

# Macroeconomic Framework: Presentation to the FOMB

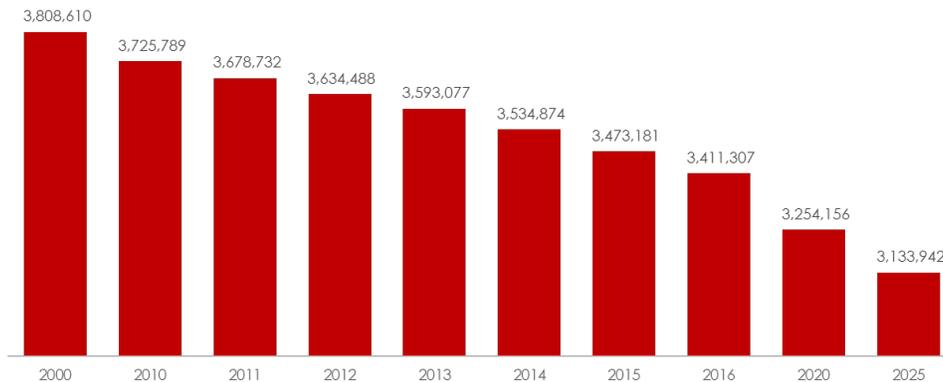
## March 31<sup>st</sup>., 2017

José J. Villamil

### Background

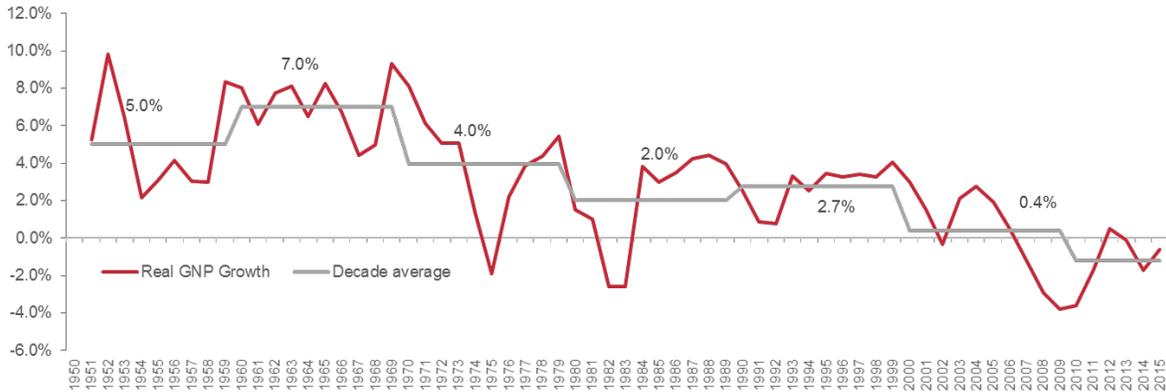
The population and the economy of Puerto Rico have both become smaller. By 2030 the former is estimated to be around 2.8 million, way below the actual 3.45 million and even more so from the 2000 projection of close to 4.0 million by 2020.

Graph I: Population



Some recent data illustrates the magnitude of what has happened in the Island's economy in recent years: upwards of 250,000 jobs lost since 2006; manufacturing employment down to 74,000 from a peak of 165,000 in 1996; Investment in construction down from a high of some \$6.6 billion in 2004 to \$3.2 billion in 2015; home foreclosures reached a record high in excess of 5,765 in 2016. What has happened in the economy over the past five decades is a collapse of the capacity to generate growth. The recent experience beginning in 2006 is clearly not a recession, but rather the culmination of a long process of weak economic performance. This is clearly reflected in the following graph that shows a rapidly declining rate of growth over the last six decades.

Graph II: Real GNP Growth for Puerto Rico

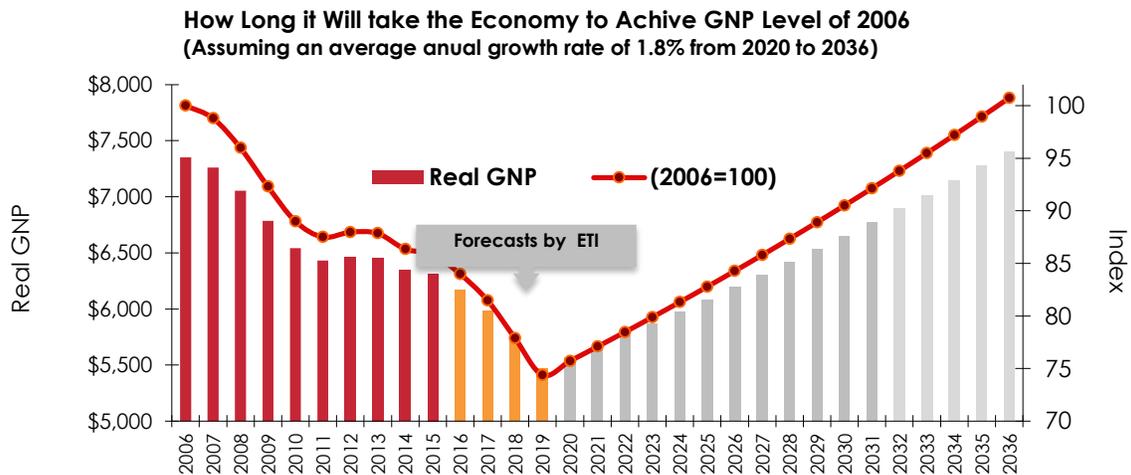


Source: Puerto Rico Planning Board, Estudios Técnicos, Inc.

It's important to understand that Puerto Rico's economic malaise refers mostly to production, since consumption has held up fairly well over the years. The reasons include: federal transfer payments to persons that make up over 20% of personal income, government employment that, although reduced recently still is in excess of 20% of total employment, and a very large informal economy estimated at 28% of the formal economy. These three factors sustain consumption, isolate part of the population from economic volatility but, on the other hand, do little to stimulate investment and production since consumption is mostly imported.

The economy is not expected to reach 2006 real GNP levels until the mid thirties even if growth rates are assumed of 1.8% in real GNP beginning in fiscal 2020. Forecasts at the moment are for at least three more years of "0" growth or contraction, so 2036 is not an improbable projection. What this tells us is that the economy will have lost close to thirty years of economic evolution.

Graph III: Real GNP Growth for Puerto Rico



Sources: P.R. Planning Board (2016); Estudios Técnicos, Inc. (2017).

To assume that such a situation will not generate major structural transformations and continue to deal with it using the traditional macroeconomic tool kit for dealing with recessions would be a huge mistake.

## The Shrinking Process and its Consequences

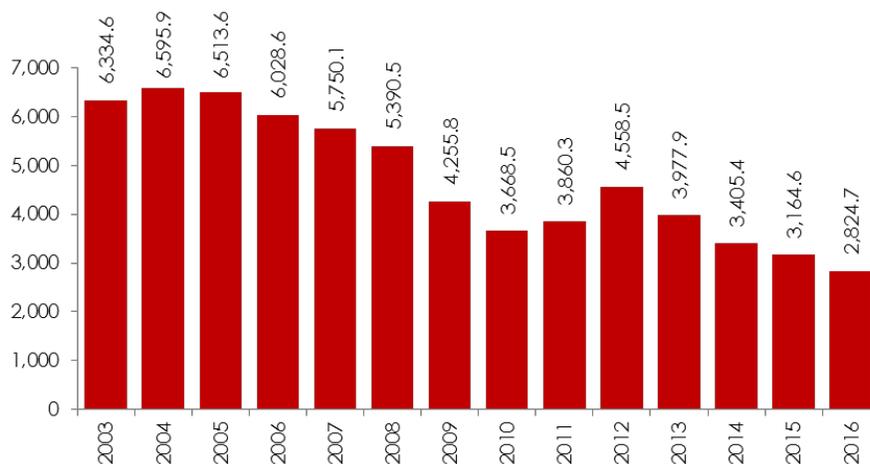
When the implications of a smaller population and economy are broached, the process by which Puerto Rico arrived at prevailing conditions will have to be carefully analysed since it will have generated major structural ruptures in the Island's demographics (including age composition and geographic distribution), and its economic structure, labour markets, government and even the spatial distribution of economic activities. Even culture, understood as the set of norms that regulates everyday life, including economic aspects, will have been impacted.

In other words, beginning from "0" or recovering from a short and shallow recession is different than starting the development process after a long stretch of contraction in both population and the economy, accompanied by major structural dislocations. Reconstructing the various "infrastructures" (physical, institutional, social, cultural, etc.) that have been impacted by the prolonged interplay of a shrinking economy and population is a much more challenging task. Returning to a population age structure that characterized a growing economy after the major changes in age composition that have taken place will not occur. Likewise, reconstituting the supply of certain skilled occupations and professions will be very difficult particularly in areas that have seen an exodus to mainland jurisdictions with higher salaries.

Weakened local economic sectors, either because of the above processes or because of the introduction of new actors intent on securing market share, will mean that breaking the vicious cycle and reconstructing the economy along lines that will generate stability and social equity will be more difficult. This is a major structural issue that needs to be dealt with. Having competitive conditions is a key component of the institutional framework essential for sustainable economic development. The market has changed in such a way that conditions that define a competitive market economy are no longer present in some sectors, specifically retail and wholesale, and perhaps in others. Competition must not be confused with laissez faire.

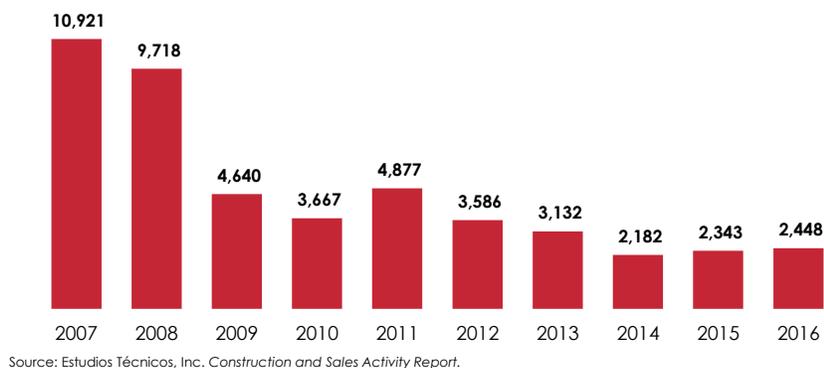
Major markets such as banking, housing, food, health services and other consumer goods and service markets will have been impacted and the industries involved substantially transformed. No one expects housing to reach the same level of sales that it enjoyed in 2006, 13,000 new units. Likely levels will be nearer the 2014 level of some 2,200 units for the foreseeable future. Much of the construction industry, for example, is not only smaller, but has disappeared completely. Reviving the industry will require major structural measures not marginal ones such as improving the permitting process or dealing with the Land Use Plan.

Graph IV: Investment in Construction



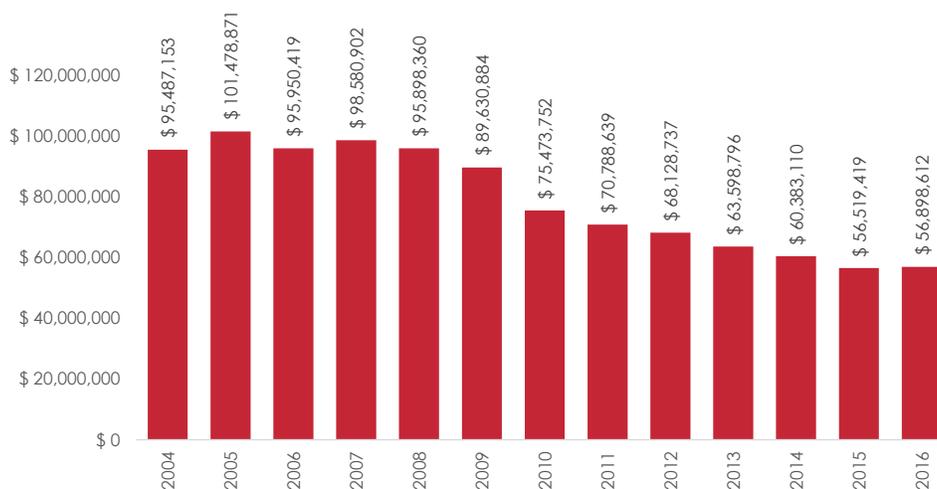
Sources: P.R. Planning Board (2017); FAFAA.  
MT = Metric tonnes.

Graph V: Sale of New Housing Units



The banking sector now has roughly 40% fewer assets than in its peak year of 2005, and there are four fewer banks. A very illustrative example of what has happened in the banking sector is the following: commercial and industrial loans fell from \$12.7 billion in 2006 to \$4.7 billion in 2016, construction loans fell in the same period from \$6.2 Billion to \$204 million. Reconstructing the sector and renewing its capacity to finance growth will not be an easy task.

Graph VI: Total Assets  
Commercial Banks



One major impact of a shrinking population and economy is on physical infrastructure planning, with excess capacity developing in some of the major infrastructures, a condition already noticeable in PREPA, for example. But this is also true of social infrastructure, as the Department of Education illustrates.

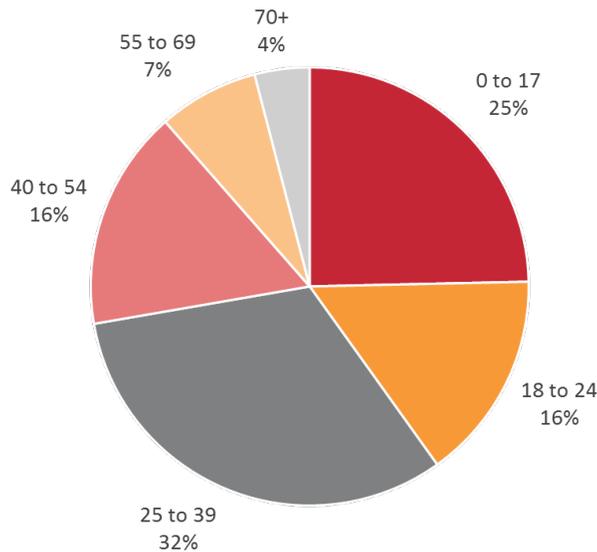
Table I: Department of Education  
Enrollment and Employment

	Enrollment	Total Employment	Enrollment/Total Employment
2000	613,019	72,005	8.5
2001	612,725	71,967	8.5
2002	601,434	70,270	8.6
2003	580,154	74,770	7.8
2004	586,286	73,854	7.9
2005	558,600	74,966	7.5
2006	563,490	76,691	7.3
2007	548,072	73,687	7.4
2008	548,072	72,045	7.6
2009	500,157	72,638	6.9
2010	491,273	69,213	7.1
2011	471,677	59,295	8.0
2012	455,434	61,458	7.4
2013	434,609	60,948	7.1
2014	423,934	60,349	7.0
2015	410,950	55,912	7.3
2016	379,818	51,162	7.4

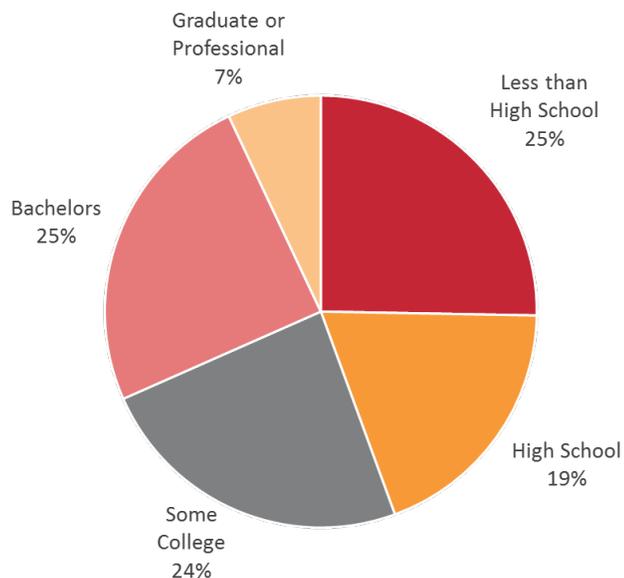
Likewise, another component of the social infrastructure, health services, will require major shifts in delivery systems and on the priorities presently in place. It will have to serve a very different population, one with greater and very different needs, with fewer resources.

The worst impact of what has transpired in Puerto Rico is the erosion in human capital that has taken place. The lack of social mobility and an increase in inequality, amply documented, due to the shrinkage of the economy are other major consequences.

Graph VII: Migration by Age Group



Graph VIII: Migration by Level of Education



Many social programs and agencies were planned and implemented for a very different social structure than that which characterizes the Island at the moment. Changes in the age composition of the population, the structure of families, the manner in which poverty manifests itself and the lack of social mobility, make agencies such as the Department of the Family and a number of anti-poverty programs obsolete. Institutional innovation assumes an urgent character given the rapid and profound changes in social conditions.

A frequently made mistake is to assume that because migration of those with professional or graduate degrees is a small share of total migration, that there is no brain drain problem. There is and it is a major drawback for future development.

### What to Do

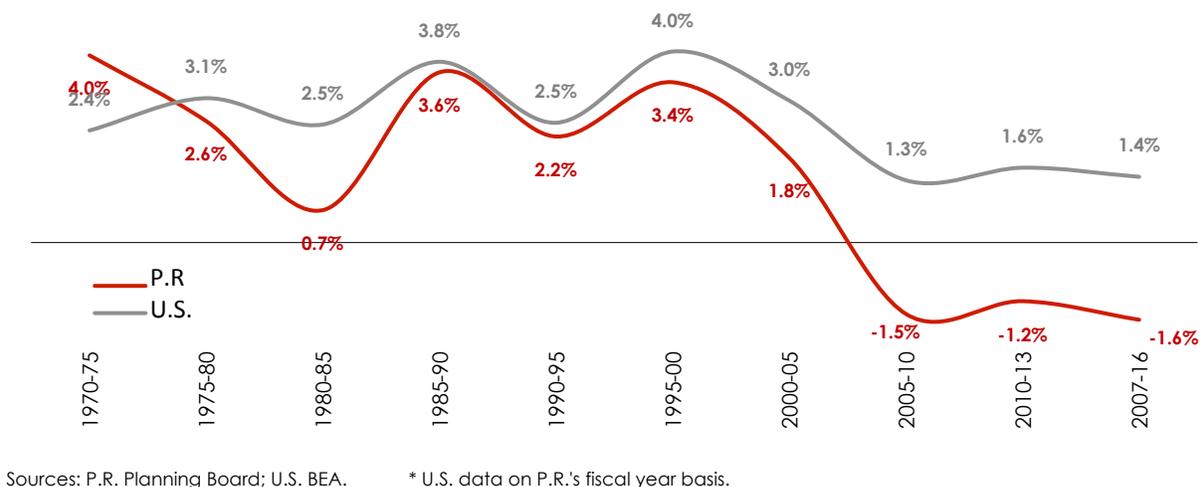
The Board will receive a long list of suggestions to spur economic growth from the various organizations, many have been circulating for years. Rather than looking at solutions as if the previous evolution had nothing to do with future prospects and in a fragmented manner, it is useful to understand the process that has resulted in a smaller economy and develop approaches to deal with the situation. Ours being a sub-national or regional economy, its degree of openness and other conditions will have a major influence on what needs to be done and how to go about doing so.

Typically, nations respond to economic contractions by devaluing their currencies. When this is not possible, the case in Puerto Rico, what takes place is "internal devaluation", i.e. loss of wealth, asset devaluations, out migration and a shrinking economy. For regional economies such as Puerto Rico's, the literature on urban and regional experiences is important as it recognizes the limits imposed by that condition with respect to the instruments and options available for economic regeneration. This is something that the Krueger team did not seem to understand when it put together its proposals in 2015.

There are examples of situations that can provide benchmarks and best practice models both at the national and sub-national levels; both are needed since Puerto Rico has some similarities to experiences at both levels. Nevertheless, although one can point to similarities there are also specific conditions that set Puerto Rico aside and that suggest prudence when benchmarking. One defining characteristic of Puerto Rico's condition is what I have called "systemic dysfunction". This refers to the fact that being part of a larger, more developed and complex system subjects Puerto Rico (or, in fact, any specific location within the larger system) to decisions

taken on the basis of system wide averages that do not necessarily respond to local needs or conditions. To the extent that the gap between the sub-system (Puerto Rico) and the major system (U.S.A) widens, the problem worsens. This is precisely what has happened in the last three decades, with the U.S. economy growing at a faster rate than Puerto Rico's. Dealing with the implications of being a dependent sub-system must be part of the policymaking process. This condition is not a status problem as perceived by many in Puerto Rico. The following graph relates growth rates in the U.S. and P.R. and shows increasing divergence.

Graph IX: Average Annual Growth of Real GNP: Puerto Rico and U.S., 1970 to 2016\*



As mentioned, dealing with a smaller population and a shrinking economy is not something that economists have paid much attention to. A useful framework for this purpose is provided by Myrdal and Kapp's Circular and Cumulative Causation model. It describes the manner in which a negative spiral is formed once contraction sets in, the need to stop it before it reaches a point of no return, and provides the basis for putting in place corrective measures during the process (An excellent discussion on the model is Diego Iribarren's paper "Puerto Rico's Circular and Cumulative Path: From Lock-In to Open-Ended Development", Occasional Paper #1, Estudios Técnicos, Inc., September, 2015). What typically happens, however, as is the case in Puerto Rico, is that both market and government actions accentuate the negative spiral. With respect to markets, lack of growth leads to lower salaries that, in turn, make skilled workers amenable to being recruited by other higher paying jurisdictions, eroding the human and social capital (teachers, nurses, doctors, skilled industrial workers). Government revenues fall and this leads to higher taxes and austerity measures that make recovery more difficult.

Needless to say, when looking at the Island's economy in the next decade or two, the most likely scenarios related to its external environment will have to be considered since these will either open up new avenues for economic development or will generate additional constraints. Being such an open system makes the analyses of the external environment mandatory and a core component of any planning effort. Likewise, given the limits imposed by scale, its regional nature and the openness of the economy, knowing how to create or insert itself into existing networks for material and knowledge production should be a core competence in Puerto Rico.

An open economy that has shrunk and in which its institutional framework has been severely weakened - the case of Puerto Rico- faces greater risks from external shocks such as increases in the cost of energy or interest rates. The shrinking process reduces flexibility to deal with such shocks or others that are internally generated. This requires that risk management assume a central role in economic policymaking. Strategies should be put in place to promote stability and lower susceptibility to either internal or externally induced volatility. The degree of openness obviously influences both the nature and scope of risks. Recent events in Puerto Rico related to its

financial situation illustrate the points made here. Decisions were made that increased risks for the economy. Network creation - as mentioned above, and some of the options suggested below - is in line with this need to consider risk management as an essential component of the decision-making process for an economy such as ours.

Obviously, the Island's economy cannot separate itself from its global environment, yet when dealing with the need to put in place major structural transformations, there is a need to focus on those structures that can be transformed in a relatively short period and that can be instrumental in stopping the negative spiral that has characterized the economy. Puerto Rico must plan for an economy that will be smaller in economic and demographic terms, but that can be economically and socially sustainable.

The above suggests the need for a conceptual framework to develop specific strategies and actions for the short, medium and long terms. Previously suggested by us is a development roadmap with two parallel strategies. One relates to the need to insert Puerto Rico into the global context more effectively. The other relates to providing community and municipal initiatives the means to become effective players in the new context described above, and for local firms to assume a more robust role in economic activities. This second route has the potential for implementing needed changes in a shorter time frame and with less need for scarce resources. It can be a more effective approach to stopping the negative spiral and begin a process of structural transformation.

Obviously, moving the economy back to a path of high growth rates will not be easy given the erosion of human, economic, financial and social capital and the need to reconstitute an institutional framework that is not functional with present and prospective economic and social needs. Changing the economic culture that has embedded itself in both the private and public sectors as a result of the prolonged contraction will add a restraining element. This is particularly noticeable in two areas. In the private sector a defensive culture has prevailed related to the fact that due to the absence of growth ours has become a market share economy.

Turning around the cultural context reflected in the above will take time and leadership, most likely from Civil Society. In the business sector an emerging entrepreneurial culture is developing and this should be seen as positive, as long as it directs its efforts to "innovative" and not "repetitive" entrepreneurship (W. Baumol, *The Microtheory of Innovative Entrepreneurship*). Entrepreneurial activity is not necessarily a driver of development, as is generally thought. If it is merely a defensive mechanism and is of the repetitive type, it does very little for economic development. This is why a strong commitment to innovation is essential in programs that support business development in Puerto Rico.

Puerto Rico's approach to development policies has been characterized for decades by a short term operational bias. Long term strategic thinking has been absent not only in government but also in private sector organizations. There have been isolated examples of attempts at putting together a longer term perspective, but these have had no impact in changing the prevailing mode of managing the economy (See, for example, The *Puerto Rico 2025* project in 2004 and various reports by private sector organizations). Given the risk environment for the Island, the absence of resources and the structural deficiencies that have resulted from the prolonged and deep economic contraction, the change to a strategic and risk based decision-making approach is essential in order to minimize the Island's risk profile and advance medium and long term economic perspectives.

Two dimensions of the strategy required are key. One is to minimize external risks by strengthening internal economic structures. One way of doing this is by stimulating internal linkages in the production and distribution systems. This requires changes not only on the demand side through various incentives, some already in place, but aggressive measures on the supply side aimed at creating a local production base that can be more effective in inserting itself in global and local supply chains. The second dimension that is important is centrality,

identifying the points in the complex economic, political and social systems that have the largest leverage in order to generate needed systemic changes more effectively and efficiently. Centrality is particularly important in view of the scarcity of resources available and the complexities of the restructuring process.

There are very specific actions that need to be implemented urgently. Stopping the circular and cumulative effects is an essential first step. The instruments available in the short term are few. They include serious rethinking of the tax system in order to stimulate investment, reconfiguring infrastructure investment to favour smaller projects with short gestation periods that can be executed by municipalities and local firms, and identifying key structural aspects that will characterize the economy and society in the next decade or two. Obviously, identifying the opportunities in specific sectors is helpful. A number of reforms have been proposed over the years, but these were based on the assumption that competitiveness is a function of lower costs alone. Among these were energy and labour reforms, improving the permitting process and lower taxes. These areas certainly need to be improved, but given the destructuring process described, a different approach is needed with more emphasis on fundamentals such as a profound rethinking of the institutional framework and creating the foundations for a development strategy geared to the conditions that characterize Puerto Rico.

Among risk reducing and potential enhancement strategies, dealing with the mainland Puerto Rican population must be a priority. Interestingly it is only when a specific situation arises that requires mobilizing political power in DC that Puerto Rico has paid attention to its diaspora. Obviously, given the difficulties faced by the Island's economy, a carefully drafted strategy is needed on how the mainland Puerto Rican population, the businesses it has generated and the professional skills accumulated can provide support to the Island's restructuring process. This will require an institutional framework at present non-existent to manage the integration process. This could generate one of those networks mentioned earlier that would reduce risk for the economy. In the science area, efforts exist to link the Island scientific establishment with mainland Puerto Rican scientists and the same should be pursued aggressively.

In a longer term perspective, it is necessary to construct scenarios of possible external events and their impact, including global displacements of economic activity, new geo-political realities, and market volatility in key products. Longer term planning must be based on specific assumptions related to managing growth in an economy that has seen its human, social and economic capital depleted. Specific attention needs to be placed on the consequences of a smaller and structurally restructured population and, finally, and perhaps the most central issue, come up with recommendations on required institutional changes to assure functionality, particularly of the political institutions, with the above mentioned strategic guidelines and with the need for a transition to a new economic system.