

**ESTIMATION OF ALTERNATIVE ECONOMIC
SCENARIOS OF THE FUTURE EMERGENCE OF
CUBA INTO THE GLOBAL ECONOMY IN A POST
U.S. TRADE EMBARGO ERA – ECONOMIC
IMPACTS ON THE U.S. ECONOMY**

Completed By:

**Dr. Tim Lynch, Director
Dr. Necati Aydin, Ph.D
Dr. Julie Harrington, Asst. Director**

**Center for Economic Forecasting and Analysis (CEFA)
2035 East Paul Dirac Drive
Suite 137, Morgan Building
Tallahassee, Florida, 32310
*850-644-7357 lynch@cefa.fsu.edu**

May 07, 2004

Introduction.....	2
New Economy and International Trade	3
U.S. - Cuba Trade in the Pre-Castro Era.....	5
U.S. - Cuba Trade in the Post-Castro Era	6
Cuba’s Trade Potential.....	8
Free Trade Benefits: Theoretical Framework	12
The Estimated Impact of Lifting Sanctions on Exports and Imports for the U.S. and Cuba	15
The Estimated Impact of Lifting Sanctions on Economic Growth and Employment Using the REMI model.....	18
Results of the REMI Analysis.....	21
Employment Impact.....	22
The Partial Economic Benefits to the Florida Economy	23
Conclusions.....	25

Introduction

On October 19, 1960, the United States Congress imposed a blockade and economic sanction on Cuba including restrictions on all trade or transactions with, and travel to or from Cuba from the U.S. The primary goal of the embargo was to create pressure on the socialist regime and eventually make it collapse. A secondary and compelling reason for implementation of the sanction was a response to the failure of the Cuban government to reimburse the money owed to U.S. companies and citizens when properties were seized after the revolution.

U.S. economic sanctions on Cuba had a minimal overall historical impact on the Cuban economy between 1960 and the late 1980s. Cuba had covered its losses resulting from U.S. sanctions through receiving nearly \$6 billion in annual economic assistance from the Soviet (USITC, 2001). However, after the collapse of Soviet Union, the Cuban economy lost this assistance and started to suffer a severe economic downturn in the 1990s. Without economic assistance, the Socialist rulers in Cuba understood that it was necessary for them to open their doors to international trade with the capitalist world. They introduced new economic reforms in order to attract foreign investment, to increase exports and to stimulate domestic employment, production and balance of trade. This economic policy change has increased the potential importance of trade with the U.S. for the Cuban economy.

Moreover, the close geographic proximity makes the United States and Cuba natural trading partners based on gravity theory. Cuba is a country of 11 million people with approximately the same land volume as the state of Pennsylvania (46,000 sq. miles), a length from east to west of 750 miles and 2,200 miles of coastline. The Cuban economy needs access to American markets, services and technology in order to develop its full

potential. This natural trading partner would result in considerable economic benefits to both trading partners.

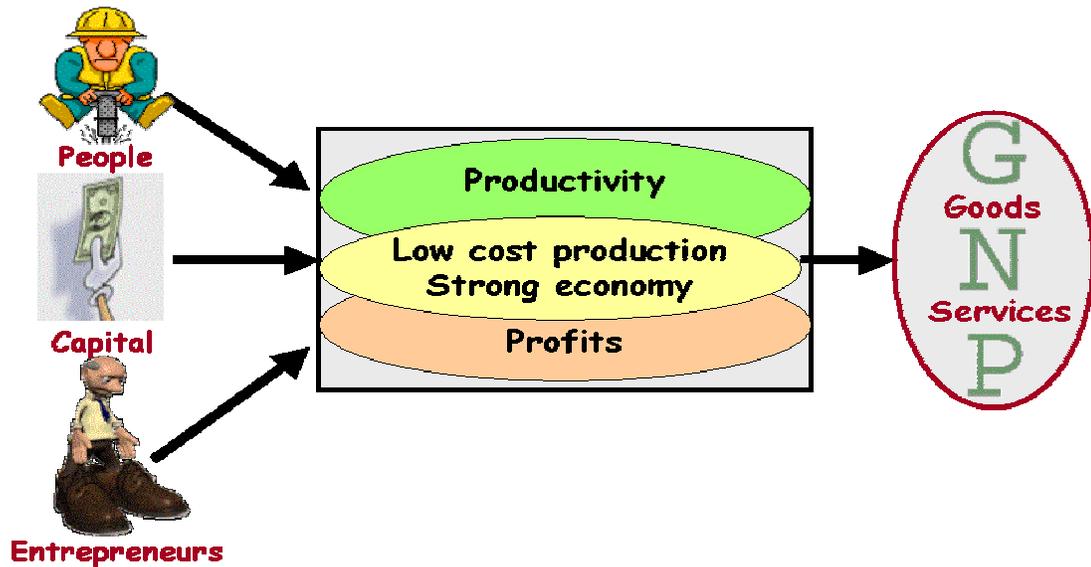
The need for Cuba to have free trade with the U.S. is more desirable than ever for both countries. The economic reforms in Cuba since the 1990s towards a more open market system, at least from planned socialism to market socialism, combined with a loosening of U.S. trade sanctions would generate significant business opportunities for the U.S. economy. Likewise, it is a good time for the United States, to explore the potential benefits of lifting the sanctions while there is a critical need to create jobs across the U.S. and to increase economic growth in both economies. The lingering relatively high unemployment problem in the U.S. economy has increased the urgent need of pursuing such a potential. Despite the problem of acquiring accurate data about the Cuban economy, this study simulates the potential benefits of free trade with Cuba to the U.S. economy. The purpose of this study is to estimate benefits of lifting economic sanctions with respect to Cuba on both the U.S. and Cuba economies with a twenty-year quantitative forecast for the U.S. economy.

New Economy and International Trade

There are significant differences between the “old economy” and the “new economy” in terms of importance of free trade. The former focused on a stable economic order with relatively protected borders insulating the economy. The latter is a new reality in global markets with increasing free movement of the factors of production. The old economic order put only moderate emphasis on the importance of research and development (R&D), while the new economy views R&D as the engine of economic growth (Lynch, J. Harrington, K. Stackpoole, & Aydin, 2003).

Figure 1: The Simulation of the Old Economy

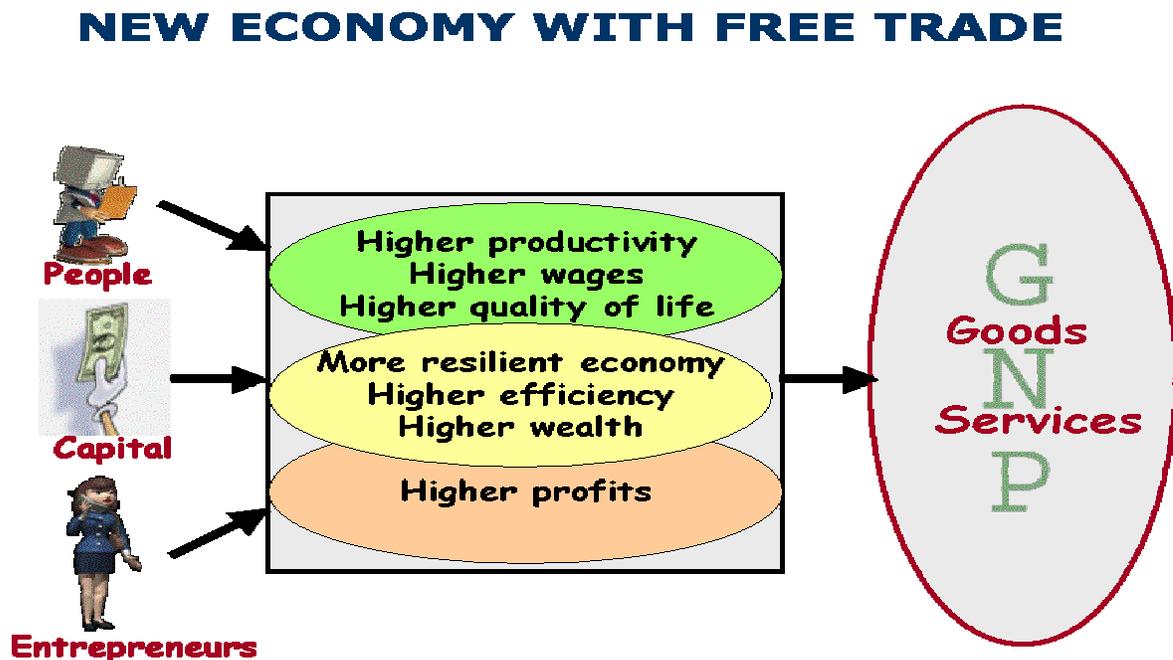
OLD ECONOMY WITH RESTRICTED TRADE



The new economy research focuses on the productivity of all factors of production: labor, capital and entrepreneurial activity. For example, the new economy index (Van Ark, 2002; Whelan, 2002) evaluates the strength and potential for the future growth of a regional, or national economy based on the educational, technical, and creative skills of general population. It also measures the access and use of information technology and the number of high tech professional sectors across that economy. (Stiroh, 2002). The infrastructure of information technology such as the Internet backbone and broadband pathway, the use of Internet, the number of patents, and the number of new firms become major indicators for the new (“global”) economy competitiveness as well. (Galbi, 2001; Oliner & Sichel, 2000).

As depicted in the graph below, similar amounts of labor, capital and entrepreneurial effort in the *new free trade open economy* creates higher GNP level compared to old economy. The factors that characterize the new economy contribute to higher labor and capital productivity and reduction of waste. The “new economy” identified with higher productivity, increasing use of information technology, better quality of life, higher wages and profits, and more resilient growth, requires every nation to target the global market. Cuba is not an exception of this process. Sooner or later, Cuba, with one of the best educated and largest populations in the Caribbean, will be part of the global economy. Sooner is better for the economies of Cuba and the other nations of the Caribbean basin, in addition to the U.S.

Figure 2: The Simulation of the New Economy



U.S. - Cuba Trade in the Pre-Castro Era

Despite the relatively small size of its economy, Cuba was an important trading partner with the U.S. before the regime change. Prior to socialist regime in 1958, Cuba

imported two thirds of its imported product from the U.S. Since then, the sanctions virtually prohibited any kind of trade relationship with Cuba.

As shown in the table below, in 1958, the U.S. export to Cuba constituted 3.1 % of total U.S. exports. Likewise, 4 % of US imported products were coming from Cuba. That trade trickled to zero in both directions by the early 1960s.

Table 1. U.S. Trade with Cuba (1957-1964)

	1957	1958	1959	1960	1961	1962	1963	1964
	Pre-Castro Era		Post-Castro Era					
U.S Exports								
to Cuba (million \$)	617	547	439	224	14	13	36	0
% of total exports	3	3.1	2.5	1.1	0.1	0.1	0.2	0
U.S Imports	482	528	475	357	35	7	0	0
to Cuba (million \$)	3.6	4	3	2.4	0.2	0.1	0	0
% of total imports								
Source: U.S. Department of Commerce, 1967 Business Statistics, supplement to the Survey of Current Business, tables, 109, 111, 114, and 116.(Adopted from the USITC 2001, table 2-2)								

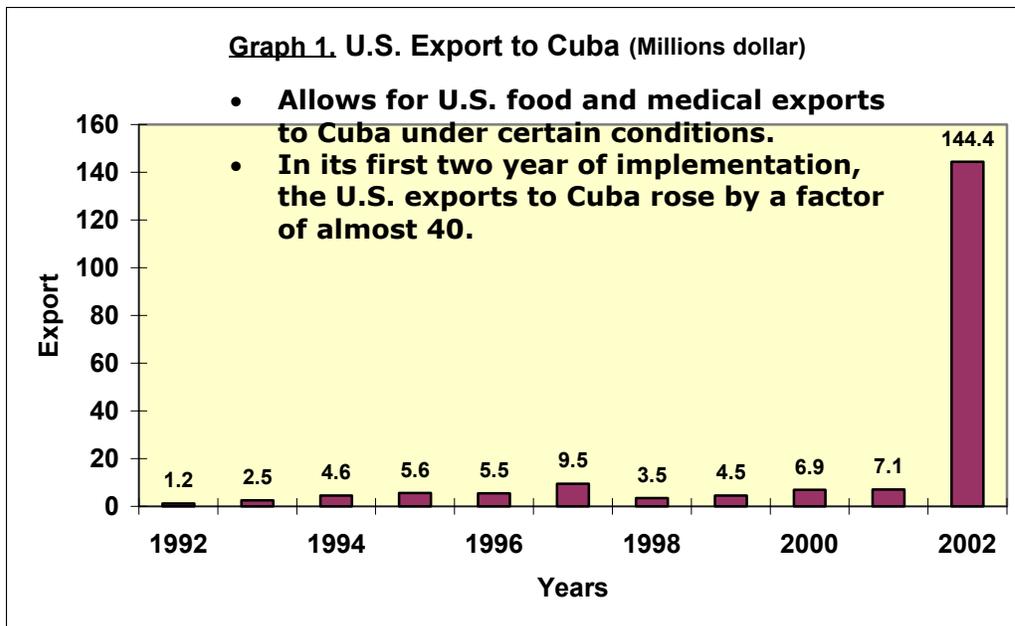
U.S. - Cuba Trade in the Post-Castro Era

The U.S. economic sanctions on Cuba have been in effect for over 40 years. The main indicator measuring the impact of these sanctions is the decline in Cuban and U.S. trade since 1958. Consumers in both countries have lost the potential benefits of free trade. There have been many attempts to measure the impact of the sanctions for the U.S. For instance, in 1998, Ernest Preeg of the Center for Strategic and International Studies estimated the embargo costs the U.S. between \$3 and \$4 billion in lost exports per year. Most recently, researchers from Texas A&M University did an extensive study to estimate the benefits of lifting sanctions on agricultural exports to Cuba for 50 states and 22 commodity sectors using an input-output model. They found that, under the high export growth scenario, U.S. agricultural exports would reach \$ 1.2 billion per year. This

increase in exports was estimated to stimulate an additional \$3.6 billion in total economic output, and be responsible for 31,262 new jobs in the US labor market (Rosson & Adcock, 2001).

Interest in U.S.-Cuba trade has increased with the passage of the Trade Sanctions Reform and Export Enhancement Act of 2000, allowing for U.S. food and medical exports to Cuba, under certain conditions. Even in the first few years after this change, as seen in Figure 3, the U.S. exports to Cuba rose by a factor of 40, to \$260.8 million.

Figure 3. Historic Changes of U.S. Exports to Cuba (Millions Dollars)

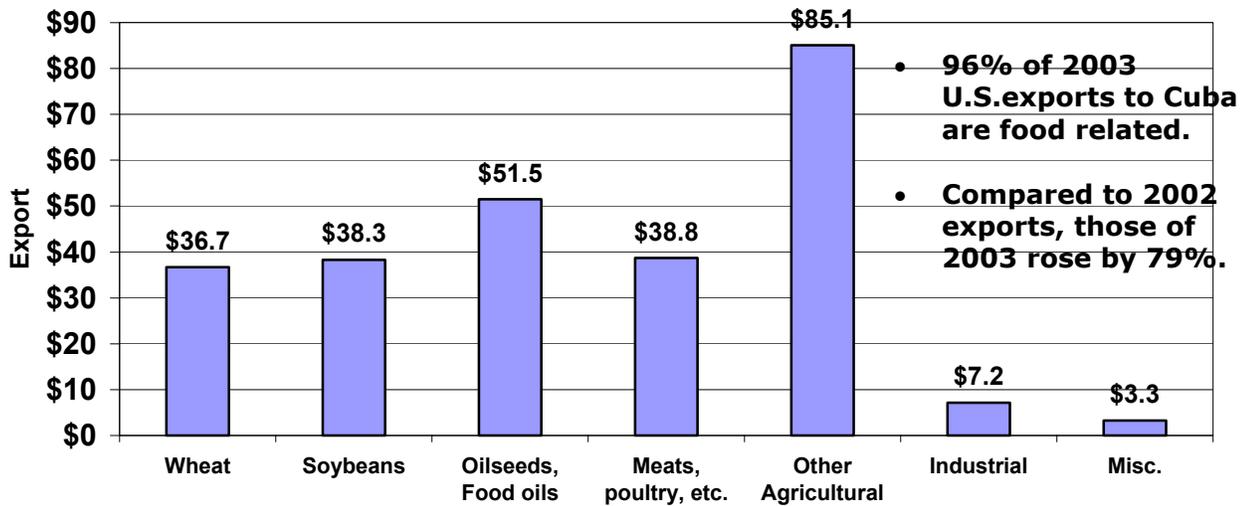


Source: USA Trade Online, U.S. Census Bureau.

As seen in Figure 4, almost 96% of the US products exported to Cuba are food related. Limited increases in industrial, medical and other nonagricultural products have also posted limited gains. A quarter billion dollar increase in exports over a two-year

period with only a very limited easing of embargo restrictions clearly indicates the substantial *potential* trade increases that continues to exist between U.S. and Cuba.

Figure 4. 2003 U.S. Exports to Cuba by Category

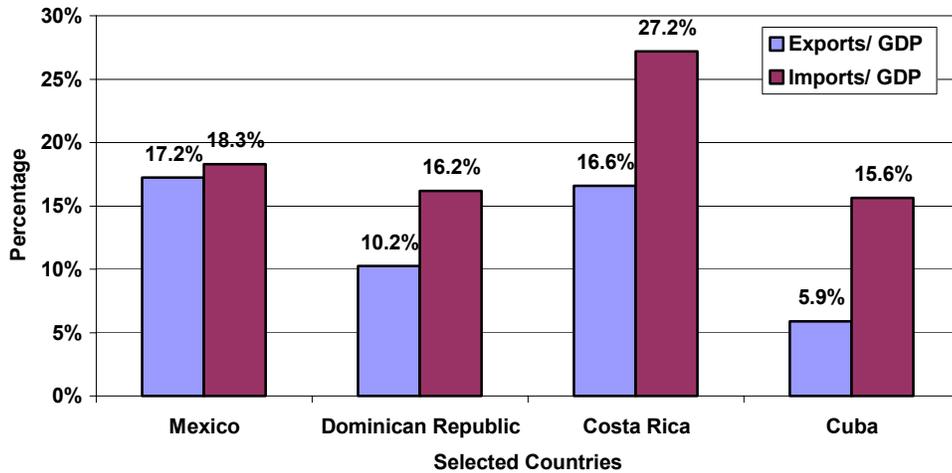


Source: USA Trade Online, U.S. Census Bureau, 2003

Cuba's Trade Potential

Castro administration has not acted based on comparative advantage theory in order to benefit from free trade. In the year 2001, Cuba's total import was \$5,239 million and total export was \$1,662 million. As seen in the graph below, with only 5.9% exports to GDP ratio and 15.6% imports to GDP ratio, Cuba is far from using its trade potential compared to the neighboring countries.

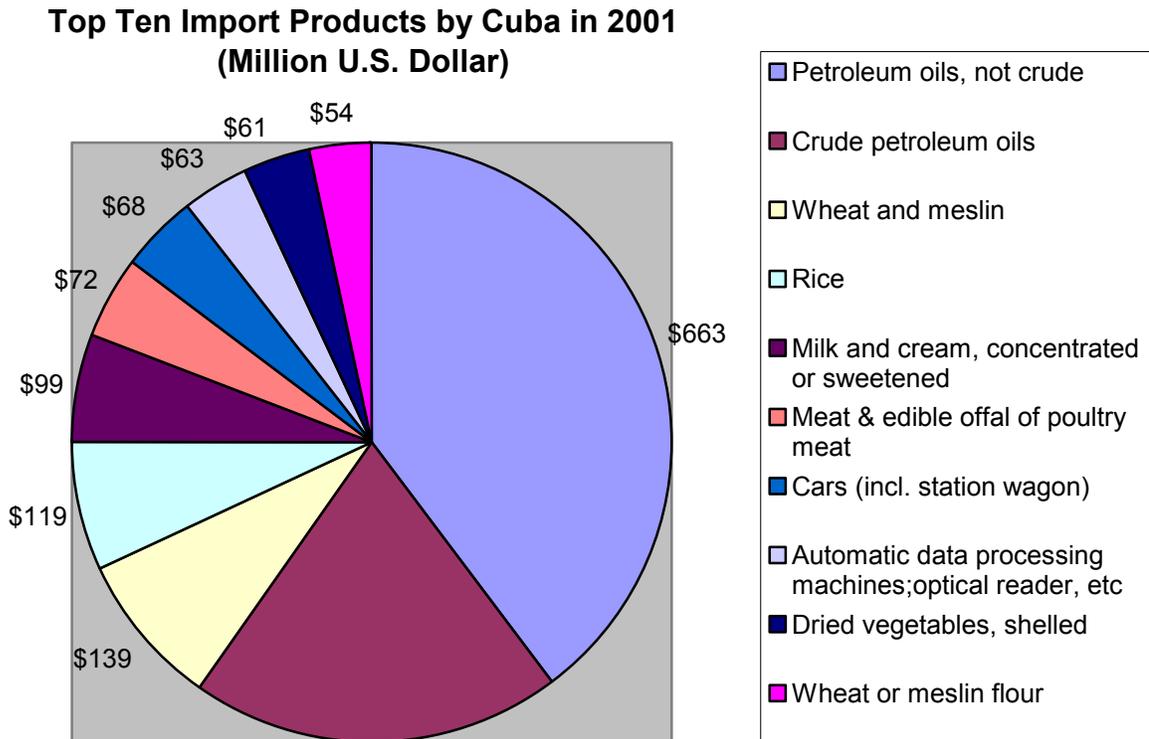
Figure 5. Examples of Neighboring National Percentage of Export and Import to GDP (2002)



Source: USA CIA, Fact Book, 2003

The graph below presents the top ten products Cuba imported from the other countries in 2001. The data indicate that Cuba needs agriculture products (wheat, rice, milk, meat, and dried vegetables) and high tech products (computers, cars, optical readers and so forth) as well as a wide range of other industrial and commercial infrastructure, equipment and services – all of which are produced in abundance at increasingly competitive prices by their nearest neighbor – the U.S.

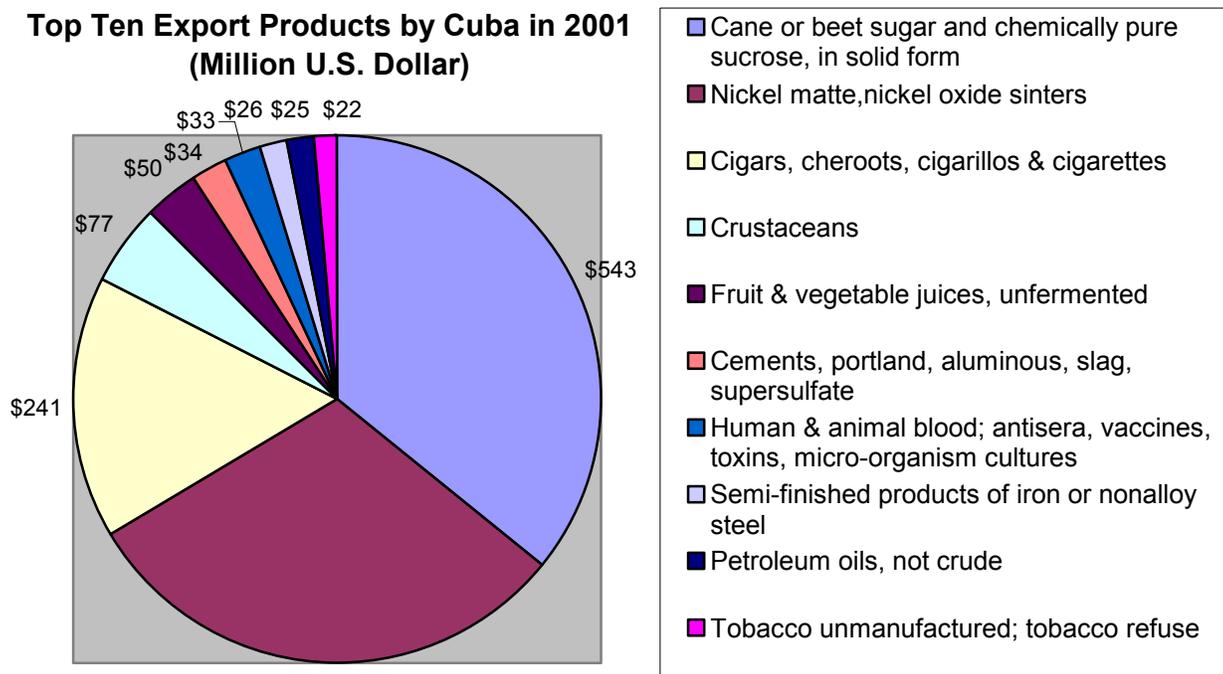
Figure 6. Top Ten Import Products by Cuba in 2001



Source: International Trade Center (ITC) Website, www.intracen.org/menus/countries.htm

Cuba's export is only one quarter of its total import. The product composition of the import depicted below mirrors the low technological advancement in the country in recent decades. The top ten export products constitute mostly raw materials and some agricultural products.

Figure 7. Top Ten Export Products by Cuba in 2001.



Source: International Trade Center (ITC) Website, www.intracen.org/menus/countries.htm

The main factor behind Cuba’s low trade performance is mainly ideological rather than economic. Historically, Cuba has predominantly emphasized trade with the socialist block since Castro came to power. Even after the collapse of communism in the former Soviet Union, Cuba continues to have Russia as the biggest trade partner. Based on the very long distance between Cuba and the Russian Federation, the trade potential between these two countries is far *below* their current trade level (as estimated by the International Trade Center, using TradeSim estimation software). After the fall of the Russian Communist regime, the imports from the Soviet block to Cuba declined from \$8 billion to \$1.7 billion from 1989 to 1993 (Robins & Trujillo, 1999). According to gravity theory, one would expect that, after removing trade barriers with Cuba, U.S. could easily exceed the peak level of exports from the former Russian economy.

Free Trade Benefits: Theoretical Framework

This study relies on two theories: Ricardian comparative advantage theory and gravity theory. Although there have been almost two centuries since David Ricardo formulized his famous theory of comparative advantage, there are continues discussion of the same topic (Buchanan & Yang J. Yoon, 2003; Nordås, 2000; Ruffin, 2002). In its most simple form, Ricardian theory assumes two countries produce two goods using labor as the only factor of production. Goods are assumed homogeneous across firms and countries. There is no transportation cost for moving goods between countries. In this model, labor is homogeneous within a country but heterogeneous across countries. Labor can move between firms within a country but cannot move between countries. There is always full employment and perfect competition in the market.

Under the assumptions above, the main issue in the Ricardian model is what happens when two countries move from the closed economy (no trade) to open one (free trade). In other words, how trade effects the prices, production, employment, wages, incomes, consumption, and welfare in both countries. In the case of trade liberation, the initial differences in relative prices of the product between countries will stimulate trade between the countries.

Profit-maximizer firms in each country's comparative advantage industry would notice that the price of their good is higher in the other country. Since, in theory, there is no cost (or minimal cost) for them to transport their product to the other country, they will increase their export instead of selling to the domestic consumers. Thus, each country would export the product in which they have a comparative advantage. Trade flows would increase until the price of each product becomes equal across countries.

Ultimately, each country will receive a higher price for the product they export because of their comparative advantage. The higher price would lead each country to specialize in the product they have a comparative advantage.

The trade liberation, according to Ricardian theory, generates an improvement in welfare for both countries. First, specialization and trade will increase the total production, compared with autarky (this is a policy of national self-sufficiency and nonreliance on imports or economic aid from outside), and will make possible an increase in consumption of goods in both countries. These aggregate gains are often described as improvements in production and consumption efficiency. Second, free trade also improves aggregate consumption efficiency, which implies that consumers have a greater array of choices available to them. The consumers could have more alternative products at relatively lower prices. Third, real wages and incomes of people will increase in both countries. Thus, everyone can consume more of both goods in free trade compared with autarky. *This means that everybody benefits from free trade in both countries.* Therefore, in the Ricardian model, trade is truly a win-win conclusion for the individuals within and the economies of both countries.

The other theoretical model this study relies on is the “gravity model” (Gould, 1994; Wall, 1999; Yang, Askari, Forrer, & Teegen, 2004). Isaac Newton originally sets up the model to explain gravitational force in the universe. His theory argues that the gravitational pull between two celestial bodies is positively related to the product of their masses and inversely related to their distance apart. The gravity model has consistently been used as a tool for the analysis of bilateral trade flows. The model as applied to trade predicts that the amount of trade between two countries is positively related to the

product of their outputs, and negatively related to the distance between them. The gravity model has been applied to bilateral trade since the 1960s and has been increasingly used in the 1990s as an empirical tool in order to analyze regional trading areas. Gravity theory suggests that U.S. has more advantages than Russia and European countries to benefit from trade liberation with Cuba. This is due to that a lifting of sanctions would result in the U.S. adding approximately 11 million additional customers just 90 miles from Florida's shores.

The general realization is that, (as has happened in across Eastern Europe, Russia and China after the better part of a century of socialistic rule) liberalization of markets created a surge of many billions of new dollars (new capital), private sector multi-national (and especially U.S. entrepreneurial) corporations and other interests to those economies. That, in turn, will usher in a Phoenix-like rise in the Cuban economy from pent up demand just as it has done elsewhere in the world. As the Cuban workers and consumers grow in wealth from the surge in economic infusion from the U.S. (and elsewhere) they in turn demand more products from global (particularly the U.S.) markets. Both nations grow in wealth and benefit from this liberalization in trade. This push-pull economic growth forecast is a simple repeat of economic experiences gained elsewhere in the world over the past three decades. Cuba's proximate location to the U.S. and the millions of well-intended Cuban-Americans with close historic and family ties and substantial financial resources in Florida (and elsewhere) would ensure this Cuban economic Renaissance much like the rise of East Germany from the embrace of West Germany after the fall of the Berlin wall. East and West Germans are now both members of one of the most productive economies in the world. So also it is the potential for Cuba.

The Estimated Impact of Lifting Sanctions on Exports and Imports for the U.S. and Cuba

Assumptions

The impact of lifting U.S. sanctions on Cuba is directly linked to the size of exports and imports between the two countries. One way to estimate a change in trade size is to look at the scale and diversity of trade between Cuba and the U.S. before the sanctions. However, this approach may not be realistic. The more accurate estimation requires taking the changes in the variables affecting exports and imports into consideration and matching them to contemporary international trade markets and activities in comparable settings.

One approach is to look at the trade relationship between the U.S. and other Caribbean countries and create a series of simulations for Cuba based on the relevant economic indicators from these proxies. For instance, in order to measure the impact of lifting travel bans on the Cuban tourism, we intend to compare the tourist intensity of other Caribbean countries and Cuba. Then, we could estimate the increase in tourist visitation for Cuba, if we assume a similar intensity of visitation. Two different studies estimated that U.S. tourist arrivals to Cuba would be increased by one million in the first year after a complete lifting of sanctions (Leake, 2002; Sanders & Long, 2002). Their similar approach could be also applied to other sectors in order to measure the total impact of trade liberation. This approach also allows us to estimate symbiotic benefits of other potential benefit free trade.

To simulate the impact of free trade on Cuba and U.S. trade the research relied on several reasonable assumptions. First, with trade liberation over time, Cuba would have an export/GDP ratio and import/GDP similar to its neighboring countries such as Mexico,

Dominican Republic, and Costa Rica. The average exports/GDP ratio for these three neighboring countries is 12% and the average imports/GDP ratio is 19%. Second, U.S.-Cuba trade would be similar to the trade between U.S. and the neighboring countries mentioned above. As seen in the table below, the biggest U.S. trade partners in this region are Mexico, the Dominican Republic, and Costa Rica. The average percentage exports from these countries to the U.S. is 75.8% of the total and the average percent of imports from the U.S. is 60.7% of the total. We assume that with trade normalization, Cuba would reach these average percentages over thirty years with increased levels of imports (capital infrastructure, industrial equipment and other capital infusions) in the early years to build the nation up. Cuba initially would have 40% of her imports from the U.S. and this percentage would go to 60.7% in 7 years. However, due to the poor economic conditions, Cuban exports to the U.S. would be significantly lower at first compared to the neighboring countries. We assume that initially Cuban exports to the U.S. would be 25 % of her total exports and this rate would increase by 4% annually.

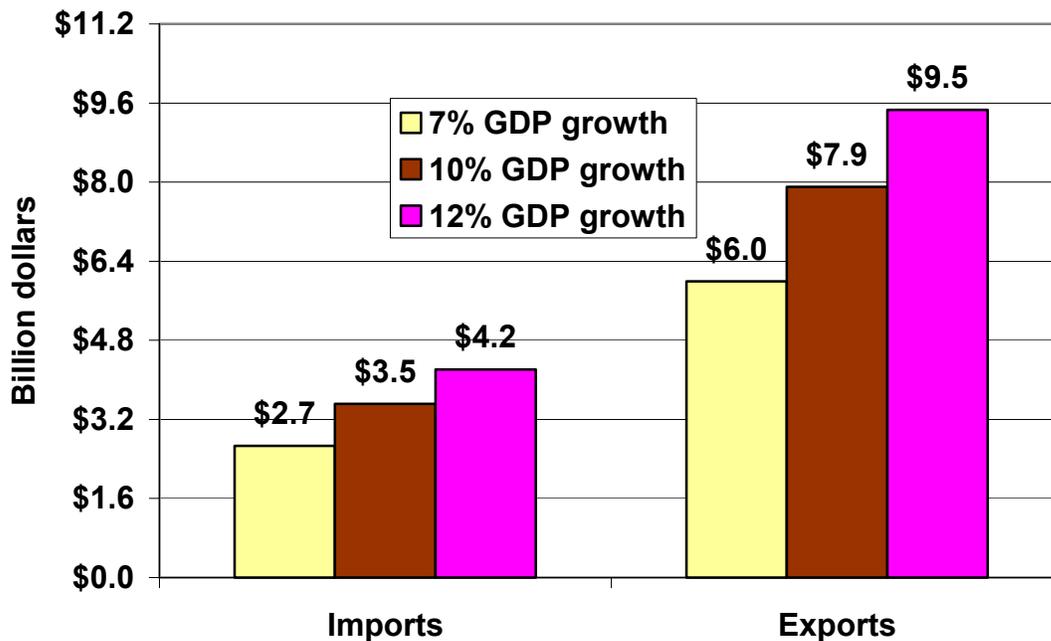
Table 2. U.S. Trade with Some Caribbean Countries

	Percent of Exports to U.S.	Percent of Imports from U.S.
Mexico	88.4	68.4
Dominican Republic	87.3	60.5
Costa Rica	51.8	53.2
Avg.	75.8	60.7

We estimate Cuba's exports to and imports from the U.S. based on the assumptions above for three different growth scenarios. The scenarios for growth for the Cuban economy are 7%, 10% and 12% growth in GDP for the next twenty years. Considering the average 9% percent economic growth in China for the last two decades

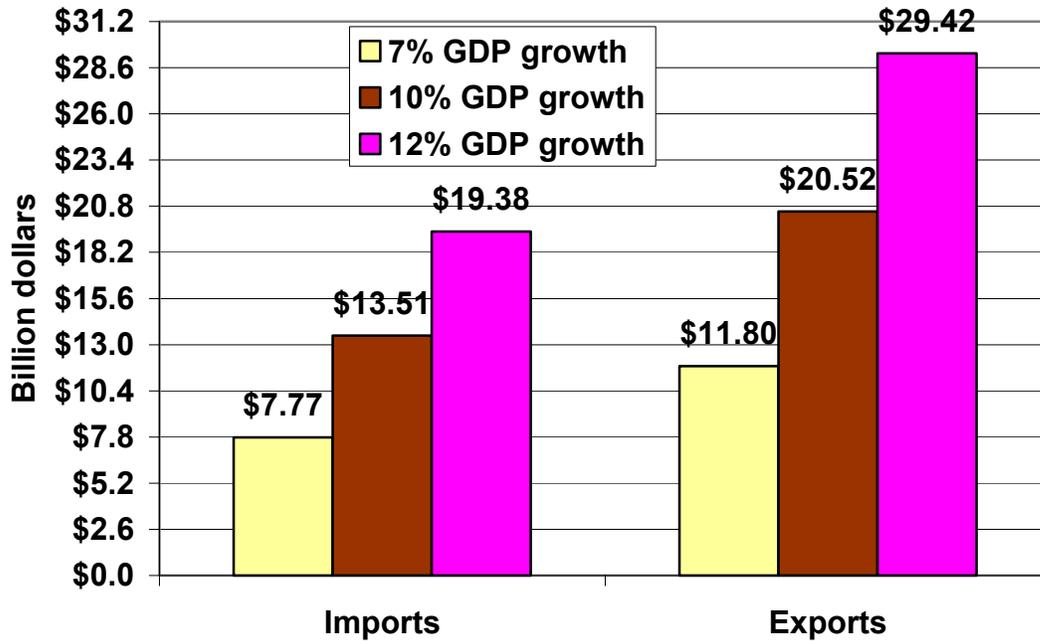
due to transition from planned socialism to market socialism, the estimated growth rates are considered reasonable. As seen in the figure below, if there is 7% GDP growth in the Cuban economy, with trade liberation, Cuba exports and imports with the U.S. would be \$2.7 and \$6 billion, respectively, in ten years. For the highest scenario (12% GDP growth in Cuban economy), Cuba's exports to the U.S. would reach \$4.21 billion and imports from the U.S. would be \$9.47 billion.

Figure 8: Forecasted Possible U.S. Export & Import Trade with Cuba in 10 Years (2003 \$)



The figure below presents the estimated U.S.-Cuba trade size in 20 years. Under the different growth scenarios, in 20 years, Cuba's exports to and imports from the U.S. would range between \$7.8 billion - \$19.4 billion, and \$11 billion-\$29.4 billion, respectively.

Figure 9: Forecasted Possible U.S. Export & Import Trade with Cuba in 20 Years
 (2003 \$)



The Estimated Impact of Lifting Sanctions on Economic Growth and Employment Using the REMI model

The increase in exports and imports after lifting sanctions will generate considerable economic activity within Florida and, across United States and Cuba. As mentioned earlier, this will create substantial employment opportunities and increase economic growth in both countries. Thus, macroeconomic analysis of trade liberation should evaluate these broader impacts of increase in trade as well. In other words, projecting increases in economic activity from increased trade must consider the indirect or induced impacts of these economic activities as well. The indirect effects measures the secondary impacts of those creating demand for inputs needed to produce the initial product. This demand creates additional income and employment in an economy. The

impacts of induced demand are measured by “multipliers”, which indicate the effect of initial spending in a specific industry on the whole economy through creating additional jobs and income. Results from the REMI models will be used to estimate the economic impacts of lifting sanctions on economic activity, income, and employment.

For example, a surge in Cuban demand for advanced telecommunications, computer systems and general consumer goods would result in a two fold impact across Florida and other U.S. states involved in this trade. The first would be a rise in transport activities across Florida air, road, railroad and ultimately sea and ports. These expansions in transport activity would occur across all modes of travel including air, truck, train, auto, barge, and ship traffic. The second would be an expansion of productivity across the affected U.S. agricultural, and manufacturing to support, expanded “new” trade with Cuba.

Another related, though separate economic activity, will be the substantial interest in American financial and other service sectors corporations to establish a foothold in the emerging Cuban economy. That is, to secure a U.S. “piece of the action” which has been precluded to this point and as a result has been conceded to Canadian and European nations. Expansion of these three areas of business hold considerable promise for the U.S. and emerging Cuban business sectors and can be simulated in this research using REMI.

REMI, 2000 (REMI, 2000) is a nationally recognized and widely accepted and used dynamic integrated input-output and econometric model. In Florida for example, REMI is used extensively to measure proposed legislative and other program and policy economic impacts across the private and public sectors of the state by the Florida Joint

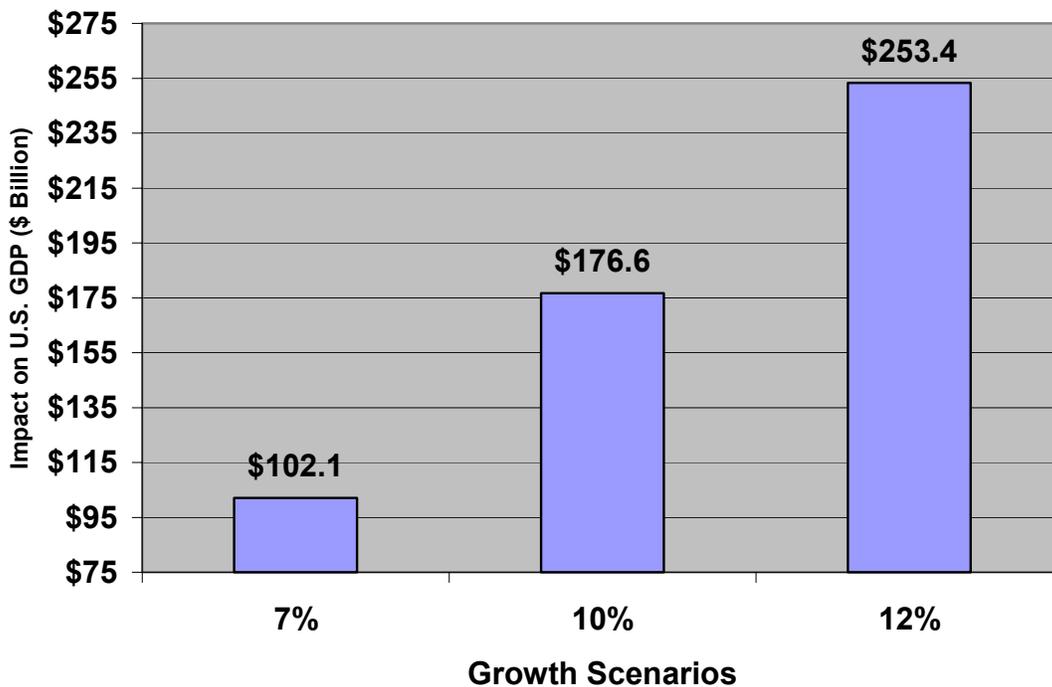
Legislative Management Committee, Division of Economic & Demographic Research, the Florida Department of Labor and other state and local government agencies. In addition, it is the chosen tool to measure these impacts by a number of universities and private research groups that evaluate economic impacts across the state and nation with growing European and other international modeling capability added annually.

REMI's principal advantage is that it may be used to forecast both direct and indirect economic effects over multiple-year time frames. Other "static" stand alone input-output models primarily model for a single year. Input output (I/O) models are basically accounting tables which trace the linkages between industry purchases and sales within a given county, region, state or country. The I/O model produces multipliers that are used to calculate the direct, indirect and induced effects on jobs, income and GRP generated per dollar of spending on various types of goods and services across the US and Florida economy. REMI combines these capabilities plus a dynamically integrated econometric model linking the various economic sectors to policy and demographic variables thereby providing the ability to forecast effects of future changes in business costs, prices, wages, taxes, population shifts, and imports and exports (to name just a few). REMI was founded in 1980, and continues to be enhanced annually. The entire Metropolitan, State or National regional economy is modeled as interactions between five linked groups of economic variables; output, labor and capital demand, population and labor supply, wages, price, and profits, and market shares of national and local firms operating in the region.

Results of the REMI Analysis

This section provides the results of the REMI modeling estimating the dynamic stimulatory impact of free trade with Cuba on the U.S. economy based on the 7%, 10% and 12% growth rates forecasts trade scenario over 20 years discussed above. As seen in Figure 10, free trade would create an additional \$102.1 to \$253.4 billion growth in GDP in the U.S. economy over 20 years. This means that the average annual total GDP losses to the U.S. economy of continuing the embargo would be between \$2.9 to \$12.7 billion in addition direct cost. This cost results from the loss of free trade.

Figure 10. Estimate of the Total Dynamic Increase in U.S. GDP Through 2024 (20 years) from Shifts of Free Trade with Cuba (2003\$)

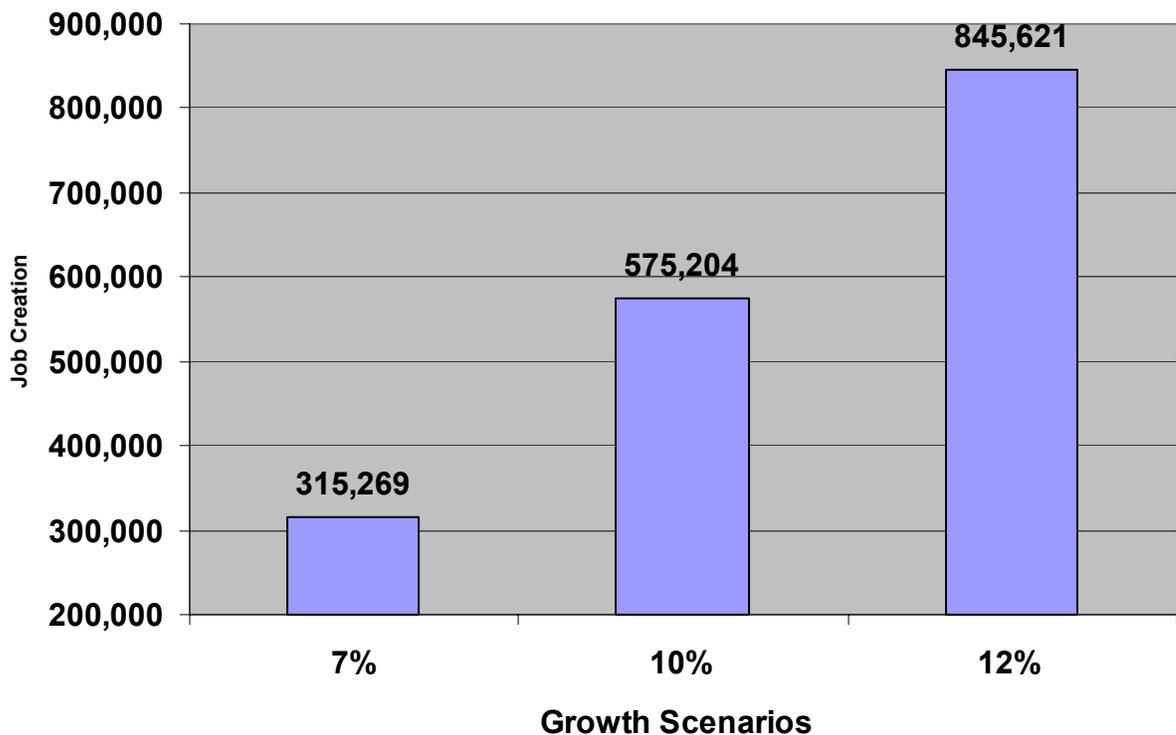


Employment Impact

Free trade with Cuba would have considerable impact on the U.S. job market over time. Since U.S. exports from Cuba would be significantly higher than U.S. imports, overall impact of free trade would be positive.

Figure 11 captures the potential long-term impact of free trade on U.S. employment for a total of 20 years at a sustained estimated 7%, 10% and 12% growth rate. These three free trade growth scenarios will result in creating between 315,269 to 845,621 US jobs over the forecasted 20 years. This means, on average, 15.8 to 42.3 thousand jobs annually would be added to the U.S. economy as a result of introducing free trade with Cuba.

Figure 11. Estimate of the Total Job Increase in the U.S. Through 2024 (over 20 years) from Shifts of Free Trade with Cuba



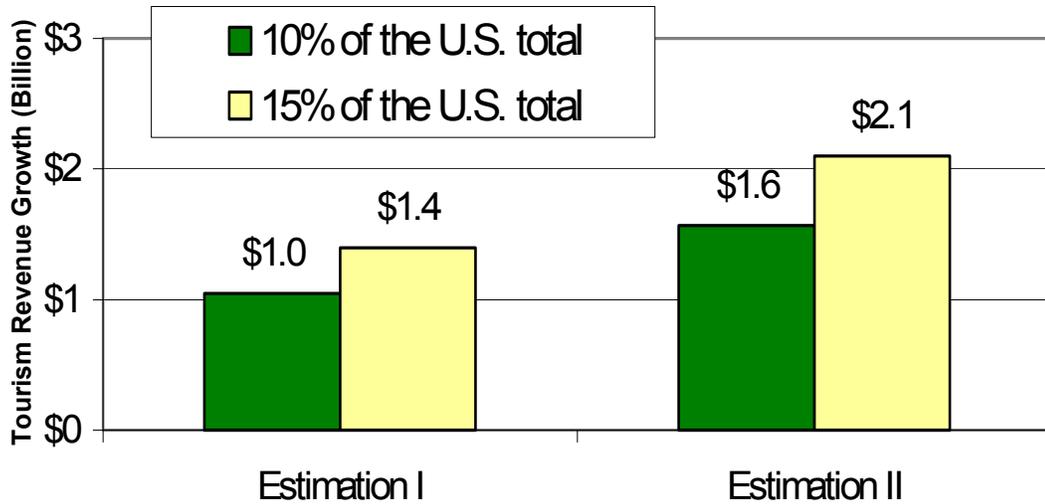
The Partial Economic Benefits to the Florida Economy

As discussed earlier, the gravity theory and historical facts suggest that Florida could potentially be the state most benefited from the free trade with Cuba due to its proximity and ease of access to all forms of transportation to Cuba, and huge resident Cuban-American (1.2 million+ Latin American) population. Miami (and south Florida generally) is considered the commerce, banking and services and trade, medical, international travel (and other) Capital of the Caribbean today. This position can only be enhanced with normalization of trade with Cuba's population (constituting two-thirds of the Florida's population residing only ninety miles away).

For instance, the Brattle Group conducted a study for the Center for International Policy estimating the economic benefits to the U.S. from lifting travel ban to Cuba (Robyn, Reitzes, & Church, 2002). The study used the Canadian travels to Cuba as a base and estimated that 2.8 million Americans would visit Cuba annually with normalization of travel restrictions. The study then forecasted the increase in the demand for the U.S. air and cruise travels to Cuba. As a result, the study estimated the U.S. air and cruise travels would expand U.S. economic output by \$1.18 billion to \$1.61 billion, over time. This expansion would create additional jobs range 16,888 (low estimate) to 23,020 (high estimate).

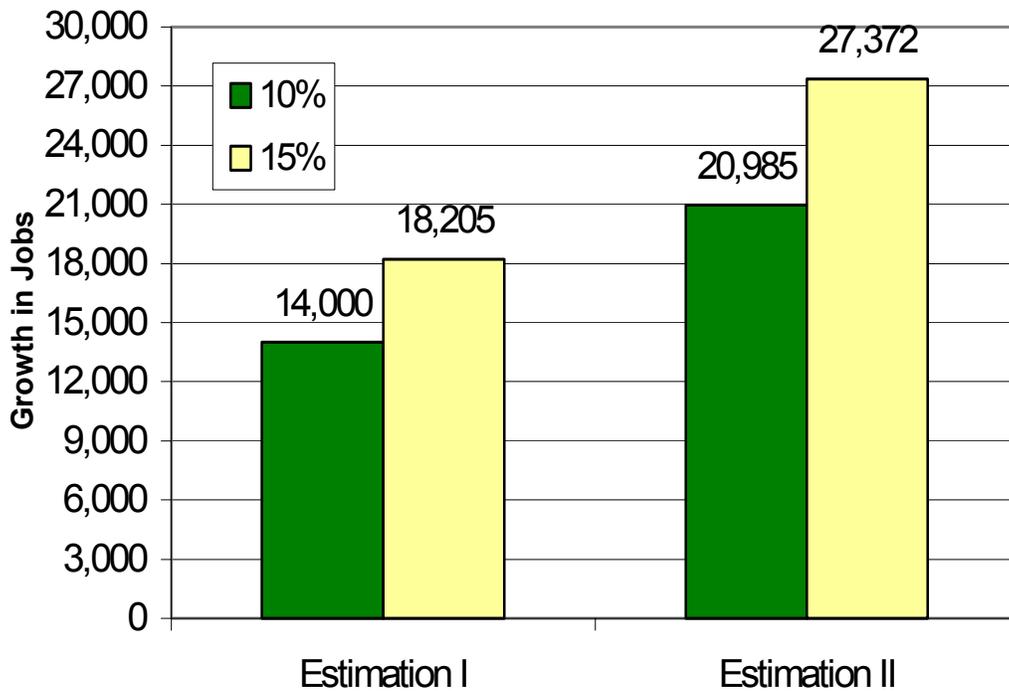
We use the travel estimate from the Brattle Group study and assume that Florida would have 10% to 15% of the total U.S. tourism benefits. Figure 12 depicts the dynamic economic benefits for Florida in the absence of a travel ban to Cuba, which ranges between \$1 and \$2.1 billion.

Figure 12. The 35-Year Low and High Dynamic Economic Impact to the Florida Economy From Lifting the Travel Ban to Cuba (2003\$)



Given these estimates, REMI forecasts in Figure 13 show that the lifting of travel ban could create between 14,000 to 27,000 jobs across the Florida economy over these 35 years through the removal of travel restrictions only. Stimulus of other economic sectors can only add to this impact.

Figure 13. The 35-Year Low and High Employment Impact to the Florida Economy From Lifting the Travel Ban to Cuba



Conclusions

This study, using the REMI model, indicates that the free trade with Cuba would have significant benefits to U.S. economy. Due to the lack of data, we were not able to estimate the benefits of free trade for the Cuban economy, only the U.S. economy. However, given the mutual benefits of free trade, under investment in the national Cuban economy, an educated and under-employed population, pent up productivity and demand of the population, and the significant size of Cuban economy, free trade with U.S. would create higher productivity and standard of living and considerable dynamic benefits to the Cuban economy as well.

- With the assumption of 12% increase in Cuba GDP growth, Cuba's exports to the U.S. would reach \$4.21 billion and imports from the U.S. would be \$9.47 billion by the year 2013. In the next 20 years, the exports from Cuba would exceed \$19 billion and the imports from U.S. would be close to \$29 billion.
- The REMI model estimates over twenty years that free trade with Cuba would increase U.S. GDP an additional \$102 to \$253 billion. The REMI results suggest that the average foregone cost of continuing the U.S. embargo would be between \$1.8 to \$12.7 billion, in foregone productivity annually.
- The REMI model estimates that the employment impact of the free trade would be 315,269 to 845,621 jobs over these twenty years. The annual job creation gains would range between 16 to 42 thousand, over these 20 years.
- An estimated \$1 to \$2.1 billion increase in economic benefits for the Florida economy over 35 years is estimated from removal of the travel ban to Cuba alone.

- The REMI model predicts that the lifting of travel ban alone would create 14,000 to 27,373 jobs across just the Florida economy alone over these 35 years.

References:

- Buchanan, J. M., & Yang J. Yoon. (2003). Globalization as framed by the two logics of trade. *Peace Research Abstracts* 40, no. 2, 123-261 Additional Info Sage Publications; 20030401 Full Text The Independent Review 20030406(20030403) 20030399-20030405, Winter 20032002. (Journal abstract).
- Galbi, D. A. (2001). Growth in the "New Economy": US Bandwidth Use and Pricing across the 1990s. *Telecommunications Policy*, 25(1-2), 139-154.
- Gould, D. M. (1994). Immigrant Links to the Home Country: Empirical Implications for U.S. Bilateral Trade Flows. *Review of Economics and Statistics*, 76(May), 302–316.
- Leake, L. L. (2002). Cashing in on Cuba. *Agri Marketing*, 40(9).
- Lynch, T., J. Harrington, K. Stackpoole, & Aydin, N. (2003). Comparison of Florida Metropolitan Statistical Areas (MSAs) Using the Metropolitan New Economy Index. *Applied Research and Economic Development*, 1(1).
- Nordås, H. K. (2000). Comparative Advantage and Economies of Scale: When Does Ricardo Dominate Smith? *Review of International Economics* 8, no. 4, 667-680 Additional Info Blackwell Publishing; 20001101.
- Oliner, S., & Sichel, D. (2000). The Resurgence of Economic Growth in the Late 1990s: Is Information Technology the Story? *Journal of Economic Perspectives*.
- Robins, N. A., & Trujillo, M. (1999). *Normalized Trade Relations Between The United States and Cuba: Economic Impact on New Orleans and Louisiana*. Retrieved 1/02/2004, 2004, from <http://cuba.tulane.edu>
- Rosson, P., & Adcock, F. (2001). *Economic Impacts of U.S. Agriculture Exports to Cuba*: Center for North American Studies, Texas A&M University.
- Ruffin, R. (2002). David Ricardo's Discovery of Comparative Advantage. *History of Political Economy* 34, no. 4, 727-746 Additional Info Project Muse; 20021101.
- Sanders, E., & Long, P. (2002). *Economic Benefits to the United States from Lifting the Ban on Travel to Cuba*. Washington, DC: Cuba Policy Foundation.
- Stiroh, K. J. (2002). Are ICT Spillovers Driving the New Economy? *Review of Income and Wealth*, 48(1), 33-57.
- USITC. (2001). *The Economic Impact of U.S. Sanctions With Respect to Cuba* (No. 3398). Washington, DC: U.S. International Trade Commission.
- Van Ark, B. (2002). Measuring the New Economy: An International Comparative Perspective. *Review of Income and Wealth*, 48(1), 1-14.
- Wall, H. J. (1999). Using the Gravity Model to Estimate the Costs of Protection. *Review*, 81(1), 33-40.
- Whelan, K. (2002). Some New Economy Lessons for Macroeconomists. *Recherches Economiques de Louvain/Louvain Economic Review*, 68(1-2), 21-36.
- Yang, J., Askari, H., Forrer, J., & Teegen, H. (2004). U S ECONOMIC SANCTIONS: An Empirical Study. *The International Trade Journal* 18, no. 1, 23-62 (40 pages) Additional Info Taylor & Francis; 20040401.