any recommendations concerning alternative approaches to the Island's economic development, an epilogue written for the Spanish edition of 1989, outlines some recommendations. These include (1) the elimination over a ten year period of Section 936, which the author argues has had negative effects; (2) insist that foreign

corporations in Puerto Rico increase their backward and forward linkages and that the creation of such linkages be made a condition for receiving local tax benefits; (3) the promotion of local firms must be the keystone of the development strategies and finally, (4) strengthen science and technology capabilities.

He suggests that these four initiatives can be undertaken regardless of status considerations. He also calls for a radical restructuring of Fomento's programs.

1999 El Futuro Económico de Puerto Rico

Martínez, Francisco E. (ed). (1999). El Futuro Económico de Puerto Rico. Editorial de la Universidad de Puerto Rico, Río Piedras, P. R.

Objective

The President of the University of Puerto Rico, Dr. Norman Maldonado, organized the project on Puerto Rico's economic future with the intention of integrating the University in the discussion of Puerto Rico's economic and social policies. The main objective was to involve economics and social science professors in the analysis of Puerto Rico's economic situation and the policy initiatives required.

The publication includes a series of articles on three major areas: the economic context, the social dimension of development and local impacts.

Methodology

A group of sixteen university professors was brought together for the purpose of putting together the project. A number of working sessions were held to discuss key issues that needed attention and tasks were assigned to each. The result was the preparation of twelve essays dealing with topics such as: the economic context, technology policy, the information infrastructure, environmental issues, poverty and inequality, gender and work, migration, public health, financial flows, urbanization, industrial policy and the cooperative sector.

Each essay developed its own approach to the subject, so there is no one methodology which characterizes the project, except perhaps for a serious intent of bringing a multi-disciplinary focus to bear on each subject. The project also aimed at bringing together academics for the various social science disciplines who typically work individually. The project incorporates an essay which evaluates a large number of previously prepared studies on Puerto Rico's economy. This essay provided the background for the work done by the group.

The results of the project were discussed in a number of workshops in the University and were publicly presented to the Governor, and the public at large, at a conference sponsored by the President of the University in February, 1997. A subsequent project was undertaken by the group dealing with the issue of poverty. This was scheduled for publication in early 2003.

Conclusions and recommendations

The essays dealing with the overall economic context centered their attention on changes in technology and the global context. The major conclusions regarding the global context dealt with the need for Puerto Rico to understand and respond to the challenges that a changing structure

of the global economy presents, the need to deal with the new microeconomics of globalization, recognizing that it is an enterprise driven phenomenon, and the more intense competitive environment created by new entrants into the global scenario.

Approaches to developing a more proactive and effective approach to technology were also discussed and it was pointed out that in most analyses of Puerto Rico's development the issue of technology has been absent. After reviewing the various attempts through the years to generate policies on technology by the different administrations, a number of recommendations were made concerning the need to emphasize technology transfer and its requirements, the consideration of reverse engineering as a suitable approach for Puerto Rico and strengthening the institutional infrastructure for science and technology. The author calls the efforts in the direction of defining technology policy as fragmented or worse, non-existing.

The remaining essays conclude that:

- there is a serious environmental problem related to the Island's economic development,
- that poverty remains a major issue and that federal programs are of little relevance for solving the problem of inequality, whose main cause is the absence of jobs
- Puerto Rico needs a new industrial policy to supplant the tax incentive based approach
- Mobilizing local savings is an imperative in view of changes to Section 936

Each essay makes recommendations on specific topics, in addition to those highlighted above related to technology. Thus the review essay calls for a number of new initiatives aimed at providing Puerto Rico with benchmarks to measure its competitive position in the world, new studies on the informal economy and on locally owned businesses, the implications of an aging population and other topics with socio-economic implications.

Perhaps the main conclusion and the recommendations which follow from these conclusions is that there are many areas in which Puerto Rico simply does not have the information to generate coherent policy approaches to solve the problems. Similarly, the collection of articles conclude that there is a need to devise an alternative economic development model which emphasizes endogenous growth theory approaches.

