

course of construction. In today's market, the cost of such construction money is at least 8 percent counting points and discounts and requirements for compensating balances.

Earlier this month, I obtained some specific information for this statement from a builder in northern Indiana. He started construction of a 1,300-square-foot, 3-bedroom, 2-bath house with a partial basement in the last week of January and was not able to complete it until the last of May—approximately 120 days. On April 1, he started a similar house but with 1,600 square feet and finished it the first of June—60 days. Specifically, he said bad weather experienced in January and February delayed his schedule in the case of the first house by the difference of 2 months. Assuming then a \$10,000 loan at 8 percent, the extra 2 months added approximately \$130 to the cost of the construction loan.

The cost of mortgage money is not directly affected by bad weather except to the extent that the amount of the mortgage and the price of the dwelling must be increased to compensate for the cost of bad weather construction.

Overhead and indirect costs are increased by bad weather and seasonality. Construction delays increase the cost of supervision, increase the cost of equipment that is either owned or leased by reducing the productive time of that equipment in the case of ownership or increasing the time charges if leased or rented.

I have no way of rationally estimating the amount of this but it certainly is an important factor.

Delays in the production schedule cause a number of management and related overhead and indirect cost increases such as additional supervision time, reduced productivity, and increased interest costs on materials and equipment in inventory. In addition, weather-caused delays in construction reduce the rate of capital turnover and, therefore, reduce return on invested capital.

Direct construction costs for both labor and materials can be increased by bad weather. Materials waste and scrap rises, we know, during periods of rain, snow, or either very cold or very hot temperatures. For the average priced home of about \$22,000 including lot, I would expect the cost of materials and equipment, such as air-conditioning equipment, to be about \$8,000. Therefore, even a 1-percent increase in waste and scrap would represent a cost increase due to bad weather of about \$80—a reasonable figure.

The cost of labor is definitely increased by bad weather. This past week I obtained from a builder in northern Indiana some specific figures for this statement. The table below sets forth the differences between estimated number of labor hours and actual labor hours for the two houses mentioned—one started in late January, the other started the first of April.

The data are taken from the builder's weekly field labor reports which are a part of his internal management cost control system. The builder is well known for his productivity and for his advanced management and record systems. This builder has sufficient experience to accurately predict the estimated labor hours for each of the operations required to build.

Accordingly, there is a reason when actual labor hours differ significantly from estimated hours. The operations selected and set forth