

It is my responsibility to direct the activities of the foundation, which conducts research for the National Association of Home Builders and a number of building material manufacturers, trade associations, builders, and others in the industry.

I am indeed honored to accept your invitation to submit comments on seasonality in the construction industry and the problems of all-weather residential construction.

My comments will relate specifically to residential construction, which I believe is somewhat different than Mr. Bone's. I will refer primarily to residential construction.

(The prepared statement follows:)

STATEMENT OF RALPH J. JOHNSON, STAFF VICE PRESIDENT, NAHB RESEARCH FOUNDATION, INC.

Mr. Chairman and Members of the Committee, I am Ralph J. Johnson, Staff Vice President and Director of the NAHB Research Foundation, Inc., a subsidiary corporation of the National Association of Home Builders. NAHB is a trade association of nearly 500,000 members who build America's homes and who are organized in 447 affiliated state and local associations in all 50 states, Puerto Rico, and the Virgin Islands.

It is my responsibility to direct the activities of the Foundation, which conducts research for the National Association of Home Builders and a number of building material manufacturers, trade associations, builders and others.

I am honored to accept your invitation to submit comments on seasonality in the construction industry and the problems of all-weather residential construction.

Inclement weather is a significant problem for home builders in almost all parts of the country. Construction problems of rain, mud, snow, and freezing temperatures are readily apparent. However, even in some normally good climates, high temperatures and blowing dust and sand cause weather-related construction problems.

Inclement weather is a very significant and, perhaps, the primary reason for seasonality in residential construction. It increases the cost of residential construction in several ways: Bad weather adds direct labor time, increases scrap and waste materials, increases the use of some materials such as gravel, increases construction time, increases site equipment time, and increases supervision time. All of these add extra cost. In addition, in certain kinds of weather, alternate building methods must sometimes be used such as thawing frozen ground and heating concrete during freezing weather, and these add to construction costs.

I will examine the direct and indirect cost increasing factors in more detail later but would like to mention now two other factors that probably increase residential construction costs in relation to seasonality. First the unit cost of many building materials is probably higher due to seasonality because the manufacturer must make the capital investment in machinery and equipment to produce at the highest rate required by his customers, but this only occurs during peak production periods. This adds to the cost of producing building materials and products in the same way that peak power production capability to handle peak loads affects the cost of energy produced by utility companies. Second, it is probable that hourly wage rates are higher in the construction industry than they would be if workmen could be expected to be employed throughout the year. I have no rational way of assessing the extent to which these two factors increase cost of construction, but together, they probably importantly affect construction cost.

DIRECT AND INDIRECT COSTS RELATED TO WEATHER

The cost of a dwelling may be divided into the following categories: Sales, financing, overhead and indirect costs, land, and direct construction costs.

*Sales*

Weather and seasonality have only a slight effect on the cost of sales. There may be some extra costs related to bad weather such as supplementary advertising but these are probably small.