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Trade Raises GDP

Whether international trade increases nations' standards of living has interested economists ever since Adam Smith wrote *The Wealth of Nations*. Of all the questions posed by economists, it continues to be one of the most important, as the recent, contentious debates about the establishment of the World Trade Organization and the ratification of the North American Free Trade Agreement have shown. But despite the great effort that has been devoted to studying the issue, there has been little persuasive evidence concerning the effect of trade on income. Now a recent NBER study by **Jeffrey Frankel** and **David Romer**, which uses a new method to examine the relationship, suggests that earlier research has understated the effects of trade, and that trade has a quantitatively large, significant, and robust positive effect on income.

Earlier studies found that there is a moderate positive relationship across countries between the ratio of trade to GDP and income per capita. But these studies do not establish cause

and effect: the positive relationship may arise not because trade raises income, but because countries that are wealthy for other reasons trade more. In **Trade and Growth: An Empirical Investigation** (NBER Working Paper No. 5476), Frankel and Romer observe that countries' geographic characteristics, such as their proximity to other countries and whether they are landlocked, have large effects on their trade. These geographic characteristics are not the consequence of income or of other variables, such as government policies, that affect income. Frankel and Romer therefore investigate the impact of trade on income by examining not the relationship between income and overall trade, but the relationship between income and the component of trade that is attributable to geography.

There are three main findings. First, there is no evidence that the positive association between trade and income arises because countries whose incomes are high for other reasons engage in more trade.

Second, the estimates suggest that the impact of trade is substantial. In a typical specification, the estimates imply that increasing the share of both exports and imports in GDP by a single percentage point raises income per person by 2 percent or more. Third, although the finding of a large impact of trade on income is robust across the different samples and specifications that Frankel and Romer consider, the effect is not estimated very precisely. Thus there is still considerable uncertainty about the exact magnitude of trade's effect on income.

In a recent related study, **Frankel** and **Romer**, together with **Teresa Cyrus**, examine the rapidly growing East Asian countries. Some researchers have suggested that openness to trade has played a role in these countries' growth, but again it has been difficult to establish causality. In **Trade and Growth in East Asian Countries: Cause and Effect?** (NBER Working Paper No. 5732), Frankel, Romer, and Cyrus therefore use their geography-based

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approach to assess the importance of trade to the rapid growth of East Asian countries. They first show that these countries' high trade shares are largely the result of their geographic characteristics. Of the 10 East Asian countries they consider, only Malaysia and Singapore have more trade than one would expect given their locations.

Frankel, Romer, and Cyrus then combine their estimates of trade's impact on income with data on the amounts these countries trade to ask

how much their high levels of trade have contributed to their growth. They find that trade accounts for a

ever, a large part of their rapid growth cannot be accounted for by trade. Thus, the authors conclude,

"...trade has a quantitatively large, significant, and robust positive effect on income."

large amount of growth for Hong Kong and Singapore, and positive (though smaller) amounts for Korea, Malaysia, and Taiwan. For all of the countries other than Singapore, how-

the high levels of trade resulting from East Asian countries' favorable locations have been an important source, though certainly not the only one, of their high growth. RN

Prices of Medical Care May Be Declining

The official Consumer Price Index (CPI) for medical care has increased more rapidly than the price of other goods and services for the past several decades. But the CPI for medical care has many difficulties: it does not take into account all of the rapid technological advances that are occurring in the field of medicine, nor the fact that some people who would have died from a

The Service Price Index considers the price of particular medical treatments over time. As such, it corresponds most closely to current price indexes, such as the CPI. The Cost of Living Index measures how much consumers would be willing to pay or would have to be compensated to accept changes in heart attack treatments and prices over time, accounting for changes in quality.

In **Are Medical Prices Declining?** (NBER Working Paper No.

Index is especially high because of changes in the bundle of goods consumed. Simply switching from an index like the CPI to one that annually reprices treatments for patients with a given health problem would reduce measured growth of a medical price index by almost 3 percentage points annually, to less than one percent annually.

For patients with a heart attack, the rise in this component of the Cost of Living Index is even smaller, they find, and may actually be a decline. The authors estimate changes in the quality of medical care by using data on longevity following a heart attack. They find that between 1984 and 1991, life expectancy for heart attack patients increased by 8 months. While this improvement in life expectancy cost money, Cutler and McClellan estimate that the benefits of the medical care were greater than these costs. Thus their central estimate is that this component of the Cost of Living Index is actually falling by about one percent annually from 1984 to 1991. There is a great deal of uncertainty in this estimate, the authors caution, but even under conservative assumptions they find no change in this component of the Cost of Living Index.

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medical problem in previous years can now be treated and live for many more years.

In an attempt to get a better idea of the true price of health care, NBER researchers **David Cutler** and **Mark McClellan** and their co-authors **Joseph Newhouse** of Harvard Medical School and **Dahlia Remler** of Tulane University estimate two new indexes of medical care prices which they apply to care for heart attacks: a Service Price Index and a Cost of Living Index.

5750), the authors estimate these indexes using data on heart attack treatment for the Medicare population between 1984 and 1991 and for patients at a large teaching hospital between 1983 and 1994. Their price indexes increase substantially less rapidly than official medical care price indexes do. For example, relative to the GDP deflator, their indexes suggest that medical prices have, at most, risen modestly in recent years, and may have fallen. The differential for the Service Price

The NAIRU Declines Below 6 Percent

The NAIRU (Non-Accelerating Inflation Rate of Unemployment) is the unemployment rate that is consistent with a constant rate of inflation. In a paper published last summer by the National Bureau of Economic Research, Research Associate **Robert J. Gordon** asks whether the NAIRU has declined, and if so, from what level a decade ago to what level today.

In **The Time-Varying NAIRU and its Implications for Economic Policy** (NBER Working Paper No. 5735), Gordon asserts that the NAIRU does vary over time, and he develops a new technique for estimating a time-varying NAIRU. He also shows that the price index used in estimating the NAIRU is crucial to

its value: that is, "the Fed needs to decide which inflation index it is trying to stabilize, for example, the GDP deflator, the deflator for Personal Consumption Expenditures (PCE), or the Consumer Price Index."

interval, ranging between extreme values of 5.3 and 6.5 percent," Gordon finds. "In recent years there has been a downward drift in the NAIRU from around 6.2 percent in the late 1980s to current estimates of

"The...time-varying...NAIRU stays remarkably close to 6 percent over the entire four-decade interval, ranging between extreme values of 5.3 and 6.5 percent."

Gordon estimates that the NAIRU for the GDP deflator in the first quarter of 1996 was 5.7 percent. If he relies instead on the chain-weighted PCE deflator as the inflation measure, he obtains a value of 5.3 percent for the NAIRU for that same quarter. "The...time-varying...NAIRU stays remarkably close to 6 percent over the entire four-decade

5.7 percent for the GDP deflator and 5.3 percent for the PCE deflator." According to Gordon, his new NAIRU series "implies that monetary policy in 1995-6 has been almost precisely on target, with an average unemployment rate during the six quarters [from the end of 1994 to the beginning of 1996] of 5.6 percent."

When is a Current Account Deficit Sustainable?

It has been some three years since Mexico's financial crisis stunned the global capital markets and nearly swamped other emerging markets. Since then, economists, investors, international lending institutions, and other interested parties have struggled to gain a better grasp of the dynamics of a financial and exchange rate crisis, spurred largely by the desire to come up with a set of "early warning" indicators. With vast amounts of capital pouring into the developing world, one area of study has been large and persistent current account deficits. A persistent current account deficit above, say, 5 percent of gross domestic product is a traditional danger signal, especially if the deficit is financed with short-term debt or foreign exchange reserves, or if it reflects high consumption.

But experience shows that a large external imbalance is not necessarily

a sign of weakness or impending crisis. A country with ample investment opportunities can profitably import plenty of capital. What's more, countries such as Australia, Ireland, Israel, and South Korea had current account deficits around the 5 percent level for years without suffering a financial meltdown even as other nations, such as Mexico and Chile, ran headlong into severe difficulties.

In the **Sustainability of Persistent Current Account Deficits** (NBER Working Paper No. 5467), **Gian Maria Milesi-Ferretti** and **Assaf Razin** take a critical look at external imbalances. Solvency, defined as whether a country has the ability to generate future trade surpluses to repay existing debt, partially captures a country's ability to pay. But a country's willingness to pay its debts and the willingness of foreign investors to continue lending also determine "sustainability."

The authors point out that a group

of countries had persistent and large current account deficits with very different outcomes. Chile in 1982 and Mexico in 1976, 1982, and 1994 all went through an external crisis. The governments in Israel in 1985, Ireland in 1987, and South Korea in 1980 all managed to shift their policies and steer clear of financial crisis. Australia had a current account deficit between 1990 and 1995 with no change in policy. In general, Milesi-Ferretti and Razin find that a 5 percent or so current account deficit becomes worrisome when a nation's export sector is small, debt service is large, savings are low, the financial sector is dominated by banks with weak regulatory oversight, and equity financing is small.

Indeed, the main lesson the authors draw from this study is the need to consider a number of factors rather than any single variable in judging the potential consequences of a current account deficit. Similarly,

in a related study, **Current Account Sustainability: Selected East Asian and Latin American Experiences** (NBER Working Paper No. 5791), the authors conclude that no single variable works as an early warning signal. Here Milesi-Ferretti and Razin compare the experience with large

that is running large external imbalances must hit a turning point when the trade balance shifts from deficits to surpluses. The question is, can the shift happen smoothly, or must it be forced by a crisis?

The authors' case study approach reveals significant differences

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current account deficits of three Latin American countries (Chile, Columbia, and Mexico) and three East Asian countries (Korea, Malaysia, and Thailand) in the early 1980s and early 1990s. At some point, a country

between the experiences of the early 1980s and the early 1990s. For instance, the current account imbalances of the early 1980s in Columbia, Malaysia, Mexico, and Thailand were accompanied by large fiscal

deficits. In sharp contrast, none of these countries had huge fiscal deficits in the early 1990s. Instead, their external borrowings largely reflected a disparity between private sector savings and private investment. In the late 1970s and early 1980s, the external borrowings by Latin American and East Asian countries were mostly syndicated loans; in the early 1990s a large fraction of the capital came from portfolio flows and direct foreign investment. The authors findings here echo the results of their earlier study; indeed, this work emphasizes how large current account deficits are less likely to lead to external crisis when the export base is large, and that low savings are a common denominator in all of their examples of crisis. CF

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