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Introduction and Summary

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At the close of the millennium, Puerto Rico was a tale of two economies. It had achieved some impressive economic milestones. Per capita income was substantially higher than in the rest of Latin America. In terms of quality of life measures such as literacy rates, years of schooling, and life expectancy, it ranked close to the most highly developed countries. But in other key dimensions, Puerto Rico appeared stuck under an economic glass ceiling. Although Puerto Rican residents have been American citizens since 1917, nearly half of them still lived under the U.S. poverty line, and the income gap relative to the mainland was widening.

As a territory of the United States, Puerto Rico shares key U.S. institutions; in particular, the region operates under U.S. judicial, monetary, and tariff systems. It is one of the world's most open economies, with free mobility of goods, services, capital, and labor to the large, prosperous U.S. market. One might expect these conditions to pave the way for rapid economic development in Puerto Rico, with living standards converging steadily with those enjoyed in the rest of the nation. Indeed, in the decades following World War II, Puerto Rico was hailed as a success story, sustaining impressive rates of economic growth and significantly raising domestic living standards. Its gross domestic product (GDP) per worker rose from 30 percent of the U.S. average in 1950 to 75 percent in 1980, a remarkable achievement.

But over the past twenty-five years, the economic situation on the island has deteriorated.[1] Growth in GDP has slowed substantially, and no further progress has been made in narrowing the gap with the U.S. mainland. Gross national income per capita, a more appropriate measure of living standards, yields an even less favorable picture. While income per capita doubled from just over 20 percent of the U.S. average in 1950 to roughly 40 percent in the early 1970s, it has drifted back down to only about 30 percent more recently. Living standards in Puerto Rico are farther from the U.S. average today than they were in 1970, and per capita income is only about half that of the poorest state.

Why did Puerto Rico's economic progress stall? More important, what can be done to restore growth? These are the questions that motivated the Center for the New Economy and the Brookings Institution to undertake this collaborative research project. The objective was to examine Puerto Rico's economy and propose strategies for sustainable growth. Although it necessarily touches on political issues at times, no assessment of the alternative political options for the region was intended. Indeed, our economic analyses and proposed growth strategy are status neutral and will be relevant regardless of political regime.

The issues raised by Puerto Rico's puzzling economic performance are both important and interesting. Many Americans are unaware that the incomes of a large group of fellow citizens have been far below the average. More broadly, it is critical to understand why an economy with so many of the characteristics economists deem key to growth should not perform better. And as economic integration expands and deepens in Europe and elsewhere, it is ever more essential to understand which policy levers remain available for a small but open peripheral economy to ensure that it does not fall behind.

A preliminary analysis of Puerto Rico's economic situation highlighted a set of overlapping concerns that appeared to be at the heart of Puerto Rico's economic difficulties. These included dimensions of labor supply and demand, entrepreneurship, the fiscal situation, financial markets, and trade. In selecting authors to study each of these topics, we paired Puerto Rican and mainland experts so as to ensure that the analysis was appropriately grounded in the relevant historical context. The authors met for an initial conference in San Juan in May 2004. Drafts of all the papers, as well as commentary by invited discussants, were presented at a second, academic conference in March 2005, also in San Juan. The revised analyses and discussant remarks are presented in this volume.

The volume consists of nine substantive chapters—each summarized briefly in the remainder of this chapter. Chapter 2 provides an empirical overview of Puerto

1. We sometimes follow common parlance in using the phrases "on the island" and "on the mainland" to distinguish developments in Puerto Rico from those in the rest of the United States. In addition to the principal island of Puerto Rico, the Commonwealth also includes Vieques, Culebrita, Palomino (know by some as the Spanish Virgin Islands), Mona, Monito, and various other isolated islands.

Rico's growth experience, setting the stage for subsequent chapters. Motivated by the island's extremely low employment rates, the next two chapters study labor supply from two different perspectives. Chapter 3 focuses on the effects of public transfers on labor supply, and chapter 4 examines the influence of a broader range of determinants. Chapter 5 addresses the quality of the labor supply, looking at the educational system and its performance. Private sector development, a critical component of labor demand, is the focus of chapter 6. Chapter 7 examines fiscal policy, an area of considerable local autonomy but growing difficulties. Puerto Rico has much less control over its monetary and trade policies than it would if it were an independent country. Nonetheless, financial markets and cross-border interactions are central to the island's economic performance. These issues are the subject of chapters 8 and 9. The final chapter of the volume pulls together the lessons from these analyses and sets out a growth strategy for Puerto Rico.

IN THE SECOND CHAPTER, Barry P. Bosworth and Susan M. Collins examine the level and growth of production and income in Puerto Rico. Pulling together data from a variety of sources, they analyze why economic performance faltered, identify the main characteristics of the current economy, and highlight the key challenges to restoring sustained growth.

The analysis uncovers three main sets of findings. First, official statistics substantially overstate production of goods and services on the island. The problem arises from section 936 of the U.S. tax code, which provided strong incentives for U.S. corporations to use transfer pricing to shift reported income to Puerto Rico. Profits earned in Puerto Rico are effectively exempt from U.S. taxation. These provisions were introduced in 1976 and remained in force until they were repealed in 1995, with a ten-year phase-out. The authors document the magnitude of the distortion in a number of ways and then construct "adjusted" GDP estimates. Their preferred measure cuts the level of Puerto Rican GDP by about 20 percent in 2003 and that of output growth by 0.7 percent a year since 1975. The tax distortion explains much of the growing gap between Puerto Rico's measured production and national income, and the adjusted data highlight the sluggishness of recent economic performance. Bosworth and Collins conclude that U.S. tax policy has done a disservice to Puerto Rico by providing U.S. corporations incentives for investments with few or no employment or local linkages.

Second, their examination of the relationship between GDP per worker (productivity) and income per capita (living standards) highlights the reasons why Puerto Rico's income per capita has fallen relative to the U.S. level since 1970. Using the adjusted GDP data, they find that labor productivity in Puerto Rico stalled and employment as a share of its working-age population declined to just two-thirds of the U.S. level.

Third, they undertake a growth-accounting analysis that decomposes growth in Puerto Rico's output per worker into the contributions from increased physical and human capital per worker and those from a residual measure of total factor productivity. This analysis clearly distinguishes two periods in Puerto Rico's economic performance. In the early period (roughly 1950–75), the island sustained growth rates in output per worker near 5 percent a year, comparable to rates achieved in the rapid growth phases for Ireland and East Asia and well above the Latin American average. With growth rates more than double those on the mainland, this was a period of significant catch-up for Puerto Rico and was characterized by both capital deepening and increased efficiency of factor usage. In contrast, since 1975 Puerto Rico has fallen behind. The authors estimate that Puerto Rican growth in output per worker dropped to just over 1 percent a year, below that of the mainland.

The growth accounts uncover two reasons for Puerto Rico's slow growth in labor productivity. One is that capital accumulation did not keep pace with increases in employment. Although investment rates have recovered somewhat, they are insufficient to support long-term growth at the level achieved in the earlier period. In contrast, Puerto Rico stands out for relatively high contributions of increased human capital to growth, owing to continued gains in educational attainment. Indeed, the island has largely caught up with the mainland in terms of average years of schooling. The other is a sharp, persistent slowing of growth in total factor productivity. Again using the adjusted output measure, the authors find that total factor productivity growth fell after 1970, turning negative in the 1990s. This pattern suggests a secular deterioration, which is more worrisome than the typical Latin American experience of sharp cyclical fluctuations in economic growth.

PUERTO RICO'S PER CAPITA INCOME is less than one-third that of residents of the U.S. mainland. Much of this difference can be traced to employment rate differences—and ultimately to labor force participation rate differences—between the two economies. Furthermore, these differences have increased substantially over time. The labor force participation rate of Puerto Ricans between the ages of twenty and sixty-four is currently just 85 percent of the equivalent participation rate on the U.S. mainland for men and 62 percent for women.

In chapter 3, Gary Burtless and Orlando Sotomayor examine reasons for the trend toward lower relative employment rates in Puerto Rico. Their analysis focuses on implications of the generosity and structure of government transfer benefits available to Puerto Rico residents. The chapter presents empirical evidence, including the timing of changes in policy versus employment rates and differences in trends across differentially affected groups. Although other developments, including a minimum-wage hike and two severe recessions after 1973, account for part of the slump in Puerto Rican labor supply, the authors conclude that changes in the generosity of transfer benefits played a crucial role.

Burtless and Sotomayor document that government transfer payments account for a large percentage of the total income received by Puerto Rico residents. This percentage rose steeply in the 1970s and 1980s. Since 1990, government transfer benefits have provided 25 to 28 percent of Puerto Rico's personal income, twice the equivalent percentage on the U.S. mainland.

The authors examine the effects of five transfer programs in detail: Puerto Rico's equivalent of the food stamp program, unemployment insurance, Social Security retirement and disability benefits, government-provided health insurance, and Temporary Assistance for Needy Families. All of these programs has important work-discouraging effects because they reduce benefit payments to recipients who find employment. The chapter documents cases in which an increase in earned income may be more than offset by reductions in various public assistance payments.

Burtless and Sotomayor also note that, because average incomes are lower in Puerto Rico than on the mainland, the U.S. Social Security program offers significantly more attractive retirement and disability benefits to Puerto Rican workers. In view of the generosity of disability insurance pensions for low-wage Puerto Rican workers, for example, it is not surprising that the disability rate in Puerto Rico is well above the U.S. average. The authors document differences that may account for 2 to 3 percentage points of the lower labor force participation rate in Puerto Rico relative to the United States.

Burtless and Sotomayor argue that policymakers should aim to increase employment and labor force participation rates on the island so they approach or match those on the U.S. mainland. To reform social protection programs so they encourage rather than discourage work, the authors call for modifications in current benefit schedules and new eligibility rules for assistance that would redesign transfer programs to increase incentives to work and encourage workers to earn higher wages.

The authors emphasize the importance of linking program benefits with incentives to seek employment or to increase the hours of work. An example of such a program is the earned income tax credit in the United States, which provides a supplement to earnings. In contrast, a typical assistance program, such as Puerto Rico's Nutritional Assistance Program, discourages work among recipients by reducing benefits to those who find employment. To reduce program costs and encourage bigger increases in workers' weekly earnings, Burtless and Sotomayor propose a Puerto Rican wage supplement program that requires participating workers to hold jobs with minimum hours conditions. Such restrictions would allocate larger subsidy payments to those workers who make the biggest increases in their monthly hours of work.

María Enchautegui and Richard Freeman also focus on Puerto Rico's strikingly low employment rates. Their analysis concentrates on men, because they find that it is the low male employment rate that is "off the map" in comparison with other countries. A unifying theme of their work is the "rich uncle (Sam) hypothesis": the primary reason for the low employment, the authors posit, is that Puerto Rico's unique relationship with the United States has produced an economic environment that discourages work on both the supply and demand sides of the market. This hypothesis suggests that the close tie between the island and the mainland has been double edged, offering Puerto Ricans many of the benefits of living in a highly advanced economy but also contributing to the employment problem.

The authors begin by documenting what has happened to male labor force participation and employment, using measures of labor force activity from the census and household surveys. They conclude that at the turn of the twenty-first century, Puerto Rican men had an exceptionally low involvement in the labor market by global standards. This resulted from both a downward trend in participation in the 1970s, which produced a permanent detachment of many men from the workforce, and a rising proportion through the 1990s who reported themselves disabled. The remainder of the chapter attempts to answer the question, "Why don't more Puerto Rican men work?"

Enchautegui and Freeman identify and examine a number of interacting factors that may play a role. One is the distorted relationship between aggregate demand and employment. The authors show that employment in Puerto Rico has been more closely related to the slower-growing GNP than to the faster-growing GDP. Furthermore, the tax incentives for investing in capital-intensive activities may have also distorted the pattern of GDP and employment in Puerto Rico.

Second, like Burtless and Sotomayor, they argue that transfer programs—especially the Social Security Disability Insurance and the Nutritional Assistance Programs—are likely to have had large disincentive effects on male employment. A third potential factor is the option for workers to migrate to the mainland. The authors explain that this has both direct effects—such as reducing labor force participation if those most willing to work are more likely to migrate—and indirect effects—such as raising the reservation wage of those on the island.

Finally, the authors focus on Puerto Rico's wage structure in comparison with that on the mainland. Surprisingly, the highest relative earnings are for less educated workers—in contrast with the normal pattern in cross-country earnings differences, whereby the earnings of the most educated workers in developing and high-income countries are more similar because of their greater opportunities for emigration.

Three possible explanations are examined. Puerto Rico's adoption of the U.S. minimum wage has limited downward wage flexibility. Income transfers may have created a reservation wage considerably above the minimum and above the full employment wage rates. Finally, potential migration to the United States may have created a wage floor above the minimum.

There is a widespread belief that many jobless Puerto Rican men work in the informal sector and are therefore not measured by standard labor force surveys. Thus Enchautegui and Freeman undertook a small pilot study to find out what men in communities with potentially low employment were doing. Their results suggest that the official Department of Labor data understate employment considerably but understate labor force participation only modestly.

Their chapter concludes with a discussion of policy implications. The authors note that it is the federal government—not the commonwealth—that controls many of the factors affecting employment. These include the level of benefits of Social Security and eligibility into this program, the minimum wage, federal tax incentives, the amount of transfer to the poor, and border control. Enchautegui and Freeman argue that Puerto Rico needs to work with the U.S. government to redesign these programs to encourage work. They also advocate the introduction of an earned income tax credit or a program of tax credits to firms on the basis of the number of jobs created. They also suggest that a shift in compensation toward deferred benefits such as pensions or health insurance could reduce the rate of withdrawal of older men from the workforce.

PUERTO RICO HAS HAD a remarkable record of educational development during the past forty years. In chapter 5, Helen Ladd and Francisco Rivera-Batiz document Puerto Rico's gains in education and identify areas requiring further improvement. They conclude that significant increases in the quality of schooling are now necessary if the island is to continue to use education as an engine of economic development. They also express concern about evidence of large educational inequities.

Beginning in the mid-1940s, the Puerto Rican government committed itself to dramatically increasing education funding. The result has been considerable gains in student enrollments. The average years of schooling of Puerto Rican workers increased from 2.7 years in 1940 to 11.0 years in 2000, and in this respect Puerto is now comparable to the United States and many other high-income countries. Puerto Rico is also in the top tier of world nations ranked by their proportion of college-educated adults.

Measuring educational quality in Puerto Rico has proved more difficult because of the limited availability of systematic testing in schools. One approach is to look at the rates at which students are switching to private schools. Indeed, the private sector has grown from a relatively small sector providing elite education to a much larger and diverse system serving 25 percent of all students.

Ladd and Rivera-Batiz find a dropout rate of 21 percent, which, though higher than the rate in the United States, is far lower than previous estimates for Puerto Rico. Dropout rates for students from low-income families are particularly high. Combining the dropout rate and the school delay rate (which reflects retention in grade), they estimate that almost half the youth aged eighteen to twenty-four residing in the poorest 30 percent of households of Puerto Rico confront severe educational challenges.

During the 1990s Puerto Rico undertook a major overhaul of its education system with the purpose of decentralizing the Department of Education and increasing the autonomy of community schools. In addition to these governance changes, Puerto Rico significantly increased its public spending on elementary and secondary education. However, Puerto Rico still spends only about half the U.S. average per pupil and significantly less than Utah and Mississippi, the two lowest-spending states.

Ladd and Rivera-Batiz conclude that the reforms have not yet yielded the intended benefits of a smaller bureaucracy and less centralization. Their analysis highlights the lack of accountability as a major problem. The system now is facing the worst of both worlds: a large and politicized bureaucracy and a failed program of decentralization of authority to the school level, with little or no accountability at either level.

Puerto Rico is now subject to the test-based accountability provisions of the 2001 No Child Left Behind Act and therefore must test all students annually in grades 3 to 8. While certain parts of this federal legislation should be helpful to Puerto Rico, the failure of many low-performing schools to meet annual performance standards could further discredit the public school system and lead to a greater movement of students to the private sector. Increasing the level of support for failing schools, expanding funds to improve teaching quality, and generating enhanced parental involvement through better integration of schools into social and community service programs constitute three areas in which the government can help public schools.

Tertiary education enrollments in Puerto Rico have also risen sharply. However, in 2002–03 only 39 percent of the students currently enrolled in higher education were male. The prospect of creating an underclass of Puerto Rican men whose lack of college education prevents entry into mainstream labor markets may have potentially problematic social implications.

Although the initial expansion of tertiary education was primarily in the public sector, enrollment in private institutions has been growing more rapidly and now accounts for 62.7 percent of all students in higher education. Paradoxically, the public sector universities tend to be more selective and cater to students from more affluent backgrounds than private institutions, even while the private schools charge much higher tuition.

Despite rising enrollments, the island's public institutions of higher education have significantly increased spending per student over time. The result is that Puerto Rico spends about the same amount per student in its public universities as does the United States. In terms of student outcomes, however, Puerto Ricans take far longer to graduate than their counterparts in the United States. Research productivity in Puerto Rican universities also appears to be lower.

Finally, Ladd and Rivera-Batiz find that the return to an additional year of schooling has been basically unchanged since 1970.[2] This contrasts with a rising

2. Bosworth and Collins, in chapter 2, find that the wage premium for college graduates in Puerto Rico has been either flat or increasing, depending on definitions and methodology.

wage premium on the mainland over the same period. The difference may reflect a variety of factors. One is the rapidly rising supply of higher-educated labor. On the demand side, the authors note that almost all the decline in the wage premium occurred in the public sector. In 2000 almost 40 percent of all employed workers with a college degree or more in Puerto Rico were working for the government.

STEVEN J. DAVIS AND LUIS A. RIVERA-BATIZ analyze some of the demand-side dimensions of what they label an "employment shortfall of stunning dimensions" in Puerto Rico. Their work focuses on the relatively underdeveloped state of the commonwealth's private sector, its implications, and what might be done to invigorate it.

The chapter begins by empirically examining the structure of employment in Puerto Rico. Two features stand out. First, the authors show that the employment shortfall is concentrated in the private sector—or, more specifically, in the free enterprise segment, which they define as businesses that operate in the formal economy without large subsidies, special regulatory advantages, or extensive oversight by government bureaucracies. Less than one-quarter of working-age Puerto Ricans holds a job in the free enterprise segment of the economy, compared with more than half of the working-age population on the mainland. These findings support the view that Puerto Rico suffers from an inhospitable business climate.

Second, the authors argue that Puerto Rico's industry structure is misaligned with the human capital mix of its population and has been for decades. The average schooling level of working-age persons in Puerto Rico is below that of any U.S. state. Yet Puerto Rico ranks among the top third of states in terms of the schooling intensity of its industry structure. This implies that the missing jobs in Puerto Rico are concentrated in labor-intensive industries that rely heavily on less educated workers. They argue that this feature is testament to the need for substantial revisions to domestic industrial and employment policies.

Davis and Rivera-Batiz identify seven key factors that they argue have jointly contributed to Puerto Rico's huge employment shortfall, underdeveloped private sector, and misaligned industry structure:

—Large government transfer payments undermine work incentives and contribute to a deficit of work experience and marketable skills.

—Minimum-wage laws discourage the hiring of less skilled workers and diminish opportunities to acquire experience and training on the job.

—High public sector employment and production has softened competitive pressures on the island and discouraged the emergence of a vibrant private sector.

—Section 936 of the U.S. tax code and other federal tax incentives have helped create an industry structure that is poorly aligned with the job opportunities needed by Puerto Rico's population.

—Puerto Rico's own tax code is replete with provisions that benefit special business interests at the expense of the general welfare.

—Puerto Rico's regulatory environment deters business entry, hampers job creation, and erodes competitive pressures in many ways. Like many provisions of the tax code, these reflect and promote a business culture focused on rent seeking.

—The permitting process suffers from several serious problems that raise the costs of doing business, undercut the drive for employment growth, and retard economic development.

Although their analysis focuses on implications of each for employment, the authors stress that these factors also lower real incomes and living standards by undermining labor productivity.

In the final section of their chapter, Davis and Rivera-Batiz undertake a detailed study of the permitting process, informed by interviews of more than one hundred persons with expertise or firsthand experience. Widely shared views are that the permitting process is excessively slow and costly, fraught with uncertainty, subject to capricious outcomes, prone to corruption, and susceptible to manipulation by business rivals, politicians, and special interest groups. Independent evidence from public sources supports these claims. The authors discuss efforts to reform the permitting process but conclude that these efforts have met with limited success.

James Alm assesses Puerto Rico's fiscal situation. Although he addresses the role of fiscal deficits and some features of public expenditure, he focuses on the tax side, emphasizing weak tax administration and the overuse of tax incentives in undermining government effectiveness in promoting development.

Puerto Rico's public debt grew more rapidly than GNP between 1990 and 2004. Deficits have been especially large in recent years, reaching $3 billion in 2004, and they are compounded by growing unfunded pension liabilities. In response, two credit agencies lowered their ratings on Puerto Rican bonds in May 2005, making debt service payments more expensive. Much of the new debt has gone to the financing of current expenditures and will therefore provide few benefits to future generations tasked with paying off the debt. Persistent fiscal imbalance threatens Puerto Rico's welfare in the near and the long term, suggesting a need for structural changes in expenditure and taxation.

Despite the fiscal deficits, public sector expenditure as a percentage of GNP has not risen in the past few years. Indeed, central and municipal spending is relatively lower today than it was thirty years ago (even if state enterprises are included) and below that in most developed countries. In terms of composition, central government spending is comparable to the "average" U.S. state; however, Puerto Rico spends a smaller share on education and higher shares on health and welfare. Discontent with government spending thus seems to stem from something other than the size of outlays. Noting that government's share of total employment has not declined as rapidly as government's share of consumption, Alm hypothesizes that public sector productivity may have decreased.

Alm finds much to criticize in Puerto Rico's tax system. Commonwealth status means its residents do not pay federal income taxes, though the island receives some revenue from the federal government. The Puerto Rican government has full autonomy in designing a collection mechanism for internal revenue sources as long as it does not violate the U.S. Constitution, applicable laws of Congress, or relevant international treaties.

Tax revenue in Puerto Rico comes almost exclusively from three sources: personal income taxes, corporate taxes, and excise taxes (*arbitrios*). Although excise taxes played a greater role historically, by 2002 the personal and corporate income taxes together accounted for more than three-quarters of General Fund revenue. Also notable is the small role of the property tax, which has declined in importance since the 1950s and finances some municipal government activities. A comparison with U.S. states and some foreign countries reveals that Puerto Rico's ratio of tax to its total income is higher than that of the average state but comparable to those of some foreign countries. In terms of distribution, however, Puerto Rico appears to rely more heavily on personal and corporate taxes, and flaws in the administration of these two taxes hamper Puerto Rico's overall tax effort.

A major problem with the personal and corporate taxes is that the tax base has narrowed over time. Excessive complexity, widespread evasion, and the use of tax incentives have put many individuals and corporations outside the reach of the tax system, leaving wage earners to bear a disproportionate share of the tax burden. The narrower tax base means those left in the tax net face potentially greater distortions of their decisionmaking.

The author also highlights disruptions caused by the pervasive system of corporate tax incentives. Tax incentives are of doubtful effect in attracting foreign investment and often are not cost effective. Costs include reduced tax revenue, increased administrative costs, distorted investment decisions, and discrimination against firms that lack access to the special provisions.

Alm concludes by offering some suggestions for ways to improve Puerto Rico's tax system. He recommends eliminating most tax incentives and instead lowering the corporate taxation rate so that it is roughly in line with that of the United States. More broadly, he discusses ways to expand the tax base, including the introduction of a value added tax or a flat tax that would target consumption. A tax reform should also improve and simplify tax administration to reduce the amount of evasion and correct the inequities present in the current system. Above all, the author notes, the problems with the current tax system along with the overall fiscal imbalance make the need for reform paramount.

RITA MALDONADO-BEAR AND INGO WALTER study Puerto Rico's financial architecture. Drawing on a long literature, they begin from the premise that the financial sector plays a special role in economic development. This role reflects the importance of financial intermediation in allocating savings to productive investments and ameliorating information asymmetries in the economy.

Maldonado-Bear and Walter present detailed summaries of each of the components of the financial sector. In 2004 total financial assets in Puerto Rico reached $218 billion. Private commercial banks (43 percent) and international banking entities (at 43 and 31 percent, respectively) account for the lion's share of the market, with insurance companies, two government banks, and a variety of other financial companies holding the remaining assets. Each of these is assessed using ten-year income statements and balance sheets to determine financial health and contribution to growth.

As in the United States, Puerto Rico's banking sector has declined in relative importance over time (albeit at a much slower rate), but the sector still accounts for about half of all financial assets and grew at 13 percent annually from December 1995 to June 2004. The banks are subject to regulation by the U.S. Federal Reserve System and the Federal Deposit Insurance Corporation, as well as by Puerto Rico banking authorities. Growth in private sector loans—which arguably contribute most directly to economic development—has lagged behind growth in the sector as a whole. Furthermore, the banks have emphasized debt, rather than deposits, to finance their growth. International banking entities have also been active in Puerto Rico, conducting transactions with nonresidents. Asset growth in these institutions averaged 15 percent annually over the decade, indicating the possibility that Puerto Rico could emerge as a global center of offshore banking.

Insurance companies, investment companies (mutual funds), mortgage companies, credit unions, finance companies, broker-dealers, small-loan companies, and a handful of venture capital firms constitute the remainder of Puerto Rico's private financial architecture. The high growth in assets of mutual funds and in assets managed by broker-dealers demonstrates the increasing importance of nonbank entities in managing private savings. Indeed, the $4 billion increase in assets managed by broker-dealers in 2004 alone appears at odds with the supposedly negative savings rate on the island.

Maldonado-Bear and Walter also discuss the crucial role played by the Government Development Bank (GDB). The GDB acts as fiscal agent for the government (including bond issues), financial adviser to the government and other public agencies, and lender to both the government and the private sector. It also has a number of official subsidiaries and affiliates, which are involved with various lending and investment projects.

While the GDB thus performs many crucial services, it has in recent years become weakened by the growing government budget deficits. The government has borrowed substantial sums from the GDB to cover its operating expenses. The recent downgrading of the commonwealth's bond status means the GDB's high exposure to government debt carries significant risk. In addition, government borrowing from the GDB crowds out private sector borrowers. Perhaps most troubling, the comparatively low interest rates offered by the GDB encourage government deficits beyond what many feel are prudent levels. These tensions have led to a succession of five GDB presidents during the six-year period 2000–05, a fact that leads Maldonado-Bear and Walter to propose seven-year terms as part of an effort to isolate the GDB from the political process.

The chapter concludes with a comparison of Puerto Rico's financial sector with those of the United States as a whole and the states of Hawaii and Florida in particular, along with a set of policy recommendations. These include changing the tax structure to induce banks to increase their share of commercial and industrial loans, strengthening the pension system, and enhancing the availability of financial statistics to facilitate effective oversight.

PUERTO RICO HAS A SMALL but extremely open economy. Thus its trade—both with the mainland and with rest of the world—is a central determinant of its economic performance. In chapter 9 of this volume, Robert Lawrence and Juan Lara examine Puerto Rico's trade experience and its implications for external adjustment, employment, and growth. They also present policy recommendations to strengthen Puerto Rico's future trade performance. Given that the island cannot conduct an independent trade policy, this discussion concentrates on industrial policy and the strengths and weaknesses of alternative approaches.

In the first section of their chapter, the authors suggest that concerns about maintaining external balance should not be a constraint to domestic growth, largely because Puerto Rican exports are estimated to be highly responsive to growth in mainland GDP. Indeed, the analysis suggests that import growth would not exceed export growth, even if GDP in Puerto Rico grew 60 percent more rapidly than on the mainland. With slower growth relative to the mainland in recent years, Puerto Rico's merchandise trade surplus has increased. At the same time, this trade surplus in goods is more than offset by a deficit in services, reflecting large payments of profits earned by foreign corporations.

The authors also empirically explore the extent to which Puerto Rico's exports are vulnerable to U.S. trade liberalization. This is a potential concern because the United States is by far its largest trading partner, and reductions in tariff barriers—for example, to countries that sign free trade agreements—erode Puerto Rico's unique access to the U.S. market. They conclude that the commonwealth's exports to the mainland are not dependent on tariff preferences and are thus unlikely to be affected by further liberalization.

They note, however, that tax considerations provide international firms with incentives to overstate their Puerto Rican activities and that the export data may give inaccurate pictures of value added and of the employment implications of trade flows. To explore this concern, the authors adjust exports for foreign profits and examine employment growth directly. They conclude that these adjustments do not alter their main conclusions.

The analysis does highlight the overwhelming role U.S. tax policy has played in determining Puerto Rico's comparative advantage. The commonwealth has become increasingly specialized in high-technology products such as pharmaceuticals, which Puerto Rico sells in astounding volumes to both the United States and other developed economies. Whatever may have been the original reasons for locating in Puerto Rico, and even if the connections with the rest of the economy are not deep, these high-tech sectors have now established a firm footing in the commonwealth. Despite recent repeal of section 936 tax provisions, the growth of these sectors has accelerated. Particularly noteworthy has been the robust employment growth in the pharmaceuticals sector. There is also evidence of smaller but rapidly growing services exports that are more closely linked to Puerto Rican factor endowments.

The final section of the chapter focuses on policy. Since it is part of the U.S. monetary system and subject to the U.S. customs regime, Puerto Rico can have neither an independent exchange rate policy nor an independent trade policy. Therefore, industrial policy is one of the few policy instruments the commonwealth government has at its disposal. The chapter's empirical analysis suggests that Puerto Rican growth is not constrained by its external performance, so that the focus of its industrial policies should be on stimulating growth.

Lawrence and Lara argue that the challenge for industrial policies is to concentrate on cases in which reliance on private market activities is likely to be inadequate—so called market failures—but to do so in a precise fashion that avoids providing financial support for private sector activities that would be undertaken in any case. Policies that simply stimulate all types of a particular activity (foreign investment, exports, import substitution) or sectors (pharmaceuticals, electronics) are likely to be wasteful. Rather, the authors note, the focus should be on stimulating learning and innovation, providing coordination, and investing in infrastructure and public goods throughout the economy. Lawrence and Lara also conclude that a policy focused on import substitution would be unsuccessful. Instead, they favor policies that promote innovation, learning, and coordination throughout the economy.

Finally, the authors observe that recent Puerto Rican industrial policies have emphasized promotion of clusters—particularly in the high-tech sector and exports more generally. There are some examples in which policy does seem to be aimed at dealing with market failures and improving public infrastructure, but in other cases the approach remains undeveloped or lacks focus and is therefore likely to be wasteful. An approach that narrows the scope to dealing only with clear cases of market failure is likely to give better results.

In the final chapter, Barry Bosworth and Susan Collins present a set of policy recommendations for restoring growth in Puerto Rico. Drawing on the analysis and conclusions of the preceding chapters, they focus their attention on increasing employment, improving the quality of education, upgrading infrastructure, and fixing government finances.

Policies to raise the employment level focus on both the supply of and the demand for labor. Bosworth and Collins suggest that the achievement of parity with the employment rate on the mainland is a reachable goal. Because of reduced future population growth, reaching parity would require a pace of job creation roughly comparable to what Puerto Rico has achieved over the past twenty-five years and below that reached in fast-growing states and other parts of the world. On the supply side, Puerto Rico must reform many of its antipoverty programs to strengthen incentives to seek employment. An example of such a policy endorsed by a number of authors in this volume is the earned income tax credit, which provides a transfer payment that increases with a recipient's earnings up to a ceiling amount. On the demand side, the commonwealth government needs to promote the growth of employment in private business. In this regard, the government must reform and simplify the regulatory and licensing process to ease the burden on new businesses. Increasing research and development on the island and the linkages between the universities and the private sector should also help spur development. Finally, workforce development programs and a minimum wage better suited to Puerto Rico's income level would have positive effects on both labor supply and labor demand.

The chapter also suggests policies to improve the quality of education and physical infrastructure. Noting that efforts to increase accountability in the school system failed in the 1990s, the authors suggest that Puerto Rico should consider the example of cities such as Chicago, which undertook major educational reforms in recent years. For higher education, there is a need to promote the research activities of the university system and alter the financing structure. The current system provides a tuition subsidy to high-income families but little financial assistance to low-income students. In the area of physical infrastructure, Bosworth and Collins focus on measures to lower the cost of electricity and on the need to improve the quality of the transportation and water and sewer systems.

Given the rising public debt and the recent downgrading of Puerto Rican bonds, fiscal policy constitutes the area perhaps most in need of immediate reform. The corporate income tax, which currently combines a high marginal rate with numerous exemptions, should be lowered to a globally competitive rate that applies to all corporations. Puerto Rico should also consider implementing a value added tax as a means of simplifying the tax code and raising revenue. Finally, the property tax requires major reform as part of an effort to resolve the financial problems of municipal governments.

Taken together, the analyses presented in this volume provide a detailed assessment of the Puerto Rican economy at the outset of the twenty-first century. This is an economy with the exciting potential for sustained high growth that would close the income gap with the mainland. We hope that our work contributes to implementation of the requisite policy reforms and the consensus needed to sustain them. More generally, we hope that these studies help stimulate a renewed research focus on the Puerto Rican economic experience and its implications for future policy.