Comments on
"Productivity Growth and Trade Specialization"
by Richard Harris and Samer Kherfi

General Comments:

1. This paper is very (perhaps too) ambitious. Unlike most studies (including one of mine) that take productivity as given and examine its impact on trade flows, this paper also considers the more difficult question of the impact of trade on productivity via specialization.

2. The paper derives two formal theoretical models based on the Heckscher-Ohlin and Ricardian trade models to examine the relationship between trade, specialization and productivity. It also discusses some dynamic effects in the context of endogenous growth models. The results from this theorizing, however, are somewhat unsatisfactory as no new or particularly insightful results are obtained. (More on this below.)

3. The paper includes as well several attempts to "test" the empirical implications of the theory and, on the whole, not much supporting evidence is found. Two industry-level regression models with the following dependent variables are estimated:
1. Canadian TFP growth and
2. Canadian export growth.

In the first regression model almost all the explanatory variables are statistically insignificant. The main finding of interest is that TFP growth rates in relatively open Canadian manufacturing industries exhibit conditional convergence. In particular, Canadian industries with initially lower productivity levels tend to grow faster if they are open to trade. This is a useful result because not only is consistent with the hypothesis that international competition improves the performance of domestic firms, but also with recent empirical work in Canada by Dan Trefler, Keith Head and John Ries. They find that the FTA raised the productivity of the most protected industries by forcing the exit of the weakest firms.

In the second regression model, similar results are obtained. In particular, productivity growth is found not to affect export performance. This finding stands in contrast to the results of my work with Ehsan Choudhri in which we find that relative productivity performance in Canada and the United States has a statistically significant impact on their share of sales in each other's market.

4. Why are the empirical results not stronger?
(i) The absence of a well-specified theoretical model that adequately captures the characteristics of Canadian industries.
Although the paper reviews a number of different models, the review lacks focus and also relevance to the Canadian economy. In particular, why look at models in which the terms of trade are endogenous, when the overwhelming evidence for Canada (and other countries also) indicates that domestic advances in productivity typically have no impact on the terms of trade (or perhaps improves them) rather than causing them to decline as the simple 3-good Ricardian model implies? [Note: the result that productivity improvements worsen the terms of trade is an artifact of this model; it disappears if the model is generalized to an infinite number of goods as in the Dornbusch-Fischer-Samuelson model. Also, the paper ignores quality-ladder models that imply

that as domestic labour productivity improves, countries will produce products with higher value-added (e.g., Japan, South Korea, Mexico)].

Furthermore, the regression models that are specified do not provide a complete explanation of the variation in the dependent variables. There are many potential omitted variables.

(ii) The empirical specification is not consistent with the theoretical models.
The regression models are an unorthodox mix of rates of change and levels, which cannot be derived from the theoretical trade models considered in the paper. The issue of stationarity is not addressed (i.e., short-run dynamics versus long-run equilibria).

The estimated models constrain all the slope coefficients to be the same across industries. Theoretically, there is no reason for this to be true. Moreover, the likely invalidity of this constraint is manifested by the fact that when industry fixed effects are included in the first regression model they are highly significant.

(iii) The choice of the dependent variable
In my experience, using TFP as a dependent variable is problematic. The series seems to contain a lot of noise. Hence, it is not surprising that poor empirical results are obtained.

5. The critical question that this paper fails to address is why the post-FTA explosion of bilateral trade between Canada and the U.S. has not eliminated the productivity level gap between the Canadian and U.S. manufacturing sectors as Harris's earlier work predicted. In particular, why has this dramatic increase in trade not produced the scale effects that the earlier models predicted.

6. The empirical evidence - tables, regression results etc. - is not well explained. No data sources are given nor are the usual range of specification tests presented for the empirical models.

Specific Comments:
1. The paper often repeats the incorrect assertion that specialization cannot occur in the HOV model, but only in the Ricardian model. This is not correct: when a country liberalizes trade, for example, specialization will occur in the HOV model and generate gains from trade. While this assertion is generally believed to be true for "complete" specialization, recent papers by Deardorff have extended the HOV to situations of complete specialization.

2. Tables 1-4 and Figures 1 & 2 are only tangentially related to the theory discussed in the paper and the estimated regression models.

3. p.1. Trade does not break the direct link between productivity and living standards; it simply allows for an additional channel - the terms of trade - to have an impact.

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Comments on
"Has Canada Specialized in the Wrong Manufacturing Industries"
by Edward Wolff

General Comments:

1. The most interesting results in this paper are the calculations of labour productivity and TFP growth in the manufacturing sectors in Canada and the United States when the other country's industry weights are used (Tables 6 &7). In the case of Canada, labour productivity and TFP growth increase only marginally over the period 1989-97 when U.S. industry weights are employed, indicating that labour productivity and TFP growth are similarly low across all Canadian industries. This finding points to systemic factors as the root causes of the relatively weak Canadian productivity performance. An important potential explanation might be the relatively low levels of investment in machinery and equipment across all industries in Canada due to macroeconomic factors - weak (until recently) aggregate demand and a depreciated real exchange rate (70% of machinery and equipment is imported). In addition, the OECD has recently found that the effective tax rate on machinery and equipment in the United States is well below the OECD average.

In the case of the United States, however, labour productivity and TFP growth rates fall significantly when Canadian industry weights are used. This observation implies:
(i) the differential in productivity growth rates across U.S. industries is higher than in Canada (that is, the composition matters) and
(ii) Canadian manufacturing has not moved into the sectors or industries that have experienced the highest measured productivity growth rates in the United States.

(i) Why would the differential in productivity rates across industries be larger in the United States than in Canada?

This observed differential is consistent with the "Two-Industry Explanation of the Canada-U.S. Productivity Gap". Andrew Sharpe argues that "The superior U.S. labour productivity performance is based on the massive output gains in the industrial machinery & equipment and the electronic and other electric equipment sectors and evaporates when these sectors are excluded." The observed Canada-U.S. differential in these two industries could be due to:
(a) economic factors (e.g., different supplies of productive factors, including human and R&D capital, different market sizes and agglomeration economies) or
(b) the mismeasurement of productivity growth due, in part, to the use of hedonic output price indices in these two U.S. industries.

(ii) Why has Canadian manufacturing not shifted resources into these two industries to the same extent as in the United States?

The answer to this question is either the market incentives were not the same or that government intervention played a role. The market incentives to move into these industries may be less in Canada because of the factors that drive comparative advantage: differences in technology, differences in factor endowments (human capital versus natural resources) and market size.

In terms of government intervention, there are at least three possible answers:
(a) relatively low U.S. tax rates on machinery and equipment,
(b) relatively high U.S. government defence expenditures on these two high-tech industries; and
(c) the Canadian corporate tax system that favours the traditional manufacturing and processing industries.

2. Although the paper answers the question posed by its title with a weak "yes", its main weakness is that it fails to go deeper and explain why this might occur in a market-based economy like Canada's.

Specific Comments:
1. It would be useful to know whether the correlation coefficients and rank coefficients given in the tables are significantly different from zero.

2. The statements that an exact decomposition could be obtained for TFP but not for labour productivity are not well explained.

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