



**Construction Industry
Round Table**

A force for positive change in the design / construction industry

**United States
Construction Market Analysis
“Q&A” Heading into 2007**

Introduction

The United States construction market represents the largest such segment in the world with nearly \$1.2 trillion dollars of “construction in place” as of November 2006. While still extremely robust, the residential slowdown experienced during the year has trimmed overall construction spending growth to about 5.4% over 2005. Of this figure, approximately three-quarters is private market activity, while the remaining nearly one quarter is public sector projects (see, table below).

TOTAL NOVEMBER 2006 in millions:	\$1,184,139
Private Sector:	\$905,763 (76.49% of total)
Residential	\$589,277 (49.76%) 1 st time below 50% since Aug. '02
Nonresidential	\$316,486 (26.72%)
Public Sector:	\$278,376 (23.51% of total)
State/Local	\$258,717 (21.85%)
Federal	\$ 19,659 (01.66%)

Source: U.S. Census Bureau of the Department of Commerce

Current estimates place construction spending at about 8.5% of the United States’ GDP for 2006 (up from 8.0% in 2001 and 7.75% in 1996). Out-year projections place construction spending as a percent of GDP in the 9.0% range through 2009. Forecast place overall (private and public sector) non-residential construction spending growth at about 7.5-8.0% per year through 2009.

[ASIDE: A comparison table of total GDP dollars and construction spending creates two almost perfectly parallel lines over and extended 15 year period].

Question Regarding U.S. Markets

The following are the series of questions propounded on the U.S. construction market.

PUBIC SECTOR (Non-Residential Markets)

What is the most important driver of non-residential public construction spending? How forecast able is this variable? What are the best leading indicators to track which influence this variable?

The public sector market is dominated by construction projects in the transportation/highway arena, education spending, the power/water field, and finally environmental programs. Given all of these areas have a federal government role the leading driver is the federal budget outlays. (Many states will create matching funds to be expended with federal dollars to deliver projects in the public sector).

The federal budget is very capable of being forecast and usually has a steady growth component to it that defies even market downturns in private sector spending. Appropriations are a slow

process that are done on an annual basis at the federal level (and in most states), which rarely see cuts of any magnitude or duration. Longer term authorization bills usual forecast likely spending levels (e.g., SAFETEA-LU and the Energy Resource Bill).

The best leading indicators for the federal budget would be a sustained downturn that would affect tax revenues to the point where there would be a political will to cut spending. (Counter this possibility is that fact that the federal government is expected to spend into the red to put more dollars out on the street to pull the economy out of a recession and to create jobs. The most prevalent job creating aspect of the federal government is in the arena of public infrastructure projects!)

ASIDES:

- The federal budget is expected to grow around 6.5% per year.
- Interestingly there is no correlation between interest rates and federal deficit spending. The second most important indicator is the overall political atmosphere at the federal level (i.e. is there a will to constrain spending?)
- The National Association of State Budget Officers predicts positive end-year balances for the vast majority of jurisdictions (totaling about 4.5% in 2005 and beyond).

What is the expectation in the medium term for spending in the education infrastructure category?

If past trends are a clue to the future, data seems to indicate low to modest levels of growth in the education infrastructure arena extrapolating from the table depicted below:

U.S. Education Construction Spending (Seasonally adjusted \$ in billions)

Year/July	Private	Public	Total	% Change
2006	\$ 12.6	\$ 69.9	\$ 82.5	3.6%
2005	\$ 12.8	\$ 66.8	\$ 79.6	4.3%
2004	\$ 12.5	\$ 63.8	\$ 76.3	2.8%
2003	\$ 13.9	\$ 60.3	\$ 74.2	10.1%
2002	\$ 12.5	\$ 54.9	\$ 67.4	n/a
2001	\$ 12.5	n/a	n/a	4.2%
2000	\$ 12.0	n/a	n/a	17.6%
1999	\$ 10.2	n/a	n/a	n/a

Source: U.S. Census Bureau of the Department of Commerce. Data was not kept for separate public sector spending markets prior to 2002.

How do presidential elections influence the spending cycles?

Not as much as one might expect on the face of things, since both party’s Presidents must go to Congress for all spending authority – thus, it often turns on who is in control of the legislative branch and their political will to restrain spending at the federal level.

Notwithstanding, the growth in government spending (not necessarily infrastructure construction spending) has been very steady and high by historic percentage numbers over the past seven years with Republicans in control of both the White House and House of Representatives. (Common belief and wisdom is a Democratic Party controlled House/Senate would result in even a higher level of spending – something that will be tested in the 110th Congress).

[ASIDE: There is enormous pressure on the White House to “reign-in” spending, which they have done to a certain extent when it comes to non-security discretionary spending (projected to increase only 1.0% in 2006), that means a squeeze on certain non-defense infrastructure spending. The losses suffered in 2006 can be partially attributed to the lack of fiscal discipline exhibited by the Republicans. It will be interesting to see which party tries to seize this issue for crucial 2008 elections].

How do typical local/state tenders for construction projects work? How are big project decisions made? How are contractor/key vendor decisions made and how long do they take? How reversible/cancelable are these decisions (if economic conditions deteriorate)?

Typically, state/local governments operate under a strict set of procurement policies that are set in state statutes (a uniform code has been promoted over the past few years to create some standards among states) and are usually administered by the agencies responsible for major infrastructure expenditures (e.g. state Departments of Transportation and/or Capital Improvements). Contracts are generally publicly announced (more often now in an electronic format) with interested parties responding in a timely manner.

Virtually all states use a qualifications-based selection method for design services (A/E) and either a straight low responsive bid or some form of best value (usually a design/build) process for construction contracts.

[ASIDE: An AIA study indicates that 14 states allow D/B for all agencies on all types of projects (AK, AZ, FL, GA, HA, ID, KY, NV, OR, SD, TN, UT, VA, and WV). Another ten widely permit D/B (CA, CT, DC, MD, ME, NM, PA, TX, VT, and WA)].

How long does it take for construction spending to decline if economic conditions (tax receipts) decline?

If there ever was a true decline in tax receipts at the national level, it is very likely that the federal government would spend in the red (i.e. deficit) seeking to create economic activity with infrastructure projects. [In 25 years of monitoring the federal budget and infrastructure spending, there has never been a sustained or meaningful decrease in spending].

At the state level, their budgets are more susceptible to fluctuations, including down-turns that cause short term decreases in infrastructure spending. (Often the trust funds and other capital asset accounts are used to off set some or most of the shortfall in operating budgets). Usually, these impacts are for a short duration (one to two years) after which growth spurts occur or the tax revenue side is enhanced.

PRIVATE SECTOR (Non-Residential Markets)

Why isn't retail construction spending more volatile?

The size, scope, and wealth of the U.S. economy explain why the retail construction market isn't more volatile. The U.S. economy has gotten to a point in the past two decades where it now more often than not experiences slow-downs in certain sectors and regions but not overall. Thus, with such a huge GDP, which is very customer oriented, retail construction can weather slow-downs,

especially since the Federal Reserve has become very aggressive with interest rate manipulation. (Meaning, when the economy slows, the Fed will drop interest rates – which makes longer term capitol asset improvements and retail development much more affordable and attractive to investors!) Forecasts have construction growth in this area at 7% for the next four years.

[ASIDE: One out of every five American workers is employed by the retail industry. In 2004, total retail sales topped \$4.1 trillion!]

Why is office construction spending so much more volatile than the other segments? Why were there sustained growth in the 90s and what drove this?

One of the key reasons for office development is white-collar employment growth (mostly for larger, inner city locations, which gets one into demographic shifts that have occurred in the past two decades). Given this factor, coupled with local economic forecasts, expected employment trends, and costs of materials as well as operating/tax expenses often determine vacancy rates and thus the need for further expansion. These factors tend to be more volatile than other segments of the construction market and often send signals that may be misleading or create expectations that will chill development/investor dollars from flowing into this market segment.

The growth experienced in the 1990s can be attributed to three major elements: (1) pent-up need after a credit slump in the early 90s had put a damper on office construction, (2) explosion of the service industry sector in the U.S. economy requiring new facilities/office space, and (3) raise of the real estate investor/commercial rental class.

How should one think about capacity when developing forecast models (especially in relation to long boom of the 90s)? Why were vacancy rates so high in the late 80s?

A steady growth is being predicted for the office construction market at a sustainable rate of 8-10% with stronger results along the coasts, slower in the Midwest. Forecast models should keep a close eye on expected employment trends (i.e., what predictions/estimates are being forecast for economic activity/growth will foreshadow employment). Vacancy levels are another predictor as to whether investors/developers will move money in or out of the office building market. Finally, the unprecedented concern about security/terror attacks may affect this market in a disproportional manner to other infrastructure spending areas.

Vacancy rates were high in the 80s because of overbuilding, speculation, oil price collapse, and the beginning in full force of the demographic and economic trend to a more service oriented workforce no longer required to work in high-rise office complexes found in major metropolitan centers.

What drives manufacturing construction spending?

The overall strength of the U.S. economy, the shifting demographics of out-sourcing, and the global economy have the greatest impacts on the manufacturing market segment. When these three align negatively (as they did in the early 2000s) the segment experienced five consecutive years of decline (1999-2003). Big ticket items such as automobile, aerospace, and machinery are keys in the market area – when they are in good health they help keep this segment afloat.

Off-setting these macro factors are the internal needs to: (1) improve or expand existing facilities to upgrade for productivity gains, (2) health and safety standard upgrades, and (3) the introduction of new goods in the U.S. customer market.

What important geographical trends does one need to be aware of and why not look at a regional level? Is it a worthwhile exercise?

The most noteworthy geographical trend for the U.S. is the continued growth and vitality of the Southeast and Southwest and along the two coasts. The demographic growth in these areas (and aging population) will dictate what development will be needed to meet the public requirements. (Older slower growth areas will see more retrofitting and less new development). However, beyond this when looking at regional construction growth in a percentage form, the regions appear very similar (7-8% over the next few years). In absolute dollars the larger sums will be spent in the heavier populated areas.

How much of the unusual long boom in non-residential construction in the 90s was related to the unusual long boom in the new residential construction cycle?

There appears to be no particular correlation between the two market areas, that is to say, they are not good (or even adequate) predictors of each others performance. In fact, there are enough examples of divergence to suggest they may actually work independent of each other (short of some overwhelming economic condition –which did not show itself in the seven year period of 1993-1999).

U.S. Construction Spending (Seasonally adjusted \$ in billions)

Year/Dec.	Residential	% Change	Non-Resid.	% Change	Public Non-R	% Change
1993	\$ 248.4	n/a	\$159.6	n/a	\$121.1	n/a
1994	\$ 261.7	5.35%	\$165.3	3.45%	\$128.3	5.95%
1995	\$ 252.5	(3.52%)	\$182.1	10.16%	\$129.4	0.86%
1996	\$ 287.1	8.55%	\$208.0	14.28%	\$146.1	12.91%
1997	\$ 302.7	5.43%	\$218.4	5.0%	\$147.8	1.16%
1998	\$ 324.3	7.14%	\$243.7	11.58%	\$164.3	11.16%
1999	\$ 379.1	16.90%	\$257.4	5.62%	\$182.8	11.26%

Source: U.S. Census Bureau of the Department of Commerce.

In fact, if one looks at 1995 residential spending went down, while private sector non-residential spending grew at one of its most rapid rates in the seven year period (10.16% vs. -3.52%). Additional evidence can be found that no correlation exists when comparing 1999 results (the strongest for residential while private sector non-residential performance was modest at best).

At best, one might analyze the data to see if a lag is present between the markets (or echo boom) that may create a model upon which to predict future trends (albeit not apparent from the table above)!

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Resource Materials:

FMI's *The 2005-2006 U.S. Markets Construction Overview*

McGraw-Hill Construction's *Construction Outlook 2006*

The U.S. Census Bureau of the Department of Commerce