Pavement Price Ri$ks

Forecasting material prices is not a perfect science, nor is it a problem with easy solutions. So what can be done?

The initial cost of pavements can be determined with reasonable confidence. Future maintenance, rehabilitation, and, equally important, reconstruction costs, are more difficult to predict, particularly for asphalt pavements.

The Producer Price Index (PPI), a measure of the average change over time in the selling price of a material, provides a means to quantify both the overall increase as well as the volatility of pavement material costs.

Figure 1 shows the PPI of asphalt and concrete for approximately the last 50 years. Also shown is a 4% inflation curve. In that time, the cost of **asphalt** has **increased** more than **17 fold**. In sharp contrast, the cost of **concrete** has increased a relatively low **7 fold** in the past 50 years (less than the rate of inflation). This plot also illustrates how international political unrest impacts asphalt prices in the U.S, whereas concrete prices are relatively insensitive to such influences.

Rising prices have reduced the purchasing power of highway budgets and strained agencies' ability to keep up with needed capital improvements and maintenance activities.

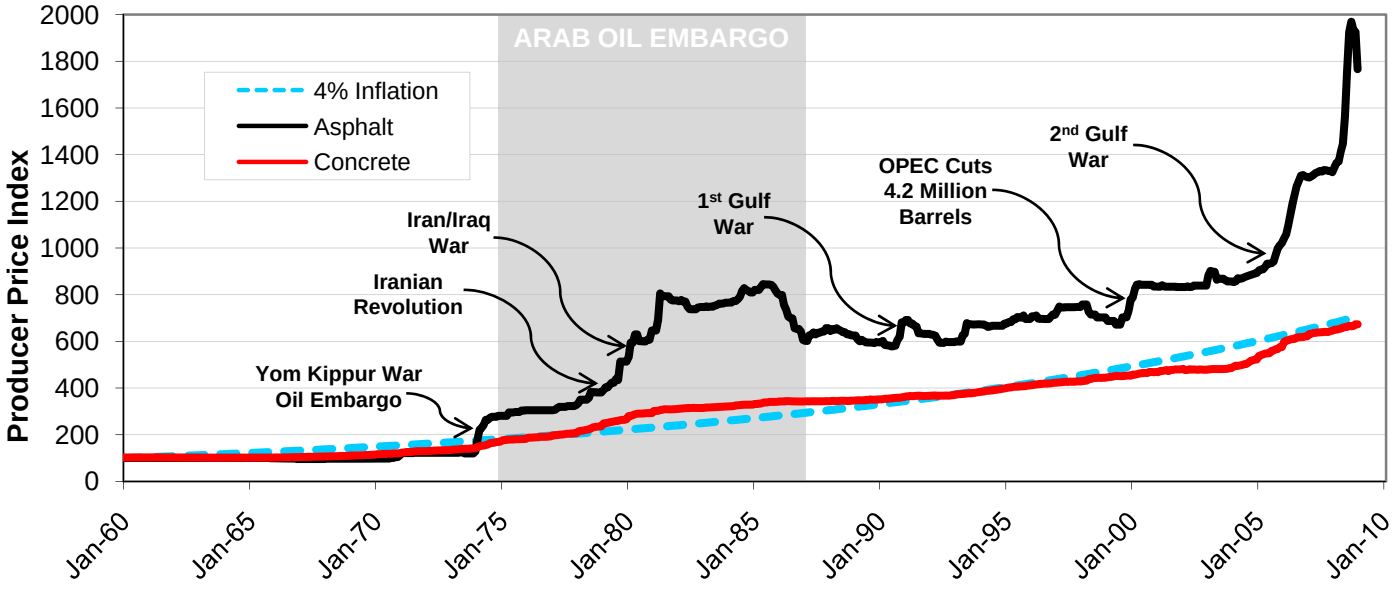

Figure 1. Inflation at a rate of 4% with a basis of 100 at 1958, Producer Price Index (PPI) for concrete and asphalt ($PPI_{1958} = 100$), and various political events over the past 50 years.

Turmoil in Prices

An easy way to assess the price volatility of a material is to look at its month-to-month change over time. Large month-to-month increases or decreases indicate that a material's price is unstable. This volatility is likely to affect a purchaser negatively.

Figure 2 shows the month-to-month changes for the PPI of asphalt and concrete over the past 50 years. Asphalt prices have had many large month-to-month fluctuations, most of which were price increases. Concrete prices, have proven to be relatively stable with fewer and less dramatic changes.

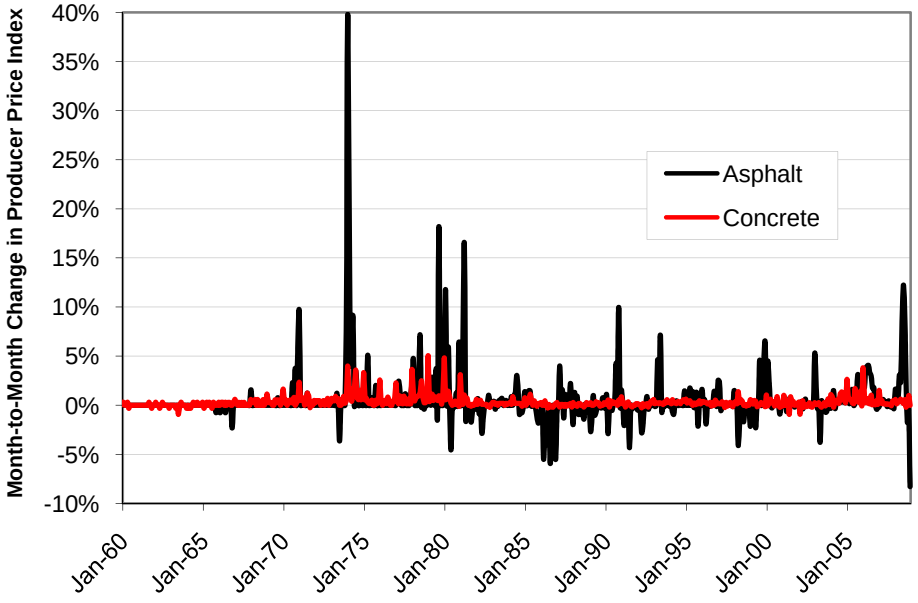

Figure 2. Month-to-month change in PPI for concrete and asphalt during the past 50 years.

During the past 50 years, concrete has experienced a monthly change in PPI exceeding 5% only once, while asphalt has experienced changes in excess of 5% twenty-six times (Figure 3). In fact, asphalt PPI has exceeded a 10% increase from one month to the next six times!

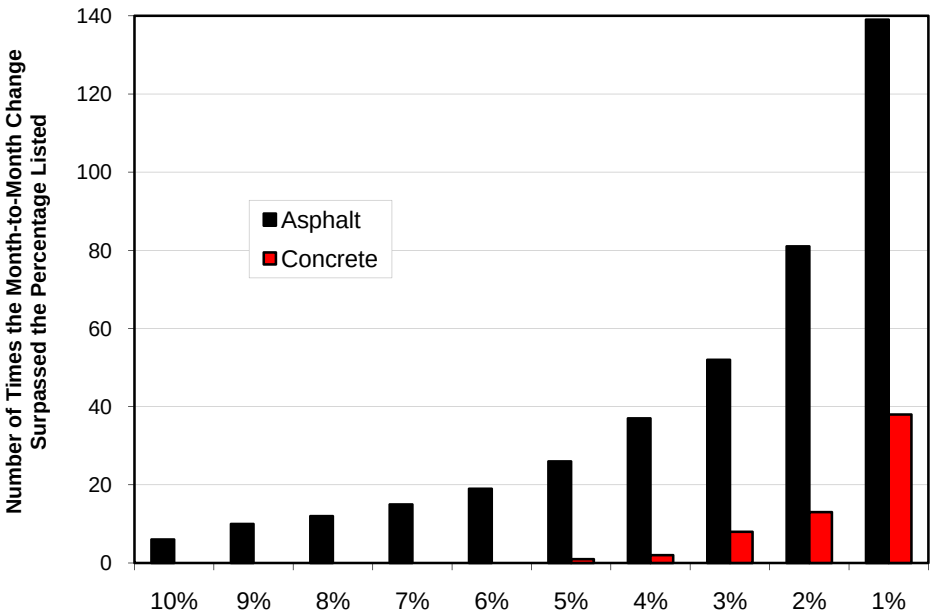

Figure 3. Number of times the month-to-month change in PPI exceeded a certain percent over the past 50 years.

Uncertainty in material prices translates to increased risk for a roadway agency. It presents a challenge in accurately predicting future material costs and budgeting for roadway improvement projects. Coupled with a degradation of purchasing power, the impact can stifle needed maintenance and capacity improvements.

What can be done?

Agencies are encouraged to look to concrete where they have traditionally used asphalt-only solutions. Stability in concrete prices coupled with concrete pavement's long-term durability promise less turbulent times ahead for roadway agencies.

Sources

http://www.bls.gov/ppi/home.htm

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