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JUDGING FACTOR ABUNDANCE

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ABSTRACT

Recent theoretical developments have cast doubt on the reliability of the commonly used cross-industry regression as a method for inferring a country's abundant factors. This paper examines the empirical importance of these theoretical cautions by comparing regression derived estimates of factor abundance with both revealed and actual factor abundances for thirty-five countries and up to twelve resources. Trade imbalances are found to importantly affect the regression estimates and we therefore derive and implement a theoretically consistent trade balance correction. The results indicate that despite theoretical concerns, the regression measures are often reliable indicators of revealed factor abundances. The results therefore enhance the credibility of the findings of the numerous regression studies that have been conducted over the past thirty years.

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I. Introduction

Many studies have attempted to test Heckscher-Ohlin (H-O) theory, or more generally, to infer a country's abundant resources, by regressing industry trade balances on factor input requirements in a single year. Inferences about a country's abundance in a factor are then based on the sign of its estimated coefficient. However, Anderson (1981), Leamer and Bowen (1981) and Aw (1983) have demonstrated that unless each factor is specific to each industry, such inferences are inappropriate in a model with more than two factors. Moreover, Leamer and Bowen have argued that, in the context of the H-O model, the theoretically correct method for inferring factor abundances is to directly compute the embodied trade in factor services.

Despite these theoretical statements, many economists continue to use the interindustry regression methodology to infer factor abundances. Balassa (1979, 1986) studied the relationship between factor intensity and trade in a large number of countries, often with quite strong results. Harkness (1978, 1983) continues to argue that interindustry regressions provide information on factor abundances.[1] Crafts and Plant (1986) use such regressions as the basis for discussing historical differences between the British, German and US economies. In general, the results of these and other studies suggest that, contrary to the theoretical criticisms, the interaction between net trade and factor inputs captured by interindustry regressions is useful for inferring factor abundances. In contrast, direct study of the interaction between trade and factor inputs in the form of the embodied trade in factor services (Bowen,

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[1] A notable and theoretically consistent use of the inter-industry methodology is Baldwin and Hilton (1984) who re-interpreted the standard methodology to provide evidence on factor price differences between particular countries.

Leamer and Sveikauskas (1987)) suggests that factor abundances are not accurately revealed. The contrasting conclusions of these two approaches raises questions as to the usefulness of the regression approach as a method for inferring factor abundances and doubts about the validity of the results generated by the innumerable regression studies conducted over the past thirty years.

This paper attempts to determine the usefulness of regression derived measures of factor abundance by examining their consistency with factor abundance as revealed both by the embodied trade in factor services and by true factor abundance. Our analysis therefore assesses the empirical importance of theoretical criticisms of the regression approach, and offers an indication of the its reliability as a method for inferring factor abundances.[2]

In Section II we review the theoretical criticisms of the regression approach and demonstrate that trade imbalances also affect the ability of the regression approach to predict factor abundances. We therefore extend prior analyses to derive (and subsequently implement) a theoretically consistent trade balance correction - a matter that has been largely ignored by the interindustry regression literature.

Section III presents the results of estimating six interindustry regression models reflecting alternative degrees of factor input aggregation for each of thirty-five countries and the "rest-of-world." Section IV compares these regression results with corresponding measures of the embodied net trade in factor services computed using total factor input requirements

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[2]An understanding of this is important since the wealth of regression studies offer numerous independent observations on factor abundances at different points in time and for countries other than the United States.

derived from the 80 order U.S. input-output table for 1967. Section V then examines the consistency between the regression approach and the embodied trade in factor services for revealing true factor abundances as measured by countries' actual factor supplies. In general, these analyses indicate the reliability of the regression approach for revealing factor abundances.

Overall, our results indicate that regression coefficients generally provide an effective approximation to the embodied trade in factor services and thus provide a reliable indication of revealed factor abundances. However, regression coefficients are only slightly more reliable than embodied trade in factor services at revealing true factor abundances. We conclude that despite the valid theoretical criticism of the regression approach, interindustry regression coefficients nonetheless perform surprisingly well. Therefore, the many regression studies conducted over the past thirty years can be considered to have provided reliable evidence on countries' revealed factor abundances.

II. Theory

Given N commodities and K factors, the vector of country i's net trade in factor services (F_i) is:

(1) $$F_i = A'_i T_i = A'_i Q_i - A'_i C_i$$

where

T_i = Nx1 vector of net trade.

A_i = NxK matrix of factor input requirements (direct plus indirect).

Q_i = Nx1 vector of final outputs.

C_i = Nx1 vector of final demands.

If, following Bowen, Leamer and Sveikauskas (1987), we allow for the possibility of a trade imbalance and assume that the technology matrix A is identical across countries[3] and that countries have identical homothetic preferences, then we may express (1) to indicate the net trade in factor services if trade were balanced (F_i^A):

(2) $$F_i^A = A'T_i - \lambda_i E_w = E_i - \alpha_i E_w$$

where

E_i = Kx1 vector of country i's factor supplies;

$E_w = \Sigma_i E_i$, Kx1 vector of world factor supplies;

$\alpha_i = Y_i/Y_w$, country i's share of world expenditure;

$\lambda_i = b_i/Y_w$, the ratio of country i's trade imbalance to world expenditure.

Defining a country to be abundant in factor k if its share of the world amount of factor k exceeds its expenditure share ($e_{ik}/e_{wk} > \alpha_i$), (2) implies the Heckscher-Ohlin-Vanek (H-O-V) "sign proposition:" a country will be a net exporter of the services of its abundant factors and a net importer of the services of its scarce factors. That is, if (2) holds then a country's abundance in a factor is indicated by the sign of the corresponding element of either the adjusted factor content vector F_i^A or the excess factor supply vector $E_i - \alpha_i E_w$. In what follows we refer to F_i^A as the measure of revealed factor abundance and denote $E_i - \alpha_i E_w$ as the measure of true factor abundance.

As stated by Leamer and Bowen (1981), many researchers wishing to infer a country's true factor abundance observe T_i and A but do not compute $A'T_i$. Instead they regress the trade vector of country i on the input requirements:

(3) $$T_i = A\beta + \epsilon$$

where β is the Kx1 vector of regression coefficients (excluding a constant term) and ϵ is the Nx1 vector of errors (this discussion assumes balanced

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[3]This assumes either factor price equalization or that input requirements are technologically fixed and internationally identical.

trade). The elements of the vector of estimated coefficients β^* are then assumed to have the same sign as the corresponding elements of the factor content vector $A'T_i$, or since (2) is assumed to hold, the same sign as the elements of the excess factor supply vector $(E_i - \alpha_i E_w)$. However, this assumed equality of signs between the vector of coefficients and the vector of revealed factor abundance or the vector of true factor abundance is not an implication of the H-O-V theorem. In particular, the estimate of β (β^*) is, assuming trade balance,

(4) $$\beta^* = (A'A)^{-1}A'T_i$$

which by equation (2) is

(5) $$\beta^* = (A'A)^{-1}(E_i - \alpha_i E_w).$$

Whether the elements of the estimated coefficient vector β^* have the same sign as the corresponding elements of the vector of revealed factor abundances or the vector of true factor abundances depends on the matrix $(A'A)^{-1}$. As suggested by Leamer and Bowen and proved rigorously by Aw (1983), a necessary and sufficient condition for the vector β^* to have the same sign as the vector of revealed factor abundances is that the matrix $(A'A)^{-1}$ be diagonal with strictly positive elements.

Since industries do in fact use several inputs, the actual input requirements matrix A used in such regression studies is never diagonal. And this raises a question as to the empirical importance of the off-diagonal elements ("factor complementarities" in Harkness'(1978) terminology) in $(A'A)^{-1}$.[4] If "factor complementarities" are small then the theoretical concerns expressed above may be empirically unimportant and correct inferences

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[4] Aw's condition does not rule out that there may exist a non-diagonal $(A'A)^{-1}$ matrix which would preserve the sign of the vector of revealed factor abundances.

about revealed factor abundances based on coefficient signs may be correct.

To assess the empirical importance of "factor complementarities" we first estimate (3)[5] for each of thirty-five countries and the "rest-of-world" using as data the 1967 net trade in 62 industries in agriculture, mining and manufacturing and the 1967 U.S. matrix of direct plus indirect factor input requirements. We then compare the sign of an estimated coefficient with the sign of the corresponding revealed factor abundance and true factor abundance for each factor across the sample of countries. The comparison with true factor abundances permits an assessment of the regression approach versus revealed factor abundances as predictors of true factor abundance. Our measure of conformity between the sign of regression coefficients, revealed factor abundances and true factor abundances is the proportion of correct sign matches.

Estimation Issues

Three issues that arise when estimating interindustry regressions are the treatment of possible heteroscedasticity, correction for any trade imbalance, and whether to include a constant term. Past literature has usually viewed the issue of heteroscedasticity as a "scaling" problem associated with the differing importance of commodities in world trade so that "correction" typically involves a scaling of the industry trade balances by industry outputs.[6] The issue of trade imbalance has been largely ignored by the regression literature. An exception is Baldwin (1971) who dealt with this issue indirectly by measuring an industry's net trade as the difference between its export share and its import share. Although Baldwin's treatment

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[5]After correcting for trade imbalance as discussed below.

[6]Or, more generally, by using weighted least squares with weights equal to some function (e.g., square root) of industry outputs.

does force trade balance *ex ante*, the theoretical validity of this procedure was not explored. Lastly, as the following discussion shows, whether to include or exclude a constant term in the regression is closely associated with the issue of correcting for a trade imbalance. Essentially, inclusion of a constant term implies a specific trade balance correction.

Consider first the trade balance correction implied by including a constant term in the regression equation. As is well known, this implies that estimates of the "slope" coefficients can be obtained by first removing the means of the variables and then proceeding with estimation as usual. Specifically, if M is the NxN idempotent matrix $I - 1(1'1)^{-1}1'$ where 1 is an Nx1 vector of unit elements, then the estimates of the slope coefficients are:

(6) $$\beta^* = (A'M'MA)^{-1}A'M'MT_i = (A'MA)^{-1}A'MT_i$$

where we have used the result that $M'M = M$. Since $MT_i = T_i - 1b_iN^{-1}$, where b_i is country i's trade imbalance, the implicit trade balance correction involves subtracting from each industry's net trade the fraction 1/N of the country's trade imbalance. Given this, (6) can be written

(7) $$\beta^* = (A'MA)^{-1}[A'T_i - \bar{a}'b_i]$$

where $\bar{a}'$ is a Kx1 vector whose k^{th} element is the average requirement (across N industries) of input k. Equation (7) indicates that unless trade is balanced, inclusion of a constant term implies that one is attempting to infer the signs of the elements of the vector $(A'T_i - \bar{a}'b_i)$ and not the signs of the elements of the vector of revealed factor abundances $(A'T - \lambda_iE_w)$. Thus, even if the matrix $(A'MA)^{-1}$ satisfied Aw's condition (diagonal with strictly positive elements), inclusion of a constant term may result in coefficient signs that do not correspond to either the actual revealed factor abundances $(A'T - \lambda_iE_w)$ or the true factor abundances $(E_i - \alpha_iE_w)$.

To derive the proper trade balance correction we note that the trade balance correction in (2) is λ_iE_w. Since $\lambda_i = b_i/Y_w$ and $E_w = A'Q_w$, where Q_w

is the Nx1 vector of world outputs, the vector of revealed factor abundances (F_i^A) can be written

(9) $A'(T_i - b_i S)$

where S is the Nx1 vector whose elements $s_j = q_{wj}/Y_w$ are the world output shares of each commodity. . Thus, the proper correction for a trade imbalance is to subtract from industry j's net trade the fraction s_j of the country's trade imbalance.

Once a country's net trade vector is corrected for any trade imbalance according to (9), the issue of including or excluding a constant term then involves only its effect on the elements of $(A'A)^{-1}$. How inclusion of a constant term affects the off-diagonal elements of $(A'A)^{-1}$ cannot be determined without a more complete specification.[7] And, without additional theoretical guidelines, we choose to use the more general specification that includes a constant term in our subsequent estimation of interindustry regressions.

The trade balance correction (9) requires detailed data on world outputs which are not available. However, the assumption of identical homothetic preferences permits one to adopt the correction using data on the expenditure shares of only one country. Specifically, homotheticity implies that a country's share of expenditure on commodity j equals the share of the world's expenditure on commodity j

(10) $c_{ij}/Y_i = c_{wj}/Y_w$

where $c_{.j}$ is expenditure on commodity j. Since world expenditure equals world

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[7] If input requirements are positively correlated across sectors then including a constant term would lower the magnitude of the off-diagonal elements of $(A'A)^{-1}$ and thus more closely approximate Aw's condition. This follows from the relation $COV(X,Y) = E[(X - E[X])(Y - E[Y])] = E(XY) - E(X)E(Y)$, where X and Y are any two input vectors, since if $COV(X,Y) > 0$ then $COV(X,Y) < E(XY)$.

production of commodity j (q_{wj}), (10) can also be written as

(11) $$c_{ij}/Y_i = q_{wj}/Y_W = s_j.$$

Estimates of the world output shares in (9) can therefore be obtained from data on the expenditure shares of only one country. Here we use the data on U.S. final demand to measure expenditure shares for each of sixty-four commodities (shares are normalized so that $\Sigma_j s_j = 1$).[8] Note that additive errors in measuring world output shares using US expenditure data does not introduce an "errors in variables" problem since such errors are incorporated into the usual regression error term.[9]

Finally, since the trade balance correction involves the world output of each commodity, estimating an interindustry regression without the correction involves a left-out variable (world output). This specification error may explain, in part, the usual finding by prior studies of a correlation between industry outputs and the regression residuals[10] which then led analysts to scale the trade data by industry outputs. Finally, the result that the influence of a trade imbalance involves <u>world</u> outputs offers support for Deardorff's (1984) conjecture that a more appropriate variable for scaling the trade data would likely involve a measure of world market size.[11]

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[8] Consumption shares were computed for IO categories 11 (construction) and 12 (construction repair) even though these sectors are omitted from the regression analysis (there is no trade in these sectors).

[9] Note that with additive measurement errors the regression error would include the trade imbalance. This would not bias coefficient estimates since we expect this variable to be uncorrelated with factor input requirements.

[10] If the only source of this correlation was a failure to correct for trade imbalance, then the sign of the correlation would depend upon the sign of the trade imbalance of the country being analyzed and the value of the correlation would be zero if trade were balanced.

[11] This conjecture is further supported by Bowen (1989) who shows that world output is also a theoretically appropriate scaling variable in the context of a cross-country regression of trade on countries' factor supplies.

Turning to the issue of heteroscedasticity, we note that it is logically distinct from the issue of scaling discussed above in the context of trade imbalance. In particular, proper treatment of heteroscedasticity requires that one specify the source of the heteroscedasticity. Since the trade balance correction mitigates one possible source of heteroscedasticity, we are unwilling to follow usual practice and scale the trade data by industry outputs without further theoretical justification. However, granting that there may be other sources of heteroscedasticity, we assume the existence of a general, but unspecified form, of heteroscedasticity[12] and employ White's (1980) correction to provide consistent estimates of the variance-covariance matrix of the estimated coefficients. But the resulting estimates of the coefficient standard errors are not efficient.

III. Interindustry Regressions

This section presents the results of estimating an interindustry regression of the form

$$(12) \qquad (T_i - b_i S) = \beta_0 + A\beta + \epsilon$$

for each of thirty-five countries and the "rest-of-world." Six alternative specifications of (12) are considered which differ in the degree of aggregation of the factor input data. The most general model (Model 1) uses data on the total requirements of thirteen factor inputs: capital, nine categories of labor (professional/technical, managers, sales, clerical, craftsmen, operatives, laborers, services, farmers) and three categories of land (arable, pasture, forest). Model 2 aggregates the three land types into one variable, LAND. Model 3 further aggregates the labor categories into two

[12] Calculation of Breusch-Pagan statistics for each country and each model indicated widespread rejection of the null hypothesis that the regression residuals were unrelated to one or more of the explanatory variables.

variables, WHITE (professional/technical, managers, sales, clerical) and BLUE (craftsmen, operatives, laborers, services, farmers). Model 4 aggregates all labor inputs into one category, LABOR.[13] Models 5 and 6 correspond to Models 1 and 2 except that the three labor inputs: operatives, craftsmen and laborers are aggregated into one factor, BLUE2. This procedure makes it possible to compare the regression results with the available data on true factor abundance.

Recent theoretical work (e.g., Leamer (1987)) has emphasized a three-input model: capital, labor and land, which here corresponds to Model 4. In contrast, much of the empirical trade literature has favored a three factor model: capital, human capital, and raw labor. Our four factor model, Model 3, is closest in spirit to this three factor model.[14]

Appendix Tables A1-A6 show the detailed results of estimating equation (12) for each country and model. Before addressing the central issue of this paper, the consistency of the regression approach for inferring factor abundances, we examine if aggregation of the factor input data affects the explanatory power of the regression equations. This issue warrants examination since the interindustry regression literature has used varying degrees of input aggregation.

The first six columns of Table 1 show adjusted R-squares for each model and country. The last 5 columns show the reduction in the adjusted R-square

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[13] The data used here are essentially those used in Bowen, Leamer and Sveikauskas (1987), and are discussed in detail in the Data Appendix to that paper. The only differences in the present data are that we use the 80-order input-output table for the United States in 1967 and we use data on thirty-five countries instead of twenty-seven as in the preceding study.

[14] However, notable differences are that we include a land variable and measure varying degrees of human capital (labor inputs) using occupational data. The usual three factor model uses the capitalized wage differential to measure human capital.

between successive models. Examination of this table indicates the following. For the most complete model (Model 1) the equations for five countries (Belgium-Luxembourg, Canada, Finland, Sweden and Switzerland) are not significant at the 5 percent level and of these, Canada and Finland have negative adjusted R-squares. Six countries have adjusted R-squares in excess of .90 (Argentina, Brazil, Denmark, Iceland, Ireland and Norway) and 22 countries have adjusted R-squares in excess of .50. Finally, note that the adjusted R-square for the United States (.596) is low compared to many of the other countries - a surprising result given that the factor input data are for the United States.

The second column of Table 1 shows that with aggregation of the three land variables into one variable, LAND (Model 2), the regressions for Austria, Egypt and Singapore are no longer significant at the 5 percent level. In addition, for sixteen countries the adjusted R-square declines by more than .10. Such results suggest that differences in land inputs provide important information on the variation in countries' trade patterns.

When the labor inputs are aggregated into two categories, WHITE and BLUE (Model 3), the equation for the United States is no longer significant at the 5 percent level. This result is troubling since Model 3 is closest in spirit to the accepted model of the interindustry regression literature.[15] Finally,

[15] The better performance of the typical three factor model in the trade literature may be due to its use of the capitalized wage differential as a measure of human capital input. However, Krueger and Summers (1988) have shown that there are substantial interindustry differences in wages which are not associated with labor quality. Furthermore, Katz and Summers (1988) have shown that the wage premium is systematically associated with an industry's net export performance. Therefore, interindustry studies of the relationship between human capital and trade performance have to be regarded as spurious, at least in part. In addition, the typical regression in the literature uses data only for manufacturing sectors whereas we include data on agriculture and mining sectors as well. Thus, it is possible that these non-manufacturing sectors may be exerting an extreme influence on the regressions for the more

the reduction in adjusted R-squares from aggregating the detailed occupational inputs is not as large as that resulting from aggregating the land inputs.

Further aggregation of the WHITE and BLUE inputs into one overall LABOR input (Model 4) leads to only an additional small reduction in adjusted R-squares. In particular, most countries have reductions of less than .02, the exceptions being the Netherlands and Switzerland which show reductions of .025 and .079, respectively. These results suggest that the presence of highly skilled white collar workers is particularly important in these countries. In general, however, aggregation of the different occupational inputs, as from Model 2 to Model 4, has surprisingly little impact on overall explanatory power.

The last row of Table 1 indicates that, on average, the greatest reduction in explanatory power results from aggregating the land inputs. Also, there are few differences, on average, between Model 1 and Model 5 and between Model 2 and Model 6. Thus, in subsequent comparisons of coefficient signs and factor abundances we do not expect the conclusions to be sensitive to the slightly greater aggregation of the labor inputs associated with Models 5 and 6. A general conclusion from Table 1 is that aggregation of land inputs, rather than aggregation of labor inputs, has a more important effect on explanatory power.[16]

Tables 2A-2F present the estimated sign of each coefficient for each country. These signs are part of the data that will be used in evaluating the regression approach. In each table a sign is reported if its associated confidence level is 90 percent or higher and the overall regression is

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aggregated models.

[16]This conclusion may be sensitive to the order in which the various groups of inputs were aggregated.

significant at the 5 percent level.

For Model 1 (Table 2A), each of the twenty-two significant capital coefficients is negative.[17] Similarly, all significant PROFTECH coefficients are positive but the coefficients for the remaining labor categories and for the land variables vary across countries. Model 2 (Table 2B) shows a similar pattern of signs for CAPITAL and PROFTECH and indicates that the sign of the coefficients for these inputs is insensitive to aggregation of the land variables.

For Model 3 (Table 2C), the sign for CAPITAL is again negative when significant. Aggregation of the labor variables also leads to few changes in the sign of LAND's coefficient while the signs for WHITE and BLUE vary across the sample of countries. Table 2D shows that further aggregation of the labor data into a single variable, LABOR, leaves the signs for CAPITAL and LAND undisturbed.

Finally, Tables 2E and 2F indicate that the sign patterns for Models 5 and 6 are virtually identical those of Model 1 and Model 2, respectively.

In general, aggregation of the land and labor inputs leaves the sign for capital undisturbed and does not appreciably change the number of significant coefficients.

IV. Predicting Revealed Factor Abundances

We now proceed to the basic empirical results of this paper. We first examine the importance of the trade balance correction developed in Section II. In this, and subsequent analyses, we focus on significant regression coefficients since these have been emphasized by most of the past regression

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[17] The positive capital coefficient for ROW is of course a consequence of the definition of ROW.

literature.

The first six columns of Table 3 report the proportion of matches between the sign of significant regression coefficients and the sign of the corresponding revealed factor abundances corrected for trade imbalance ($A'(T_i - b_i S)$). The next six columns of Table 3 show the proportion of sign matches when the trade vector is "corrected" for trade imbalance only by inclusion of the constant term (the usual regression in the literature). In all six models, as shown by the row TOTAL, the proportion of sign matches between significant regression coefficients and revealed factor abundance is greater when the proper trade balance correction is used. The row "Z-STAT" shows standardized normal test statistics for the difference in these overall proportions. The null hypothesis of no difference in the proportions is tested against the alternative hypothesis that the proportion of matches is higher when the proper trade balance correction is used. The null hypothesis is rejected at the 95 percent level for Models 2, 3 and 4.

Models 3 and 4 correspond to the usual models employed in the literature in that the factors are measured as broad aggregates such as capital, labor and land, or skilled and unskilled labor. For these models the overall proportion of matches is at most 82 percent without the trade balance correction but increases to over 95 percent with the correction. Therefore, using the proper trade balance correction makes a substantial difference in the reliability of the regression coefficients for these models, which are the more important for practical applications.

The last row of Table 3 reports similar summary proportions (TOTAL) and corresponding Z-STATs when the proportion of sign matches is computed using all coefficients, without regard to their level of significance. As might be expected, when all coefficient signs are considered the proportion of sign matches between regression coefficients and revealed factor abundances is typically lower. Again, however, the proportion of matches is generally higher with the trade balance correction. In particular, the proportion of matches is higher in the corrected case for five of the six models, and significantly so in four cases.

Lastly, that the proportion of matches is generally higher for the trade balance corrected models also applies to many of the individual factors. In this regard, particularly interesting is the effect of the trade balance correction on the proportion of matches for the three broad labor aggregates LABOR, WHITE and BLUE. The proportion of WHITE increases from 64.3 percent to 81.8 percent with the correction and the proportions for LABOR and BLUE more that double to become 100 percent with the correction.[18]

The above results indicate that the proposed trade balance correction significantly improves the reliability of the regression coefficients as indicators of revealed factor abundances.[19] Consequently, subsequent analyses will use only the results of regressions estimated using the trade balance corrected data.

We now consider the evidence on sign matches between regression coefficients and revealed factor abundances in more detail. The discussion proceeds by examining the results for significant coefficients estimated using trade balance corrected data as shown in the first six columns of Table 3. For example, the evidence with respect to Model 1 indicates that 95.7 percent of the significant coefficient signs for capital match capital's revealed factor abundance and that this proportion is 90 percent for Model 2.

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[18]The precise reason for the dramatic increases in the proportions for these aggregate labor categories is unclear, but one is tempted to think that patterns of protection may be involved.

[19]Correction for trade imbalance is less important if one is only interested in the ordering of revealed factor abundances (i.e., the H-O-V "rank" proposition). See Bowen, Leamer and Sveikauskas.

Models 3 and 4 use commonly accepted broad economic aggregates such as capital, labor and land, or white and blue collar labor. For these models the regression coefficient signs do surprisingly well at predicting revealed factor abundance given the trade balance correction. Overall, a significant regression coefficient would predict the sign of its corresponding revealed factor abundance at least 95 percent of the time. Since an empirical study should describe at least the central themes contained in the data accurately, the fact that regression estimates of the effect of such broad aggregates almost invariably describe revealed factor abundance accurately provides very strong support for the regression methodology in such cases.[20]

It is important to note that the strong support for the regression methodology occurs only with the trade balance correction. The proportion of matches is considerably lower without the trade balance correction. Since most past studies that have used these broad factor aggregates have not used the trade balance correction employed here, one would expect their proportion of successes to be closer to the 80 percent level for Model 4 indicated on the right-hand side of Table 3.

In general, the coefficient signs for the disaggregated inputs match the sign of their revealed factor abundances less frequently. For the individual land inputs, the proportion of sign matches is reasonably high for arable and pasture land but substantially lower for forest land. The proportion of sign matches is lowest for the detailed labor inputs.[21] Finally, the row TOTAL in

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[20] The better performance of the more aggregated model occurs, in part, because they contain fewer labor inputs, and therefore give less weight to those inputs where sign matches are the weakest.

[21] The relatively poorer performance of the disaggregated labor inputs given the disaggregated land inputs may reflect a "co-linearity problem." However, the manifestation of this problem in terms of the matrix $(A'A)^{-1}$ is indistinguishable from that of "factor complementarities."

Table 3 indicates that for the entire sample the likelihood that a coefficient's sign correctly matches the sign of the corresponding revealed factor abundance is higher the more aggregated the input data.

Since most regression studies have not used detailed information on land and labor inputs, the utility of their findings is relatively unaffected by the finding above of weak performance for the detailed inputs. However, some studies such as Baldwin (1971) and Harkness (1978) did use such detailed information and the evidence in Table 3 suggests that inferring the revealed factor abundance of such detailed inputs from their corresponding regression coefficient, especially for labor inputs defined by occupational categories, is particularly questionable.

In summary, the above evidence shows that the potentially damaging influence of "factor complementarities" on the regression approach as emphasized by Leamer and Bowen and by Aw is less severe than may have been suggested, but that the damaging influence of such complementarities increases with the level of disaggregation of the input data. In this context, the use of detailed occupational data appear particularly unreliable at predicting revealed factor abundance.[22]

V. Predicting True Factor Abundances

This section considers whether factor abundances as indicated by the sign of regression coefficients are more likely than revealed factor abundances to predict true factor abundances. This analysis complements the tests of the

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[22]Combining this finding with the relatively weaker performance of the models estimated using the detailed occupational data as indicated by Table 1, and with the difficulties in using the alternative concept of the human capital as discussed in footnote 15, indicates that more accurate measures of the influence of on trade need to be devised.

relationship between factor contents and true factor abundances considered in Bowen, Leamer and Sveikauskas (1987), and also addresses the issue that regression coefficients might be preferable to revealed factor abundances as indicators of true factor abundances. This latter issues arises because the regression approach, unlike the direct computation of revealed factor abundances, takes into account possible sampling error in the trade and factor input data.[23]

Table 4 provides evidence on these matters. The first four columns show the proportion of sign matches between revealed factor abundance and true factor abundance whereas the next eight columns show the proportion of matches between the sign of regression coefficients and the sign of true factor abundance.[24]

The first four columns of Table 4 support the findings of Bowen, Leamer and Sveikauskas (1987) and indicate that the H-O-V sign proposition also receives little support in our sample.[25] The overall frequency of sign matches between factor contents and true factor abundances is relatively constant across models and is generally little better than 50 percent. But a new finding here is that the failure of revealed factor abundances to consistently predict true factor abundances does not depend on the questionable occupational data. In Models 3 and 4, where labor is measured as white-collar or blue-collar workers or as total labor input, the proportion of correct

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23This is strictly true only if sampling error is associated with the trade data since errors in the input data may lead to biased coefficient estimates.

24Only 34 countries are considered in this comparison. ROW and Burma were excluded for lack of endowment data.

25The proportion of sign matches reported in Bowen, Leamer and Sveikauskas (1987) was .61. The result here differs because of differences in the method used to correct for trade imbalance and the number of countries (27 versus 34).

matches is also low.

Comparing the results in the first four columns of Table 4 with those in the next four columns indicates little difference between the ability of regression coefficients, in general, and the factor contents to predict true factor abundances correctly. Although the overall proportion of sign matches (row TOTAL) based on all regression coefficients is significantly higher than the proportion for revealed factor abundances for Models 3, 4 and 6, these higher proportions are still too low to support the H-O-V sign proposition. A similar conclusion holds when only significant regression coefficients are considered as indicated by the last four columns in Table 4. Whereas the proportion of matches between significant regression coefficients and true factor abundance are uniformly higher than the proportions for revealed factor abundances, the differences in the proportions are not significant. This lack of a significant difference in the proportions is due in part to the smaller sample size associated with restricting attention to significant regression coefficients.

Overall, the above results indicate that the signs of regression coefficients are no worse, and in some cases better, than revealed factor abundances at predicting true factor abundances. But the results also indicate that accounting for possible sampling error in the trade and factor input data using regression analysis does not significantly improve upon revealed factor abundances as predictors of true factor abundance. Stated differently, the failure of revealed factor abundances to predict true factor abundances is not importantly related to the former's inability to account for sampling error in the trade and factor input data.

Finally, interpreting the results of past regression studies in light of the above results, one may conclude that the signs of significant regression coefficients are probably a reasonable indicator of the corresponding revealed factor abundances. Therefore, the typical finding of a negative regression coefficient for capital in the regression for the United States and several other advanced countries suggests that the H-O-V sign proposition would have frequently been rejected had past studies undertaken the direct comparison between revealed capital abundance and true capital abundance.

VI. Concluding Remarks

Detailed study of interindustry regressions for thirty-five countries and the "rest of the world" indicates that the signs of significant regression coefficients are often reliable indicators of revealed factor abundances as measured by a country's net trade in factor services. For significant signs, the likelihood of a correct prediction of revealed factor abundance is between 57 and 98 percent depending upon the model considered. More importantly, for broad aggregates such as capital, labor and land, or white and blue-collar labor, significant regression coefficients almost invariably reflect revealed factor abundances. The likelihood of correct prediction is significantly increased when estimation is made using trade data that are appropriately corrected for a country's trade imbalance.

Whereas the signs of regression coefficients are often reliable predictors of revealed factor abundances, they are only slightly better than revealed factor abundances at predicting true factor abundances. This suggests that prior rejections of the H-O-V sign proposition as indicate by the failure of revealed and true factor abundances to conform does not fundamentally arise from the failure to account for sampling error when computing the revealed factor abundances.

The finding of overall reliability of regression coefficients as predictors of revealed factor abundances reflects a diversity of results. Coefficients for aggregated input measures such as capital, white-collar labor, blue-collar labor or land, generally predict revealed factor abundances quite well. The coefficients for disaggregated labor inputs defined by occupational categories are especially weak in predicting revealed factor abundance.

Overall the findings lead us to conclude that while past interindustry regression studies failed to incorporate a proper trade balance correction, the results of these studies are not as unreliable at indicating revealed factor abundances as the theoretical criticisms of the regression literature might have suggested. Thus, while future tests of H-O-V theory should be conducted using the theoretically proper revealed factor abundances, the results of the innumerable past regression studies can be considered to constitute a relevant body of evidence concerning countries' revealed factor abundances, and thus a body of evidence which suggests, in many cases, rejection of the sign proposition implied by the H-O-V theory.

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TABLE 2A

COEFFICEINT SIGNS - MODEL 1

COUNTRY	CAPITAL	PROFTECH	MANAGERS	SALES	CLERICAL	CRAFTMEN	OPERATIV	LABORERS	SERVICES	FARMERS	ARABLE	PASTURE	FOREST	Adj R-Sq
ARG	-	+		+	-		+	+	-	-	+	+	-	.943**
AUSL	-	+	-	+	-	+	+	+	-	-	+	+	-	.875**
AUST								+			-	+	+	.209*
BLUX														.086
BRAZ	-		-					+		-	+	+		.902**
BRMA	-							+	-	-	+	+		.832**
CAN														-.028
DEN	-	+		+				+	-	-	+	+	-	.910**
EGPT								-		+	+	-		.670**
FIN														-.083
FRA	-			-			-		+		-	+		.377**
GER	-					+	-				-		-	.567**
GRCE	-					-			-		+		-	.627**
HOKO			-				+		-		-			.494**
ICE	-	+						+	-	-	+	+	-	.936**
IRE	-	+						+	-	-	+	+	-	.909**
ITLY	-				+				+	+	-	-		.360**
JAP	-									-	-	+		.453**
KORA	-		-		+	-	+	+		-		+		.426**
MEX								+		-	+			.712**
NETH							-	+		-	+	+	-	.545**
NIGR		+		+	-	+	+	-	-	+	+	-	+	.895**
NOR	-					-	-	+		-	+	+	-	.467**
NUZE	-	+		+				+	-	-	+	+	-	.954**
PLIP	-		-					+		-	+	+		.620**
PORT				-		-	+	+		-	-	+		.648**
SING	-	+	-						-		-	+	+	.348**
SPAN	-		-					+		-	+	+		.530**
SWE														.025
SWIT														.131
THAI	-	+	-	+			+	+	-	-	+	+	+	.796**
TURK	-									+	+	-		.830**
UK	-		-						+	+	-		-	.652**
US	-					+	-	-	+	+	+	-		.596**
YUG							+	+		-	+	+		.305**
ROW	+					-	+		-		+		+	.552**

All signs significant at 10% level.
No signs shown if overall F-statistic not significant at 5% level.
Significance levels: * = .05 ** = .01

TABLE 2B

COEFFICIENT SIGNS - MODEL 2

COUNTRY	CAPITAL	PROFTECH	MANAGERS	SALES	CLERICAL	CRAFTMEN	OPERATIV	LABORERS	SERVICES	FARMERS	LAND	Adj R-Sq
ARG	-						+		-		+	.884**
AUSL	-	+	-	+		+	+		-	-	+	.820**
AUST												.004
BLUX												.032
BRAZ	-							+		-	+	.827**
BRMA	-	+						+	-	-	+	.820**
CAN												-.019
DEN	-	+		+						-	+	.734**
EGPT												.126
FIN												-.148
FRA	-	-		-			-		+			.358**
GER	-					+	-				-	.525**
GRCE	-				+	-					+	.508**
HOKO		+	-				+	+	-		-	.490**
ICE										-	+	.807**
IRE		+									+	.507**
ITLY	-				+				+	+	-	.384**
JAP	-								+		-	.305**
KORA	-				+	-	+				+	.245**
MEX											+	.635**
NETH							-		+	-	+	.445**
NIGR	-								-			.260**
NOR	-						-			-	+	.287**
NUZE		+		+						-	+	.847**
PLIP	-		-					+		-	+	.632**
PORT				-				+	+	-	+	.308**
SING												.126
SPAN	-		-							-	+	.475**
SWE												-.011
SWIT												.112
THAI	-	+	-	+			+	+	-	-	+	.796**
TURK	-										+	.508**
UK	-								+	+	-	.627**
US	-					+	-	-		+	-	.216*
YUG							+	+			+	.261**
ROW	+					-	+		-	-	+	.549**

All signs significant at 10% level.
No signs shown if overall F-statistic not significant at 5% level.
Significance levels: * = .05 ** = .01

TABLE 2C

COEFFICIENT SIGNS - MODEL 3

COUNTRY	CAPITAL	WHITE	BLUE	LAND	Adj R-Sq
ARG	-			+	.885**
AUSL	-	-		+	.800**
AUST					.056
BLUX					.072
BRAZ	-			+	.682**
BRMA	-			+	.685**
CAN		-	-	+	.097*
DEN	-	+		+	.628**
EGPT					.031
FIN					-.046
FRA	-				.342**
GER	-			-	.540**
GRCE	-			+	.475**
HOKO			+	-	.354**
ICE		+	-	+	.644**
IRE	-	+		+	.529**
ITLY	-		+	-	.420**
JAP	-	+	+	-	.340**
KORA	-				.159**
MEX				+	.667**
NETH		+	-	+	.442**
NIGR		-	-		.213**
NOR	-		-	+	.267**
NUZE		+		+	.667**
PLIP	-			+	.615**
PORT			+		.164**
SING					.080
SPAN	-			+	.474**
SWE					.030
SWIT		+		-	.172**
THAI	-		-	+	.707**
TURK	-	-		+	.495**
UK	-			-	.605**
US					.026
YUG				+	.262**
ROW	+			+	.521**

All signs significant at 10% level.
No signs shown if overall F-statistic not significant at 5% level.
Significance levels: * = .05 ** = .01

TABLE 2D

COEFFICIENT SIGNS - MODEL 4

COUNTRY	CAPITAL	TOTLABOR	LAND	Adj R-Sq
ARG	−		+	.887**
AUSL	−		+	.798**
AUST				.072
BLUX				.071
BRAZ	−		+	.687**
BRMA	−		+	.690**
CAN		−	+	.095*
DEN	−		+	.620**
EGPT				.043
FIN				-.041
FRA	−			.352**
GER	−		−	.548**
GRCE	−		+	.483**
HOKO		+	−	.349**
ICE			+	.642**
IRE	−	+	+	.530**
ITLY	−	+	−	.426**
JAP	−	+	−	.349**
KORA	−			.172**
MEX			+	.666**
NETH	−		+	.417**
NIGR		−		.222**
NOR	−	−	+	.273**
NUZE	−		+	.668**
PLIP	−		+	.620**
PORT		+		.175**
SING	−	−		.095*
SPAN	−		+	.483**
SWE				.034
SWIT	−		−	.093*
THAI	−	−	+	.711**
TURK	−		+	.494**
UK	−		−	.609**
US				.032
YUG		+	+	.269**
ROW	+		+	.527**

All signs significant at 10% level.
No signs shown if overall F-statistic not significant at 5% level.
Significance levels: * = .05 ** = .01

TABLE 2E

COEFFICIENT SIGNS - MODEL 5

COUNTRY	CAPITAL	PROFTECH	MANAGERS	SALES	CLERICAL	BLUE2	SERVICES	FARMERS	ARABLE	PASTURE	FOREST	Adj R-Sq
ARG	-	+		+	-	+	-	-	+	+	-	.945**
AUSL	-	+	-	+	-	+	-	-	+	+	-	.872**
AUST						+			-	+	+	.226*
BLUX												.074
BRAZ	-					+		-	+	+	+	.877**
BRMA	-				-		-	-	+	+	+	.826**
CAN												.013
DEN	-	+		+	-	+	-	-	+	+		.898**
EGPT				-	+			+	+	-		.658**
FIN												-.044
FRA	-			-		-	+		-	+		.392**
GER	-					-			-		-	.559**
GRCE	-	+	-				-		+		-	.606**
HOKO		+	-	+	+	+	-		-			.419**
ICE		+		+	-	+	-	-	+	+		.915**
IRE	-	+		+	-	+		-		+		.903**
ITLY	-				+			+	-	-		.377**
JAP	-								-	+		.472**
KORA	-	+	-			+		-		+		.337**
MEX								-	+			.721**
NETH		+			-			-	+	+		.544**
NIGR								+	+	-		.872**
NOR	-							-	+	+		.421**
NUZE		+		+	-	+	-	-	+	+		.935**
PLIP	-	+	-			+		-	+	+	+	.626**
PORT						+		-	-	+		.615**
SING	-	+	-	+			-		-	+	+	.373**
SPAN	-	+	-			+		-	+	+		.541**
SWE												-.002
SWIT			+			-	+		-	+		.156*
THAI	-	+	-	+	-	+	-	-	+	+	+	.801**
TURK	-							+	+	-		.834**
UK	-		-				+	+	-		-	.664**
US	-			-		-		+	+	-	-	.560**
YUG		+	-	+		+		-	+	+	+	.301**
ROW	+						-		+		+	.550**

All signs significant at 10% level.
No signs shown if overall F-statistic not significant at 5% level.
Significance levels: * = .05 ** = .01

TABLE 2F

COEFFICIENT SIGNS - MODEL 6

COUNTRY	CAPITAL	PROFTECH	MANAGERS	SALES	CLERICAL	BLUE2	SERVICES	FARMERS	LAND	Adj R-Sq
ARG	-						-		+	.887**
AUSL	-	+	-	+		+	-	-	+	.823**
AUST										.000
BLUX										.035
BRAZ	-				-	+		-	+	.820**
BRMA	-	+		+	-	+	-	-	+	.809**
CAN										.018
DEN	-	+		+				-	+	.743**
EGPT				-	+			+		.141*
FIN										-.127
FRA	-	-		-		-	+			.379**
GER	-					-			-	.513**
GRCE	-		-		+		-		+	.486**
HOKO		+	-	+		+	-		-	.425**
ICE		+		+				-	+	.811**
IRE									+	.525**
ITLY	-				+			+	-	.398**
JAP	-						+		-	.328**
KORA	-		-			+			+	.190*
MEX			-						+	.645**
NETH						-	+	-	+	.465**
NIGR	-						-			.283**
NOR	-							-	+	.285**
NUZE		+		+	-	+		-	+	.849**
PLIP	-	+	-			+		-	+	.637**
PORT						+	+	-	+	.310**
SING	-	+	-	+	-		-		+	.145*
SPAN	-		-					-	+	.492**
SWE										-.051
SWIT			+			-	+		-	.139*
THAI	-	+	-	+	-	+	-	-	+	.800**
TURK	-		-						+	.524**
UK	-			-	+	-	+	+	-	.633**
US	-			-	+	-		+	-	.219**
YUG		+	-	+		+			+	.262**
ROW	+			+		+	-	-	+	.547**

All signs significant at 10% level.
No signs shown if overall F-statistic not significant at 5% level.
Significance levels: * = .05 ** = .01

TABLE 3

PROPORTION OF SIGN MATCHES BETWEEN REGRESSION COEFFICIENTS AND FACTOR CONTENTS
FACTOR BY FACTOR

FACTOR	SIGNIFICANT REGRESSION COEFFICIENTS: FACTOR CONTENTS CORRECTED FOR TRADE IMBALANCE						FACTOR CONTENTS NOT CORRECTED FOR TRADE IMBALANCE					
	M1	M2	M3	M4	M5	M6	M1	M2	M3	M4	M5	M6
CAPITAL	95.7	90.0	94.7	95.7	95.2	75.0	56.4	83.3	88.2	88.9	85.0	78.9
LABOR				100.0						41.7		
WHITE			81.8						64.3			
BLUE			100.0						42.9			
PROF	11.1	12.5			33.3	28.6	10.0	11.1			11.1	12.5
MANAGERS	55.6	60.0			54.5	50.0	83.3	80.0			80.0	60.0
SALES	75.0	66.7			76.9	75.0	40.0	20.0			23.1	30.8
CLERICAL	100.0	66.7			66.7	58.8	100.0	100.0			76.9	88.9
CRAFTSMEN	66.7	83.3					57.1	50.0				
OPERATIVES	50.0	50.0			+ 36.8	22.2 +	28.6	33.3			+ 15.0	25.0 -
LABORERS	76.2	100.0					36.8	44.4				
SERVICE	35.3	61.5			35.7	57.9	61.1	46.7			64.7	53.3
FARMERS	29.2	12.5			26.1	41.7	33.3	8.3			33.3	13.3
LAND		100.0	100.0	100.0		100.0		100.0	95.8	96.2		100.0
ARABLE	93.3				93.3		96.7				96.7	
PASTURE	88.0				84.6		73.1				73.1	
FOREST	43.8				78.6		56.3				84.6	
TOTAL	65.7	67.5	95.4	98.3	64.6	56.5	60.2	55.7	76.8	82.1	61.1	55.3
OBS	(210)	(123)	(65)	(59)	(198)	(138)	(206)	(122)	(69)	(56)	(190)	(123)
Z-STAT*	1.17	1.89	3.08	2.95	0.73	0.20						
ALL REGRESSION COEFFICEINTS												
TOTAL	58.1	61.1	84.7	88.9	58.1	57.1	57.9	55.1	75.0	75.0	59.1	54.9
Z-STATS*	0.66	15.8	7.88	8.35	-2.62	4.68						

Proportions are in percent.
Sign of regression coefficients significant at 10 percent level (one-tail).
* Tests for difference between proportion and "trade balance corrected" proportion.

TABLE 4

PROPORTION OF SIGN MATCHES BETWEEN FACTOR CONTENTS, REGRESSION COEFFICIENTS AND TRUE FACTOR ABUNDANCE
FACTOR BY FACTOR

	SIGN OF TRUE FACTOR ABUDANCE COMPARED TO SIGN OF											
	REVEALED FACTOR ABUNDANCES				REGRESSION COEFFICIENTS				SIGNIFICANT REGRESSION COEFFICIENTS			
	M3	M4	M5	M6	M3	M4	M5	M6	M3	M4	M5	M6
CAPITAL	44.4	47.2	47.1	47.1	47.2	50.0	55.9	58.8	64.7 (17)	47.6 (21)	68.4 (19)	60.0 (10)
LABOR		47.2				58.3				45.5 (11)		
WHITE	47.2				44.4				36.4 (11)			
BLUE	63.9				72.2				80.0 (10)			
PROF			41.2	41.2			73.5	67.6			93.3 (15)	66.7 (12)
MANAGERS			26.5	26.5			44.1	35.3			27.3 (11)	26.7 (15)
SALES			70.6	70.6			64.7	58.8			76.9 (13)	63.6 (11)
CLERICAL			50.0	50.0			47.1	64.7			63.6 (11)	56.0 (16)
BLUE2			52.9	52.9			70.6	73.5			78.9 (19)	81.0 (16)
SERVICE			61.8	61.8			32.4	35.3			33.3 (12)	33.1 (18)
FARMERS			64.7	64.7			41.2	47.1			45.5 (22)	58.0 (12)
LAND	66.7	69.4		64.7	63.9	72.2		64.7	73.9 (23)	69.6 (23)		61.3 (18)
ARABLE			85.3				79.4				75.0 (28)	
PASTURE			64.7				44.1				40.0 (25)	
FOREST			67.6				70.6				66.7 (12)	
TOTAL	55.6	54.6	57.5	53.3	56.9	60.2	56.7	56.2	65.6 (61)	56.4 (55)	61.5 (187)	55.5 (128)
Z-STATS*					-1.26	3.76	-1.99	6.09	1.23	0.21	0.91	0.42

Numbers in parentheses are sample size for listed proportion.
* Tests for difference between proportion and factor content proportion.

TABLE A1
CROSS-INDUSTRY REGRESSIONS - MODEL 1
DEPENDENT VARIABLE: TRADE BALANCE CORRECTED NET EXPORTS

COUNTRY	INTERCEP	CAPITAL	PROFTECH	MANAGERS	SALES	CLERICAL	CRAFTMEN	OPERATIV	LABORERS	SERVICES	FARMERS	ARABLE	PASTURE	FOREST	Adj R-Sq	F-Stat	DF
ARG	1935.74	-8439.82	2247.31	3440.71	14638.11	-4234.68	111.60	491.01	1015.24	-19861.23	-2871.54	69.58	32.18	-35.76	.943	79.407**	22.0
	(.083)	(2.408)	(1.670)	(.502)	(2.465)	(1.748)	(.134)	(1.735)	(1.896)	(2.819)	(6.492)	(54.002)	(9.421)	(1.687)			
AUSL	179171.00	-35997.00	12281.56	-44203.38	60407.56	-13378.30	4562.49	1570.72	4382.20	-66133.12	-7249.25	105.32	67.64	-93.64	.375	33.799**	17.0
	(2.644)	(3.027)	(3.425)	(2.639)	(3.475)	(2.751)	(2.374)	(1.954)	(4.120)	(2.527)	(8.564)	(56.711)	(9.867)	(4.763)			
AUST	-59319.00	1262.52	-41.25	-3627.17	-5885.13	4120.74	1017.91	305.46	1443.64	4901.94	-85.84	-11.61	17.65	59.48	.209	2.237*	28.2
	(1.673)	(.235)	(.020)	(.384)	(.528)	(1.145)	(.774)	(.666)	(1.791)	(.413)	(.143)	(6.228)	(3.513)	(1.963)			
BLUX	99394.00	-42335.00	-3936.31	-54751.86	-38080.60	16477.90	1927.14	-1462.03	6774.52	62172.25	-2962.82	-40.78	56.60	-94.42	.086	1.442	99.0
	(1.056)	(2.101)	(.693)	(1.120)	(1.523)	(1.594)	(.314)	(1.174)	(1.569)	(1.921)	(1.390)	(8.788)	(3.636)	(1.215)			
BRAZ	88649.00	-33712.00	1534.55	-16405.99	-2976.49	1917.28	160.45	-152.25	5934.40	-8091.73	-12468.50	53.94	137.77	.65	.902	44.210**	28.0
	(1.713)	(4.495)	(.610)	(1.334)	(.181)	(.405)	(.154)	(.406)	(4.091)	(.659)	(14.586)	(20.632)	(20.038)	(.032)			
BRMA	6306.45	-1627.95	337.84	-276.38	1677.63	-269.29	43.62	4.12	296.68	-3516.13	-642.77	4.17	6.47	7.70	.832	24.226**	119.2
	(1.088)	(2.325)	(1.103)	(.338)	(.911)	(.738)	(.420)	(.074)	(5.695)	(1.302)	(5.555)	(11.014)	(5.784)	(1.089)			
CAN	120913.00	17538.00	-4611.18	10275.48	669.68	-20710.33	-1969.30	-1658.29	-1115.65	32287.70	-533.69	62.29	-51.67	120.74	-.038	.874	29.0
	(.483)	(.508)	(.397)	(.230)	(.015)	(1.860)	(.451)	(.734)	(.392)	(.503)	(.153)	(5.119)	(1.529)	(.666)			
DEN	79883.00	-31028.00	5864.86	-9408.19	22695.75	-13.39	-711.29	439.87	4098.74	-43702.32	-13669.27	44.70	177.66	-56.98	.910	48.607**	15.4
	(1.779)	(4.785)	(2.059)	(.710)	(1.831)	(.004)	(.426)	(.642)	(3.080)	(2.339)	(13.631)	(11.300)	(18.537)	(1.353)			
EGPT	-35351.00	277.51	-1088.83	1845.62	-10094.56	1359.79	-208.00	215.45	-996.19	15691.91	2880.89	12.95	-34.08	.51	.670	10.509**	91.4
	(1.249)	(.062)	(.779)	(.463)	(1.093)	(.607)	(.353)	(1.127)	(3.754)	(1.239)	(7.561)	(14.591)	(10.077)	(.032)			
FIN	-78270.00	-1927.29	-5267.10	10694.21	-6831.01	574.88	1070.63	-604.99	-270.26	28778.53	2842.38	-20.01	-21.97	183.81	-.063	.638	59.9
	(1.514)	(.211)	(1.107)	(1.017)	(.577)	(.139)	(.706)	(.633)	(.217)	(1.010)	(1.982)	(2.916)	(1.318)	(1.802)			
FRA	276788.00	-185372.00	-10825.40	-31850.43	-37622.13	16655.65	-3086.16	-3369.18	2770.29	165563.50	-1508.24	-32.55	72.60	-126.35	.377	3.637**	151.0
	(1.336)	(2.117)	(1.131)	(1.126)	(2.024)	(1.161)	(.503)	(1.869)	(.787)	(4.101)	(.389)	(4.550)	(4.271)	(1.254)			
GER	517828.00	-234865.00	45.39	-15018.80	43912.01	-19970.64	20692.26	-7418.14	-2967.29	41922.80	5570.35	-333.70	16.65	-310.11	.567	7.158**	13.9
	(1.360)	(3.226)	(.002)	(.143)	(.536)	(.528)	(1.996)	(2.171)	(.359)	(.449)	(.978)	(33.654)	(.530)	(1.945)			
GRCE	82624.00	-17249.00	405.57	-8195.32	-3107.72	2666.52	-1523.80	289.90	346.41	-9302.01	-108.00	20.55	-.26	-24.54	.627	8.870**	26.6
	(2.492)	(3.404)	(.261)	(1.200)	(.393)	(.824)	(1.537)	(.872)	(.732)	(1.467)	(.322)	(17.202)	(.090)	(2.496)			
HOKO	29173.00	-1605.34	4275.51	-28942.02	14015.72	6097.83	-1400.87	3671.03	714.73	-38238.70	440.16	-15.72	-1.11	26.61	.494	5.586**	209.9
	(.685)	(.240)	(1.264)	(1.819)	(.850)	(1.226)	(.815)	(2.117)	(.637)	(1.663)	(.518)	(8.676)	(.190)	(1.165)			
ICE	9116.74	-1330.16	520.90	-1072.56	1537.70	-109.91	-149.08	23.59	521.33	-3842.88	-1501.85	5.56	16.02	-6.65	.936	69.127**	27.0
	(2.423)	(1.599)	(2.036)	(1.015)	(1.171)	(.275)	(1.154)	(.542)	(3.783)	(2.363)	(15.266)	(15.421)	(17.694)	(1.579)			

TABLE A1
CROSS-INDUSTRY REGRESSIONS - MODEL 1
DEPENDENT VARIABLE: TRADE BALANCE CORRECTED NET EXPORTS

IRE	22142.00	-3502.70	1676.26	-4481.86	3586.62	-163.03	-303.30	352.46	1130.42	-7276.17	-3645.77	2.09	63.79	-16.29	.909	47.580**	11.09
	(1.889)	(3.426)	(1.701)	(1.045)	(.826)	(.119)	(.551)	(.939)	(3.134)	(1.287)	(9.766)	(2.180)	(26.691)	(1.622)			
ITLY	166449.00	-153014.00	-11934.40	-14313.13	-57316.21	23358.77	-4783.61	1707.49	-1701.02	79748.66	7454.34	-52.57	-78.30	-68.18	.360	3.640**	182.37
	(.673)	(1.393)	(1.065)	(.387)	(1.049)	(1.293)	(.626)	(.732)	(.428)	(1.291)	(1.491)	(5.631)	(3.195)	(.513)			
JAP	-44501.00	-199812.00	6063.46	-29667.30	-41382.89	90.12	3271.88	1127.17	7548.20	179518.30	-10685.13	-176.46	262.84	-448.38	.453	4.864**	43.25
	(.095)	(3.032)	(.212)	(.319)	(.306)	(.002)	(.190)	(.333)	(.906)	(1.070)	(1.296)	(6.414)	(3.407)	(1.018)			
KORA	51636.00	-11385.00	25.21	-10120.07	-8610.13	6277.89	-2263.30	717.37	1167.28	-6821.12	-2317.96	1.12	35.32	-9.20	.426	4.496**	7.44
	(2.478)	(3.322)	(.014)	(1.482)	(.930)	(1.850)	(1.995)	(1.575)	(1.930)	(.908)	(5.756)	(.985)	(11.258)	(1.060)			
MEX	11186.00	651.18	462.59	-8357.56	2001.82	263.24	-420.19	390.19	1090.03	-3977.77	-1036.69	45.75	3.35	-5.06	.712	12.621**	21.13
	(.256)	(.103)	(.187)	(.891)	(.200)	(.063)	(.375)	(.834)	(1.770)	(.376)	(1.949)	(58.991)	(1.085)	(.494)			
NETH	96900.00	-50515.00	5203.65	-4721.36	10864.36	-2966.66	-2285.03	-1869.48	4018.39	11461.07	-13658.69	43.59	159.07	-130.69	.545	6.624**	223.54
	(.842)	(.909)	(.890)	(.292)	(.431)	(.304)	(.598)	(1.870)	(2.456)	(.433)	(5.275)	(7.915)	(11.304)	(1.621)			
NIGR	-7967.59	192.64	1122.91	2861.19	10465.02	-3809.73	999.14	245.63	-1371.12	-8551.86	3650.45	25.46	-48.12	15.62	.896	40.833**	36.65
	(.395)	(.068)	(1.413)	(1.025)	(2.360)	(2.556)	(2.018)	(1.541)	(2.738)	(1.889)	(12.189)	(20.617)	(17.892)	(2.118)			
NOR	155396.00	-26206.00	-2330.51	-7276.25	-12183.11	8523.23	-4466.73	-1042.29	3152.04	-10325.25	-8035.86	11.84	94.05	-42.06	.467	5.109**	26.01
	(2.371)	(3.303)	(.531)	(.671)	(.601)	(1.105)	(1.443)	(1.739)	(4.725)	(.908)	(9.952)	(6.969)	(13.649)	(1.337)			
NUZE	36952.00	-7187.74	3422.17	-4045.74	12524.03	-1887.54	-468.32	241.61	3688.83	-26242.30	-10048.92	39.27	107.05	-23.48	.954	97.923**	15.93
	(1.479)	(1.972)	(2.570)	(.582)	(1.894)	(.943)	(.656)	(.975)	(4.247)	(3.614)	(22.851)	(23.393)	(28.238)	(1.631)			
PLIP	20488.00	-10939.00	1901.06	-11475.46	-1826.17	852.64	755.21	279.00	1263.08	460.74	-1222.81	19.64	15.92	11.41	.620	8.653**	46.92
	(1.083)	(1.522)	(1.085)	(1.664)	(.227)	(.325)	(.654)	(.971)	(3.510)	(.068)	(3.359)	(35.127)	(6.822)	(.969)			
PORT	-19234.00	-2712.89	-1114.33	-2408.41	-12533.29	2969.53	-965.37	374.27	1533.61	13487.46	-2690.05	-3.58	38.06	3.82	.648	9.635**	22.05
	(.786)	(.717)	(.818)	(.473)	(1.356)	(1.011)	(1.598)	(1.295)	(2.550)	(1.262)	(6.081)	(2.232)	(9.510)	(.241)			
SING	67939.00	-11966.00	1903.75	-6570.25	8775.73	-965.87	5.88	156.15	-73.96	-16795.35	169.28	-5.31	3.98	57.49	.348	3.506**	157.23
	(2.950)	(1.423)	(1.514)	(2.028)	(1.257)	(.524)	(.008)	(.762)	(.269)	(1.979)	(.358)	(5.565)	(1.364)	(3.399)			
SPAN	115145.00	-53908.00	2881.46	-29995.77	-1292.81	6732.20	-521.11	672.64	3696.67	-2101.34	-6170.05	24.35	87.60	-39.12	.538	6.470**	89.14
	(2.068)	(2.114)	(.754)	(2.041)	(.072)	(.845)	(.200)	(.791)	(2.283)	(.148)	(4.426)	(8.548)	(12.103)	(1.149)			
SWE	-39338.00	-28616.00	251.20	-8738.09	10009.67	-5841.45	9016.66	-1232.78	361.85	21613.03	5604.22	-37.80	-39.33	203.46	.025	1.120	45.09
	(.412)	(1.364)	(.037)	(.405)	(.371)	(.628)	(2.451)	(.958)	(.194)	(.536)	(2.585)	(4.425)	(1.835)	(1.571)			
SWIT	-91881.00	-12649.00	-3259.81	30398.69	-21136.67	5181.38	-4395.05	-1681.73	-2785.49	48200.15	-868.31	-33.41	15.65	13.03	.131	1.710	22.75
	(1.223)	(1.107)	(.645)	(1.468)	(.936)	(.609)	(1.506)	(1.700)	(1.352)	(1.678)	(.745)	(8.797)	(1.570)	(.425)			

TABLE A1

CROSS-INDUSTRY REGRESSIONS – MODEL 1

DEPENDENT VARIABLE: TRADE BALANCE CORRECTED NET EXPORTS

THAI	67211.00	-10207.00	3588.35	-9205.58	12279.49	-1497.17	208.36	506.73	1242.21	-28512.58	-2747.69	23.62	33.35	31.29	.796	19.327**	16.7
	(2.912)	(2.924)	(2.610)	(1.463)	(2.159)	(.780)	(.258)	(2.037)	(3.167)	(4.168)	(6.724)	(21.530)	(10.543)	(1.606)			
TURK	24637.00	-9999.00	362.93	-3957.85	841.63	-636.85	98.05	273.77	-426.14	-1693.00	2466.53	30.61	-27.62	-1.02	.830	23.953**	35.1
	(1.242)	(2.908)	(.350)	(.745)	(.162)	(.293)	(.164)	(1.208)	(.957)	(.300)	(8.497)	(57.223)	(17.592)	(.122)			
UK	503444.00	-261825.00	8014.56	-85421.77	-16463.14	12638.50	3892.07	-1925.01	-2713.16	111526.90	9302.08	-217.51	-12.80	-485.60	.652	9.760**	26.7
	(1.500)	(4.318)	(.548)	(1.655)	(.298)	(.657)	(.612)	(.839)	(.583)	(1.696)	(1.812)	(13.085)	(.309)	(1.775)			
US	-436507.00	-151504.00	14120.13	126239.60	-51867.85	-41463.30	29948.16	-9949.09	-38104.48	222373.40	93213.19	69.66	-1050.65	-192.55	.596	7.909**	7.3
	(1.127)	(2.220)	(.487)	(1.042)	(.386)	(.963)	(1.958)	(1.514)	(3.287)	(1.500)	(12.407)	(4.971)	(21.728)	(1.042)			
YUG	-1883.84	-3967.58	1343.82	-8497.47	3190.77	1069.68	-721.03	973.87	1051.11	-3902.41	-906.94	3.36	20.39	28.85	.308	3.061**	10.4
	(.063)	(.390)	(.707)	(1.088)	(.355)	(.294)	(.562)	(2.517)	(1.747)	(.461)	(1.856)	(2.350)	(5.194)	(1.273)			
ROW	-2017259.00	1592583.00	-35447.87	275953.00	147126.60	60.39	-47161.95	16455.78	-7519.37	-730820.60	-26977.19	241.69	-175.75	1440.60	.552	6.776**	47.1
	(1.510)	(3.409)	(.514)	(1.097)	(.560)	(.001)	(1.413)	(1.352)	(.316)	(2.233)	(1.076)	(3.804)	(1.019)	(1.353)			

Labor coefficients scaled by 1000.
T-statistics in parentheses.
Significance levels: * = .05; **=.01

TABLE A2
INTER-INDUSTRY REGRESSIONS - MODEL 2
DEPENDENT VARIABLE: TRADE BALANCE CORRECTED NET EXPORTS

COUNTRY	INTERCEP	CAPITAL	PROFTECH	MANAGERS	SALES	CLERICAL	CRAFTMEN	OPERATIV	LABORERS	SERVICES	FARMERS	LAND	Adj R-Sq	F-Stat	PG
ARG	3277.95	-9161.45	312.58	4717.72	5001.33	-291.49	-236.28	468.87	-230.62	-17737.78	-1588.08	50.50	.884	43.282**	84.24
	(.098)	(2.179)	(.182)	(.678)	(.534)	(.092)	(.257)	(1.357)	(.208)	(1.680)	(.745)	(13.721)			
AUSL	153736.00	-34196.00	8640.38	-39022.05	44073.46	-7222.44	4172.89	1525.36	1475.77	-56883.70	-4304.53	78.15	.820	26.287**	20.42
	(1.897)	(2.820)	(1.940)	(2.302)	(2.022)	(1.220)	(2.086)	(1.798)	(.639)	(1.869)	(1.565)	(16.542)			
AUST	-63638.00	2135.64	1266.07	-4151.08	846.46	1301.90	1282.88	319.97	2262.21	4108.08	-888.50	2.35	.004	1.022	32.03
	(1.880)	(.420)	(.706)	(.459)	(.088)	(.403)	(.964)	(.656)	(1.863)	(.325)	(.528)	(.783)			
BLUX	1303.80	-31528.00	-4874.48	-44322.43	-36388.63	13921.90	2624.02	-1505.75	4494.86	81752.54	-471.45	-19.19	.032	1.184	79.34
	(.015)	(1.463)	(.989)	(.959)	(1.676)	(1.293)	(.419)	(1.146)	(1.211)	(2.349)	(.131)	(2.462)			
BRAZ	2355.01	-24215.00	597.25	-7129.24	-2027.66	-115.78	755.84	-174.43	3849.25	9309.03	-10197.21	71.91	.827	27.576**	119.12
	(.040)	(2.785)	(.281)	(.612)	(.156)	(.036)	(.685)	(.463)	(1.993)	(.713)	(3.325)	(8.888)			
BRMA	5380.41	-1503.91	402.97	-231.64	2058.91	-441.97	63.07	4.75	325.74	-3421.74	-669.26	5.09	.820	26.316**	52.36
	(1.077)	(2.283)	(1.476)	(.306)	(1.178)	(1.194)	(.591)	(.085)	(2.435)	(1.351)	(4.843)	(19.126)			
CAN	234452.00	5008.81	-3592.01	-1747.96	-1618.31	-17617.78	-2787.54	-1631.61	1479.57	9705.43	-3372.29	36.66	-.019	.896	21.94
	(1.042)	(.162)	(.338)	(.041)	(.036)	(1.518)	(.599)	(.711)	(.521)	(.175)	(.661)	(3.296)			
DEN	-62249.00	-15497.00	4066.58	6025.24	22976.41	-2834.55	222.12	400.42	1295.70	-14789.88	-9761.60	71.74	.734	16.273**	232.63
	(.969)	(1.929)	(1.591)	(.495)	(1.780)	(.604)	(.134)	(.630)	(.440)	(.706)	(2.045)	(5.669)			
EGPT	956.81	-3897.28	-1334.41	-1582.63	-13647.23	3496.55	-568.93	217.39	-556.34	9172.28	2359.78	-.76	.126	1.798	262.91
	(.030)	(.860)	(.922)	(.398)	(1.217)	(1.221)	(.981)	(1.144)	(.761)	(.634)	(1.200)	(.190)			
FIN	-16363.00	-7801.43	-1462.41	1770.01	5959.17	-4258.70	1188.91	-552.96	3357.54	12476.16	-903.33	-2.65	-.148	.284	33.56
	(.400)	(1.080)	(.433)	(.207)	(.502)	(1.041)	(.718)	(.573)	(1.412)	(.553)	(.422)	(.743)			
FRA	160525.00	-172727.00	-12492.27	-19084.25	-88355.74	14739.61	-2356.56	-3403.70	-309.82	189452.80	1820.08	-12.31	.358	4.087**	134.93
	(.831)	(1.959)	(1.383)	(.698)	(2.265)	(1.079)	(.389)	(1.904)	(.073)	(4.798)	(.379)	(1.144)			
GER	227400.00	-201881.00	617.02	13419.48	65455.05	-34259.85	23337.49	-7449.73	-7434.75	95784.24	10680.99	-237.48	.525	7.129**	11.96
	(.628)	(2.709)	(.033)	(.128)	(.723)	(.863)	(2.145)	(2.078)	(.811)	(.911)	(.758)	(7.395)			
GRCE	87272.00	-18019.00	-424.52	-8052.57	-7504.90	4542.64	-1708.75	280.93	-141.47	-9156.11	365.57	11.09	.508	6.737**	35.21
	(2.341)	(3.331)	(.237)	(1.157)	(.784)	(1.341)	(1.622)	(.834)	(.210)	(1.167)	(.349)	(5.946)			
HOKO	29992.00	-1355.98	5052.80	-29490.72	17864.18	4529.88	-1264.25	3679.97	1241.35	-39159.22	-82.27	-8.17	.490	6.325**	196.27
	(.753)	(.221)	(1.505)	(1.788)	(1.121)	(.931)	(.740)	(2.094)	(1.405)	(1.740)	(.087)	(3.675)			
ICE	-3280.60	-43.65	302.70	318.22	1259.77	-233.04	-78.31	19.45	165.33	-1245.84	-1119.57	7.32	.807	24.176**	195.68
	(.671)	(.051)	(1.250)	(.351)	(1.071)	(.532)	(.511)	(.403)	(.602)	(.791)	(3.104)	(7.173)			

TABLE A2

INTER-INDUSTRY REGRESSIONS - MODEL 2

DEPENDENT VARIABLE: TRADE BALANCE CORRECTED NET EXPORTS

IRE	-35503.00	-2080.70	1366.25	1471.28	5772.18	-2149.39	148.16	241.30	-44.83	3934.25	-1344.93	17.10	.507	6.707**	335.52
	(1.330)	(.503)	(1.522)	(.349)	(1.095)	(1.091)	(.251)	(.962)	(.045)	(.471)	(.572)	(3.093)			
ITLY	183771.00	-155058.00	-12229.17	-15819.24	-59687.88	24764.13	-4986.67	1706.36	-1612.19	76856.29	7325.83	-60.83	.384	4.452**	179.57
	(.803)	(1.425)	(1.103)	(.442)	(1.099)	(1.368)	(.651)	(.734)	(.420)	(1.290)	(1.544)	(10.245)			
JAP	-495642.00	-150245.00	1285.45	19638.05	-35687.13	-10736.26	6396.56	1012.73	-3252.13	270141.80	1086.62	-81.64	.305	3.431**	40.31
	(1.221)	(2.226)	(.049)	(.226)	(.298)	(.260)	(.381)	(.239)	(.248)	(1.785)	(.068)	(1.888)			
KORA	19641.00	-7820.95	-149.07	-6814.21	-7407.97	5179.81	-2013.11	711.15	513.47	-596.16	-1594.47	9.45	.245	2.803**	42.69
	(.843)	(2.133)	(.090)	(1.052)	(.905)	(1.604)	(1.746)	(1.611)	(.672)	(.076)	(1.196)	(2.771)			
MEX	32497.00	-2034.65	-480.40	-9787.52	-4026.77	3119.93	-770.83	382.11	803.88	-6823.75	-802.14	30.00	.635	10.627**	32.32
	(.750)	(.319)	(.182)	(1.027)	(.336)	(.718)	(.678)	(.800)	(.834)	(.527)	(.408)	(7.659)			
NETH	-51348.00	-34686.00	2074.25	12286.79	4963.17	-3395.17	-1529.13	-1925.07	-593.18	43156.23	-8735.53	59.71	.445	5.441**	152.64
	(.474)	(.611)	(.390)	(.882)	(.213)	(.366)	(.395)	(1.736)	(.164)	(1.618)	(1.982)	(5.125)			
NIGR	51616.00	-6601.31	913.92	-2306.25	5592.63	-694.17	440.52	251.05	-517.08	-19499.26	2664.02	4.83	.260	2.950**	485.83
	(1.531)	(1.520)	(1.132)	(.763)	(1.171)	(.296)	(.726)	(1.224)	(.469)	(2.207)	(.909)	(.753)			
NOR	70098.00	-18847.00	-3279.60	1883.27	-11369.60	6567.97	-3883.86	-1064.45	1078.86	6865.28	-5779.23	29.32	.287	3.239**	44.07
	(1.048)	(2.301)	(.752)	(.187)	(.575)	(.831)	(1.199)	(1.660)	(.693)	(.485)	(1.847)	(3.967)			
NUZE	-39656.00	1026.48	2306.11	4279.69	11839.69	-3069.24	.58	218.79	1663.94	-10667.38	-7862.77	52.12	.847	31.726**	227.40
	(1.060)	(.228)	(1.554)	(.671)	(1.476)	(1.108)	(.001)	(.767)	(1.069)	(.886)	(3.342)	(8.395)			
PLIP	21274.00	-11122.00	1749.61	-11443.12	-2624.42	1192.12	722.01	277.35	1173.02	499.09	-1136.22	17.93	.632	10.513**	45.43
	(1.161)	(1.549)	(1.000)	(1.682)	(.319)	(.457)	(.626)	(.968)	(3.087)	(.074)	(3.104)	(23.794)			
PORT	-52431.00	1082.77	-962.61	779.21	-9644.45	1162.89	-648.01	371.65	1081.82	19537.93	-2164.33	8.25	.308	3.463**	170.68
	(1.965)	(.255)	(.818)	(.150)	(1.359)	(.417)	(1.030)	(1.222)	(1.351)	(1.971)	(1.331)	(2.112)			
SING	78173.00	-12784.00	3052.03	-8424.09	13784.22	-2807.06	115.65	170.74	879.62	-20127.99	-801.26	2.56	.126	1.900	95.52
	(2.317)	(1.464)	(1.653)	(1.655)	(1.514)	(1.062)	(.156)	(.634)	(1.367)	(1.946)	(1.013)	(2.102)			
SPAN	43175.00	-46109.00	1750.33	-22020.67	-2236.97	5745.31	-86.71	650.13	1722.33	12808.87	-4042.53	35.92	.475	6.015**	71.78
	(.772)	(1.756)	(.489)	(1.630)	(.138)	(.784)	(.054)	(.799)	(.809)	(.890)	(1.641)	(5.557)			
SWE	31522.00	-35327.00	4648.72	-18983.93	27149.05	-11459.54	9159.45	-1172.72	4543.31	2900.77	1287.99	-17.59	-.011	.941	29.73
	(.398)	(1.768)	(.828)	(1.030)	(1.126)	(1.358)	(2.383)	(.915)	(1.460)	(.086)	(.461)	(3.795)			
SWIT	-120107.00	-9204.65	-2275.73	32571.62	-15042.06	2166.18	-3995.16	-1675.45	-2667.38	52439.47	-919.96	-16.24	.112	1.699	19.53
	(1.671)	(.818)	(.461)	(1.593)	(.611)	(.249)	(1.366)	(1.729)	(1.447)	(1.886)	(.410)	(2.794)			
THAI	61162.00	-9481.08	3732.13	-8709.41	13379.10	-2059.39	286.36	507.59	1239.02	-27562.70	-2730.46	26.89	.796	22.560**	14.74
	(2.714)	(2.705)	(2.691)	(1.417)	(2.364)	(1.045)	(.353)	(2.038)	(2.853)	(4.019)	(5.949)	(23.663)			

TABLE A2
INTER-INDUSTRY REGRESSIONS - MODEL 2
DEPENDENT VARIABLE: TRADE BALANCE CORRECTED NET EXPORTS

TURK	64911.00	-14726.00	-237.08	-7221.90	-4716.29	2389.66	-359.23	272.14	-161.44	-8622.78	2130.10	12.25	.508	6.730**	235.79
	(1.868)	(2.978)	(.158)	(1.215)	(.534)	(.748)	(.438)	(.972)	(.176)	(.933)	(.883)	(2.440)			
UK	252427.00	-234877.00	3211.60	-56981.21	-23930.78	10917.97	5258.12	-2013.42	-10183.73	164583.40	17302.68	-185.43	.627	10.318**	16.70
	(.870)	(3.954)	(.241)	(1.177)	(.472)	(.572)	(.837)	(.889)	(1.269)	(2.530)	(2.506)	(9.007)			
US	449491.00	-253265.00	8516.44	42297.70	-136641.40	9873.86	21207.89	-8897.27	-27105.83	62799.73	80233.55	-241.11	.216	2.531*	144.48
	(.779)	(3.047)	(.323)	(.359)	(.967)	(.187)	(1.408)	(1.526)	(1.470)	(.385)	(1.744)	(2.395)			
YUG	-8971.33	-3027.84	1815.36	-8137.05	5975.28	-197.29	-576.98	978.37	1253.89	-3149.87	-1091.79	10.12	.261	2.962**	10.32
	(.328)	(.696)	(1.018)	(1.058)	(.718)	(.054)	(.460)	(2.486)	(1.830)	(.370)	(1.215)	(5.395)			
ROW	-1317223.00	1519871.00	-13767.77	190597.90	209019.10	-11768.18	-49532.18	16797.95	18960.31	-888958.50	-54894.54	232.15	.549	7.749**	43.37
	(1.170)	(3.269)	(.224)	(.790)	(.919)	(.128)	(1.480)	(1.368)	(.545)	(2.927)	(2.399)	(3.707)			

Labor coefficients scaled by 1000.
T-statistics in parentheses.
Significance levels: * = .05; **=.01

TABLE A3
INTER-INDUSTRY REGRESSIONS - MODEL 3
DEPENDENT VARIABLE: TRADE BALANCE CORRECTED NET EXPORTS

COUNTRY	INTERCEP	CAPITAL	WHITE	BLUE	LAND	Adj R-Sq	F-Stat	PS
ARG	-11123.00	-11155.00	247.24	16.18	45.76	.885	118.0**	47.6
	(.384)	(1.609)	(.545)	(.075)	(13.635)			
AUSL	117530.00	-40760.00	-2291.29	-401.57	65.82	.800	62.1**	17.8
	(1.682)	(2.967)	(1.719)	(.744)	(12.248)			
AUST	-49093.00	-279.57	650.10	615.19	-.64	.056	1.9	21.6
	(1.806)	(.060)	(1.041)	(3.040)	(.168)			
BLUX	87824.00	-35957.00	-2240.18	768.19	-17.71	.072	2.2	20.7
	(.950)	(1.434)	(1.064)	(1.549)	(2.119)			
BRAZ	53398.00	-40901.00	-334.32	58.36	50.25	.682	33.7**	317.4
	(1.147)	(4.216)	(.357)	(.186)	(3.027)			
BRMA	5034.59	-2353.13	-2.08	-46.25	3.60	.685	34.2**	80.4
	(1.276)	(2.341)	(.042)	(.942)	(4.839)			
CAN	242045.00	3633.49	-7433.00	-1588.74	35.29	.097	2.6*	15.5
	(1.122)	(.121)	(1.851)	(1.363)	(3.594)			
DEN	-25821.00	-31826.00	2598.20	-106.38	51.48	.628	26.8**	390.3
	(.588)	(2.623)	(2.633)	(.314)	(2.592)			
EGPT	-15156.00	36.20	-52.92	260.95	3.37	.031	1.5	212.8
	(.775)	(.007)	(.190)	(1.145)	(.624)			
FIN	29596.00	-10574.00	-1446.10	477.52	-2.93	-.046	.3	11.8
	(.608)	(1.487)	(1.340)	(1.351)	(1.249)			
FRA	325554.00	-176017.00	-1029.59	454.20	1.91	.342	8.9**	119.4
	(1.420)	(1.864)	(.373)	(.400)	(.192)			
GER	678222.00	-209812.00	-2411.91	-2143.43	-203.07	.540	18.9**	6.6
	(1.705)	(2.102)	(.328)	(.872)	(7.659)			
GREE	41790.00	-14944.00	-398.19	-187.64	11.07	.473	14.5**	19.8
	(1.218)	(2.727)	(.643)	(.750)	(5.336)			
HOKO	-81015.00	217.58	171.49	1505.09	-13.44	.354	9.4**	173.3
	(1.177)	(.020)	(.318)	(1.448)	(4.982)			
ICE	-735.22	-1750.11	149.70	-42.30	4.99	.644	28.6**	415.5
	(.155)	(1.026)	(1.746)	(1.408)	(2.659)			
IRE	-22349.00	-5112.26	695.21	125.68	14.75	.529	18.2**	347.5
	(1.622)	(1.544)	(2.376)	(.931)	(2.355)			

TABLE A3
INTER-INDUSTRY REGRESSIONS - MODEL 3
DEPENDENT VARIABLE: TRADE BALANCE CORRECTED NET EXPORTS

COUNTRY	INTERCEP	CAPITAL	WHITE	BLUE	LAND	Adj R-Sq	F-Stat	PG
ITLY	149875.00	-145792.00	-151.65	2689.79	-46.02	.420	12.0**	149.3
	(.586)	(1.326)	(.050)	(1.779)	(5.348)			
JAP	-120754.00	-175257.00	8866.29	4850.02	-69.48	.340	8.9**	29.9
	(.418)	(2.485)	(1.403)	(1.797)	(1.617)			
KORA	-13097.00	-8771.90	460.28	276.09	5.31	.159	3.9**	49.6
	(.555)	(1.807)	(1.166)	(.969)	(1.214)			
MEX	5242.10	-1873.79	-865.39	76.01	27.34	.667	31.5**	15.5
	(.139)	(.251)	(1.184)	(.288)	(7.713)			
NETH	46892.00	-50091.00	3508.59	-1168.17	48.44	.442	13.1**	132.1
	(.431)	(.965)	(2.512)	(2.015)	(2.873)			
NIGR	19764.00	-1365.17	-587.87	-144.46	9.20	.213	5.1**	444.7
	(1.230)	(.460)	(1.488)	(1.404)	(1.089)			
NOR	68887.00	-24734.00	282.87	-730.89	20.02	.267	6.5**	62.2
	(1.483)	(3.167)	(.334)	(2.098)	(1.911)			
NUZE	-14117.00	-11423.00	957.56	-128.39	35.46	.667	31.6**	417.5
	(.454)	(1.185)	(1.672)	(.571)	(2.801)			
PLIP	15406.00	-12678.00	-163.85	75.91	14.44	.615	25.4**	28.4
	(.906)	(1.880)	(.510)	(.607)	(10.546)			
PORT	-35316.00	-3244.98	270.03	589.06	3.71	.164	4.0**	248.0
	(1.967)	(.982)	(.828)	(2.988)	(.626)			
SING	54026.00	-12397.00	-430.97	-378.04	.86	.080	2.3	52.1
	(1.821)	(1.487)	(1.247)	(1.518)	(.674)			
SPAN	45666.00	-52934.00	613.49	413.78	27.15	.474	14.8**	68.1
	(.821)	(2.194)	(.633)	(.953)	(2.885)			
SWE	132328.00	-38604.00	-2493.33	143.40	-15.30	.030	1.5	14.0
	(1.608)	(1.927)	(1.542)	(.190)	(3.927)			
SWIT	-58492.00	-11641.00	4654.02	-466.30	-11.67	.172	4.2**	19.1
	(.812)	(1.035)	(1.939)	(1.002)	(2.014)			
THAI	32121.00	-11938.00	-135.70	-313.56	19.78	.707	37.8**	28.1
	(1.225)	(2.369)	(.346)	(1.456)	(6.113)			
TURK	30042.00	-9987.00	-776.32	-21.86	15.55	.495	16.0**	211.1
	(1.169)	(2.352)	(1.457)	(.133)	(2.429)			

TABLE A3

INTER-INDUSTRY REGRESSIONS - MODEL 3

DEPENDENT VARIABLE: TRADE BALANCE CORRECTED NET EXPORTS

COUNTRY	INTERCEP	CAPITAL	WHITE	BLUE	LAND	Adj R-Sq	F-Stat	PG
UK	389678.00	-220501.00	4196.08	-104.59	-138.52	.605	24.4**	9.2
	(1.222)	(2.754)	(.781)	(.061)	(9.685)			
US	394494.00	-131391.00	8026.32	-5376.06	-82.47	.026	1.4	208.7
	(.896)	(1.038)	(.724)	(1.557)	(.509)			
YUG	-27877.00	-4464.11	116.52	527.73	7.28	.262	6.4**	7.9
	(1.166)	(.951)	(.951)	(.252)	(2.285)			
ROW	-2490471.00	1506644.00	-13219.31	-574.51	78.39	.521	17.6**	50.5
	(1.724)	(2.715)	(.707)	(.080)	(1.707)			

Labor coefficients scaled by 1000.
T-statistics in parentheses.
Significance levels: * = .05; **=.01

TABLE A4
INTER-INDUSTRY REGRESSIONS - MODEL 4
DEPENDENT VARIABLE: TRADE BALANCE CORRECTED NET EXPORTS

COUNTRY	INTERCEP	CAPITAL	TOTLABOR	LAND	Adj R-Sq	F-Stat	BP
ARG	-6131.31	-11809.00	39409.00	45.67	.887	159.9**	42.9
	(.227)	(1.701)	(.188)	(13.415)			
AUSL	76706.00	-35413.00	-591532.00	66.55	.798	91.5**	13.7
	(1.235)	(2.548)	(1.113)	(12.644)			
AUST	-48339.00	-378.35	618703.00	-.65	.072	2.6	13.9
	(2.233)	(.086)	(3.212)	(.171)			
BLUX	22832.00	-27444.00	465781.00	-16.55	.071	2.5	11.0
	(.325)	(1.031)	(.925)	(2.104)			
BRAZ	44915.00	-39790.00	18887.00	50.40	.687	45.6**	311.0
	(1.149)	(3.973)	(.056)	(3.059)			
BRMA	5988.77	-2478.11	-41811.00	3.58	.690	46.2**	76.6
	(1.259)	(2.265)	(.961)	(4.776)			
CAN	115789.00	20171.00	-2176229.00	37.54	.095	3.1*	9.7
	(.700)	(.747)	(1.558)	(3.635)			
DEN	32608.00	-39479.00	165497.00	50.44	.620	34.2**	393.9
	(.799)	(2.798)	(.519)	(2.485)			
EGPT	-21937.00	924.35	229397.00	3.49	.043	1.9	215.4
	(.956)	(.171)	(1.090)	(.639)			
FIN	-11961.00	-5130.56	284150.00	-2.19	-.041	.2	6.4
	(.340)	(.637)	(.819)	(.948)			
FRA	293498.00	-171818.00	305044.00	2.49	.352	12.0**	121.5
	(1.496)	(1.895)	(.274)	(.244)			
GER	672421.00	-209053.00	-2170418.00	-202.96	.548	25.7**	6.1
	(2.037)	(2.223)	(.867)	(7.600)			
GRCE	37242.00	-14348.00	-208805.00	11.15	.483	20.0**	11.5
	(1.283)	(2.944)	(.791)	(5.250)			
HOKO	-109826.00	3991.16	1371030.00	-12.92	.349	11.9**	146.4
	(1.199)	(.320)	(1.435)	(5.392)			
ICE	3412.79	-2293.42	-23001.00	4.92	.642	37.5**	425.8
	(.770)	(1.267)	(.939)	(2.581)			
IRE	-10044.00	-6723.84	182927.00	14.53	.530	24.0**	352.1
	(.767)	(1.906)	(1.483)	(2.281)			

TABLE A4
INTER-INDUSTRY REGRESSIONS - MODEL 4
DEPENDENT VARIABLE: TRADE BALANCE CORRECTED NET EXPORTS

ITLY	88490.00	-137752.00	2404157.00	-44.93	.426	16.1**	151.4
	(.391)	(1.294)	(1.647)	(4.797)			
JAP	-33989.00	-186621.00	5253750.00	-71.03	.349	11.9**	28.2
	(.126)	(2.715)	(2.124)	(1.625)			
KORA	-9117.49	-9293.10	294604.00	5.24	.172	5.2**	48.9
	(.364)	(1.864)	(1.144)	(1.191)			
MEX	-15096.00	790.04	-18618.00	27.70	.666	41.6**	15.6
	(.446)	(.115)	(.065)	(7.540)			
NETH	147926.00	-63325.00	-698041.00	46.64	.417	15.6**	116.3
	(1.681)	(1.338)	(1.212)	(2.638)			
NIGR	10185.00	-110.50	-189038.00	9.37	.222	6.8**	450.6
	(.850)	(.034)	(1.717)	(1.098)			
NOR	90788.00	-27602.00	-628981.00	19.63	.273	8.6**	62.6
	(2.348)	(3.472)	(1.781)	(1.847)			
NUZE	9343.61	-14496.00	-19226.00	35.04	.668	41.8**	428.3
	(.302)	(1.380)	(.088)	(2.735)			
PLIP	10226.00	-11999.00	51805.00	14.53	.620	34.2**	29.6
	(.628)	(1.763)	(.435)	(10.905)			
PORT	-42208.00	-2342.24	556992.00	3.83	.175	5.3**	236.5
	(2.126)	(.616)	(2.900)	(.652)			
SING	52882.00	-12247.00	-383362.00	.88	.095	3.1*	51.5
	(1.869)	(1.518)	(1.567)	(.678)			
SPAN	49980.00	-53499.00	433857.00	27.07	.483	20.0**	68.2
	(1.044)	(2.315)	(1.080)	(2.868)			
SWE	75365.00	-31143.00	-121656.00	-14.28	.034	1.7	9.9
	(1.125)	(1.603)	(.176)	(3.477)			
SWIT	52125.00	-26130.00	48411.00	-13.65	.093	3.1*	1.2
	(.969)	(2.237)	(.099)	(2.071)			
THAI	35964.00	-12442.00	-295683.00	19.71	.711	51.1**	26.3
	(1.453)	(2.449)	(1.400)	(6.069)			
TURK	13743.00	-7852.49	-97706.00	15.85	.494	20.9**	216.2
	(.635)	(1.971)	(.503)	(2.422)			
UK	482588.00	-232670.00	327729.00	-140.18	.609	32.6**	2.9
	(1.887)	(3.249)	(.182)	(9.853)			

TABLE A4
INTER-INDUSTRY REGRESSIONS - MODEL 4
DEPENDENT VARIABLE: TRADE BALANCE CORRECTED NET EXPORTS

US	684034.00	-169315.00	-4028809.00	-87.63	.032	1.7	193.0
	(1.801)	(1.430)	(1.153)	(.548)			
YUG	-36761.00	-3300.53	486397.00	7.44	.269	8.5**	5.5
	(1.576)	(.733)	(2.139)	(2.139)			
ROW	-2763644.00	1542424.00	-1845611.00	83.26	.527	23.6**	46.8
	(2.270)	(2.977)	(.262)	(1.751)			

Labor coefficients scaled by 1000.
T-statistics in parentheses.
Significance levels: * = .05; **=.01

TABLE A5
INTER-INDUSTRY REGRESSIONS - MODEL 5
DEPENDENT VARIABLE: TRADE BALANCE CORRECTED NET EXPORTS

COUNTRY	INTERCEP	CAPITAL	PROFTECH	MANAGERS	SALES	CLERICAL	BLUE2	SERVICES	FARMERS	ARABLE	PASTURE	FOREST	Adj R-Sq	F-Stat	BP
ARG	-4178.31	-7920.34	3662.48	4127.64	17151.88	-5519.73	574.17	-20428.49	-2627.61	69.26	30.78	-30.87	.945	96.7**	16.9
	(.183)	(2.314)	(2.166)	(.770)	(3.092)	(2.531)	(2.356)	(2.776)	(6.427)	(51.751)	(9.377)	(1.573)			
AUSL	195861.00	-36290.00	11009.21	-33757.77	56878.32	-15102.83	2138.34	-65260.70	-6695.60	103.29	63.25	-73.21	.872	38.8**	16.4
	(2.694)	(2.709)	(3.248)	(2.274)	(3.423)	(2.583)	(2.764)	(2.464)	(7.270)	(46.229)	(8.482)	(3.536)			
AUST	-57532.00	1453.06	-204.96	-77.48	-5605.40	2303.67	523.03	4061.99	214.07	-12.40	15.56	68.32	.226	2.6*	25.7
	(1.586)	(.286)	(.121)	(.010)	(.602)	(1.187)	(1.555)	(.423)	(.402)	(6.689)	(3.116)	(2.214)			
BLUX	95114.00	-39879.00	-3904.24	-31358.64	-30122.20	5847.90	53.90	60517.94	-524.21	-46.39	40.37	-28.21	.074	1.4	48.7
	(.837)	(1.761)	(.979)	(1.006)	(1.415)	(.748)	(.058)	(1.841)	(.293)	(9.686)	(3.528)	(.631)			
BRAZ	64119.00	-30569.00	3083.85	-2109.04	10307.47	-8172.17	926.99	-11018.20	-10341.77	49.96	124.46	51.97	.877	40.7**	31.0
	(1.161)	(3.448)	(1.002)	(.184)	(.703)	(1.275)	(1.538)	(.538)	(5.963)	(8.674)	(11.506)	(2.442)			
BRMA	5358.81	-1491.23	395.40	444.08	2234.12	-729.54	56.62	-3637.92	-544.14	3.98	5.84	10.14	.826	27.2**	116.1
	(.896)	(2.023)	(1.247)	(.498)	(1.246)	(1.965)	(1.271)	(1.315)	(4.647)	(10.473)	(5.126)	(1.379)			
CAN	115376.00	18026.00	-4237.52	11100.62	3000.33	-21960.23	-1569.89	31762.89	-292.71	61.95	-53.07	125.72	.015	1.1	28.7
	(.467)	(.527)	(.388)	(.275)	(.072)	(2.391)	(.766)	(.499)	(.104)	(5.270)	(1.655)	(.729)			
DEN	48239.00	-27876.00	7956.78	-783.99	32079.39	-8817.81	1197.21	-46917.30	-11904.94	41.38	167.06	-17.81	.898	49.9**	15.6
	(1.033)	(4.239)	(2.470)	(.069)	(2.937)	(1.748)	(1.604)	(1.932)	(7.330)	(6.747)	(13.480)	(.502)			
EGPT	-33969.00	-129.72	-1146.81	-1494.34	-11521.46	2998.41	-8.10	15994.29	2511.54	13.76	-31.66	-9.29	.658	11.7**	71.7
	(1.184)	(.029)	(.872)	(.391)	(1.285)	(1.702)	(.049)	(1.256)	(5.956)	(13.117)	(8.627)	(.530)			
FIN	-63370.00	-2765.78	-6331.72	13702.47	-13690.39	1718.08	-505.67	29904.02	2711.39	-20.34	-21.69	109.74	-.044	.8	59.9
	(1.179)	(.281)	(1.351)	(1.186)	(.942)	(.551)	(.584)	(1.037)	(2.307)	(3.116)	(1.345)	(1.875)			
FRA	251526.00	-182172.00	-9240.19	-17472.79	-74113.72	6445.48	-2231.36	162586.60	641.78	-36.56	59.15	-74.54	.392	4.6**	144.7
	(1.176)	(2.016)	(1.106)	(.634)	(2.035)	(.535)	(1.414)	(3.587)	(.160)	(4.032)	(3.404)	(.903)			
GER	773115.00	-249571.00	-18152.74	32792.34	-40353.36	1199.91	-5956.90	61410.67	2956.84	-338.57	23.99	-304.43	.559	8.0**	12.6
	(1.892)	(2.903)	(1.052)	(.368)	(.443)	(.039)	(1.535)	(.612)	(.612)	(39.268)	(.893)	(2.593)			
GRCE	64583.00	-16111.00	1679.44	-10497.00	3138.70	712.32	256.13	-10738.32	183.34	20.64	-1.50	-21.99	.606	9.5**	27.3
	(2.228)	(3.237)	(1.408)	(1.585)	(.537)	(.342)	(.824)	(1.758)	(.528)	(12.968)	(.416)	(2.151)			
HOKO	-7054.96	-134.74	6934.18	-42478.02	24147.27	5960.63	3028.25	-40633.76	142.81	-13.44	2.34	7.30	.419	5.0**	192.6
	(.142)	(.015)	(1.530)	(1.576)	(1.382)	(1.472)	(1.832)	(1.639)	(.206)	(6.946)	(.419)	(.601)			
ICE	5150.73	-1001.38	785.04	-169.03	3292.20	-1137.96	107.07	-4235.97	-1298.30	5.24	14.81	-2.23	.915	60.7**	43.3
	(1.298)	(1.144)	(2.536)	(.193)	(2.394)	(2.006)	(1.793)	(1.855)	(7.686)	(8.437)	(12.141)	(.597)			

TABLE A5
INTER-INDUSTRY REGRESSIONS - MODEL 5
DEPENDENT VARIABLE: TRADE BALANCE CORRECTED NET EXPORTS

IRE	12683.00	-7681.31	2316.34	-3224.66	7528.06	-2233.61	393.65	-8164.39	-2249.17	1.56	61.50	-8.20	.903	52.9**	8.1
	(.940)	(2.923)	(2.378)	(.764)	(1.947)	(1.629)	(1.507)	(1.204)	(5.968)	(1.096)	(20.007)	(.867)			
ITLY	118372.00	-150926.00	-8422.98	-30781.66	-43466.29	22571.82	950.88	76488.17	7207.70	-49.90	-74.71	-89.70	.377	4.4**	160.4
	(.453)	(1.376)	(.865)	(.784)	(.934)	(1.586)	(.431)	(1.210)	(1.620)	(5.093)	(3.170)	(.655)			
JAP	-52796.00	-197594.00	6439.62	-11153.37	-33486.28	-8696.39	2309.44	177838.80	-8712.91	-180.78	249.91	-396.32	.472	6.0**	28.4
	(.121)	(3.001)	(.271)	(.138)	(.298)	(.282)	(.656)	(1.057)	(1.113)	(6.478)	(3.369)	(.959)			
KORA	20357.00	-9518.97	2222.32	-13087.79	2496.47	2456.48	724.74	-9367.47	-1711.67	1.04	32.50	-1.97	.337	3.8**	9.8
	(.960)	(2.127)	(1.366)	(1.669)	(.338)	(1.037)	(1.494)	(1.001)	(3.214)	(.512)	(7.392)	(.196)			
MEX	44.06	1530.08	1227.51	-7847.64	6381.87	-1763.40	493.88	-4970.75	-665.62	46.35	1.30	1.81	.721	15.3**	20.8
	(.001)	(.242)	(.572)	(1.033)	(.762)	(.477)	(1.109)	(.457)	(1.487)	(48.548)	(.414)	(.170)			
NETH	65937.00	-47027.00	7200.19	8146.63	26124.74	-13461.81	-842.80	8073.19	-11494.07	39.79	145.75	-80.22	.544	7.6**	208.3
	(.527)	(.813)	(1.404)	(.586)	(1.186)	(1.456)	(.897)	(.263)	(4.098)	(5.108)	(9.246)	(1.113)			
NIGR	6803.57	-1156.25	131.36	184.47	4116.74	-273.18	-20.88	-7125.60	2960.47	26.46	-44.07	1.04	.872	38.7**	39.3
	(.353)	(.383)	(.134)	(.050)	(.965)	(.159)	(.104)	(1.041)	(5.189)	(11.915)	(10.800)	(.174)			
NOR	102666.00	-23812.00	1260.77	-2303.02	9239.79	-2156.41	-386.32	-15165.38	-6026.11	9.35	82.65	-2.54	.421	5.0**	11.3
	(1.984)	(3.198)	(.409)	(.264)	(.729)	(.393)	(.647)	(1.040)	(5.151)	(2.434)	(9.890)	(.073)			
NUZE	14248.00	-4860.90	4914.63	2863.00	23037.36	-8610.02	831.46	-28687.80	-8711.81	37.08	98.97	6.60	.935	80.8**	49.5
	(.566)	(1.266)	(2.771)	(.497)	(3.207)	(2.665)	(2.293)	(2.311)	(8.616)	(10.300)	(15.237)	(.554)			
PLIP	20663.00	-10739.00	1856.44	-8593.64	-1113.15	-342.78	463.75	317.77	-942.60	18.97	14.02	19.22	.626	10.3**	43.1
	(.987)	(1.432)	(1.406)	(1.475)	(.171)	(.140)	(1.726)	(.045)	(2.157)	(17.892)	(5.010)	(1.368)			
PORT	-37663.00	-1258.65	150.87	-1559.91	-5286.86	-384.89	546.10	11844.69	-2075.77	-4.24	34.67	15.19	.615	9.9**	18.7
	(1.452)	(.313)	(.104)	(.296)	(.621)	(.142)	(1.950)	(1.004)	(3.252)	(1.749)	(6.933)	(.966)			
SING	67516.00	-12001.00	1941.17	-7296.24	8740.19	-726.20	112.01	-16792.11	109.58	-5.15	4.40	55.71	.373	4.3**	140.7
	(2.756)	(1.398)	(1.819)	(2.165)	(1.416)	(.500)	(.606)	(1.982)	(.269)	(5.415)	(1.538)	(3.360)			
SPAN	89631.00	-51519.00	4586.57	-24700.19	9854.42	338.09	1176.32	-4601.80	-4911.72	22.47	80.17	-12.08	.541	7.5**	84.6
	(1.536)	(1.943)	(1.318)	(2.007)	(.699)	(.046)	(1.527)	(.247)	(3.068)	(4.991)	(9.119)	(.387)			
SWE	53872.00	-33994.00	-6392.27	8630.17	-20781.08	1925.87	-704.95	28733.26	4641.22	-39.63	-36.59	205.29	-.002	1.0	45.3
	(.520)	(1.530)	(.976)	(.396)	(.802)	(.325)	(.521)	(.668)	(2.318)	(4.365)	(1.651)	(1.519)			
SWIT	-113424.00	-11601.00	-1700.26	24249.35	-14597.87	4292.92	-1941.43	46671.66	-857.08	-32.50	16.44	6.75	.156	2.0*	22.1
	(1.409)	(.990)	(.361)	(1.485)	(.749)	(.541)	(2.233)	(1.667)	(.807)	(8.086)	(1.667)	(.203)			

TABLE A5

INTER-INDUSTRY REGRESSIONS - MODEL 5

DEPENDENT VARIABLE: TRADE BALANCE CORRECTED NET EXPORTS

THAI	60727.00	-9621.00	4008.63	-7928.38	15017.70	-3060.52	629.03	-29126.95	-2440.45	23.16	31.54	37.87	.801	23.3**	11.5
	(2.548)	(2.843)	(3.469)	(1.493)	(2.908)	(1.576)	(2.617)	(4.017)	(6.073)	(18.544)	(9.542)	(2.084)			
TURK	26110.00	-10276.00	281.67	-5489.13	-214.83	380.25	146.30	-1464.89	2262.87	31.08	-26.17	-6.76	.834	28.9**	21.3
	(1.578)	(3.734)	(.279)	(1.180)	(.042)	(.213)	(.680)	(.251)	(6.738)	(50.661)	(15.251)	(1.083)			
UK	564077.00	-265807.00	3752.75	-79424.99	-37927.00	19942.60	-1923.56	116449.50	8150.91	-217.40	-7.49	-498.94	.664	11.9**	26.8
	(1.728)	(4.281)	(.282)	(1.595)	(.704)	(1.167)	(.961)	(1.776)	(1.809)	(14.709)	(.202)	(1.967)			
US	78012.00	-191253.00	-21308.01	111878.60	-251656.00	48226.72	-13145.01	267725.80	76986.49	105.89	-962.16	-404.52	.560	8.1**	5.9
	(.165)	(2.283)	(.691)	(.961)	(1.733)	(1.043)	(1.725)	(1.273)	(6.383)	(2.613)	(11.708)	(2.529)			
YUG	-18864.00	-2891.01	2541.34	-10692.19	9086.61	-797.85	946.61	-5257.36	-625.95	3.43	19.18	31.45	.301	3.4**	8.5
	(.672)	(.600)	(1.689)	(1.427)	(1.305)	(.337)	(2.424)	(.566)	(1.474)	(2.261)	(5.093)	(1.647)			
ROW	-2531521.00	1618228.00	1703.14	136051.60	305082.10	-24075.31	10700.97	-767686.10	-26026.80	261.74	-161.52	1309.71	.550	7.8**	48.5
	(1.799)	(3.221)	(.027)	(.631)	(1.036)	(.269)	(1.034)	(2.254)	(1.106)	(4.419)	(1.080)	(1.446)			

Labor coefficients scaled by 1000.
T-statistics in parentheses.
Significance levels: * = .05; **=.01

TABLE A6
INTER-INDUSTRY REGRESSIONS - MODEL 6
DEPENDENT VARIABLE: TRADE BALANCE CORRECTED NET EXPORTS

COUNTRY	INTERCEP	CAPITAL	PROFTECH	MANAGERS	SALES	CLERICAL	BLUE2	SERVICES	FARMERS	LAND	Adj R-Sq	F-Stat	BP
ARG	-2441.25	-8933.10	407.53	2141.01	4801.35	645.09	293.85	-17111.32	-1654.76	50.74	.887	54.4**	76.8
	(.078)	(2.151)	(.229)	(.300)	(.506)	(.178)	(1.000)	(1.641)	(.870)	(14.517)			
AUSL	177557.00	-35590.00	6675.57	-35448.00	34564.95	-4222.46	1561.90	-54092.18	-4648.42	78.25	.823	32.6**	19.2
	(2.110)	(2.723)	(1.395)	(1.992)	(1.480)	(.611)	(1.864)	(1.776)	(1.919)	(17.555)			
AUST	-56582.00	1996.12	1652.44	1324.80	4411.22	-2067.83	758.08	1602.30	-606.79	1.69	.000	1.0	24.7
	(1.651)	(.417)	(1.226)	(.161)	(.636)	(.682)	(2.207)	(.143)	(.433)	(.593)			
BLUX	33478.00	-32563.00	-4525.66	-25799.38	-29445.16	4770.31	-131.57	75189.59	253.39	-21.17	.035	1.2	40.6
	(.309)	(1.367)	(1.228)	(.840)	(1.474)	(.557)	(.144)	(2.237)	(.080)	(2.636)			
BRAZ	7411.77	-23947.00	2176.53	2735.45	9109.31	-8257.68	714.17	3031.21	-9479.45	70.53	.820	31.8**	120.2
	(.125)	(2.437)	(.789)	(.231)	(.715)	(1.352)	(1.312)	(.160)	(3.236)	(8.336)			
BRMA	5641.11	-1474.22	540.58	533.23	3003.36	-1108.82	75.35	-3938.77	-610.00	4.98	.809	29.7**	30.6
	(1.158)	(2.172)	(2.212)	(.554)	(2.001)	(2.191)	(1.754)	(1.625)	(5.638)	(19.637)			
CAN	221519.00	6196.99	-998.94	3273.29	13602.00	-25958.19	-978.01	2937.17	-2581.02	35.53	.018	1.1	20.1
	(.980)	(.201)	(.110)	(.083)	(.350)	(2.150)	(.546)	(.057)	(.555)	(3.223)			
DEN	-64585.00	-15236.00	4698.85	7684.64	26812.31	-5066.29	591.26	-16579.99	-9553.35	71.42	.743	20.6**	233.3
	(1.039)	(1.899)	(1.578)	(.576)	(2.015)	(.784)	(.946)	(.735)	(2.156)	(5.675)			
EGPT	-5471.64	-3631.01	-1193.69	-4323.80	-13647.96	4398.77	35.67	9759.43	2298.30	-.52	.141	2.1*	242.1
	(.175)	(.806)	(.908)	(1.108)	(1.351)	(1.887)	(.224)	(.697)	(1.295)	(.130)			
FIN	-3923.39	-7979.35	-540.47	12521.57	13830.25	-11257.98	325.62	7230.08	-311.33	-3.97	-.127	.2	25.7
	(.105)	(.938)	(.205)	(.988)	(1.232)	(1.599)	(.518)	(.390)	(.199)	(1.381)			
FRA	167394.00	-172694.00	-11520.71	-11037.92	-80961.84	8841.03	-2714.50	184964.40	2330.16	-13.37	.379	5.1**	130.2
	(.805)	(1.900)	(1.505)	(.401)	(2.552)	(.767)	(1.712)	(4.324)	(.507)	(1.198)			
GER	503921.00	-217984.00	-21898.88	56241.23	-42996.91	-720.39	-6896.64	127183.20	6804.77	-236.52	.513	8.2**	10.6
	(1.268)	(2.463)	(1.239)	(.620)	(.473)	(.023)	(1.657)	(1.114)	(.486)	(7.309)			
GRCE	69747.00	-17057.00	793.92	-11717.80	-2005.83	3334.10	153.86	-10428.35	528.62	11.18	.486	7.4**	37.2
	(2.080)	(3.138)	(.577)	(1.592)	(.276)	(1.414)	(.469)	(1.460)	(.527)	(5.923)			
HOKO	-13418.00	773.29	7300.41	-41557.55	26552.65	4687.56	3063.19	-39825.73	34.68	-7.47	.425	6.0**	182.4
	(.290)	(.087)	(1.678)	(1.546)	(1.499)	(1.242)	(1.879)	(1.705)	(.037)	(3.133)			
ICE	-4278.24	34.85	456.14	493.13	2126.93	-671.60	49.32	-1607.65	-1076.98	7.27	.811	30.2**	194.3
	(.919)	(.040)	(1.662)	(.444)	(1.796)	(1.080)	(.930)	(.853)	(3.187)	(7.089)			

TABLE A6
INTER-INDUSTRY REGRESSIONS - MODEL 6
DEPENDENT VARIABLE: TRADE BALANCE CORRECTED NET EXPORTS

IRE	-36105.00	-2085.63	1273.70	732.27	5075.35	-1599.84	177.63	4353.13	-1392.57	17.20	.525	8.5**	376.3
	(1.394)	(.507)	(1.219)	(.148)	(.983)	(.691)	(.759)	(.515)	(.642)	(3.180)			
ITLY	126374.00	-152179.00	-9196.31	-32191.19	-48188.48	25017.12	867.65	75985.24	7480.58	-59.87	.398	5.5**	157.5
	(.511)	(1.400)	(1.009)	(.831)	(1.109)	(1.760)	(.396)	(1.274)	(1.786)	(10.392)			
JAP	-443787.00	-153861.00	-5048.77	18035.27	-70141.44	4840.04	184.62	283298.00	-476.78	-79.97	.328	4.3**	31.7
	(1.177)	(2.298)	(.262)	(.224)	(.816)	(.131)	(.052)	(1.953)	(.032)	(1.894)			
KORA	-4666.13	-6432.81	1733.00	-11021.68	1485.09	2658.86	619.66	-3021.85	-1292.22	9.42	.190	2.6*	30.4
	(.205)	(1.452)	(1.172)	(1.396)	(.227)	(1.140)	(1.346)	(.360)	(1.088)	(2.806)			
MEX	21795.00	-1352.39	599.99	-10491.44	1547.70	902.85	452.93	-8758.20	-569.34	29.81	.645	13.3**	32.8
	(.534)	(.207)	(.254)	(1.290)	(.149)	(.242)	(.950)	(.656)	(.305)	(7.731)			
NETH	-48883.00	-34643.00	2532.62	15676.46	8339.48	-5994.28	-1629.36	41167.02	-8509.03	59.26	.465	6.9**	148.9
	(.400)	(.593)	(.573)	(.993)	(.481)	(.659)	(1.684)	(1.457)	(2.074)	(5.097)			
NIGR	53947.00	-6844.49	343.88	-4279.27	2172.89	1260.42	87.97	-17916.13	2480.75	5.11	.283	3.7**	460.9
	(1.680)	(1.546)	(.294)	(.926)	(.394)	(.429)	(.400)	(1.927)	(.938)	(.784)			
NOR	43016.00	-16970.00	-13.09	2535.61	6245.92	-1383.98	-650.32	137.52	-4979.20	28.48	.285	3.7**	27.4
	(.796)	(2.298)	(.005)	(.278)	(.576)	(.255)	(1.194)	(.010)	(1.834)	(3.869)			
NUZE	-41801.00	1411.65	3277.42	7055.04	17835.29	-6595.81	528.08	-13485.92	-7535.38	51.60	.849	39.1**	228.8
	(1.204)	(.309)	(1.787)	(1.039)	(2.092)	(1.766)	(1.594)	(.988)	(3.432)	(8.201)			
PLIP	24534.00	-11187.00	1927.34	-8917.04	-982.65	-361.19	479.40	-655.85	-1005.39	17.63	.637	12.9**	40.7
	(1.258)	(1.502)	(1.565)	(1.549)	(.154)	(.154)	(1.853)	(.095)	(2.338)	(21.468)			
PORT	-62172.00	1749.39	182.25	874.91	-3506.47	-1565.13	507.35	17221.50	-1888.48	7.97	.310	4.0**	159.4
	(2.243)	(.397)	(.137)	(.158)	(.508)	(.549)	(1.833)	(1.635)	(1.292)	(2.040)			
SING	77097.00	-12623.00	3490.48	-6990.52	16518.07	-4480.27	323.38	-21457.52	-647.21	2.31	.145	2.2*	80.9
	(2.284)	(1.398)	(1.765)	(1.477)	(1.720)	(1.523)	(1.220)	(2.004)	(.994)	(2.051)			
SPAN	35677.00	-45523.00	2891.61	-20760.65	4201.29	2501.86	869.33	10130.84	-3727.19	35.52	.492	7.6**	70.8
	(.601)	(1.686)	(.941)	(1.628)	(.332)	(.392)	(1.220)	(.597)	(1.604)	(5.422)			
SWE	119640.00	-39661.00	299.95	7553.30	11213.38	-13199.78	250.55	3180.07	1172.25	-19.28	-.051	.7	22.8
	(1.453)	(1.903)	(.068)	(.335)	(.542)	(1.325)	(.215)	(.103)	(.516)	(4.633)			
SWIT	-140129.00	-8177.11	-1253.72	27234.42	-10420.30	1893.78	-1931.84	51853.35	-833.50	-15.97	.139	2.1*	17.4
	(1.784)	(.714)	(.268)	(1.619)	(.496)	(.256)	(2.362)	(1.968)	(.409)	(2.801)			

TABLE A6
INTER-INDUSTRY REGRESSIONS - MODEL 6
DEPENDENT VARIABLE: TRADE BALANCE CORRECTED NET EXPORTS

THAI	58576.00	-9228.18	4304.78	-7458.71	16779.25	-3965.09	662.15	-29092.32	-2550.80	26.63	.800	28.1**	10.8
	(2.490)	(2.678)	(3.475)	(1.420)	(3.032)	(1.883)	(2.747)	(3.967)	(6.347)	(22.318)			
TURK	59596.00	-14477.00	-18.67	-9023.10	-4044.48	2687.81	166.90	-8388.44	2119.68	12.38	.524	8.5**	227.6
	(1.875)	(2.876)	(.013)	(1.548)	(.499)	(.943)	(.607)	(.912)	(.965)	(2.516)			
UK	324439.00	-240214.00	-6697.16	-64280.21	-78890.04	37440.11	-3654.19	186681.40	14690.97	-182.33	.633	12.7**	16.8
	(1.117)	(3.949)	(.599)	(1.257)	(1.818)	(1.826)	(1.748)	(2.904)	(2.169)	(9.400)			
US	734828.00	-272429.00	-23735.61	45349.46	-307978.80	84139.38	-12305.68	126235.90	72661.63	-233.76	.219	2.9**	125.7
	(1.244)	(2.965)	(.802)	(.378)	(1.955)	(1.422)	(1.803)	(.617)	(1.792)	(2.347)			
YUG	-23168.00	-2162.48	3108.02	-9711.83	12444.01	-2520.38	1010.30	-5232.38	-838.63	9.98	.262	3.4**	7.7
	(.876)	(.459)	(2.297)	(1.312)	(2.039)	(.993)	(2.669)	(.592)	(1.108)	(5.406)			
ROW	-1914778.00	1554978.00	35974.66	103015.00	450538.30	-89022.09	16081.95	-960548.80	-46087.94	229.31	.547	9.2**	43.2
	(1.505)	(3.117)	(.684)	(.467)	(2.021)	(1.008)	(1.514)	(3.031)	(2.104)	(3.773)			

Labor coefficients scaled by 1000.
T-statistics in parentheses.
Significance levels: * = .05; **=.01