

THE DAWN OF SUPREMACY:

The Emergence of the
Billion Dollar Boys
in Nonresidential Construction



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Billion Dollar Boys
in Nonresidential Construction

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“The worth of the state, in the long run, is the worth of the individuals composing it.”

-John Stuart Mills

The driving force that enables the United States to stand alone as the largest economy in the world is competition. In analyzing the competitive nature of any sized market, one can gather general information about how the respective market operates. This paper analyzes the market structure of the nonresidential construction industry and how it is changing. The analysis will focus on the Billion Dollar Boys (which are defined as any firm reporting revenue in excess of \$1 billion) and the percentage of the total nonresidential construction market they capture. The results of this study show a considerable change in the total revenue of firms

reporting in excess of one billion dollars, the market share they capture, and the competitive nature of the industry moving forward. This study includes the following findings:

- The largest firms in nonresidential construction have begun to exhibit signs of dominance within the industry.
- Work being captured by smaller firms has not grown in proportion with nonresidential construction, and will begin to shrink.
- The Billion Dollar Boys will continue to gain market share until the economy rebounds and aggregate demand substantially increases.

The great expansion that took place from 1960-2005 to accommodate the growing population of the baby boomers has propelled the nonresidential construction industry to become a vital aspect of the United States' economy.





Most companies are either solely run by a charismatic owner or a family, and usually do not pursue work outside their local region.

The great expansion that took place from 1960-2005 to accommodate the growing population of the baby boomers has propelled the nonresidential construction industry to become a vital aspect of the United States' economy. The construction industry as a whole makes up around six percent of Gross Domestic Product. The boom in nonresidential construction over the last few decades caused the market and its firms to grow exponentially.

Throughout the great expansion, the business atmosphere in the United States has endured significant change from a domestic good producing powerhouse to a service intensive country. The technological advancement coupled with emerging countries around the world created the global economy we see today. The market for goods and services in the United States went from being largely domestic with intense competition inside the borders to large conglomerates that operate globally.

The market structure of the nonresidential construction industry has been unique because of its seemingly perfect competitiveness. The four main components of a perfectly competitive market are:

1. The ease in which a firm can start a new company or close one.
2. A large number of companies present in the market

3. Readily available information
4. No single firm controls the price of services.

All of these factors have held true in this market for generations. In the last 17 years, however, the market has begun to show signs of being less competitive due in part to the fact that larger firms are securing larger amounts of work.

Due to the private nature of the industry, studying the overall market as well as individual firms' profit and revenue numbers is very challenging. Most companies are either solely run by a charismatic owner or a family, and usually do not pursue work outside their local region. The Engineering News Record's Annual Top 400 General Contractors has made it possible to analyze revenue numbers. These revenue numbers will be used for the purpose of this study.

This study will uncover the beginnings of firm dominance in nonresidential construction, and the implications for firms of all sizes in the future. The market will be analyzed from a macroeconomic view, as well as at a firm level to investigate why this dominance has begun to surface, the repercussions that growing market share will have on smaller firms, and what the future holds for the industry.

II. Overview of the Nonresidential Market

Note: 2009 and 2010 values for Nonresidential Put in Place are estimates. Public Nonresidential Categories include: Education, Transportation, Highway and Street, Sewage Waste and Disposal, and Water Supply. Recession dates provided by the Nation Bureau of Economic Research (nber.org). Sources: (Census.gov), (Engineering News Record)

Figure 1
Domestic Top 400 and Nonresidential Put in Place

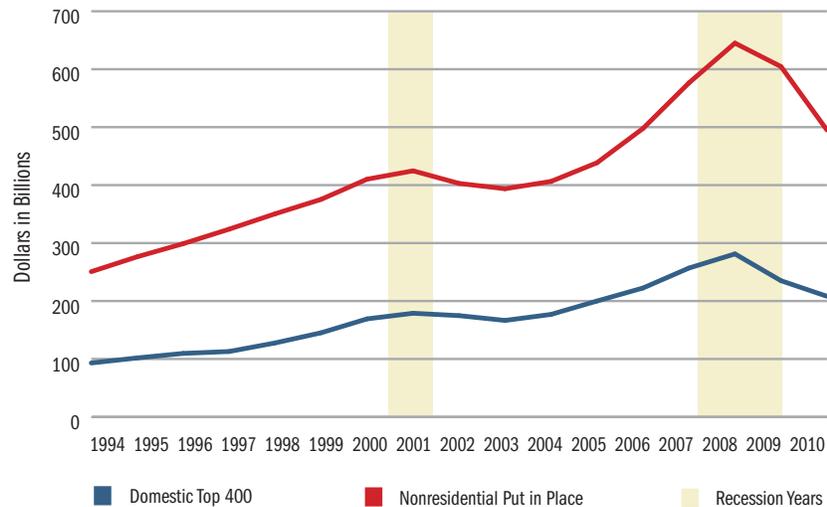


Figure 1 shows the relatively steady growth in nonresidential construction and the Top 400 over the last 17 years. The industry generally lags the overall economy by 18 to 24 months, as shown by the recession of 2001 and the most recent recession. Construction went through certain fluctuations during this seventeen year period, but growth was sustained even with short periods of losses in certain market sectors of construction. The main causes of this sustained growth were technological innovations, peaks of population, spending cycles, and the ease of acquiring credit.

Major technological innovation in the 1990's led to a whole new age of commercial construction. A significant amount of building came from "big box" warehouses like Home Depot, Wal-Mart, Costco, and

Amazon to accommodate the baby boomers who were approaching their peak spending cycle. With corporations like these attempting to meet unprecedented levels of demand, general contractors would often strategize to become preferred vendors for owners and developers alike. The contractors would lock themselves into these "preferred vendor agreements" to provide high quality projects at a fair price, in exchange for reduced competition. This strategy was successful as it provided contractors with consistent work over an elongated span of time.

As we entered the 2000's decade, commercial building began to cool, and many believed that nonresidential construction was headed for a downturn. However, with improvements in power plants and the construction of "peaker plants",



Health care, education, transportation, strip malls, and condominiums saw massive gains from 2004-2008, allowing the nonresidential market to increase put in place numbers by over 51% in just a half decade.



power seemed to offset the cooling of the general building sector. Along with investments in power came the dawn of the internet and the dot com era where tech companies rapidly expanded, which provided general contractors with substantial work in industrial, telecommunications, data centers, and chip plants.

As cyclical fluctuations in general building and power were occurring, auto-makers also began to build large scale plants throughout the United States in correlation with future demand. After the short recession of 2001-2002 which did not really hit the construction industry until the country was in recovery, nonresidential construction began to boom. Health care, education,

transportation, strip malls, and condominiums saw massive gains from 2004-2008, allowing the nonresidential market to increase put in place numbers by over 51% in just a half decade. For an industry that has grown at a six percent pace annually over the last 40 years, this was a massive boom for nonresidential construction.

Strategic plans, political legislation, easy access to credit, and economic prosperity all lead to the massive influx of capital into nonresidential construction. Firms were living in the moment and many were not concerned with the future. Then, the massive wave that was the Great Recession hit and left firms which did not plan accordingly under water.

Figure 2
Construction Highlights: 1994-2010

Analysis of The Billion Dollar Boys



Major technological innovation in the 1990's led to a whole new age of commercial construction. A significant amount of building came from "big box" warehouses like Home Depot, Wal-Mart, Costco, and Amazon to accommodate the baby boomers who were approaching their peak spending cycle.



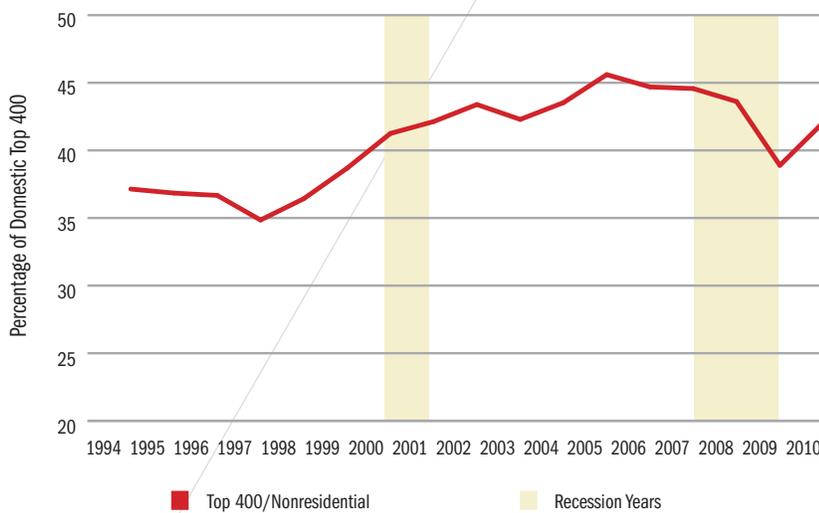
Although the firms in ENR's Top 400 have changed over the years, the general makeup pertaining to work mix and size has remained relatively consistent. From 1980-2008, there have been over 1,315 firms that have reported on ENR's Top 400.

On average, that is almost 370 new firms reporting every decade and 37 different firms from year to year. The amount of the total nonresidential construction market that the Top 400 encompass has stayed relatively consistent throughout the years. In 1994, the Top 400 captured 37% of the total nonresidential put in place, and averaged 40% over the 17- year span (Figure 3).

Firms reporting more than a billion dollars a year in revenue tend to be the most diversified, securing work in three or more market segments. Firms with revenue of at least \$500 million or more a year are usually sustaining backlog in more than one market segment. If a firm maintains revenues over \$500 million and only works in one particular market, they usually perform work internationally to sustain backlog. The firms with revenues between \$100-300 million are mostly specialized in one segment, most often general building or transportation.

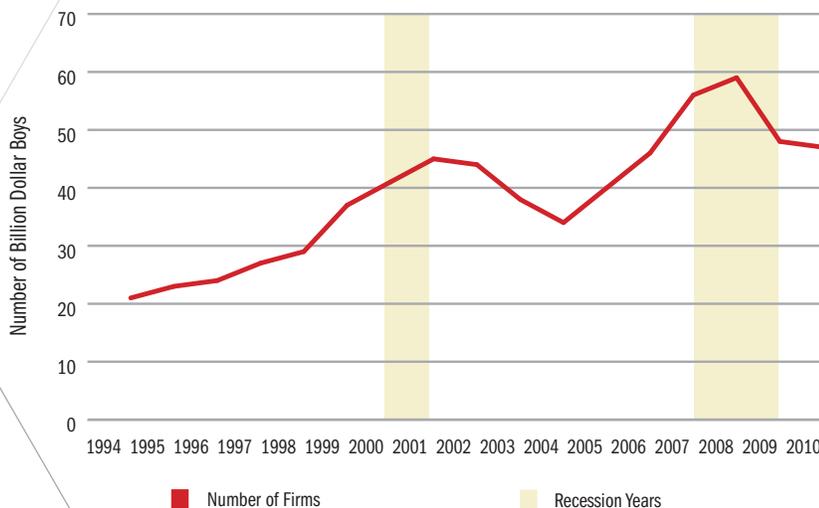
Figure 4 shows that in 1994 there were only 21 firms reporting revenues over \$1 billion, and that number had almost tripled to 59 in 2008. This may seem staggering at first, but the firms tallied each year are reporting on a nominal basis. Taking inflation into account, the number of firms doing over a billion dollars has stayed consistently around 45 per year. However, what has not stayed stable is how much of the market they have captured.

Figure 3
Domestic Top 400 as Percent of Nonresidential Put in Place



Sources: Engineering News Record (McGraw Hill Publishing), (Census.gov).
Note: 2009 and 2010 values for Nonresidential Put in Place are estimates. Public Nonresidential Categories include: Education, Transportation, Highway and Street, Sewage Waste and Disposal, and Water Supply. Recession Years determined by National Bureau of Economic Analysis (nber.org)

Figure 4
Number of Billion Dollar Boys

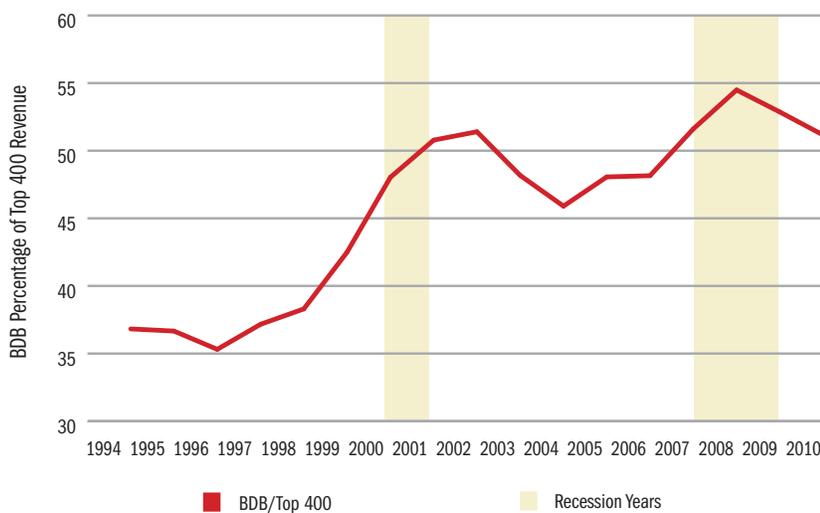


Source: (Engineering News Record) Recession Years determined by National Bureau of Economic Analysis (nber.org)



With growing market share, smaller firms must either diversify or expand to keep up with the larger firms in the same competitive market, or restructure their company in order to accommodate the decrease in number of projects realistically available.

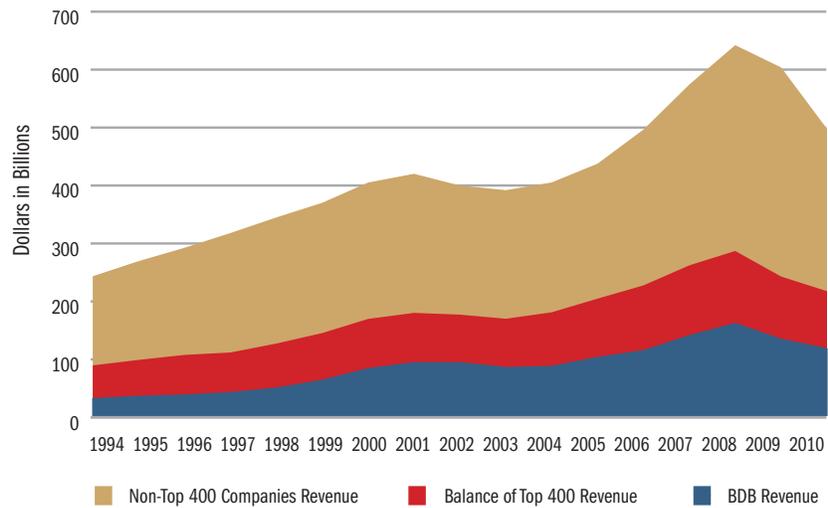
Figure 5
Billion Dollar Boy's Share of Top 400 Revenue



Source: Engineering News Record
Recession Years determined by National Bureau of Economic Analysis (nber.org)

In 1994, The Billion Dollar Boys made up slightly more than 35% of the total revenue reported in ENR's Top 400 as Figure 5 depicts. This number has steadily increased and hit a high of 54% in 2008. Consequently, there are about the same number of firms reporting large revenues every year, but their share of the Top 400 like the nonresidential market, is growing consistently. With growing market share, smaller firms must either diversify or expand to keep up with the larger firms in the same competitive market, or restructure their company in order to accommodate the decrease in number of projects realistically available.

Figure 6
Work Distribution By Firm Size



Source: (Engineering News Record), (Census.gov)
Note: Nonresidential Put in Place is the Census Bureau's reported estimate

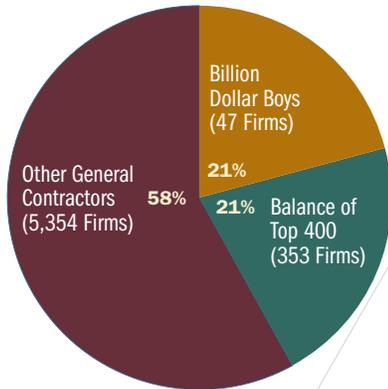


Figure 6 shows that the Top 400 general contractor's share of the nonresidential market (red and blue combined) has remained around 40% over the 17-year time span. On the contrary, the Billion Dollar Boys (blue) only accounted for about 13% of nonresidential put in place in 1994, and in 2010 were responsible for over one fifth of market activity. In a market where tens of thousands of companies compete for work, it is astounding that a small number of firms are capturing over 20% of the work available. The analysis leads to the conclusion that the Billion Dollar Boys are capturing a larger share of the Top 400 and the nonresidential market as a whole.

What seems to be startling about the put in place numbers is that despite the boom in the late 90's and middle of the past decade, the amount of work available to companies that are outside of the Top 400 has averaged \$292 billion. Figure 6 depicts this by showing that in real 2010 dollars; there was an estimated \$286 billion of work available to companies that were not in the Top 400 in 2010.

The Associated General Contractors of America (AGC) is one of the largest organizations for general contractors in the United States. As of June 2011, the AGC reported 5,754 general contractors in their membership directory. This is not the exact number of general

Figure 7
2010 Distribution by Firm Size



Source: (Engineering News Record), (Census.gov)
Note: Nonresidential Put in Place is the Census Bureau's reported estimate

contractors in the country, but for analysis purposes let's assume that there are in fact only 5,754 GC's in the United States. In 2010 alone, the Top 400 secured \$208 billion in domestic revenue, which left about \$286 billion to the rest of the 5,354 contractors (Figure 7). Furthermore, the 47 contractors that reported over one billion dollars of revenue secured \$106 billion. That means that less than one percent of the theoretical 5,754 general contractors in the nation are capturing over one fifth of all the work completed, and six percent of the contractors (Top 400) are capturing 42% of work put in place.

As seen during the tech boom of the 90's, the smaller firms received more work due to one of the strongest and longest economic expansions in United States history. It was an ideal scenario for contractors of all sizes because the large volume of high value projects kept the Billion Dollar Boys busy and left the smaller jobs alone. However, as some of the mega projects began to dissipate in the middle of the 2000's, smaller firms witnessed their work decline at an alarming rate. This translates to less work being captured by small firms while the Top 400 increased by over 60% simultaneously.

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IV. Explanations for Growing Market Share



The lack of a succession plan is another reason why firms may exit the industry.

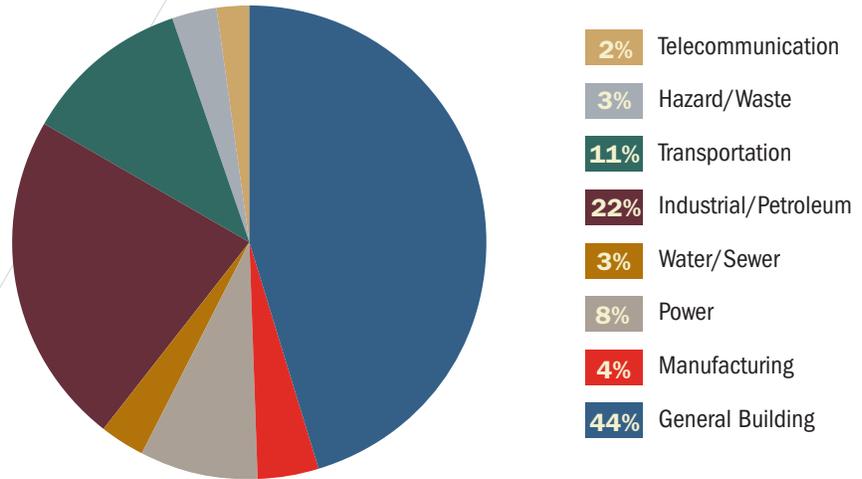
The nonresidential construction industry was as close to perfectly competitive as possible before the great expansion that was the 1990's. The apparent decline in work available for companies with revenues lower than the Top 400 could signal the beginning of a shift in market structure for nonresidential construction. There are several strategic factors that would cause large firms to capture more market share in the nonresidential construction industry:

Entry and Exit: The natural business cycle will always cause fluctuations in the work available to smaller companies as well as the entry and exit of firms in the market. The inability for smaller firms to become sustainable as well as the length of time required for newer firms to become established could

be a barrier to entry. Firms exiting the market may do so by simply mismanaging their finances and overleveraging, which is a common root in the failing of companies in nonresidential construction. The lack of a succession plan is another reason why firms may exit the industry. A firm may also abruptly exit the industry due to failure on a project. Even though there are not many barriers to entry in nonresidential construction besides capital and labor requirements, the risk associated with construction is high enough to deter new firms from entering the market.

M&A's: Mergers and acquisitions have propelled some firms to new heights in nonresidential construction. This tactic of expansion has always been prevalent in the industry, with notable firms

Figure 8
Average Diversification for the Billion Dollar Boys



The cost associated with diversification is often a deterrent for smaller firms.

executing large and small scale mergers and acquisitions that enabled them to become a greater force in the industry. During the massive economic boom that occurred in the mid and late 1990's, firms were seeing more work than they had in years. The rapid technological expansion and need to service customers ignited their desire to flourish into new cities, states, and regions in order to keep up with demand. A common strategy deployed was to identify established firms in target regions and acquire them. The benefits from the acquisition provided a parochial access to a new market, established client base, and quality local personnel. All of these aspects adversely affect the main attributes of a perfectly competitive market, which is a specific reason for the market shift.

Diversification: Smaller firm's inability or unwillingness to diversify could be another explanation for the ascendancy from the Billion Dollar Boys. Figure 8 shows the average diversification for the Billion Dollar Boys over the last 17-years. Most of the BDB are widely diversified in their work, and this helps control for the cycles and fluctuations that occur within market segments. The cost associated with diversification is often a deterrent for smaller firms. Hiring the necessary talent, purchasing the new equipment, and securing contracts needed to outpace the startup costs all make diversification in nonresidential construction risky. The risk linked to being diversified is often why smaller firms only specialize in one or two markets. The smaller firms often get enough work to stay alive, but feel no need to jump into a new market

segment because the opportunity cost is too high. A merger can benefit smaller firms because they may feel more secure being owned by a large conglomerate, while still overseeing daily operations. A benefit to the smaller firms is that a merger broadens their horizons and permits them to capture work previously unavailable to them.

These strategic principles: Entry and exit, mergers and acquisitions, as well as diversification are all components that permitted the growing market share over the past

decade and a half. The most crucial principle shared by successful firms is the evaluation and development of talent. The titans of the industry who have remained superpowers in nonresidential construction have shown true sustainability through evaluating and developing their future leaders. The Billion Dollar Boys will continue to expand their share of the market as long as their leadership adheres to these strategic principles. As a result, smaller firms are going to have to play an almost impossible game of catch-up if they desire expansion.

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The Great Recession has opened firms' eyes to the impact that a severe downturn can have on their ability to maintain sustainable levels of backlog. At the height of the latest recession, nearly a quarter of the entire construction work force was unemployed (Figure 9). Projects were either put on hold or cancelled all together, and new projects were almost nonexistent due to the frozen credit market and oversupply.

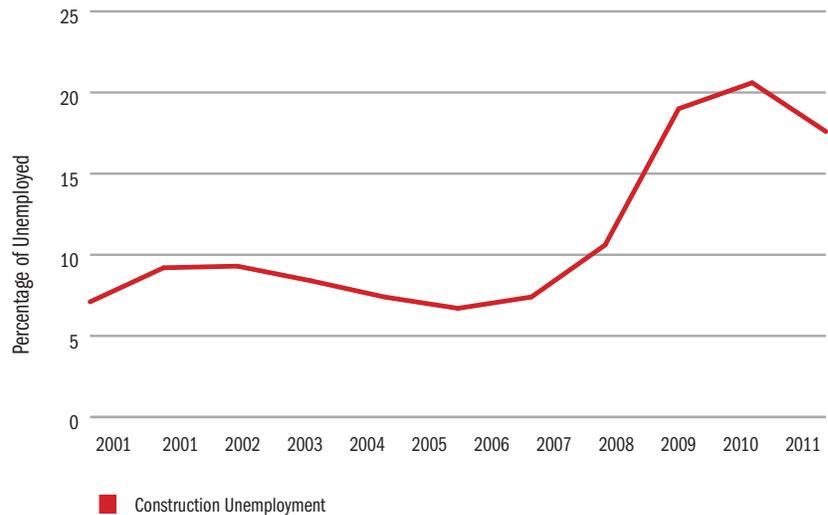
The economic climate has shown some bright signs, but the future for the nonresidential construction industry is cloudy at best for most

firms. The firms that have the most optimism for the next decade are The Billion Dollar Boys. A growing need for infrastructure reform, alternative energy, large retail, and manufacturing could spur mega projects. The majority of these projects will fall into the hands of the firms that survive and have the necessary resources. This will most likely increase the market share of the largest firms. The economic factors mainly attributed to the assumption of future growing market share are: financing and leveraging, competitive bidding, the transition to a new generation, and fiscal policy.



A growing need for infrastructure reform, alternative energy, large retail, and manufacturing could spur mega projects.

Figure 9
Construction Unemployment

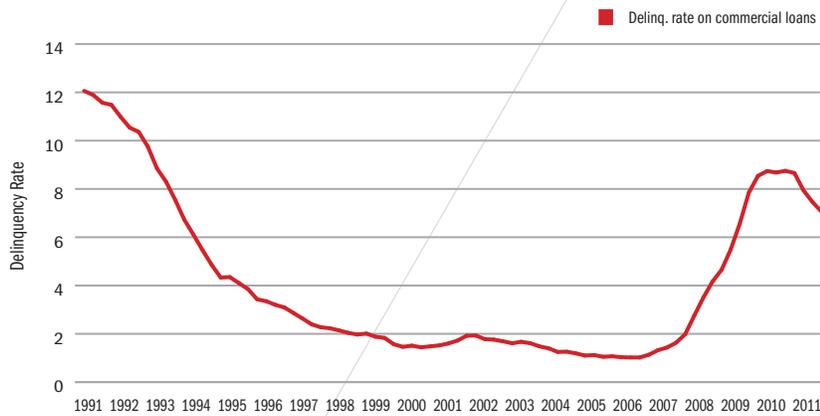


Source: (Bureau of Labor Statistics)

Figure 10

Delinquency rate on commercial real estate loans

(excluding farmland), booked in domestic offices; All commercial banks (Seasonally adjusted)



Source: Federal Reserve (federalreserve.gov)

Financial Leveraging

The credit markets are beginning to loosen slowly from the heart of the recession. The health of lending and credit is crucial to nonresidential construction, especially private commercial projects. However, lending and financing practices that existed throughout the last 20 years are probably never going to return. The housing bubble that burst in 2007 was the spark that initiated the deep recession, but growing delinquent commercial loans (Figure 10) and mortgages have many experts fearing a similar fall in commercial real estate. Congress passed a financial reform bill that makes banks more accountable for lending at all levels, which could prevent the fall of the commercial market by tightening lending practices. Ultimately, the financial reform bill makes banks more risk averse, and higher levels of commercial delinquencies will only make banks more leery to lend to developers. In turn, developers and owners will be more risk averse, and may require contractors to bond projects more often. This will benefit contractors with larger bonding capacity, which, in most cases are the larger firms in the industry.



The health of lending and credit is crucial to nonresidential construction, especially private commercial projects.

When executives were questioned about what changed during the last few years, most said the competition was fiercer than they have ever seen.

Competitive Bidding

This recession has taught contractors a great deal about the intense competition that exists in the nonresidential construction industry. When executives were questioned about what changed during the last few years, most said the competition was fiercer than they have ever seen. The local and state projects that small firms once were able to secure easily are now being bid on by firms in the Top 400. These events have created a trickle-down effect, which puts immense downward pressure on smaller firms. Combining the hypercompetition and tight lending practices potentially leads to smaller firms being forced out of the market.



Fiscal Policy

In 2050, the citizens of the United States are going to look back at the 2008 election to see how they arrived at their current state. Not since the 1930's has there been a politically dense set of issues clouding the world. The most important issue that concerns the construction industry is the national debt. Nations in Europe that have had ballooning deficits for decades are now beginning to feel the disastrous penalties for their actions. The United States is also doomed to this fate unless drastic fiscal initiatives are put in place. Debt to GDP ratios may surpass 100% in 2011, the first time this has happened in the United States since World War II (Figure 11). Republicans and Democrats are largely divided on how to cut the deficit and overall debt in the United States. Due to political

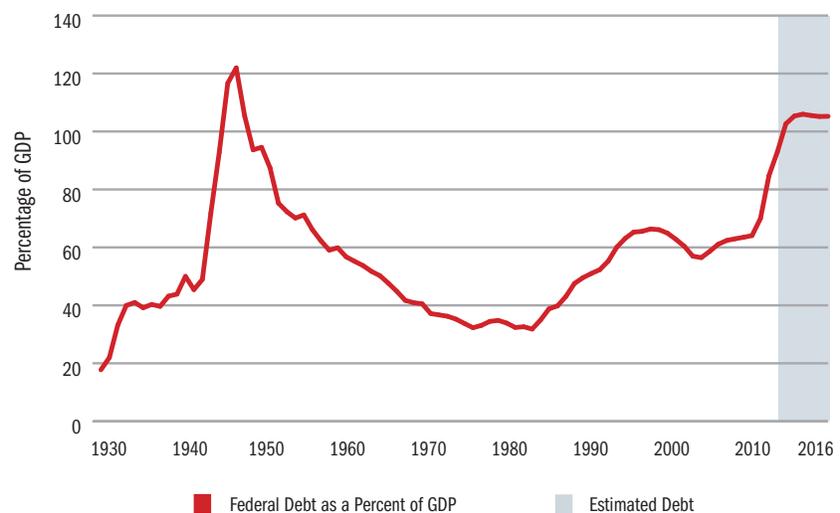
strategy, it is unlikely that anything notable will happen before the 2012 elections, but in order to bring the current \$14.3 trillion national debt down, discretionary spending needs to be cut and entitlements need reformed.

Highway, power, and commercial projects funded by the government fall into discretionary spending. If and when discretionary spending is cut, funding for public projects will be reduced and the trickledown effect could be even greater. The smaller public projects that smaller firms acquire to stay afloat could dissolve due to budget crunching. If the government decides to cut funding to projects like this, it could drive smaller firms out of the industry due to lack of available work.



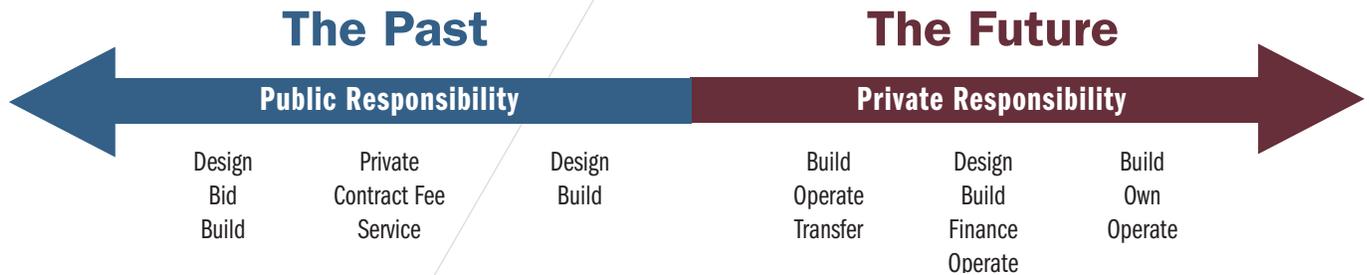
The smaller public projects that smaller firms acquire to stay afloat could dissolve due to budget crunching.

Figure 11
Federal Debt as a Percent of GDP



Source: www.usgovernmentsspending.com

Figure 12
Public Private Partnership Options



Source: FHWA (Federal Highway Administration)

One tactic that has recently emerged in the infrastructure segment to offset public spending cuts is public private partnerships. A public private partnership (PPP) is an agreement between the public and private sector to plan, design, finance, and build a project that would otherwise be classified as a public sector responsibility. Public Private Partnerships are an example of the private sector solving the government's capital problems.

This political idea is being implemented in different sectors of the economy to alleviate financial burdens for the government, and create private sector growth. The benefit for absorbing the financial risk of the project is that the contractor now receives the revenue generated once the project is complete.

Considering many developed nations in Europe and North America are facing extensive debt issues, public private partnerships are an attractive option for the future. If the United States shifts focus to cutting its national debt, public officials may look to explore opportunities in self-financing public private partnerships.

With the current state of the economy, this strategy is definitely tailored to large companies like The Billion Dollar Boys. The capability to finance projects in a sluggish economic climate provides The Billion Dollar Boys yet another advantage to expand and maintain backlogs. This is not to say that small firms cannot engage in a PPP, but unless they have the resources to acquire the necessary funding, PPP's will be more suitable for larger firms because of their greater leveraging capabilities.

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The significant decrease in demand for nonresidential work has caused firms in all industries to innovate in order to stay afloat. Nonresidential construction felt the worst of the recession in 2009-2010 as backlogs wore off and new work was incredibly scarce. The supply of firms in nonresidential construction will contract due to heavily depressed demand to reach a new temporary equilibrium. As demand begins to rise again in both the economy and nonresidential construction, many smaller firms should regain their footing and become successful again. However, the growing gap in market share that is occurring in the industry signifies trouble for smaller firms long past the end of the most recent economic downturn.

The market structure of nonresidential construction has begun to show signs of becoming less competitive, translating to an unsure future for a majority of firms in the industry. A number of smaller and mid size firms will exit the nonresidential construction industry due to financial or personal reasons, which will decrease the number of suppliers in the market. This number will continue to decrease until the demand for services catches up with the currently saturated supply.

The fiscal, competitive, and financial environment will enhance the

probability of growing market share until a steady expansion transpires in the United States. The question at hand for smaller firms is when this expansion will occur. The larger firms that are dipping into smaller jobs that they normally do not pursue in a regular business cycle are crippling small firms. This downward pressure will continue until large projects begin to surface, which will get the Billion Dollar Boys out of the bid room on jobs of smaller proportions.

It took the economy over twelve years and a world war to recover from the Great Depression, and contractors today are anxiously searching for what the light at the end of the tunnel is for the current economy. The break that could bring the economy into a new, thriving era centers on the major revamping of the nation's infrastructure. Demand for rail projects, renewal of transportation systems, water/waste treatment upgrades, and investing in nuclear energy and natural gas could create millions of jobs and vastly reduce the economic volatility of not only nonresidential construction but also the entire country. These types of innovations will make every industry more efficient, which is why the future of nonresidential construction is one of the most crucial aspects when discussing the long term success and sustainability of the United States and the world as a whole.



It took the economy over twelve years and a world war to recover from the Great Depression.

Photos courtesy of Alexis Cruz, Mark Mehalovich, and Joe Bunta.

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*All information about nonresidential construction
put in place estimates in graphs and text was
provided by The United States Census Bureau:
<http://www.census.gov/const/www/c30index.html>

*All information pertaining to recession dates in
graphs was provided the National Bureau of
Economic Research's, "U.S. Business Cycle
Expansion and Contraction":
<http://www.nber.org/cycles/cyclesmain.html>

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