SALES TAX FORECAST REVIEW

for the

Sonoma-Marin Area Rail Transit District

December 13, 2010

Robert Eyler, Ph.D., Principal
Economic Forensics and Analytics
PO Box 750641
Petaluma, CA 94975-0641
eyler@econforensics.com

Executive Summary

This study is a review of Beacon Economics' (Beacon) Sales Tax Revenue Forecast, provided to SMART on July 23, 2010. This study updated the original forecast provided to complete SMART's Strategic Plan before the 2008 election. Because we have entered a recession with historic breadth and depth since 2008, many questions have been asked about SMART's financial plan and its assumptions. Beacon was recently asked to revise its forecast, if necessary, and did so in the document attached as Exhibit A. Beacon Economics' assumptions are based on their opinion concerning the macroeconomy's evolution at the national, state and local levels, as well as demographic changes.

After reviewing Beacon Economics' study, the following conclusions are drawn:
1. Beacon's use of overall consumption of goods and services as the economic driver in their sales tax forecast captures more of the economics behind taxable sales than using personal income alone;
2. Beacon's use of regression analysis captures more of the variation in sales tax revenues over time than a simple trend analysis;
3. Beacon's population analysis may be slightly more aggressive than alternative forecasts as a reflection that Beacon is more bullish about population growth than other organizations for the SMART District;
4. The trend of more services and fewer goods consumed in terms of total dollars spent by households is a sound assumption by Beacon;
5. Beacon's inflation forecast reflects trends in economic policy over the long term and how macroeconomists currently see the future;
6. Alternative models can be more conservative but not necessarily any more precise; and
7. Fundamentally, Beacon's study is sound theoretically.

The recommendations are:

1. SMART should use an estimate of consumption expenditures as the economic basis for sales tax forecasts as the academic literature and taxable sales patterns suggests that using personal income alone may underestimate the sales tax base;
2. While Beacon's current inflation estimates are consistent with the forecasted stance and outlook of macroeconomic policy and practice worldwide, there may be regional deviations from these figures to be monitored over time;
3. SMART should consider an amalgam of DOF and ABAG forecasts for population to remain conservative and reflect how state and local policy makers will likely use such figures in their decision making; and
4. SMART should be sure to use real versus nominal (constant versus current) analyses for these forecasts going forward.

Sales Tax Forecast, SMART
Peer Review of Beacon Economics Study, 2010

Introduction

This peer review is for a sales tax forecast performed by Beacon Economics on behalf of SMART in July 2010. Beacon Economics' forecast looks at four major variables to shape its final estimates. These include population projections, demographics, consumption behavior, and inflation. Beacon's assumptions have generated controversies, which would arise for a long-term forecast performed by economists. Since the economy entered recession in 2008, more questions have arisen about the way household consumption will be funded. Beacon's forecast, and also this peer review, provides guidance for SMART in making decisions in a dynamic environment with a recently, less-predictable economy.

The peer review has three stages. First, Beacon's general approach is reviewed. Beacon Economics generates economic forecasts throughout the state of California, and their proprietary forecasts of income growth, consumption behavior, inflation, and population dynamics are used throughout their study. One of the inherent risks in their forecast is being more aggressive than other, alternative estimates. For example, there are risks in assuming population growth to be larger than existing state and local policy estimates. A strength of the forecast is their use of personal consumption expenditures for income and consumption dynamics. Second, a review of each major group of assumptions used describes their strengths and weaknesses. Finally, conclusions and recommendations are provided; the recommendations focus on how SMART should look its revenue dynamics going forward specific to sales taxes, as all these data (as well as alternative forecasts generated by governmental or other organizations) are also subject to change. There is also reference to academic works on sales tax forecasts, specifically Bruce, et al. (2006), which provides strength to Beacon Economics' use of consumption expenditures rather than personal income in their forecast.

General Issues

Beacon Economics' methodology in this forecast is a simple one and is based on solid economic forecasting techniques. Population forecasts are generated by many agencies, something that creates confusion for economic forecasters when looking at local policy issues. Three population forecasts will be discussed in this study. There is Beacon's own forecast, the California Department of Finance (DOF) estimates, and the Association of Bay Area Government's (ABAG) forecast. Unfortunately, these all differ from each other; Beacon Economics' forecast is larger through 2029 than the others, which is recognized in their report (Levine, 2010).

Recent literature in economics looks at sales tax forecasts and revenue dynamics for state governments. Personal income is the way many economists would look at the beginning of the economic flows for a sales tax forecast. As shown in Arnold (2010), the ratio of taxable sales to personal income has been falling steadily since 1970 for the SMART District (Sonoma and Marin counties) and for California as a whole. Bruce, et al. (2006) suggests that using

personal income as a proxy for taxable sales may exclude purchases made as intermediate goods, inputs for businesses, which would not be reflected in personal income data. (pg. 321) Thus, a plausible reason why the ratio of taxable sales to personal income has fallen quickly is due to business purchases of taxable goods rising in its proportion of total taxable sales.

Beacon Economics focuses on personal consumption expenditures, consumption of goods and services. Theoretically, this choice makes the forecast more specific to taxable sales; however, there are no existing data for consumption in these counties specifically. One risk in Beacon's forecast is that the consumption estimates to generate taxable sales is aggressive in its growth rate. The population and consumption figures provide a per capita or per-person estimate of retail sales per person. The growth of population, combined with the growth of income, generates an estimate for taxable sales. The proportion of retail sales that are taxable is another assumption that if too large may put the overall forecast at risk. However, Beacon does not consider taxable purchases by businesses, thus reducing the risk in their forecast.

The annualized change in prices, commonly known as the inflation rate, is another variable used in Beacon's forecast. Economists are generally more interested in inflation-adjusted ("real" or constant) figures because adjusted figures deflate estimates such that they are not spurious due to inflation growth alone. Inflation is a phenomenon based on excess demand. The current recession has left our economy with deflating or stable price levels, even in regions where the cost of living is relatively high. Generally, Sonoma and Marin counties have been relatively high, cost-of-living counties within California; local housing prices have been culpable for local cost-of-living levels. As discussed below, and as Beacon shows in their July 2010 memo, inflation going forward to 2029 is likely to be relatively slow and metered by the Federal Reserve; this inflation focus of policy has been the case since the early 1980s in the aftermath of stagflation. Of the forecasts made by Beacon, the inflation estimate is the least risky concerning the sales tax forecast; it is important that SMART use real or constant dollars when investigating sales tax revenues going forward.

Most of Beacon's forecasting represents a long-term trend analysis based on regression models. In short, regression models of government revenue assume that certain variables are outside the influence of the variable in question. For example, variables representing the level of consumption per capita of taxable goods, population and demographic evolutions, and inflation rates are assumed to be not significantly affected by changes in the level of sales tax revenue. Beacon uses a series of growth rate models to estimate each variable and ultimately the level of taxable sales for the SMART District, shown on page 4 of Beacon's forecast, where each variable plays a role. (Levine, 2010) The forecasted numbers are then placed into the equation representing the "best fit" model, or where the forecast error variance is minimized (i.e., the amount of taxable sales variability not explained by the variables above is minimized). The estimated taxable sales are multiplied by 0.25%, and a forecast is born.

Population Assumptions

Beacon Economics' forecast provides a list of bullets that summarizes their major assumptions. (Ibid) The first is that the SMART District population by 2029 will be approximately 919,219. The second and third provide assumptions for county-specific, net migration; Beacon assumes that Sonoma County will get larger at a faster rate than Marin
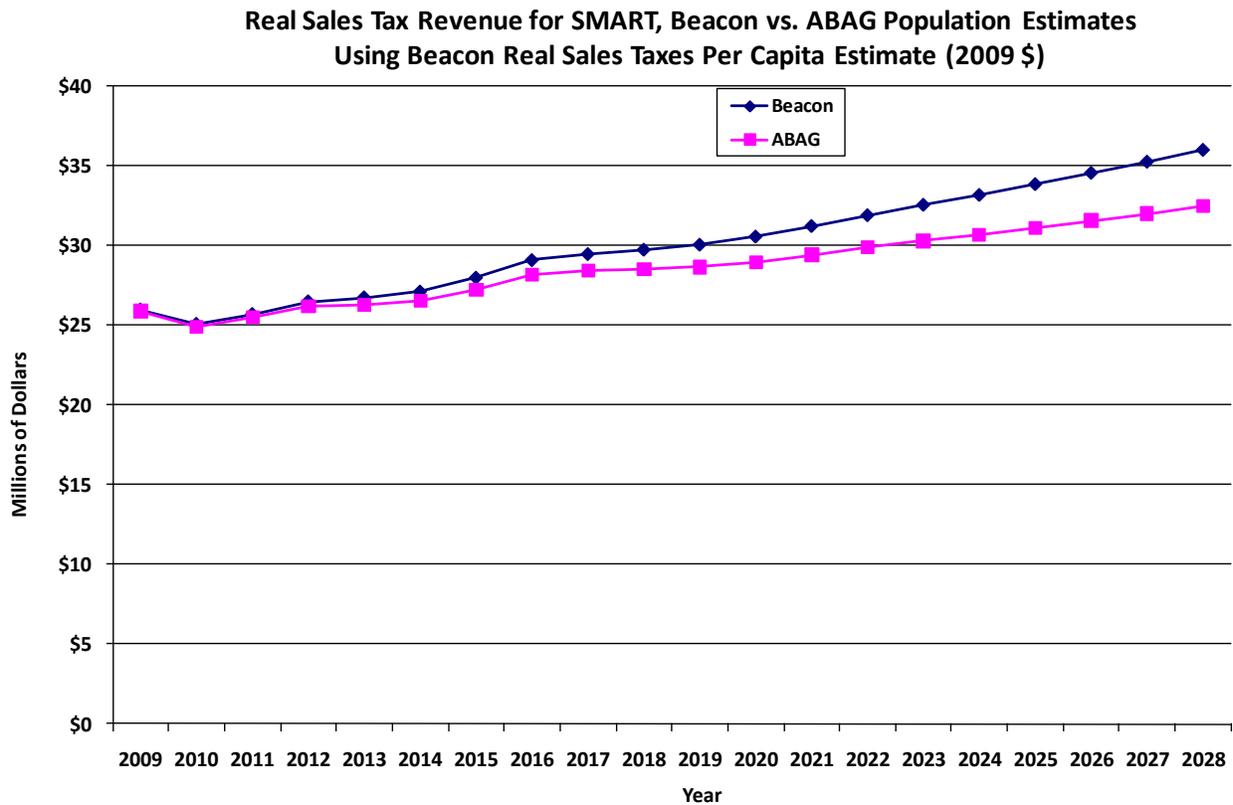
County, but both will grow due to a combination of net migration and natural increase. The natural population increase in both counties is roughly the same growth rate, 0.42% per year in Sonoma versus 0.36% annually in Marin County. In Beacon's final assumption, they suggest that the California Department of Finance (DOF) has slightly lower estimates; the Association of Bay Area Governments (ABAG) has even lower population estimates for 2029, equal to 819,300. These assumptions allow Beacon to compile a forecast of population growth as a first step in generating the sales tax forecast. It should be recognized that ABAG's estimates being less than DOF do not make them more accurate; municipalities in the Bay Area use a mix of DOF and ABAG estimates depending on the project. The State Board of Equalization (BOE) uses DOF estimates when calculating taxable sales per capita, for example. In short, these figures are generated by Beacon Economics using assumptions about the growth rate of these counties' residents that are slightly larger than DOF due to their belief in renewed housing affordability and net jobs creation in the long term versus other Bay Area counties.

The ABAG estimates are less aggressive due to their land-use projections, and are considered to be "policy-based" (see www.abag.ca.gov). In simple terms, this means that ABAG is looking at population patterns based on how easily people can live, work and commute within the Bay Area given urban growth boundaries and infrastructure. Beacon Economics sees the SMART District as a place of economic and population growth at larger rates than both DOF and ABAG, which acts as a forecast risk versus using the other data that exist. Metropolitan Transportation Commission (MTC) suggests SMART use ABAG projections when receiving federal dollars. This is based on congestion management law (Prop. 111); modeling efforts must be consistent with MTC's regional model which uses ABAG figures (MTC, pers. comm.). Because Beacon's recent estimate uses a proprietary population estimate, it does not mean it is incorrect or a poor methodology. SMART may have to recognize ABAG data as the basis of some portion of its estimates and general planning to receive federal dollars; if ABAG data were applied to its sales tax forecast, Beacon's current estimates would be lower. Figure 1 shows the differences between Beacon's current forecast and the effect if their population estimates were changed to ABAG's (assuming no other changes would take place). Figure 1 shows these estimates in real, 2009 dollars.

Consumer Spending Assumptions

Bruce, et al. (2006) implies that up to 40% of taxable sales throughout the United States may be by businesses, which would not be captured by using personal income as the basis for a revenue estimate (pg. 321). Beacon's forecast uses the proportions of goods consumption to services consumption and how it has changed since 1970 to suggest that the sales tax base is likely shrinking in these counties over time; Arnold (2010) corroborates that argument in general by showing the long-term trend in taxable sales to personal income as a shrinking ratio. Beacon's forecast is conservative concerning this set of assumptions for two reasons: (1) Beacon's estimate recognizes a downward trend in the sales tax base by households; and (2) does not explicitly consider intermediate goods purchased and taxed. Figure 2 repeats Figure 1 but with an increase of 11% in the tax base for what may not be captured by looking at household consumption alone.

Figure 1

**Real Sales Tax Revenue for SMART, Beacon vs. ABAG Population Estimates
Using Beacon Real Sales Taxes Per Capita Estimate (2009 $)**

Beacon estimates that by 2029 approximately 70% of final sales will be in services, versus 67.3% in 2009. It is important to have a way to separate taxable from non-taxable transactions. Beacon's assumptions here seem very sound in terms of the shrinking proportion of goods to services in the household consumption bundle. Arnold (2010) suggests that assumptions must be made concerning demographic changes and consumption patterns. After speaking with Beacon Economics, demographic changes are considered when building these forecasting models. Beacon also assumes that the price of services is likely to increase more quickly than goods prices; they use a mix of consumer price indices to build a goods market versus services market inflation forecast. It is important to recognize that Beacon does not use personal income growth as the basis of their forecast. Personal income growth may be endogenous with sales tax revenues, and thus the use of regressions can adjust to minimize this problem rather than the use of simple trend analyses (Bruce, et al., 2006). The potential risks in Beacon's consumption forecast are that the estimated level of consumer spending on taxable items is more aggressive than reality and that the inflation rate of those purchases is larger than reality. However, trending those purchases down and focusing on personal consumption expenditures reduces the risk in the forecast. Methodologically, using national and state trends and considering potential shifts in the spending patterns of typical households is a solid approach. The proportions of spending on taxable versus non-taxable goods can be argued on both sides and Beacon's assumptions are reasonable given the trends in consumption of goods versus services.

Figure 2

Real Sales Tax Revenue for SMART, Beacon vs. ABAG Pop Estimates, 2009$
11% increase in Tax Base Due to Taxable Sales from Non-Household Sources
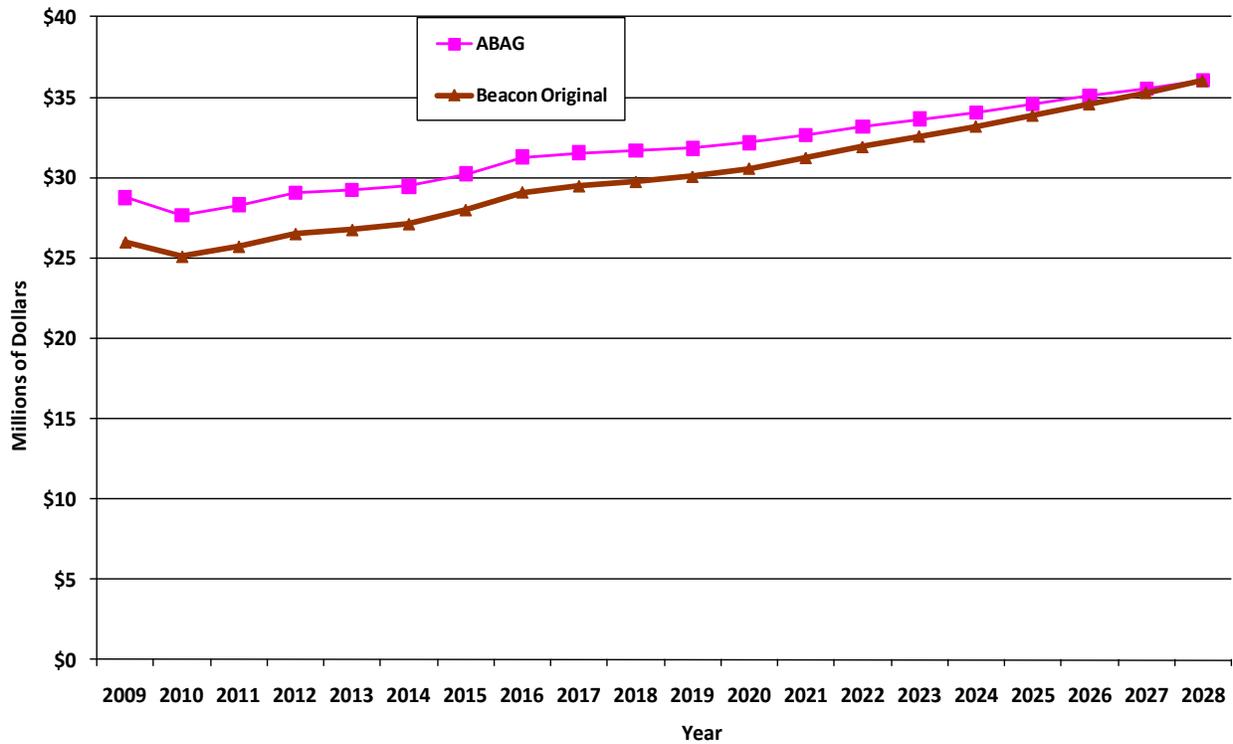
Inflation Assumptions

Inflation rates can be seen in many forms and for many types of expenditures. Beacon also considers overall inflation rates versus goods-specific inflation rates. One of the critical factors in any inflation forecast since 2008 has been our economy's lack of predictability. Monetary and fiscal policies have effects on inflation expectations, which theoretically drive consumer behavior. Since October 2008, these policies in the United States have been trying to stimulate household consumption and business investment. Central banks in developed nations have been very inflation-focused since the early 1980s. American inflation is likely to be relatively low and stable through 2029; any occurrence of significant inflation will likely lead to swift action by the Federal Reserve such that inflation will stay around two percent (2%) per annum into the foreseeable future. Beacon Economics estimates that overall inflation will rise at an average of 1.88% from 2009 to 2029. Goods inflation, in specific, will rise at only 0.51% per annum. This means that the price of services will rise at a faster rate than goods inflation. In short, Beacon's forecast of 1.88% annualized, average inflation through 2029 is conservative and consistent with both national policies and projections.

The argument of constant (inflation-adjusted) versus current dollars is another issue that comes up with these types of forecasts. Inflation has confounding effects on spending, and depends on how the inflation is generated. Excess demand at current prices is the genesis of

inflation in markets. While it is true that sales taxes are assessed on nominal or current dollars of taxable sales, all costs and revenues should be deflated in terms of real or constant dollars for decision purposes. In short, Beacon's inflation estimates concerning the sales tax forecast are sound.

Conclusions and Recommendations

After reviewing Beacon Economics' study, the following conclusions are drawn:
1. Beacon's use of overall consumption of goods and services as the economic driver in their sales tax forecast captures more of the economics behind taxable sales than using personal income alone;
2. Beacon's use of regression analysis captures more of the variation in sales tax revenues over time than a simple trend analysis;
3. Beacon's population analysis may be slightly more aggressive than alternative forecasts as a reflection that Beacon is more bullish about population growth than other organizations for the SMART District;
4. The trend of more services and fewer goods consumed in terms of total dollars spent by households is a sound assumption by Beacon;
5. Beacon's inflation forecast reflects trends in economic policy over the long term and how macroeconomists currently see the future;
6. Alternative models can be more conservative but not necessarily any more precise; and
7. Fundamentally, Beacon's study is sound theoretically.

The recommendations are:

1. SMART should use an estimate of consumption expenditures as the economic basis for sales tax forecasts as the academic literature and taxable sales patterns suggests that using personal income alone may underestimate the sales tax base;
2. While Beacon's current inflation estimates are consistent with the forecasted stance and outlook of macroeconomic policy and practice worldwide, there may be regional deviations from these figures to be monitored over time;
3. SMART should consider an amalgam of DOF and ABAG forecasts for population to remain conservative and reflect how state and local policy makers will likely use such figures in their decision making; and
4. SMART should be sure to use real versus nominal (constant versus current) analyses for these forecasts going forward.

References:

Arnold, Michael (2010) *Summary of Findings: Alternative Sales Tax Revenue Forecasts FY 2009 - FY 2029*, Memo to SMART leadership, Marin Citizens for Effective Transportation (MCET), June 17, 2010.

Bruce, Donald, William F. Fox, and M. H. Tuttle (2006) *Tax Base Elasticities: A Multi-State Analysis of Long-Run and Short-Run Dynamics*, **Southern Economic Journal** 73(2): 315-341

Levine, Jordan G (2010) *Sales Tax Revenue Forecast: Sonoma Marin Area Rail Transit (SMART) District,* Beacon Economics, July 23, 2010

Interviews with Beacon Economics (November 30, 2010), Marin Citizens for Effective Transportation (December 6, 2010) were conducted to confirm methodologies and concerns. Doug Kinsey (December 6, 2010) from Metropolitan Transportation Commission (MTC) was also interviewed briefly.

Data used in this review came from either the MCET or Beacon reports or California Department of Finance (www.dof.ca.gov) or ABAG (www.abag.ca.gov and specifically see http://www.abag.ca.gov/planning/research/projections_policy_based.html).

Exhibit A

Beacon Economics Document, July 23, 2010

Sales Tax Revenue Forecast
Sonoma-Marin Area Rail Transit District

This publication was prepared by:

Beacon Economics

Christopher Thornberg, Founding Principal
5777 W Century Blvd., Suite 895
Los Angeles, California 90045
310.571.3399
Chris@BeaconEcon.com

Jon Haveman, Founding Principal
1299 Fourth Street, Suite 400
San Rafael, California 94901
415.457.6006
Jon@BeaconEcon.com

And by:

Jordan G. Levine
Research Manager
Beacon Economics

For further information about Beacon Economics, please contact:

Victoria Pike Bond
Director of Communications
Beacon Economics
415.457.6030
Victoria@BeaconEcon.com

Or visit our website at www.BeaconEcon.com.

Lillian Hames
General Manager
Sonoma-Marin Area Rail Transit District
750 Lindaro Street, Suite 200
San Rafael, CA 94901

July 23, 2010

Dear Lillian,

Beacon Economics was contracted by the Sonoma-Marin Area Rail Transit District (SMART) to perform a forecast of taxable sales and the revenues that would be generated for the SMART infrastructure project out to the end of fiscal year 2029. This memo lays out the forecast and a summary of the basis of this forecast. It will also include a brief discussion of this forecast in relation to our previous forecast as well as the Mike Arnold memo submitted to SMART on behalf of the Marin Citizens for Effective Transportation.

As noted last year, our methodology is based on standard time series regression analysis, where we estimate total taxable sales in Marin County and Sonoma County on the basis of population and growth, as well as nominal consumer spending on goods at the national level. This year, Beacon Economics has revised downward our forecast of the SMART's tax revenues out to 2029. This is due to a downward revision to our forecast of goods spending per capita, slower than previously anticipated population growth, a smaller share of consumer spending on taxable goods, with moderate inflation. Home prices did not fall as much as we anticipated in the region, which has also led to slower population growth in in our model. In terms of goods spending, the very low inflation we have seen over the past year has kept nominal goods spending below the levels previously estimated. Based upon our review of SMART's sales tax revenue history, and the economic and demographic data for the Sonoma and Marin area, Beacon Economics has come up with a point-estimate of our forecast of taxable sales and sales tax revenue that will accrue to SMART between 2009 and 2029. This is a point estimate, rather than a range of likely outcomes, but it incorporates the best and most current information available to us at this time.

We are currently forecasting that the combined region has reached the bottom of this consumer-led downturn. Thus we expect to see growth in taxable sales continue through the remainder of the current fiscal year and beyond. Specifically, we are forecasting that taxable sales will grow from roughly $10.1 billion per year in the combined two counties in 2009-10 to more than $20 billion per year by fiscal year 2029. This means that holding tax rates constant over this period, SMART's sales tax revenue will grow from $25.4 million in the 2009-10 fiscal year to $51.7 million by 2028-29. In total, this will result in cumulative sales tax revenues over this period of $748 million, shown in the table below.

This is slightly lower than our previous forecast in the short-run, which called for growth in revenues of between 4.8% and 6.7% over the next 4-5 years. This has been revised to between 3.2% and 5.4% in the short run as the economy struggles to heal itself from this downturn. Our growth forecast for 2015-2020 is roughly the same, with revenues rising by between 3.6% and 6.1%. Our longer-run forecast is also slightly less optimistic, though we do see growth continuing at roughly 4% per year.
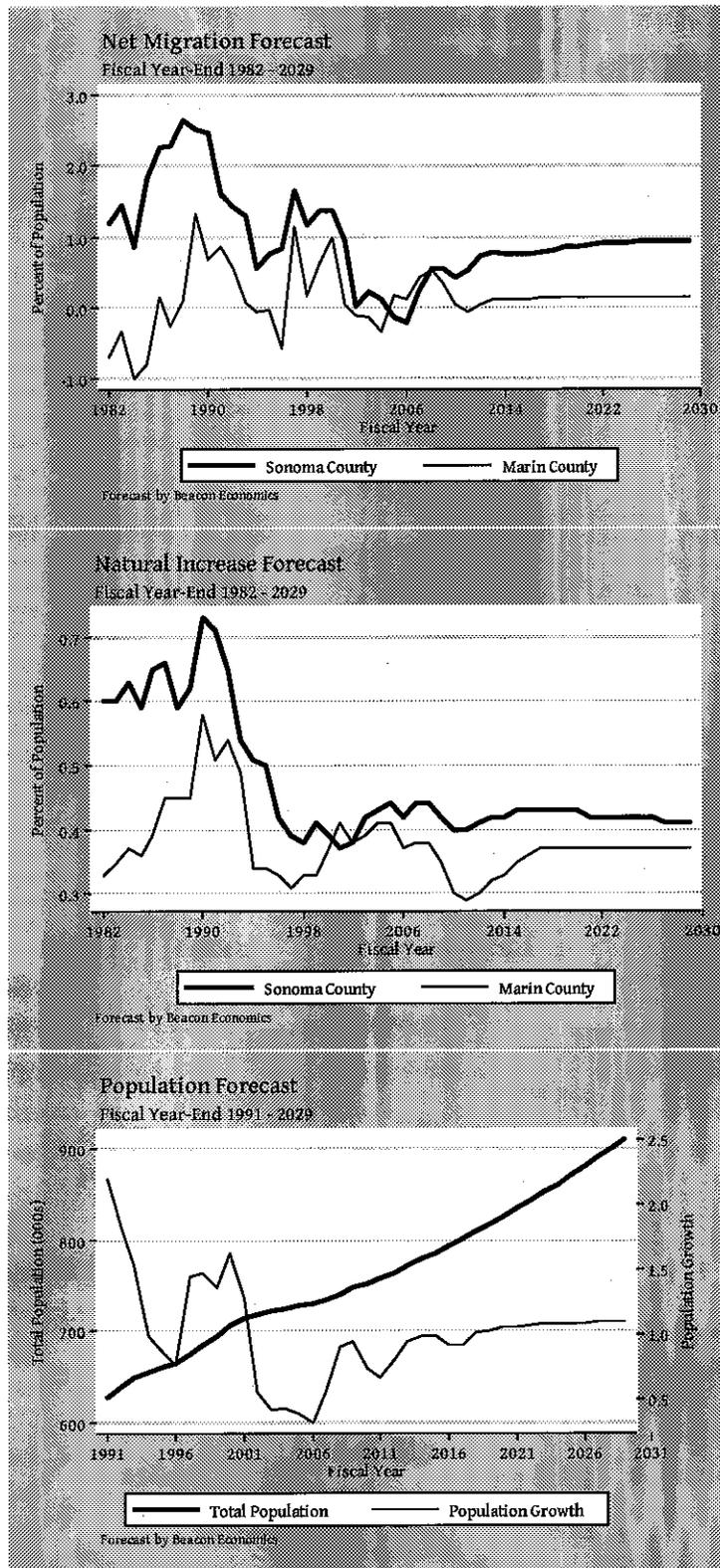
SMART Forecast, Fiscal Years 2009-10 - 2028-29

Fiscal Year	Taxable Sales	Sales Tax Revenue	Growth (%)
2009-10	10,142,848,200	25,417,216	–
2010-11	10,546,0240,00	26,427,544	4.0
2011-12	11,086,243,000	27,781,292	5.1
2012-13	11,440,598,000	28,669,279	3.2
2013-14	11,847,476,000	29,688,885	3.6
2014-15	12,492,357,000	31,304,908	5.4
2015-16	13,255,678,000	33,217,733	6.1
2016-17	13,703,233,000	34,339,272	3.4
2017-18	14,113,860,000	35,368,273	3.0
2018-19	14,553,401,000	36,469,729	3.1
2019-20	15,082,715,000	37,796,151	3.6
2020-21	15,693,307,000	39,326,248	4.0
2021-22	16,323,444,000	40,905,324	4.0
2022-23	16,961,681,000	42,504,698	3.9
2023-24	17,611,056,000	44,131,983	3.8
2024-25	18,316,370,000	45,899,447	4.0
2025-26	19,058,466,000	47,759,084	4.1
2026-27	19,811,471,000	49,646,058	4.0
2027-28	20,618,533,000	51,668,495	4.1
2028-29	15,948,160,000	39,964,891	–

Source: Global Insight

It is important to note that our forecast is lower than the $845 million predicted by SMART. This forecast is based on a number of factors (mentioned above) that come out of Beacon's own economic models of overall national spending patterns and future population, which will be detailed in the remainder of this report.

Population is an important driver of taxable sales in a region. Even if the amount of spending per person remains constant over time, and increase in the number of spenders will give rise to increased sales, holding all else constant.

- Beacon estimates that total population by 2030 will reach 910,219 residents.

- We expect net migration in Sonoma to average nearly 1% of the county's population.

- Net migration will be closer to zero in the more developed Marin County.

- Natural increase is predicted to average roughly 0.42% of Sonoma's population per year, and will be slightly lower (0.36%) of Marin's population between now and 2029.

- Our numbers are higher than the DOF's population forecast, but that difference is only 3.6% and is driven primarily by stronger net migration into Sonoma County in the future.

Net Migration Forecast
Fiscal Year-End 1982 - 2029

Forecast by Beacon Economics

Natural Increase Forecast
Fiscal Year-End 1982 - 2029

Forecast by Beacon Economics

Population Forecast
Fiscal Year-End 1991 - 2029

Forecast by Beacon Economics

Beacon's estimate was created by analyzing the trends in natural increases in the region (births minus deaths) and net migration into the region from other parts of the U.S. and abroad. The Association of Bay Area Governments (ABAG) has forecasted that the combined population of Sonoma and Marin counties will reach 819,300 in 2030. This is much lower than the California Department of Finance's (DOF) projection for the region of 879,497 residents by 2030. Our population growth *is* larger than the estimates from ABAG or the DOF, but it is important to note that this has been revised down from our previous estimate of just over 1 million. The downward revision to our forecast stems from the breadth and severity of the current recession, which has cause slower population growth in the region in the short run.

The taxable sales and revenue forecast for SMART is also a function of national consumer spending patterns. The first effect is an increase in per capita spending on goods in nominal terms.

- Nominal spending on goods is expected to climb from roughly $10,895 last year to nearly $19,000 by 2029.
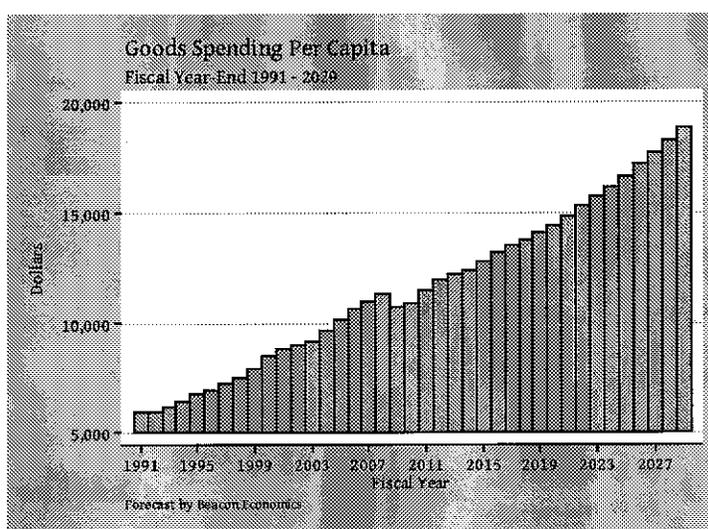
This is derived from our internal estimates of future inflation for durable and nondurable goods (between 0.5% and 1.0% per year) and our estimate of real per capita spending growth of roughly 2% per year. These numbers also take into account the increase in tax rate nationally that we expect to see over the course of the next year and a half, which has reduced the long-run trend slightly.

We have also taken into account the shift toward consumption of services and away from goods as a share of total spending. For example, in 1980 the consumption of goods represented almost half of all consumer spending in the United States. By the end of last year, this had fallen to less than one-third of total consumption.

- This is a trend that we are forecasting to continue, with services representing more than 70% of all consumption by 2029.

Share of Spending on Goods
Fiscal Year-End 1981 - 2029

Forecast by Beacon Economics
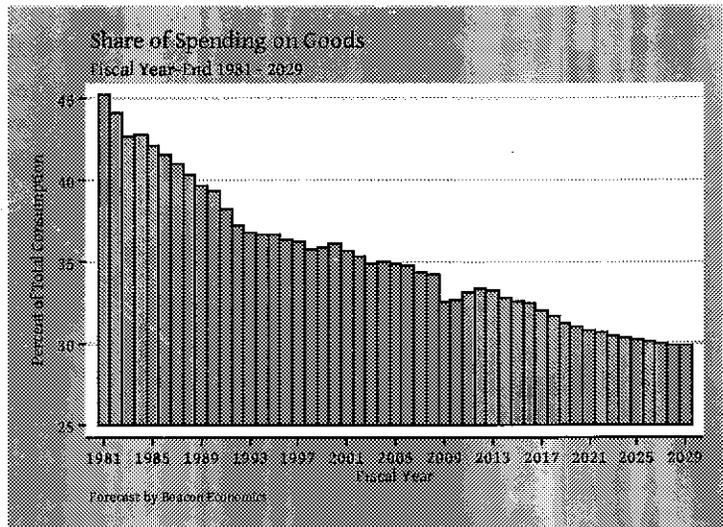
Inflation is another important driver of SMART's sales tax revenues, but it is the inflation of goods (the category of spending that SMART collects revenue from) that matters most. The rate of inflation for goods in the U.S. has remained consistently lower than the overall inflation rate. For example, in the 1990-91 fiscal year total inflation was around 5.5%, while the inflation rate for goods alone was only 3.7%. Even in low inflation periods like the present, total inflation was 1.1% last year while goods prices only grew by 0.4%.

- Our forecast calls for average annual inflation of about 2% per year overall, but less than 1% for goods resulting in slightly lower estimates in sales tax revenues for SMART.

Inflation Forecast
Fiscal Year-End 1994 - 2029

CPI ——— CPI for Goods

Forecast by Beacon Economics
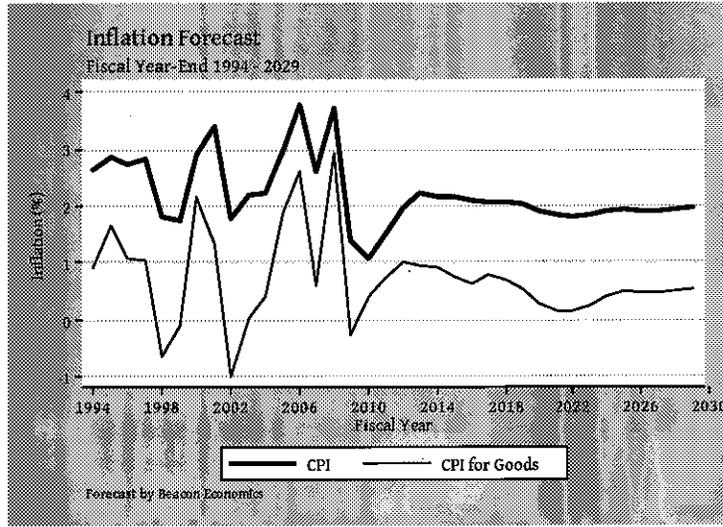
There are a few factors that could cause us to make significant changes to our forecast of SMART's revenues. This could include stronger than expected inflation due to deficit and debt issues nationally as well as excess liquidity in the banking system due to Federal Reserve's intervention into the market over the past few years. This would have the effect of increasing nominal goods spending and thus boost our forecast of SMART's tax revenues into the future. Currently, this is not an immediate risk on the horizon, given the still-high levels of unemployment

and the fact that most of the extra money poured into the system by the Fed is still being held by banks as excess reserves. Home prices may also see a "double-dip" scenario over the next year or so due to expiring government intervention in that market. We have already seen sales drop off as the first-time homebuyer tax credit expired, and eventually the Fed will be forced to raise interest rates to combat inflationary pressures as the economy picks up steam. This would lead to higher population growth into the region, and could influence our estimate of SMART's revenues upward.

Beacon has also reviewed the Mike Arnold memo submitted to SMART on behalf of the Marin Citizens for Effective Transportation. This memo rightly points out that SMART's tax revenues are influenced by several key factors including inflation, changes in personal income, and population. We agree that these are important determinants in estimating SMART's sales tax revenues and have included them in our model. We also note that there is a sizable variance in the estimates depending on the values chosen for these drivers. For example, the 19 scenarios posed in the Mike Arnold Memo give rise to a very wide range of potential outcomes for SMART's sales tax revenue. These range from $625 million between fiscal year 2009 and fiscal year 2029 on the low end to as high as $1.003 billion on the high end. One interesting point that is seemingly overlooked in the Mike Arnold Memo is that California has yet to institute sales taxes on services, which historically exhibit stronger inflationary pressure than goods. That memo uses an annual average inflation rate between 1.75% and 3.18%. For this reason, that analysis may be overstating the affect of inflation on SMART's revenues, and this accounts for some of the difference between the "middle estimate" from that memo and Beacon's forecast.

If you have any further questions, please do not hesitate to contact us.

Sincerely,

Jordan G. Levine
Research Manager
Beacon Economics

Acknowledgments

Research Staff

Brad Kemp, Director of Regional Research (Beacon Economics)

Jordan G. Levine, Research Manager (Beacon Economics)

Alex Lin Beale, Research Associate (Beacon Economics)

Brian Abe, Research Associate (Beacon Economics)

Eric Weitz, Information Specialist (Beacon Economics)

Document Format and Editing

Victoria Pike Bond, Director of Communications, Beacon Economics

Bob Kerstetter, LaTeX Consultant, Village Hiker Company

Cover Design

Andrea Haveman, 4 Corners Media

About Beacon Economics

Beacon Economics is home to some of California's leading economic researchers and advisors. From government agencies to investment funds, from non-profit organizations to private enterprise, our analysis has helped today's leaders make better decisions.

Our nationally recognized forecast has been called "eerily accurate" and was among the first to predict the collapse of the housing market and foretell the onset and depth of the current economic downturn.

Now and in the future, we are committed to equipping our clients with the tools and understanding essential for survival and success.

Services

- Economic & Revenue Forecasting
- Business, Industry, & Market Analysis
- Economic Development Analysis
- Ports & Infrastructure Analysis
- Public Speaking
- Expert Testimony

Contact

- **Jon Haveman**
  Founding Principal
  (415) 457-6006
  Jon@BeaconEcon.com
- **Christopher Thornberg**
  Founding Principal
  (310) 571-3399
  Chris@BeaconEcon.com
- **Sherif Hanna**
  Managing Principal
  (424) 646-4656
  Sherif@BeaconEcon.com

- **Victoria Pike Bond**
  Director of Communications
  (415) 457-6030
  Victoria@BeaconEcon.com