DIVISION OF INTERNATIONAL FINANCE
BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

Date: March 4, 1999

To: [redacted]

From: Guy V.G. Stevens

Subject: Interactions Between Foreign Affiliate Earnings and Domestic Capital Expenditures

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In response to a December 31 memo by Bill Helkie and me addressing your questions on U.S. exports of capital equipment, you asked whether the "trend in foreign affiliate earnings relative to domestic profits explains any part of domestic capital expenditures?"

It turns out that the equations for domestic capital expenditures in the FRB-US domestic model are well-suited to explore the effect of foreign affiliate earnings on domestic investment. Of the two capital expenditure equations -- producers' durable equipment and non-residential structures -- the former has been found to be significantly related to corporate cash flow. A major determinant of the cash flow variable is corporate profits (taken from the NIPA accounts), and a component of this variable is foreign affiliate profits. Thus, the current producers' durable equipment equation assumes that domestic capital expenditures are influenced by changes in foreign affiliate earnings.

The major question is the magnitude of such an effect. Economists in R&S's Macroeconomic and Quantitative Studies Section were kind enough to perform a number of calculations and equation reestimations to examine this question. The present equation for producers' durable equipment assumes that a dollar of foreign-earned profits has the same impact as a dollar of domestically-earned profits; however, foreign-earned profits, running at about $100 billion in 1998 for all industries, are only about 15 percent of domestic profits. A given percentage change in foreign profits thus has a much smaller impact on equipment investment than an identical percentage change in domestically-generated profits.

Using the R&S equation for producers' durable equipment, the elasticity of investment with respect to an across-the-board percentage change in total corporate profits is 0.175 (on an annual basis); for a change in foreign profits alone the elasticity is 0.025. To make the effect of a change in foreign profits more concrete, consider that our 1998 projection for foreign affiliate profits (direct investment receipts) is about 10 percent below the 1997 total. According to the calculated elasticity of 0.025, this fall would be predicted to lower U.S. equipment investment by 0.25 percent over a year. Given the 1997 total of $620.5 billion for investment in producers' durable equipment, the net impact of the 10 percent reduction in foreign affiliate profits would be approximately $1.6 billion.

A direct answer to your question -- whether the trend on foreign affiliate earnings *explains* any part of domestic capital expenditures -- is consistent with this rather insignificant calculated impact. Statistically, if one drops foreign affiliate profits from the cash flow variable, the explanatory ability of the equation (R^2) barely changes. Moreover, the estimated coefficient for the modified cash flow variable, which now equals domestic cash flow, is also unchanged.

cc: K. Johnson, M. Prell, F. Brayton, D. Reifschneider