The 2016 Economic and Product Market Databook for Cayey, Puerto Rico

Description:

This study covers the outlook for products and services in Cayey. Estimates reported are given for the latent demand, or potential industry earnings (P.I.E.), for Cayey across hundreds of categories (in millions of U.S. dollars) and of the region and of the globe. These comparative benchmarks allow the reader to quickly gauge a Cayey vis-à-vis the world. Using econometric models which project fundamental economic dynamics, latent demand estimates are created. This report does not discuss the specific players in the market serving the latent demand, nor specific details at the product level. The study also does not consider short-term cyclicalities that might affect realized sales. The study, therefore, is strategic in nature, taking an aggregate and long-run view, irrespective of the players or products involved.

This study does not report actual sales data, but give, however, my estimates for the latent demand, or the P.I.E. for a variety of categories. In order to make these estimates, a multi-stage methodology was employed that is often taught in courses on international strategic planning at graduate schools of business.

What is Latent Demand and the P.I.E.?

The concept of latent demand is rather subtle. The term latent typically refers to something that is dormant, not observable, or not yet realized. Demand is the notion of an economic quantity that a target population or market requires under different assumptions of price, quality, and distribution, among other factors. Latent demand, therefore, is commonly defined by economists as the industry earnings of a market when that market becomes accessible and attractive to serve by competing firms. It is a measure, therefore, of potential industry earnings (P.I.E.) or total revenues (not profit) if a market is served in an efficient manner. It is typically expressed as the total revenues potentially extracted by firms. The "market" is defined at a given level in the value chain. There can be latent demand at the retail level, at the wholesale level, the manufacturing level, and the raw materials level (the P.I.E. of higher levels of the value chain being always smaller than the P.I.E. of levels at lower levels of the same value chain, assuming all levels maintain minimum profitability).

The latent demand is not actual or historic sales. Nor is latent demand future sales. In fact, latent demand can be lower either lower or higher than actual sales if a market is inefficient (i.e., not representative of relatively competitive levels). Inefficiencies arise from a number of factors, including the lack of international openness, cultural barriers to consumption, regulations, and cartel-like behavior on the part of firms. In general, however, latent demand is typically larger than actual sales in a country market. It should be noted that the estimates are "culture blind" and "climate blind", meaning that sales may in fact be lower than the latent demand due to cultural or exogenous factors, such as religion or climate (e.g. the presence of certain religions can effect the actual sales of certain food and beverage products, in the same way that climatic conditions can affect the actual sales of clothing and/or heating products). The estimates of latent demand do not explicitly control for either these long-run exogenous factors or short-run exogenous factors that may be present from year to year (e.g. the effects of war, SARS, terrorist activities, civil wars, natural disasters, elections, or similar events).

Another reason why sales do not equate to latent demand is exchange rates. In this report, all figures assume the long-run efficiency of currency markets. Figures, therefore, equate values based on purchasing power parities across countries. Short-run distortions in the value of the dollar, therefore, do not figure into the estimates. Purchasing power parity estimates of country income were collected from official sources, and extrapolated using standard econometric models. The report uses the dollar as the currency of comparison, but not as a measure of transaction volume. The units used in this report are: uuuu.

For reasons discussed later, this report does not consider the notion of “unit quantities”, only total latent revenues (i.e., a calculation of price times quantity is never made, though one is implied). The units used in this report are U.S. dollars not adjusted for inflation (i.e., the figures incorporate inflationary trends) and not adjusted for future dynamics in exchange rates (i.e., the figures reflect average exchange rates over recent history). If inflation rates or exchange rates vary in a substantial way compared to recent experience, actually sales can also exceed latent demand (when expressed in U.S. dollars, not adjusted for inflation). On the other hand, latent demand can be typically higher than actual sales as there are often distribution inefficiencies that reduce actual sales below the level of latent demand.

As mentioned in the introduction, this study is strategic in nature, taking an aggregate and long-run view,
income can be operationalized in a number of ways, including gross domestic product (for industrial
has high aggregate income, but low income per capita and can not assumed to be efficient). Aggregate
markets reflect the best standards for “efficiency”. High aggregate income alone is not sufficient (i.e., China
have found the assumption that the world’s highest aggregate income and highest income-per-capita
of latent demand compared to others for which no known data are available. Of the many alternatives, I
near efficiency than others. These countries and cities are given greater weight than others in the estimation
“efficiently served”. Having implemented various alternatives and matched these with market outcomes, I

Step 1. Product Definition and Data Collection
Any study of latent demand across countries requires that some standard be established to define
“efficiently served”. Having implemented various alternatives and matched these with market outcomes, I
have found that the optimal approach is to assume that certain key countries are more likely to be at or
near efficiency than others. These countries and cities are given greater weight than others in the estimation
of latent demand compared to others for which no known data are available. Of the many alternatives, I
have found the assumption that the world’s highest aggregate income and highest income-per-capita
markets reflect the best standards for “efficiency”. High aggregate income alone is not sufficient (i.e., China
has high aggregate income, but low income per capita and can not assumed to be efficient). Aggregate
income can be operationalized in a number of ways, including gross domestic product (for industrial
city's contribution to global latent demand and may never be realized in the form of local sales. For certain
This approach is useful across cities for which some notion of non-linearity exists in the aggregate cross-city
demand structures controlling for the income variation across the pool of African cities). have similar characteristics in terms of economic development (i.e., African cities will have similar latent
at this is to say that latent demand for products and services is more likely to be similar across cities that
aggregate consumption function, but also over time (i.e., not all cities are perceived to have the same
income effect is not necessarily same for all cities). This assumption applies across cities along the
is assumed to be constant unless there is empirical evidence to suggest that this effect varies (i.e., the slope
parameter cross-sectionally pooled time series model”. Simply stated, the effect of income on latent demand
is estimated based on historical dynamics of aggregate income.

The selection of markets is further reduced by the fact that not all countries in the OECD report industry revenues at the category level. Countries that typically have ample data at the aggregate level that meet the efficiency criteria include the United States, the United Kingdom and in some cases France and Germany.

Latent demand is therefore estimated using data collected for relatively efficient markets from independent data sources (e.g. Euromonitor, Mintel, Thomson Financial Services, the U.S. Industrial Outlook, the World Resources Institute, the Organization for Economic Cooperation and Development, various agencies from the United Nations, industry trade associations, the International Monetary Fund, and the World Bank). Depending on original data sources used, the definition of a category is established. In the case of this report, the data were reported at the aggregate level, with no further breakdown or definition. In other words, any potential product or service that might be incorporated within the category falls under the broadest definition of category. Public sources rarely report data at the disaggregated level in order to protect private information from individual firms that might dominate a specific product-market. These sources will therefore aggregate across components of a category and report only the aggregate to the public. While private data are certainly available, this report only relies on public data at the aggregate level without reliance on the summation of various category components. In other words, this report does not aggregate a number of components to arrive at the “whole”. Rather, it starts with the “whole”, and estimates the whole for all countries and the world at large (without needing to know the specific parts that went into the whole in the first place). All figures in this report are for sales resulting from retail channels.

Step 2. Filtering and Smoothing
Based on the aggregate view of products and services as defined above, data were then collected for as many similar countries as possible for that same definition, at the same level of the value chain. This generates a convenience sample of countries from which comparable figures are available. If the series in question do not reflect the same accounting period, then adjustments are made. In order to eliminate short-term effects of business cycles, the series are smoothed using an 2 year moving average weighting scheme (longer weighting schemes do not substantially change the results). If data are available for a country or a city, but these reflect short-run aberrations due to exogenous shocks (such as would be the case of beef sales in a country stricken with foot and mouth disease), these observations were dropped or “filtered” from the analysis.

Step 3. Filling in Missing Values
In some cases, data are available for countries or cities on a sporadic basis. In other cases, data may be available for only one year. From a Bayesian perspective, these observations should be given greatest weight in estimating missing years. Assuming that other factors are held constant, the missing years are extrapolated using changes and growth in aggregate national income. Based on the overriding philosophy of a long-run consumption function (defined earlier), countries which have missing data for any given year, are estimated based on historical dynamics of aggregate income.

Step 4. Varying Parameter, Non-linear Estimation
Given the data available from the first three steps, the latent demand is estimated using a “varying-parameter cross-sectionally pooled time series model”. Simply stated, the effect of income on latent demand is assumed to be constant unless there is empirical evidence to suggest that this effect varies (i.e., the slope of the income effect is not necessarily same for all cities). This assumption applies across cities along the aggregate consumption function, but also over time (i.e., not all cities are perceived to have the same income growth prospects over time and this effect can vary from city to city as well). Another way of looking at this is to say that latent demand for products and services is more likely to be similar across cities that have similar characteristics in terms of economic development (i.e., African cities will have similar latent demand structures controlling for the income variation across the pool of African cities).

This approach is useful across cities for which some notion of non-linearity exists in the aggregate cross-city consumption function. For some categories, however, the reader must realize that the numbers will reflect a city’s contribution to global latent demand and may never be realized in the form of local sales. For certain
category combinations this will result in what at first glance will be odd results. For example, the latent
demand for the category “space vehicles” will exist for “Togo” even though they have no space program. The
assumption is that if the economies in these countries did not exist, the world aggregate for these categories
would be lower. The share attributed to these countries is based on a proportion of their income (however
small) being used to consume the category in question (i.e., perhaps via resellers).

Step 5. Fixed-Parameter Linear Estimation
Nonlinearities are assumed in cases where filtered data exist along the aggregate consumption function.
There will always be those cities, especially toward the bottom of the consumption function, where non-
linear estimation is simply not possible. For these cities, equilibrium latent demand is assumed to be
perfectly parametric and not a function of wealth (i.e., a city's stock of income), but a function of current
income (a city's flow of income). In the long run, if a city has no current income, the latent demand is
assumed to approach zero. The assumption is that wealth stocks fall rapidly to zero if flow income falls to
zero (i.e., cities which earn low levels of income will not use their savings, in the long run, to purchase goods
and services). In a graphical sense, for low income cities, latent demand approaches zero in a parametric
linear fashion with a zero-zero intercept. In this stage of the estimation procedure, low-income cities are
assumed to have a latent demand proportional to their income, based on the city closest to it on the
aggregate consumption function.

Step 6. Aggregation and Benchmarking
Based on the models described above, latent demand figures are estimated for all countries and cities of the
world, including for the smallest economies. These are then aggregated to get world totals and regional
totals. To make the numbers more meaningful, regional and global demand averages are presented. Figures
are rounded, so minor inconsistencies may exist across tables.

Contents:
1. Introduction & Methodology
   1.1 Overview & Methodology
   1.2 Market Potential Estimation Methodology
      1.2.1 Overview
      1.2.2 What Is Latent Demand And The P.I.E.?
      1.2.3 The Methodology
         1.2.3.1 Step 1. Product Definition And Data Collection
         1.2.3.2 Step 2. Filtering And Smoothing
         1.2.3.3 Step 3. Filling In Missing Values
         1.2.3.4 Step 4. Varying Parameter, Non-Linear Estimation
         1.2.3.5 Step 5. Fixed-Parameter Linear Estimation
         1.2.3.6 Step 6. Aggregation And Benchmarking

2 Summary Rankings

Ordering:
Order Online - http://www.researchandmarkets.com/reports/3471663/
Order by Fax - using the form below
Order by Post - print the order form below and send to

Research and Markets,
Guinness Centre,
Taylors Lane,
Dublin 8,
Ireland.
Fax Order Form
To place an order via fax simply print this form, fill in the information below and fax the completed form to 646-607-1907 (from USA) or +353-1-481-1716 (from Rest of World). If you have any questions please visit http://www.researchandmarkets.com/contact/

Order Information
Please verify that the product information is correct.

<table>
<thead>
<tr>
<th>Product Name</th>
<th>The 2016 Economic and Product Market Databook for Cayey, Puerto Rico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web Address</td>
<td><a href="http://www.researchandmarkets.com/reports/3471663/">http://www.researchandmarkets.com/reports/3471663/</a></td>
</tr>
<tr>
<td>Office Code</td>
<td>SCDKEKSR</td>
</tr>
</tbody>
</table>

Product Format
Please select the product format and quantity you require:

| Quantity          | Electronic (PDF) - Single User: USD 295 |

Contact Information
Please enter all the information below in **BLOCK CAPITALS**

<table>
<thead>
<tr>
<th>Title</th>
<th>Mr ☐ Mrs ☐ Dr ☐ Miss ☐ Ms ☐ Prof ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Name</td>
<td></td>
</tr>
<tr>
<td>Last Name</td>
<td></td>
</tr>
<tr>
<td>Email Address</td>
<td></td>
</tr>
<tr>
<td>Job Title</td>
<td></td>
</tr>
<tr>
<td>Organisation</td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>City</td>
<td></td>
</tr>
<tr>
<td>Postal / Zip Code</td>
<td></td>
</tr>
<tr>
<td>Country</td>
<td></td>
</tr>
<tr>
<td>Phone Number</td>
<td></td>
</tr>
<tr>
<td>Fax Number</td>
<td></td>
</tr>
</tbody>
</table>

* Please refrain from using free email accounts when ordering (e.g. Yahoo, Hotmail, AOL)
Payment Information

Please indicate the payment method you would like to use by selecting the appropriate box.

☐ Pay by credit card: You will receive an email with a link to a secure webpage to enter your
credit card details.

☐ Pay by check: Please post the check, accompanied by this form, to:
Research and Markets,
Guinness Center,
Taylors Lane,
Dublin 8,
Ireland.

☐ Pay by wire transfer: Please transfer funds to:
Account number 833 130 83
Sort code 98-53-30
Swift code ULSBIE2D
IBAN number IE78ULSB98533083313083
Bank Address Ulster Bank,
27-35 Main Street,
Blackrock,
Co. Dublin,
Ireland.

If you have a Marketing Code please enter it below:

Marketing Code: ____________________________

Please note that by ordering from Research and Markets you are agreeing to our Terms and Conditions at http://www.researchandmarkets.com/info/terms.asp

Please fax this form to:
(646) 607-1907 or (646) 964-6609 - From USA
+353-1-481-1716 or +353-1-653-1571 - From Rest of World