

ASPHALT – More Than You Bargained For?

The cost of asphalt is out of control, with little foreseeable recovery.
Have you considered concrete yet?

Volatile Asphalt Prices

The cost of asphalt paving materials is affected by a variety of factors, including world events, decisions made by the 12-nation Organization of the Petroleum Exporting Countries (OPEC) and refinery production.

- As illustrated in Figure 1, history shows a wide fluctuation and escalation of the producer price index (PPI) for asphalt, and a relatively stable PPI for concrete. The cost of concrete trends with the consumer price index (CPI), a gross measure of inflation.
- Over the past five decades the cost of asphalt has experienced almost a 20-fold increase, while the cost of concrete has risen less than 7 fold over that same period.
- In recent times, oil price inflation in the U.S. has had a dramatic and unprecedented impact on the cost of asphalt (Figure 2).

The Rest of the Story

This is only a part of the story, because the PPI is only an indicator of *production* prices and not a reflection of actual *purchase* prices.

The many steps in the production and distribution of asphalt also subject it to secondary supply-and-demand factors. Also, because asphalt is derived from petroleum, the cost of asphalt will continue to track crude oil prices upward, but likely not recover if crude prices fall.

Competition among petroleum-based products is an equally significant variable affecting both cost and supply. In this case, the issue is competition between asphalt and high-grade petroleum distillates (gasoline, diesel fuel, and other higher-grade fuels).

To capture greater value, refineries are increasingly using a process called coking to break down, or “crack” longer hydrocarbon chains (such as those found in asphalt materials) into shorter hydrocarbon chains (such as those found in higher-end distillates like gasoline). Refineries are realizing higher profits on these products and, in turn, producing less asphalt.

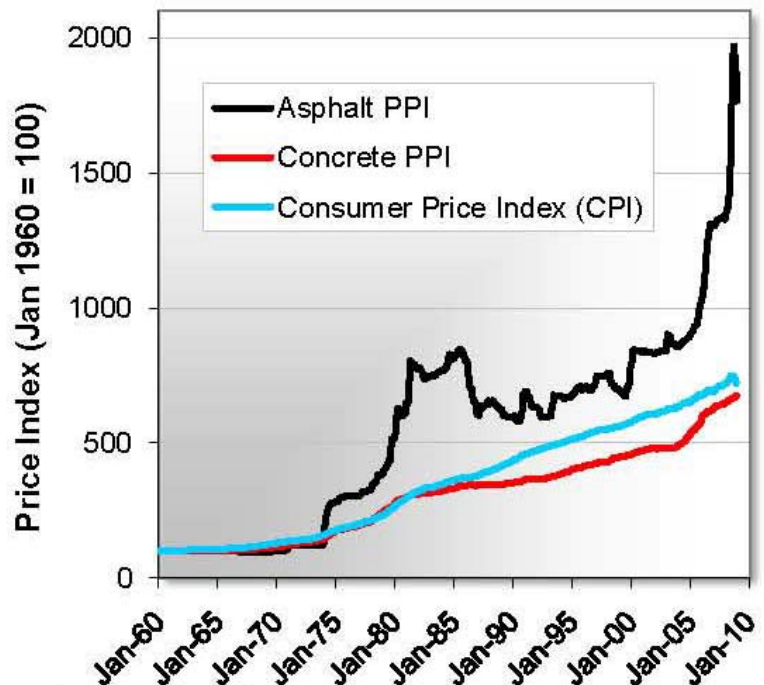


Figure 1. Long-term asphalt and concrete producer price inflation [U.S. Bureau of Labor Statistics].

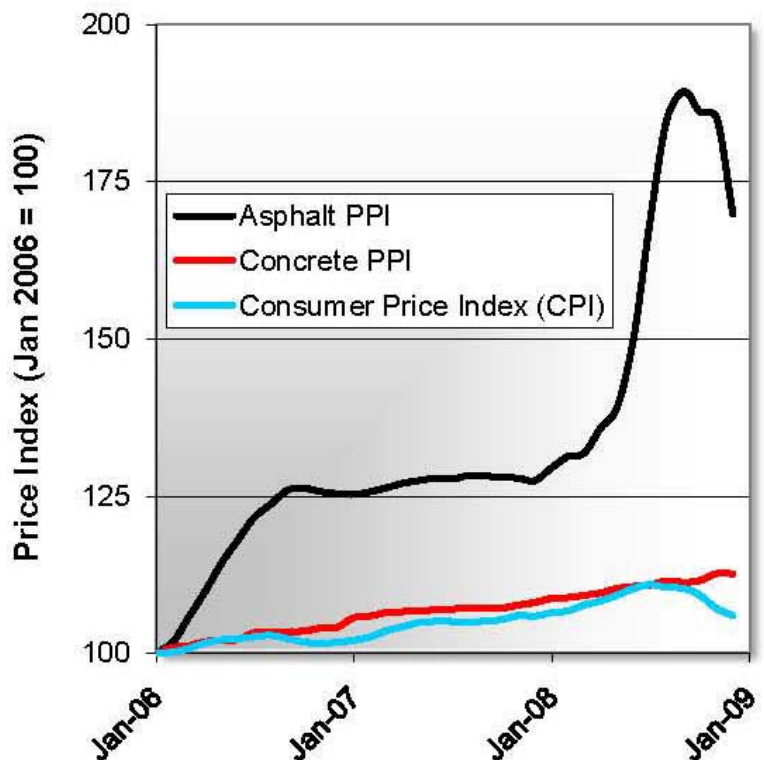


Figure 2. Asphalt and concrete producer prices against the CPI [U.S. Bureau of Labor Statistics].

Figure 3 shows refinery yield as a percent of total oil refined in the U.S. The percent of products produced from cracking has increased over time, causing the percent of asphalt produced to decrease below levels not seen since the early 1980s.

If the demand for asphalt remains about the same or increases, and if the amount of asphalt produced locally decreases, the cost of asphalt will not only remain high, but is likely to escalate even further.

To meet current demands, an increasing amount of the asphalt used in the U.S. is either being imported from foreign countries or being refined in the U.S. from the ever-increasing crude oil imports. Figure 4 shows how, since about 1997, over half of the asphalt used in the U.S. each year comes from foreign oil.

Concrete Now Costs Less

Because of the severe escalation in the cost of asphalt, many organizations are now reporting that concrete pavements have a lower initial cost than equivalent asphalt pavement designs in their area.

- “During the second quarter of 2008, the cost of one mile of pavement, one lane wide and 8 in. thick, would cost \$205,000 for asphalt and \$185,000 for concrete,” according to the Colorado Department of Transportation [Proctor].
- In Michigan, bid tabulations show that a concrete pavement with a 20-year design life costs 10 percent less than an asphalt pavement with a 10-year design life [Michigan Concrete Pavement Association].

Continued long-term value and lower first costs mean concrete pavement is the ideal option for placing, rehabilitating, resurfacing or reconstructing pavements. Not only is it a value proposition, but it is easier for agencies to budget project expenses with stable pricing.

Agencies can now add lower initial cost to concrete pavement’s well-deserved reputation for being the best, long-term value for investment of tax dollars.

Sources

- Energy Information Administration, Department of Energy, <http://www.eia.doe.gov/>.
- Michigan Concrete Pavement Association, “Run the Numbers!,” <http://www.durableroads.com/>.
- Proctor, Cindy, “Asphalt costs bring concrete into play,” Denver Business Journal, <http://www.bizjournals.com/denver/stories/2008/07/21/story3.html>.
- U.S. Bureau of Labor Statistics, U.S. Department of Labor, <http://www.bls.gov/>.

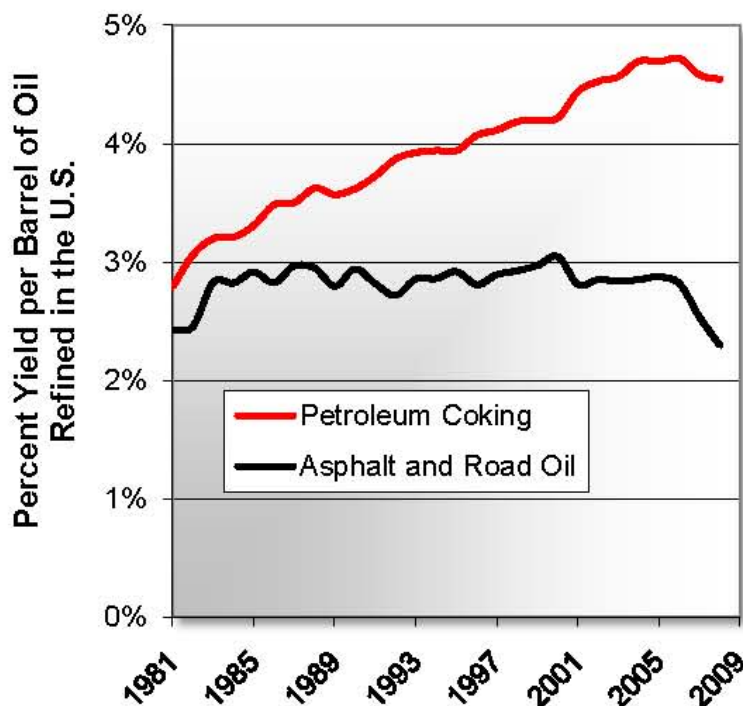


Figure 3. Production of “cracked” distillates vs. asphalt [Energy Information Administration].

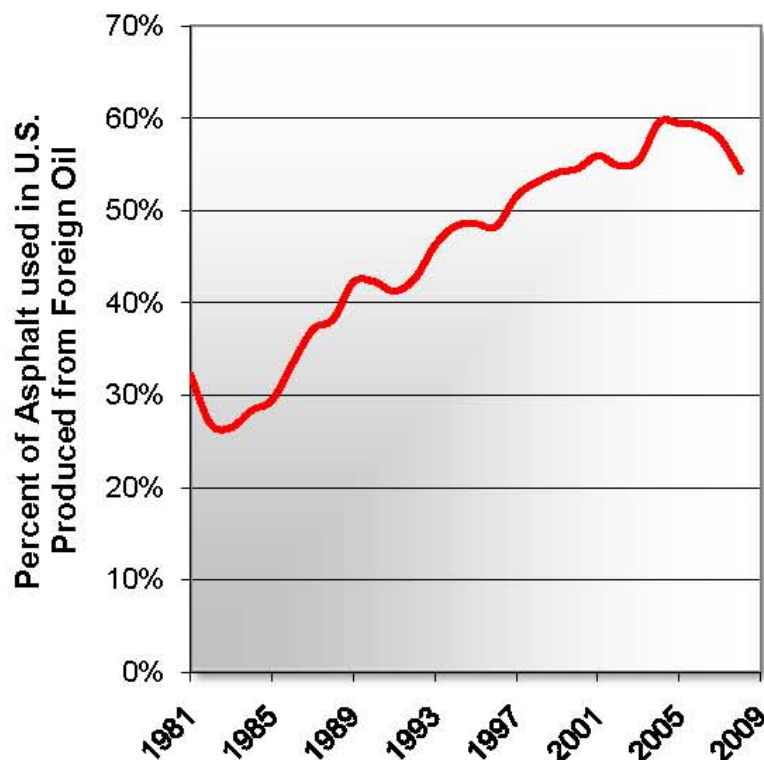


Figure 4. Percent of asphalt used in the United States produced from foreign oil [Energy Information Administration].

KICK the asphalt habit...

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