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How Government Regulation Affects the Price of a New Home

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Over the past several years, the market for new housing has suffered through a severe slump, with housing starts running at one-third of what had been the normal rate going back to the 1950s. Stumbling blocks on the path to recovery include competition from sales of distressed existing properties, uncertainty about the health of the overall economy and labor markets, and difficulty in qualifying prospective buyers for mortgages. Once these particular obstacles are overcome and normality returns, however, home builders and developers will still be contending with markets in which homes cost more to build and sell than would otherwise be the case due to government regulations.

Regulations come in many forms and can be imposed by governments at different levels. At the local level, jurisdictions may charge permit, hook-up, and impact fees and establish development and construction standards that either directly increase costs to builders and developers, or cause delays that translate to higher costs. State governments may be involved in this process directly or indirectly. Several states, for example, have adopted state-wide building codes. And although impact fees are imposed by local governments, such fees typically cannot be imposed without enabling legislation at the state level. The federal government can also impact the price of a home—for example, by requiring permits for stormwater discharge on construction sites, which may lead to delays in addition to the hard cost of filing for a permit. These are only a few examples of regulations that builders and developers encounter in practice.

This article introduces new NAHB estimates of the impact that such regulations have on the price of a home. The estimates show that, on average, regulations imposed by government at all levels account for **25.0 percent** of the final price of a new single-family home built for sale. Nearly two-thirds of this—**16.4 percent** of the final house price—is due to a higher price for a

finished lot resulting from regulations imposed during the lot's development. A little over one-third—**8.6 percent** of the house price—is the result of costs incurred by the builder after purchasing the finished lot.

The relatively high share of regulatory cost affecting a home during development is particularly significant in the current environment, when there is a low level of developed land in the pipeline, as many builders have stopped acquiring single-family lots and developers have stopped developing them.¹ Thus, in most cases the full range of regulatory costs—those that fall on development as well as construction—will need to be overcome if production and employment in the housing industry are to get back on track.

The discussion in this article is confined to regulatory *costs*. No attempt is made to estimate possible *benefits* resulting from a particular regulation, or category of regulations, or to argue that costs associated with particular regulations are (or are not) justified. Governments usually have justifications for the regulations they impose, and the justifications are sometimes contentious, but these contentions are better left for elsewhere. The issue of regulatory costs embodied in the price of a house is by itself complex and substantial enough for a separate article devoted to the topic.

Survey Background

In addition to a broad range of regulations that needs to be captured, estimating the impact of regulations on house price can be challenging in other ways as well. The impact of regulation on the price of a finished lot is often invisible to the builder who buys the lot, for instance, and developers may not keep records in a way that allows them easily to track delays and translate them into dollar values.

NAHB's Economics and Housing Policy Group tackled these problems recently, through a series of special questions on the monthly survey that serves as the basis for the NAHB/Wells Fargo Housing Market Index (HMI). In addition to the standard questions used to compute the HMI, the survey often also includes a set of "special" questions on a topic of current interest to the housing industry. The special questions on the costs of regulation were included in the April 2011 survey (questionnaire available at the end of this article).

Although the survey is sent to a panel of single-family *builders*, prior experience has shown that a significant proportion of the panel also has experience in *land development*. Of 352 builders who responded to a screening question on this topic (number 4 on the questionnaire), 140 (40

percent) indicated that they did indeed have substantial experience in acquiring land and developing lots.

The April 2011 special questions were structured around the leading case of a developer who acquires land, obtains approval for a subdivision, and develops a finished lot for sale to a builder; and a builder who then purchases the lot, constructs a single-family home built for-sale on it, and sells the home to an ultimate buyer.

A summary of the regulatory costs captured by the questionnaire is shown in Table 1. In addition to listing each cost category, the table shows the share of respondents who said costs in a particular category were typically negligible or zero, and the complementary share reporting some positive cost. Each question contained specific instructions to indicate when a particular type of cost was negligible, and these were counted as 0 for purposes of computing averages and other statistics, to avoid overstating costs.

Table 1. Categories of Regulatory Costs Captured in the Survey			
	Share with zero cost	Share with positive cost	Normal add-ons (such as carrying costs and retron on equity) where regulatory costs are positive
A. During Development			
Cost of applying for zoning / subdivision approval	10%	90%	points on acquisition loan + interest from application to time lot is sold to builder + developer profit
Costs incurred after approval / before construction (impact fees, environmental mitigation, etc)	5%	95%	points on development loan + interest from 1/2 time between approval and time lot is sold to builder + profit
Value of land dedicated / left unbuilt	19%	81%	same as above
Costs of complying with changes in development standards (setbacks, road widths, etc)	13%	87%	same as above
B. During Construction			
Added cost due to changes in construction codes / standards over the past 10 years	6%	94%	points on construction loan + interest from 1/2 time between start and sale + brokers fees + builder profit
Permit, hook-up, impact or other fees paid by builder	8%	92%	same as above
Source: Survey used to generate the NAHB/Wells Fargo HMI, April 2011			

Table 1 also describes the additional costs, such as interest on construction loans and return on equity, that builders and developers and homebuyers typically incur when each type of hard regulatory cost is imposed. When estimating these additional costs, long-term assumptions (on

items such as loan terms and profit margins) are used to produce estimates that reflect normal economic times, rather than current credit/housing market conditions which are historically anomalous and unsustainable.

Each of these assumptions is listed and documented in an appendix (also available at the end of this article).

Regulation During Development

Question 5 on the April NAHB survey asked respondents with land development experience about six different types of delays and hard costs associated with the development process. Item response rates were relatively high, with at least 131 of the 140 eligible respondents providing a usable answer to each of the first five parts of the question. Only 120 responded to the sixth part, which asked about changes in development requirements over the past 10 years. Most of the non-responders to part six indicated that they couldn't answer because they were not developing lots 10 years ago.

In order to analyze variation in regulatory costs, a consistent sample across all parts of the question is desirable, to allow for the possibility that some costs may be high in areas where others are low. For example, higher costs of applying for subdivision approval could, in theory, be offset by more expeditious processing and reduced time to obtain the approval. The analysis of regulatory costs during development is based on 135 respondents who answered at least three of the first four parts of question 5. In the relatively few cases where a particular response was missing for one of these, it was imputed at the average for those who responded. The imputation has no effect on average cost estimates and, due to the relatively small number of imputations, only a minor effect on the high-low cost spreads reported in Table 2.

Table 2. Estimated Impact of Regulation During Development			
A. Regulatory costs in the price of the finished lot sold to a builder			
	"Low" *	Average	"High" *
"Pure" cost of delay	0.8%	5.9%	11.0%
Cost of applying for zoning / subdivision approval	0.0%	11.6%	23.4%
Costs incurred after approval / before construction	0.7%	13.2%	25.6%
Value of land dedicated / left unbuilt	0.0%	10.3%	20.6%
Impact of changes in development standards	3.2%	16.4%	29.6%
Total	23.0%	57.3%	91.7%
B. Regulatory costs in the price of the home sold to the ultimate buyer			
	"Low" *	Average	"High" *
"Pure" cost of delay	0.2%	1.7%	3.1%
Cost of applying for zoning / subdivision approval	0.0%	3.3%	6.7%
Costs incurred after approval / before construction	0.2%	3.8%	7.3%
Value of land dedicated / left unbuilt	0.0%	2.9%	5.9%
Impact of changes in development standards	0.9%	4.7%	8.5%
Total	6.6%	16.4%	26.2%
*Numbers in the "low" and "high" columns are one standard deviation away from the average, bounded at zero on the low end.			
Due to the offsetting tendency for certain types of costs to be low in areas where others are high, rows in the "low" and "high" columns will not sum to the total.			
Pure cost of delay assumes that governments impose no regulatory costs at all other than the delay, and that raw land is 10.6% (and the finished lot 23.7%) of the final house price.			
Increase in final home price assumes the finished lot accounts for 23.7% of the final house price, and increases the dollar cost of the lot by 20.5% to account for points and interest on a loan, brokers fees, and builder's return on equity.			
Source: Survey used to generate the NAHB/Wells Fargo HMI, April 2011; various assumptions as described in Table 1 and the Appendix.			

The estimates in Table 2 show that, on average, regulation accounts for a little over 57 percent of the price of a developed lot. The average impacts of the individual components range from just under 6 percent for a "pure" cost of delay to over 16 percent for changes in development standards, such as setbacks and road widths.

The pure cost of delay is the estimated cost that the delays of waiting for approval and complying with development regulations would impose in the absence of any other type of regulatory cost.² Delay also factors into the other regulatory costs listed in Table 2 through higher interest payments on land acquisition and development loans.

Follow-up conversations with survey respondents revealed that some of them were able to estimate the cost of current development standards more easily than the incremental cost due to changes over the past 10 years. The survey thus provides data on costs associated with development requirements, but these should probably not be rigidly interpreted as costs that materialized over precisely the last 10-year period.

Several land developers expressed an interest in seeing a range of regulatory costs, rather than just averages. For that reason, Table 2 shows “high” and “low” costs, calculated at one standard deviation from the average. Other ways to generate a high-low spread are difficult to implement here due to the nature of the survey data, especially the large share of respondents providing information about costs during construction but not development. In practice, most of the highs shown in this article occur at roughly the 90th percentile of a cost distribution (i.e., roughly 10 percent of respondents report costs at least this high).

The averages in Table 2 are additive, but the “highs” and “lows” generally are not. At the low end of the scale, it is relatively common for developers to report zero cost for one category of regulation, but not for all five. Thus, the “low” cost of regulation imposed during development is 23 percent of the finished lot price, much higher than the sum of the “lows” for individual cost categories.

The survey sample was neither large enough nor stratified in a way to permit detailed geographic analysis, but it was possible to see that regulatory delays tended to be somewhat longer, and hard costs of applying for subdivision approval somewhat higher, in the Northeast Census region.

Table 2 also shows regulatory development costs as a percentage of the final price of the house. The calculations assume that a finished lot accounts for 23.7 percent of the house price and that the builder also incurs associated costs that increase this by 20.5 percent based on the considerations described in Table 1 and the assumptions described in the Appendix. The bottom line is that regulation during development on average accounts for 16.4 percent of the final price of a single-family home.

Regulation During Construction

The April 2011 survey concluded with a two-part question on regulation during construction. Estimates of regulatory costs during this phase of the project are based on 302 respondents who provided usable answers to either part of the question. A total of 294 answered the first part, and 283 answered the second, which dealt with changes in building codes over the past 10 years. Most who answered part one but not part two indicated that they were not building homes 10 years ago. Two responses indicating that code changes had caused construction costs to increase by more than 35 percent were deleted as unreasonably high outliers. In cases where usable answers were provided for one part of the question but not the other, the missing value

was imputed at the average for those who provided responses. The resulting impacts of regulation on construction costs are shown in Table 3.

Table 3. Estimated Impact of Regulation During Construction			
A. Regulatory costs as a share of construction costs			
	"Low" *	Average	"High" *
Permit, hook-up, impact, other fees paid by builder	0.0%	5.8%	12.3%
Changes in codes / standards over past 10 years	1.1%	8.3%	15.5%
Total	3.3%	14.1%	24.9%
B. Regulatory costs in the final price of the home sold to the ultimate buyer			
	"Low" *	Average	"High" *
Permit, hook-up, impact, other fees paid by builder	0.0%	3.6%	7.5%
Changes in codes / standards over past 10 years	0.6%	5.1%	9.5%
Total	2.0%	8.6%	15.3%
<small>*Numbers in the "low" and "high" columns are one standard deviation away from the average, bounded at zero on the low end. Because the impact of code changes and fees are not perfectly correlated with each other, rows in the "low" and "high" columns will not sum to the total. Increase in final home price assumes construction costs account for 52.9% of the house price and are increased by 16.0% to account for points and interest on a loan, brokers fees, and return on equity. Source: Survey used to generate the NAHB/Wells Fargo HMI, April 2011; various assumptions as described in Table 1 and the Appendix.</small>			

The estimates in Table 3 show that, on average, regulation accounts for a little over 14 percent of construction costs. Of this, a little under 6 percent is the cost of actual fees, and the rest is the cost of changes to construction codes and standards over the past 10 years.

In contrast to development requirements, respondents seemed to have little trouble assessing the impacts of construction code changes over the past 10 years (provided they were building homes 10 years ago). Although it doesn't necessarily imply that recent code changes have been in some sense excessive, it is still useful to remember that, as of 10 years ago, building codes had already been well established in most parts of the country for decades and typically revised many times during that span.

Regionally, the impact of code changes on construction costs was higher in the Northeast and West than in the Midwest and South. Actual construction fees paid by builders were higher in the West than in the other 3 regions. The West region, of course, includes California where particular types of fees are known to be especially high. In the 2010 survey of impact fees conducted by Duncan Associates, for example (http://www.impactfees.com/publications%20pdf/2010_survey.pdf), the state average impact fee for a standard single-family home in California was nearly \$32,000—over twice the average fee for the next highest state (Oregon, which is also in the West).

Table 3 also shows regulatory costs imposed during the construction phase as a percentage of the final house price. These calculations assume that construction costs account 52.9 percent of the house price and that the costs are increased by 16.025 percent before being passed on to the buyer, based on the assumptions described in Table 1 and the Appendix. The bottom line is that regulation imposed during actual construction of a single-family home accounts for, on average, 8.6 percent of the home’s final sale price.

Summary and Conclusion

This article describes that way NAHB has recently addressed the issue of regulatory costs embodied in the price of a home through special questions on the monthly survey that underpins the NAHB/Wells Fargo HMI. Responses to these questions were averaged and associated costs were included using average long-run assumptions about loan terms, profit margins, and time lags between different phases of the construction project to show that, on average 1) regulation imposed during development accounts for 16.4 of the price of a home built for sale, 2) regulation imposed during construction accounts for 8.6 percent of the price.

Thus, in total, 25.0 percent of the price of an average single-family home built for sale is attributable to regulation imposed by all units of government at various points along the development/construction process (Table 4).

Table 4. Total Regulatory Costs in the Final Price of a Home			
	"Low" *	Average	"High" *
Regulatory costs incurred during development	6.6%	16.4%	26.2%
Regulatory costs incurred during construction	2.0%	8.6%	15.3%
Total	14.1%	25.0%	35.9%
<small>*Numbers in the "low" and "high" columns are one standard deviation away from the average. Because costs incurred during development and construction are not perfectly correlated with each other, rows in the "low" and "high" columns will not sum to the total. Source: Survey used to generate the NAHB/Wells Fargo HMI, April 2011; various assumptions as described in Table 1 and the Appendix.</small>			

The table also shows the spread between “high” and “low” costs of regulation, using a conventional statistical technique is used to control for lack of perfect correlation between regulatory costs incurred during development and construction.³

Other tables in the article break down these cost impacts according to different categories of regulation—delays in the development process, changes in building codes, etc. The breakdown may be useful for local jurisdictions trying to assess how much the affordability of new homes

could be improved by reducing particular regulatory burdens, or how affordability may be adversely impacted by new regulations.

Estimates of regulation in the price of a new home may also be useful in national discussions. Over the past few years, for example, it has become relatively common for proposed federal legislation to contain provisions encouraging local jurisdictions to adopt particular types of building codes or land development patterns. An informed discussion of these proposals should recognize that regulation already on average accounts for one-fourth of a new home's purchase price.

Several other, related items policymakers may wish to keep in mind:

- employment in residential construction is down almost 1.5 million from its peak;⁴
- a similar number of jobs have been lost in related industries (such as manufacturing, trade, and professional services) because homes are not being built;⁵
- builders are already reporting new homes appraising at less than the cost required to produce them.⁶

Thus, in order to restore the millions of jobs lost in home building and related industries—even if the macro economy improves so Americans return to normal rates of household formation and home buying, and even if credit markets improve so loans can be obtained to build and buy new homes—it would be necessary to overcome regulations that already account for 25 percent of the price of a new home in markets where new homes sometimes appraise for less than it costs to build them.

The regulatory cost estimates in this article could only be produced thanks to the efforts of individual builders who provided high-quality answers to a fairly onerous set of survey questions. The NAHB Economics and Housing Policy Group would therefore like to express gratitude to the panel of builders who responded to the April 2011 HMI survey and took the time to answer the questions on regulatory costs.

¹ Responding to special questions on the March 2011 HMI survey, nearly three-fourths of builders indicated that their firm had, at that time, stopped acquiring single-family lots.

² The pure cost of delay also assumes that land is purchased at the time of application for subdivision approval. Alternatives are possible, such as purchasing a call option on the land to be exercised at a later date, which, if adopted as a general strategy would result in costs for options not exercised. Equilibrium in land and credit markets would tend to equate costs of the alternatives.

³ The number of respondents who provided information about construction costs but not development costs was too large to disregard, or to address through imputation. Total costs were thus treated as the sum of two dependent random variables, with an estimated covariance of $-.00109$, based on the subsample of the survey providing usable information for both development and construction costs. In addition, sample variances were $.00964$ for the regulatory development costs and $.00441$ for the regulatory construction costs; so a resulting standard deviation of $.10889$ was used to generate the high-low spread for total regulatory costs shown on the bottom line of Table 4.

⁴ U.S. Bureau of Labor Statistics: Current Employment Statistics.

⁵ See Table 2 in NAHB's study on "The Direct Impact of Home Building and Remodeling on the U.S. Economy" <http://www.nahb.org/generic.aspx?sectionID=734&genericContentID=103543&channelID=311>

⁶ For example, in response to special questions on the August 2010 HMI survey, two-thirds of builders said they had experienced appraisals below their contract sales price. Of these, over half had experienced appraisals below their cost of production.

Survey Questionnaire: Special Questions for April 2011

Please answer the following questions, which are designed to provide critical help for NAHB lobbyists. Congressional, regulatory and public affairs staff regularly request this type of information, which we last collected in 1995, and which we cannot provide using current data.

4. Does your company have substantial experience in acquiring raw land and developing lots?

- Yes No

If "Yes" in question 4, please answer 5a through 5f. If "No" in question 4, please skip to 6a.

5a. For a typical lot, how much does it cost to apply for zoning/subdivision approval as a percent of finished lot cost? (Include costs of fiscal or traffic impact or other studies, and any review or other fees that must be paid by time of application. *Please enter "0" if application costs are Zero percent*). _____ **% of finished lot cost**

5b. On average, how long does it take between the time you apply for zoning/subdivision approval and the time you obtain preliminary approval to start site work? _____ **months**

5c. In the typical case, what is the value of any land that must be dedicated to the local government or otherwise left unbuilt (for parks, open green space, schools, etc.) as a percent of finished lot cost? (*Please enter "0" if dedicating land is required infrequently*). _____ **% of finished lot cost**

5d. After obtaining approval, but before excavation/foundation work begins, how much does it cost to comply with regulations as a percent of finished lot cost? (Include costs of environmental mitigation, and hook-up or impact or other fees. *Please enter "0" if cost of complying with these regulations is Zero percent*). _____ **% of finished lot cost**

5e. How much extra time does complying with regulations add to the development process? (*Please enter "0" if regulations typically cause no delay*). _____ **months**

5f. Over the past 10 years, how much have changes in setbacks, road widths, and other development requirements added to the cost of developing a typical lot as a percent of finished lot cost? (*Please enter "0" if changes in development requirements have been minimal, or have had Zero percent impact on costs*).

_____ **% of finished lot cost** **Was not developing lots 10 years ago**

Questions 6a and 6b deal with the construction phase of the project, after excavation/foundation work begins.

6a. After a lot is finished and can be built on, how much on average do you pay for permit, hook-up, inspection, impact or other government fees as a percent of total construction costs? (*Please enter "0" if fees paid during or after construction are Zero percent*). _____ **% of total construction costs**

6b. Over the past 10 years, how much have changes in construction codes and standards added to the cost of building a typical home as a percent of total construction costs? (*Please enter "0" if code changes have had minimal impact on construction costs*).

_____ **% of total construction costs** **Was not building homes 10 years ago**

THANK YOU

**How Government Regulation Affects the
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Special Study for NAHB's Housing Economics
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**Appendix:
Assumptions Used in the Calculations**

- 1.0 point charged for all land acquisition, development, and construction (AD&C) loans, based on results from a Quarterly Finance Survey (QFS) that NAHB was conducting in 2002 and 2003. Terms on loan terms made during this period are likely to better reflect typical long-run averages than terms on loans during the subsequent period of easy credit, or the period of decline and tightening that emerged afterwards.
- An 8.5 percent interest rate on all AD&C loans. The QFS indicated that rates in 2002 & 2003 were typically set a full point above prime, and 7.5 percent is NAHB's estimate of the prime rate under neutral Federal Reserve monetary policy.
- A 10.0 percent profit rate for builders and developers, based on the average rate on NAHB Construction Cost surveys conducted between 1995 and 2009¹ (<http://www.nahb.org/generic.aspx?sectionID=734&genericContentID=134543&channelID=311>). In the long run, without a competitive return on investment, builders and developers will leave the industry, lots will not be developed, and homes will not be built.
- A brokers fee of 2.9 percent, based on the "nonconstruction" cost factor the Census Bureau applies to single-family homes built for sale (<http://www.census.gov/const/C30/methodology.pdf>). In housing markets, brokers fees are typically set as a fraction of the home's purchase price.
- Raw land that accounts for 10.6 percent of the price of a home built for sale (Census nonconstruction cost factor).
- A finished lot that accounts for 23.7 percent of the house price (1995-2009 NAHB Construction Cost Survey average).

- Construction costs that account for 52.9 percent of the house price (1995-2009 NAHB Construction Cost Survey average).

Many of the additional costs described in Table 1 of the article require estimates of the length of time between various stages of the home building process, especially interest paid on outstanding loans. In addition to the “hard” costs shown in that table, two questions in the April 2011 survey dealt with lags attributable to government regulations. On average, respondents reported that it takes 15 months between the time they apply for zoning/subdivision approval and the time they obtain preliminary approval to start site work (question 5b). Respondents also reported that, on average, complying with regulations adds 7 months to the development process (5e). The average of seven months incorporates 8 percent of respondents who said that complying with regulation typically causes them no delay.

It is assumed here that the delay caused by complying with regulation is spread across the entire development process, with half occurring before preliminary site approval is obtained, and half afterward. It is further assumed that, in the absence of regulation, the time between the developer obtaining preliminary zoning/subdivision approval and selling a finished lot to a builder is 3 months. This was shortest possible time mentioned in conversations with several developers, even for a small and simple subdivision with as much engineering work as possible done before preliminary approval. Using the shortest reasonable time for this lag avoids overstating interest costs.

For the builder, it is assumed that authorization to build is obtained at the same time the lot is purchased, that time from authorization to the start of construction is 0.9 months, that the time from start to completion is 6.0 months, and that the time from completion to sale is 2.4 months. These are average times computed from the Census Bureau’s Survey of Construction microdata files

(http://www.census.gov/const/www/surveyofconstructionmicrodatafile_cust.pdf) over the 2000-2009 period, based on homes that were sold during that time, assuming that the completion-sale lag is zero for homes sold before the completion date.

¹ Prior to 1995, construction cost surveys were conducted less often than once a decade and did not collect information on builder or developer profit.