THE UNIVERSITY OF TAMPA
SYKES COLLEGE OF BUSINESS

A University of Tampa Semi-Annual Review
Summer 2015

the tampa bay economy

POST-CRISIS ECONOMIC UNDERPERFORMANCE – A RESULT OF CHRONIC DEMAND SHORTFALL OR A CONSEQUENCE OF SUPPLY-SIDE CONSTRAINTS?

By Vivekanand Jayakumar, Ph.D.

The annual growth rate of the U.S. economy averaged just 1.2 percent between 2008 and 2014 (and a subpar 2.2 percent during the post-crisis recovery phase between 2010 and 2014). This has led many to subscribe to the notion that the recent financial crisis and the associated recession forced American households and financial institutions to focus on deleveraging and rebuilding their balance sheets, which in turn curtailed private sector demand.

According to the proponents of the chronic demand shortfall viewpoint, past excesses associated with credit and asset bubbles had given way to a new era characterized by higher private saving and reduced borrowing. It has been argued that the private sector's focus on repairing balance sheets and overcoming negative wealth effects was the primary driver of weakness in household consumption and business investment expenditures. From a policy standpoint, it was claimed that expansionary intervention was essential to keep the economy afloat in light of the travails afflicting the private sector. Indeed, the federal government's stimulus measures and the Federal Reserve's unconventional monetary policies were largely oriented towards resuscitating aggregate demand.

A closer examination of trends in U.S. household balance sheets, however, suggests there might be more to the underwhelming economic performance narrative than just chronic demand shortfall. Figure 1.1 indicates that the deleveraging trend involving U.S. households was largely over by 2013 Q2 (household borrowing overall has been rising since 2013 Q3). Figure 1.2 clearly shows household net worth has exceeded the pre-crisis peak since 2012 Q3.

The headwinds arising from negative wealth effects resulting from collapse in asset prices during the crisis have largely been replaced by positive tailwinds arising from rising asset prices. Yet, output growth and household consumption growth continue to mostly disappoint (see Figure 1.3). Persistence of economic weakness, despite extraordinarily aggressive policy interventions and improvements in the private sector balance sheets, has rekindled interest in analyzing the long-term supply-side constraints facing the U.S. economy.

The last recession ended in the second quarter of 2009 and the severe threats facing the financial sector largely abated by the end of 2009. U.S. financial assets, aided by multiple rounds of large-scale asset purchases by the Federal Reserve, have recovered smartly. Credit

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Figure 1.1: Total U.S. Household Debt Balance – Composition ($ Trillions)
Source: Federal Reserve Bank of New York

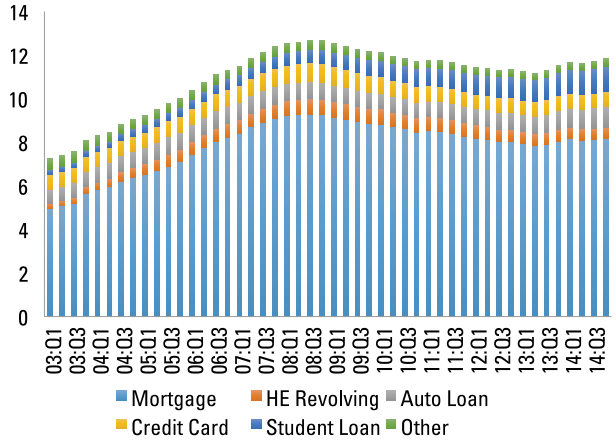


Figure 1.2: Total Household (and Non-Profits) Net Worth and Total Assets of Federal Reserve
Source: Federal Reserve Board

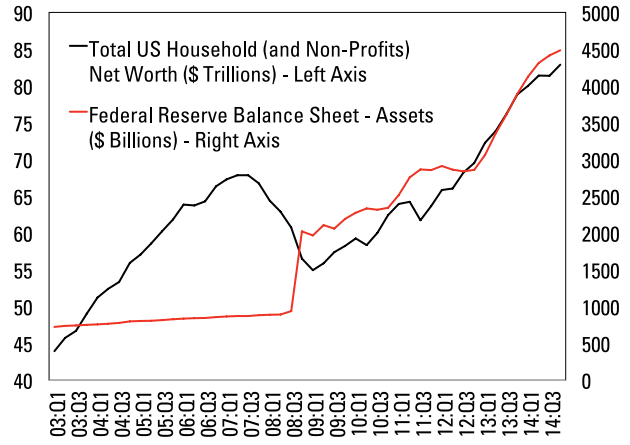


Figure 1.3: U.S. Real GDP and Real Consumption Expenditure (Percent)
Source: BEA

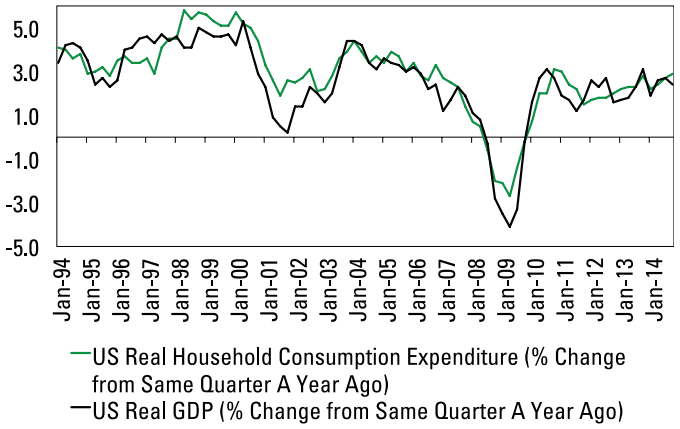
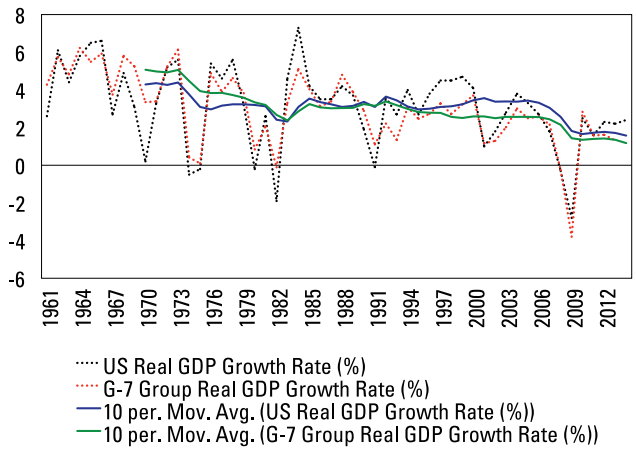


Figure 1.4: U.S. and G-7 Real GDP Rates (Percent)
Source: BEA and OECD



Post-Crisis Economic Underperformance – A Result of Chronic Demand Shortfall or a Consequence of Supply-Side Constraints?

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constraints have eased while the banking sector shored up its capital base, with some assistance from policymakers. Improvements in private sector and financial sector balance sheets, however, failed to prevent the subpar economic performance observed four, five and even six years after the recession officially ended.

Explanations that ascribe lagging performance solely on continuing shortfall in aggregate demand thus appear lacking. A long-run perspective (observe for instance the 10-year moving average of annual real GDP growth rates shown in Figure 1.4) suggests U.S. economic performance has in fact been subpar for more than a decade. Additionally, the experience of the U.S. is not unique — other advanced economies are also facing persistently slow growth despite numerous stimulus measures undertaken by concerned policymakers. It is essential to consider whether the long-run sustainable growth rate of the U.S. economy (and that of other advanced economies) has downshifted in recent years as a consequence of fundamental changes to the supply-side.

Economists generally believe long-term economic growth is fundamentally driven by increases in labor productivity and total factor productivity (TFP). Labor productivity is typically measured either as output per worker or as output per hour of work. TFP refers to the portion of the output generated that is not explained by the inputs used in the production process. Essentially, TFP captures the efficiency and intensity with which inputs are combined to produce output, and, as such, it incorporates improvements arising from a variety of sources (including innovation, research and development, better managerial practices, infrastructure upgrades and resource reallocation arising from stronger firms replacing weaker firms).

The U.S. economy has experienced a troubling decline in both labor productivity growth rates and TFP growth rates in recent years. Though the financial crisis and the Great Recession would serve as convenient excuses for the slowdown, it is worth noting that the downshift in productivity growth rates began well before 2008-09.

Post World War II (WW II) productivity growth trends in the U.S. can be distinguished into four phases — the post WW II strong productivity growth phase (1948-1973), the productivity growth slowdown phase (1974-1995), the information communication technology (ICT) driven resurgence in productivity growth rate phase (1996-2004), and the return to slow productivity growth phase (2005-present). As shown in Figure 1.5 and Figure 1.6, both labor productivity and TFP growth rates have been slow since 1974, except for a brief ICT related surge in the late 1990s and early 2000s. Several intriguing explanations have been offered for the recent slowdown in U.S. productivity growth rates.

Recent research undertaken by John Fernald of the Federal Reserve Bank of San Francisco and others suggest the observed swings in the TFP growth rates over the past two decades are largely related to developments involving ICT.

Figure 1.5: U.S. Labor Productivity (Percent Change; Annual)
Source: BLS

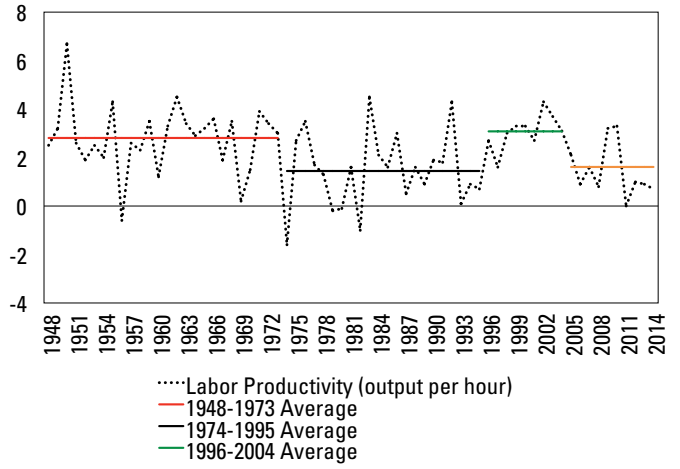


Figure 1.6: U.S. Total Factor Productivity – Cumulative Growth (Percent)
Source: Federal Reserve Bank at San Francisco

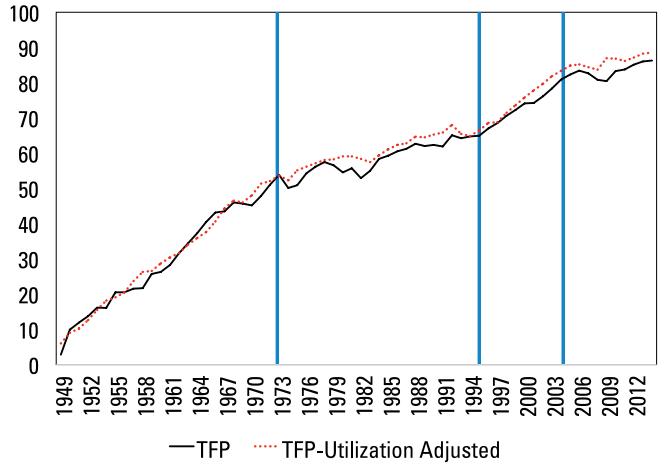


Figure 1.7: U.S. Real Non-Residential Private Fixed Investment (Percent Change Year-to-Year)
Source: Federal Reserve Board

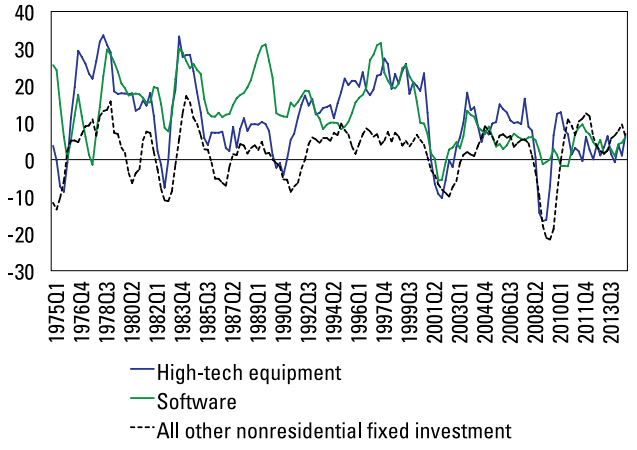
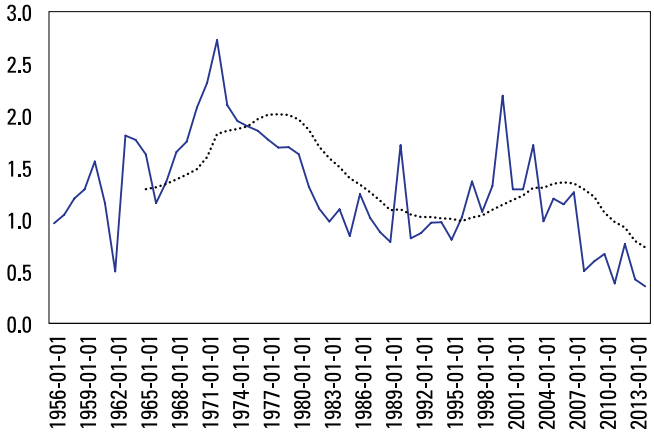


Figure 1.8: U.S. Working Age Population: Aged 15-64 (Annual Percent Change)
Source: Federal Reserve Bank of St. Louis



Sectors that either produced ICT or intensively used ICT played a crucial role in the surge in productivity growth observed in the late 1990s and early 2000s. Producers of computer hardware and software and internet and telecommunication network equipment experienced significant productivity improvements beginning in the mid-1990s, and this caused prices of ICT related products to come down sharply even as quality and performance improved dramatically. Improved and cheaper ICT then drove substantial business reorganization and efficiency gains across a broad swath of the U.S. economy (including in areas as diverse as retailing and finance).

However, by the mid-2000s much of the robust gains associated with the revolution in ICT had already been captured, and ICTs contribution to TFP growth quickly abated. It is worth noting that the gains in TFP growth associated with ICT came after nearly two decades of sustained investment in high-tech equipment and software (see Figure 1.7). Notably, as shown in Figure 1.7, there has been a sharp drop in real investment related to high-tech equipment and software, which may limit future productivity gains.

Meanwhile, the slowdown in labor productivity growth rate appears to be related to declines in TFP growth rates and in capital intensity. Simply put, labor productivity directly depends on TFP, capital intensity (which refers to capital per worker ratio) and labor quality (or labor composition). In recent decades, as improvements in labor quality have stabilized, contributions from TFP and capital intensity have become the crucial determinants of labor productivity trends. Table 1.1 (Note: BLS uses the term multifactor productivity instead of TFP) clearly indicates the recent decline in labor productivity growth rates and highlights the role of slowdown in TFP and capital intensity growth.

As previously noted, labor productivity and TFP are crucial for sustaining overall economic growth. An additional determinant of long-term production capabilities is labor supply. There has been considerable debate regarding the causes of the post-crisis decline in the labor force participation rate (LFPR) and the employment-population ratio (EPR). LFPR and EPR are influenced by factors such as the willingness of workers to engage in formal work, and, as such, they are influenced by short-term policies (e.g. extension of unemployment insurance, easier access to disability insurance) as well as long-term developments (e.g. aging of the population).

A less contentious measure of labor supply is the rate of change in the overall working-age population. If we consider the trend in U.S. working-age population (Figure 1.8), it is readily apparent that supply of labor has recently been growing at a much slower pace. Demographic shifts indicate that population aging will accelerate in the coming decades, which will impede improvements in growth rate of the working-age population and act as a supply-side constraint.

As the U.S. economy matures, long-term growth rates are likely to moderate. Except for a brief surge between 1996 and 2004, U.S. productivity growth rates have been relatively low since the mid-1970s. Expectations that high labor productivity growth rates and TFP growth rates can be sustained for extended periods of time may be unrealistic for a highly developed economy at the technological frontier.

As several prominent economists (such as Tyler Cowen and Robert Gordon) have noted, many of the low hanging fruits from the innovation tree have already been plucked, and consequently new and radical technological breakthroughs are proving to be increasingly difficult to achieve. A new wrinkle on the supply-side is the slowing growth rate of the working-age population, which is likely to constrain future labor supply. It is therefore difficult to imagine that the U.S. can return to its post WW II (1947-2000) average annual growth rate of around 3.5 percent. Lower trend growth rates will pose challenges for policymakers. Attempts by policymakers to artificially boost aggregate demand via credit and asset booms will prove to be illusory and may create financial instability.

Write to Professor Jayakumar at vjayakumar@ut.edu.

Table 1.1: Contributions to U.S. Labor Productivity Growth Rates (Compound Annual Growth Rates in Output Per Hour, Percent)
Source: BLS

	'87-'90	'90-'95	'95-'00	'00-'07	'07-'13
Labor Productivity Growth Rate (Private, Non-Farm Business)	1.6	1.6	2.9	2.6	1.5
Contribution of Capital Intensity	0.7	0.7	1.2	1.0	0.7
Contribution of Labor Composition	0.4	0.4	0.2	0.2	0.3
Contribution of Multifactor Productivity	0.5	0.5	1.4	1.4	0.5

THE TAMPA BAY ECONOMY: APRIL UPDATE

By Brian T. Kench, Ph.D.

The Tampa Bay metropolitan statistical area's (Hernando, Hillsborough, Pasco and Pinellas counties) growth continues to move forward. Gross sales are growing, employment is expanding and unemployment is declining. Existing home price appreciation continues and the pace of new home permits is improving.

Gross sales in Tampa Bay totaled $9.3 billion in January 2015, a 4.3 percent increase from January 2014 (see Figure 2.1). The year-on-year change in gross sales averaged 3.9 percent per month for 2014, which is slower than the 2013 average by 3.7 percentage points. The average year-on-year change in gross sales was 5.5 percent per month between 2012-2014.

Figure 2.2 illustrates Tampa Bay's job loss duration because of the Great Recession and the last two U.S. recessions. As of February 2015, seven years and two months have passed since the recession began in December 2007 and the area remains net negative 7,200 jobs, which is 0.5 percent of the employment level observed in December 2007.

The unemployment rate measures the ratio of those unemployed and looking for work divided to the labor force. In Tampa Bay and Florida, the unemployment rate (NSA) was 5.3 percent in March 2015, which was lower than the national unemployment rate (SA) by 0.2 percentage points and lower than the unemployment rate (NSA) for the state of Florida by 0.2 of a percentage point. The Tampa Bay unemployment rate fell in March 2015 relative to March 2014 by 1.1 percent. In March 2015, the unemployment rate (NSA) was 7 percent in Hernando County, 5.1 percent in Hillsborough County, 6 percent in Pasco County and 5.1 percent in Pinellas County.

Figure 2.3 reports Tampa Bay's 2013 employment shares by sector relative to the U.S. Higher ratios indicate the sectors in which Tampa Bay specializes. The analysis neutralizes common macroeconomic events in the dataset by comparing local sector shares relative to national sector shares. The analysis reveals that the top sectors in Tampa Bay are: insurance; wired telecom; banks; finance and insurance; financial activities; real estate; other telecom; physicians; amusements, gambling and recreation; professional and business services; ambulatory care; hospitals; and construction.

The S&P's Case-Shiller housing price index (HPI) for Tampa Bay is based on observed changes in home prices in the area. Figure 2.4 shows the high, middle and low tier HPI segments of the Tampa Bay housing market. The top third of Tampa Bay's housing market — the high tier segment — reached a maximum value of 225.96 in May 2006. The high tier declined 43 percent over more than five years to reach a low HPI value of 128.73 in September 2011. As of January 2015, this segment of the Tampa Bay housing market has increased nearly 30 percent from its low point. The middle third of Tampa Bay's housing market — the middle

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Figure 2.1: Gross Sales in Tampa Bay: January 2007 – January 2015
Source: Florida Department of Revenue

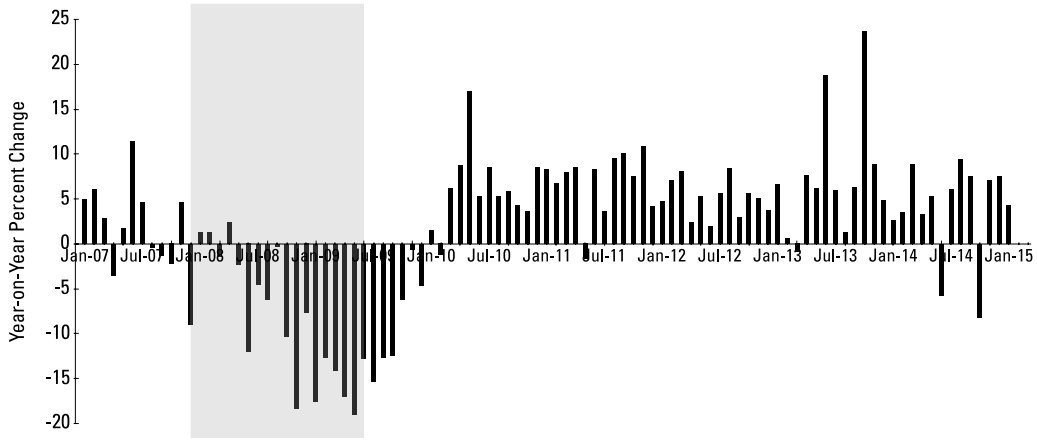


Figure 2.2: Duration of Job Loss in Tampa Bay
Source: Bureau of Labor Statistics

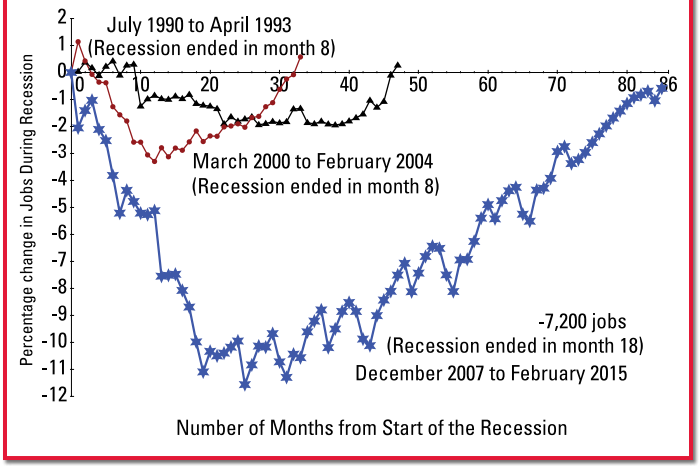
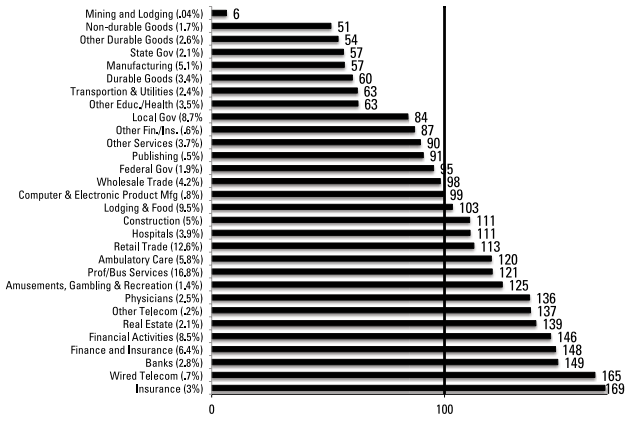


Figure 2.3: Tampa Bay Employment Share by Sector: 2014
Source: Bureau of Labor Statistics
Note: Sector share of Tampa Bay's labor market in parentheses.



The Tampa Bay Economy: April Update

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tier segment — reached a maximum value of 244.56 in June 2006. The middle tier declined 52 percent over more than five years to reach a low HPI value of 116.7 in November 2011. As of January 2015, this segment of the Tampa Bay housing market has increased 37 percent from its low point. The bottom third of Tampa Bay's housing market — the low tier segment — reached a maximum value of 279.07 in July 2006. The low tier declined 63 percent to reach a low HPI value of 102.93 in December 2011. As of January 2015, this segment of the Tampa Bay housing market has increased 60 percent from its low point.

Figure 2.5 shows the absolute number of privately owned one-unit residential permits for new homes in the Tampa Bay area. In May 2013, new permits totaled 882 — a level not observed since November 2006. However, the rate of growth in new permits slowed in the subsequent months as the Federal Reserve announced and then began the tapering of its stimulative bond-buying program. The 2014 average increased to 610 per month. As of February 2015, new permits totaled 626.

The Price-Rent Index (PRI) for Tampa Bay measures the price of area homes relative to their implicit rental value. The price component of the PRI is the S&P's Case-Shiller HPI for Tampa Bay. The rent component of the PRI is the owner's equivalent rent index (OWRI) for Tampa Bay, published by the Bureau of Labor Statistics. Each series is adjusted to one in 1987 and the PRI computes the HPI/OWRI ratio. A PRI greater than one means home prices are high relative to rents in Tampa Bay, while a PRI less than one means that home prices are low relative to rents in the Tampa Bay. Figure 2.6 informs the reader that from 2003 to 2007 home prices were high relative to rents. During the Great Recession, the PRI declined dramatically. By the end of 2011, the price-rent ratio reached a level not seen over the period of study. The 2014 PRI reveals that in Tampa Bay an individual could purchase a home and maintain a monthly payment for 95 percent of the cost required to rent the same home.

In summary, recent data continue to point in a very positive direction. Gross sales in Tampa Bay continue to grow on a year-on-year basis, albeit 2014 growth was slower than in 2013. The area continues to add nonfarm payroll jobs as the year-on-year change in nonfarm-payroll jobs has been positive since October 2010. Area unemployment rates are falling. And on net, the housing market continues to strengthen.

Write to Professor Kench at bkench@ut.edu.

Figure 2.4: Case-Shiller HPI: 1987 – 2015
Source: St. Louis Federal Reserve

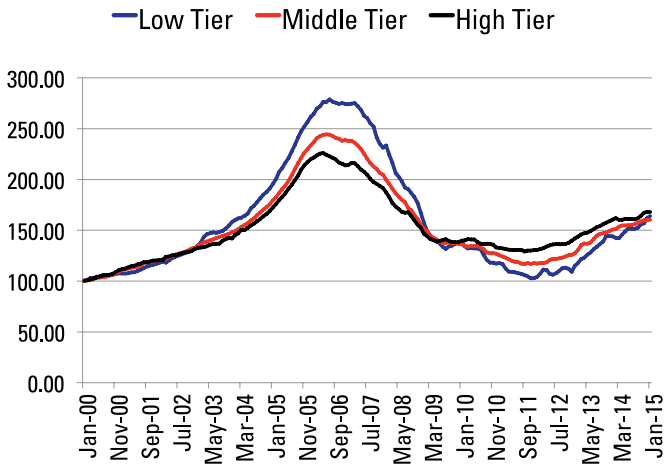


Figure 2.5: Number Residential Building Permits: January 1990 – February 2015
Source: U.S. Department of Housing and Urban Development

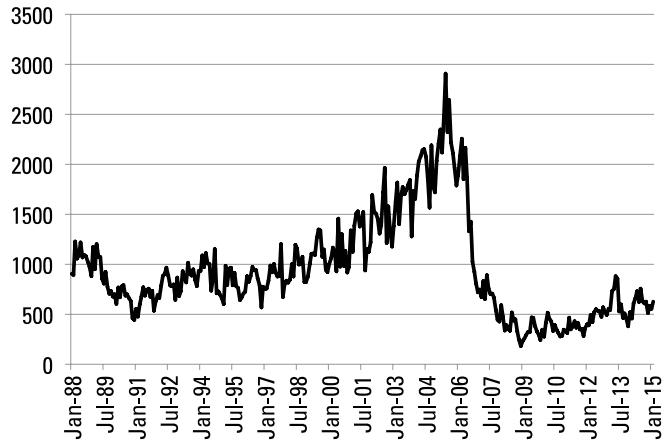
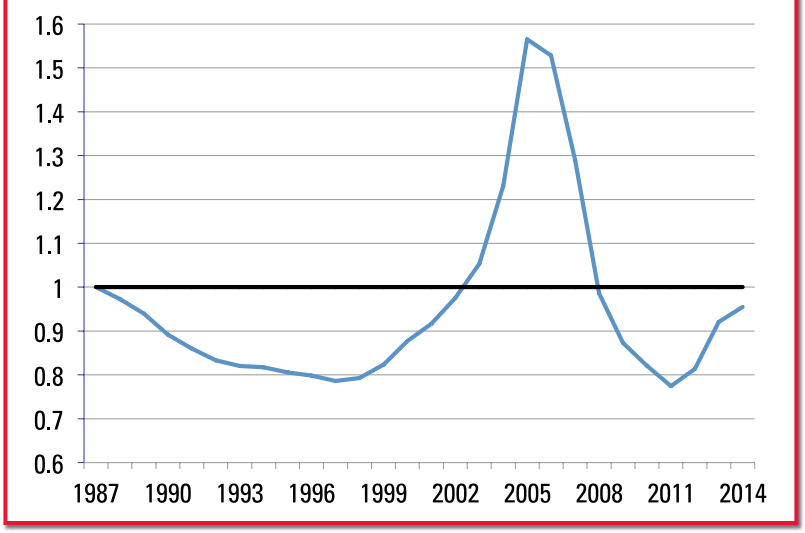


Figure 2.6: Tampa Bay's Price-Rent Ratio: 1987-2014
Sources: St. Louis Federal Reserve, Bureau of Labor and personal calculations



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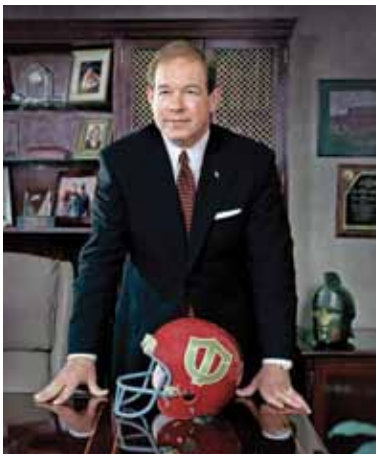

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