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# Cost Pass-Through in the U.S. Coffee Industry

**Ephraim Leibtag, Alice Nakamura, Emi Nakamura, and Dawit Zerom**

## Abstract

A rich data set of coffee prices and costs was used to determine to what extent changes in commodity costs affect manufacturer and retail prices. On average, a 10-cent increase in the cost of a pound of green coffee beans in a given quarter results in a 2-cent increase in manufacturer and retail prices in that quarter. If a cost change persists for several quarters, it will be incorporated into manufacturer prices approximately cent-for-cent with the commodity-cost change. Given the substantial fixed costs and markups involved in coffee manufacturing, this translates into about a 3-percent change in retail prices for a 10-percent change in commodity prices. We do not find robust evidence that coffee prices respond more to increases than to decreases in costs.

**Keywords:** cost pass-through, retail prices, manufacturer prices, commodity costs, coffee.

## About the Authors

Ephraim Leibtag is an economist with the Economic Research Service. Co-authors Alice Nakamura, Emi Nakamura, and Dawit Zerom worked on this project through a co-operative agreement with Harvard University and a data-sharing agreement with the University of Alberta, Canada. A. Nakamura is the Winspear Professor of Business at the University of Alberta, E. Nakamura is a doctoral candidate in the Department of Economics at Harvard University, and D. Zerom is an assistant professor in the Department of Finance and Management Science at the University of Alberta.

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# Summary

A perennial issue in economics is the effect of changes in commodity prices on manufacturer and retail food prices. The traditional explanation is that the extent to which cost increases are "passed through" in a vertically organized production process depends on the market power of producers at each stage of production as well as the value added by each producer in the production process. The U.S. coffee industry is an excellent venue to study the issue of cost pass-through, since green coffee beans are important components of the marginal costs in this industry and are publicly traded commodities.

## What Is the Issue?

This report uses unique data from the U.S. coffee industry to estimate how changes in commodity costs affect retail coffee prices. The results are relevant beyond the coffee industry, providing insight into how changes in commodity costs pass through to consumer and producer prices in other industries, too. "Cost pass-through" is a central issue in international economics since it determines how an economy responds to exchange rate adjustments as well as to changes in the prices of other imported commodities, such as oil.

## What Did the Study Find?

Average manufacturer coffee prices dropped from 23 cents in 1997 to 17 cents per ounce in 2002. That drop corresponded with a fall in the coffee-bean share of the manufacturer price from 48 percent to 24 percent, while labor and other material costs rose from 15 percent to 32 percent.

The authors found that, on average, a 10-cent increase in green-coffee-bean prices per pound yields a 2-cent increase in both manufacturer and retail prices in the current quarter. If a cost change persists, it will be incorporated into manufacturer and retail prices approximately cent-for-cent with the commodity cost change. In addition, cross-sectional differences in prices are substantially larger at the retail than the wholesale level.

Since manufacturer prices adjust approximately one-for-one with commodity prices (rather than proportionally), the ratio between manufacturer prices and commodity costs rises as commodity costs rise. We do not find robust evidence that coffee prices respond more to increases than to decreases in costs.

## How Was the Study Conducted?

An unusually rich collection of data on the ground-coffee industry was used to analyze the issue of cost pass-through. The data set included market-level average retail prices collected by Nielsen ScanTrack, market-level manufacturer prices collected by PromoData, and panel data collected by Nielsen Homescan to calculate the share of coffee by brand for each income level. Regression analysis was used to estimate the impact of changes in commodity prices on retail and manufacturer prices. These regressions are carried out for both absolute levels and in percentage terms. In addition, instrumental variable and fixed-effect methods were used to look at the manufacturer-retail price relationship and to analyze whether prices respond asymmetrically to cost increases and decreases.