Trade Union Rights, Democracy, and Exports: a Gravity Model Approach*

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Abstract

The paper uses a gravity trade model to evaluate the effects of trade union rights and democracy on exports for the 1993 to 1999 period for four classifications of manufacturing industries by labor-intensity. The model includes data for 162 countries and used eight indicators of trade union rights and democracy, including those constructed by the authors. The paper finds robust relationships between stronger trade union rights and higher total manufacturing exports and between stronger democracy and higher total exports, total manufacturing exports, and labor-intensive manufacturing exports. The paper finds that the relationship between trade union rights and labor-intensive manufacturing exports is highly sensitive to the classification of labor-intensive manufacturing industries and to model specification, yielding statistically significant results of opposite sign depending on assumptions.

1. Introduction

Freedom of association and collective bargaining (FACB) rights have figured prominently in debates on the effects of labor standards on trade competitiveness, perhaps because these rights pose a particularly challenging set of questions. FACB rights have been classified as "civic rights" for workers and are in this sense akin to civil liberties and democracy (Portes, 1994). Moreover, FACB rights define a process and their observance does not necessarily impose an immediate labor cost. It is reasonable to expect, though, that stronger FACB rights give rise to higher labor costs even after accounting for labor productivity. For stronger FACB rights are likely to lead to higher unionization rates, and studies for different countries show that union members tend to receive higher wages than nonunion members, even after accounting for other productivity-related determinants of wages (Freeman, 1994; Aidt and Tzannatos, 2002). In addition, cross-country econometric studies using indicators of democracy and FACB rights find that stronger rights are associated with higher manufacturing wages, even after accounting for labor productivity (Rodrik, 1999; Belser, 2001; Kucera, 2001). It is reasonable to expect, in turn, that higher labor costs adversely affect trade competitiveness, especially for trade of labor-intensive goods. This is of particular concern for poorer countries in the context of the Heckscher–Ohlin principle that a country's comparative trade advantage is determined by its relative factor endowments and that poorer countries tend to have high relative endowments of labor.

The trade and labor standards debate has focused more on the labor cost than non-labor cost effects of FACB rights, but the latter may also be important. In particular, stronger democracy and FACB rights may be associated with greater stability that facilitates economic performance and perhaps trade competitiveness as well. For example,

Rodrik provides cross-country empirical evidence that: "1. Democracies yield long-run growth rates that are more predictable. 2. Democracies produce greater stability in economic performance. 3. Democracies handle adverse shocks much better" (1997, pp. 2–3). Another possible causal channel is through foreign direct investment (FDI), for surveys of managers of multinational firms indicate that these managers generally rate political and social stability as a more important determinant of FDI location than labor costs, and multinational firms tend to export more and there is evidence that their presence facilitates exports of domestic firms (Hatem, 1997; Hanson, 2001).

The perception that developing countries with the most trade success also tend to have weaker FACB rights may result from the greater visibility of exports from these countries, most obvious being a number of East Asian countries. In order to know, though, whether there is a general association between weaker FACB rights and trade success, one must also include in one's purview countries with weaker FACB rights whose exports are less visible because they are not well-integrated into international markets. This suggests the potential value of cross-country econometric studies of the determinants of trade competitiveness, evaluating as many countries as possible.

In recent years there have been several useful studies of this nature. This paper seeks to contribute to this growing body of literature, employing a cross-country gravity trade model evaluating up to 162 countries for the 1993 to 1999 period with breakdowns by the labor intensity of production using four different industry classifications. We use several different indicators of FACB rights, including those of our own design and construction based on the coding of violations reported in textual sources, as well as FACB indices created by the OECD. We also use the Freedom House indices of civil liberties and political rights, which have been widely used in empirical work on the economics of democracy.

2. Prior Empirical Evidence

Here we focus on four studies employing indicators related to FACB rights and democracy in econometric models evaluating trade between richer and poorer countries: Rodrik (1996) and Busse (2001, 2002) addressing labor-intensive trade, Belser (2001) addressing labor-intensive and total trade, and Flanagan (2003) addressing total trade. The indicators used in these studies are the number of ratifications of ILO Conventions, unionization rates, the OECD FACB index, and Freedom House indices of democracy (the latter two described in section 3). Summarizing the findings of the above studies, of the three addressing the ratification of ILO Conventions, Rodrik, Busse, and Flanagan, none finds statistically significant evidence that ratification affects exports. Of the three studies employing the Freedom House indices, again Rodrik, Busse, and Flanagan, the signs on coefficient estimates are consistent with the view that stronger rights negatively affect exports, though in Rodrik and Flanagan these estimates are not found to be near statistical significance. Both studies employing the OECD FACB index, Busse and Belser, find statistically significant results consistent with the view that stronger FACB rights negatively affect exports, particularly of labor-intensive goods. Regarding unionization rates, Rodrik finds a negative but not close to statistically significant relationship with labor-intensive exports.

There are two points worth noting regarding the above evidence. First, regarding the use of ratification of ILO Conventions as an indicator of labor standards, three of the above studies, Busse, Belser, and Flanagan, provide evidence that ratification is weakly correlated with or is not a good predictor of actual labor standards. Thus it is not altogether clear what one should make of the nonresults on coefficient estimates

on the ratification of ILO Conventions. Secondly, we will see below that the results on some of the indices used in the above studies, such as the OECD FACB index, are quite sensitive to variations in model specification and to different classifications of labor-intensive manufacturing industries, raising concerns about the robustness of these results.

3. Indicators of Freedom of Association and Collective Bargaining Rights and Democracy

This paper employs a number of indicators related to FACB rights. The use of multiple indicators enables one to better address causal specificity—the ways in which different aspects of FACB rights might differently affect trade—and also provides a sense of robustness regarding the different measurement errors to which different indicators are prone. Eight indicators related to freedom of association and collective bargaining (FACB) are used, six focusing more narrowly on FACB rights and two relating to democracy, in particular to civil liberties and political rights.

Unionization rate. ILO data on the number of union members as a percentage of the nonagricultural labor force.

FH civil liberties index and *FH political rights index*. These indicators are created by Freedom House, which describes its rating method as follows: "A country is assigned to a particular numerical category [one to seven] based on responses to the checklist and the judgments of the *Survey* team at Freedom House" (Freedom House, 1999, p. 549). Regarding the civil liberties index, the checklist referred to consists of 22 questions under four categories: "freedom of expression and belief," "association and organizational rights," "rule of law and human rights," and "personal autonomy and economic rights." Under "association and organizational rights," one question relates directly to FACB rights: "Are there free trade unions and peasant organizations or equivalents, and is there effective collective bargaining?" The political rights index addresses questions relating to free and fair elections, the competitiveness of political parties, self-determination, and discrimination. The Freedom House indices are rescaled to range from 0 to 10, with 0 indicating the worst ("least free") and 10 the best ("most free") possible score.

FACB index unweighted and *FACB index weighted*. These indicators of freedom of association and collective bargaining are based on 37 evaluation criteria that address *de jure* as well as *de facto* problems and are constructed in unweighted and weighted form by coding violations of FACB rights recorded in textual sources. These evaluation criteria are grouped into six categories: FACB-related civil liberties, right to establish and join unions and worker organizations, other union activities, right to collectively bargain, right to strike, and export processing zones. Three textual sources are examined: the International Confederation of Free Trade Unions' (ICFTU) *Annual Survey of Violations of Trade Union Rights*, the US State Department's *Country Reports on Human Rights Practices*, and the ILO's *Reports of the Committee on Freedom of Association*. Problems recorded in these textual sources are coded for each of the evaluation criteria for which 0 indicates that no problems were recorded and 1 indicates that problems were recorded. For the weighted indicators, the dummy variable is multiplied by weights of 1, 1.25, 1.5, 1.75, or 2, depending on the evaluation criteria, with greater weights indicating more severe problems. These values are then summed across the evaluation criteria to yield, for each country, a nonscaled raw score. The nonscaled indicators are then rescaled to range from 0 to 10, with 0 indicating the worst possible score (most violations observed) and 10 indicating the best (least

violations observed) possible score. In addition, any country for which there are general prohibitions of the right to establish and join union and worker organizations, general absence of the above resulting from socio-economic breakdown, or general prohibitions of the right to collectively bargain receive a default score of 0. Further details on the construction of these indicators as well as the indicators themselves are available in Kucera (2004).

OECD FACB index 1996 and *OECD FACB index 2000*. The OECD indices are based on textual tables addressing aspects of FACB rights and are constructed from essentially the same sources as *FACB index unweighted* and *FACB index weighted*. The OECD writes that, "based on [OECD] Secretariat judgment," an overall score of 1, 2, 3, or 4 is given for each country based on text in the tables, with 1 indicating strongest rights and 4 indicating weakest rights (OECD, 1996, p. 43). The OECD indices are rescaled to range from 0 to 10, with 0 indicating weakest rights and 10 indicating strongest rights. The OECD indices are constructed for both OECD and non-OECD countries but are nonetheless available for only about half as many countries as the Freedom House and our own indices, so it is worth bearing in mind that regression results using the OECD indices pertain to a substantially different sample of countries.

FACB in EPZs. This is a dummy variable for observations of FACB violations in export-processing zones (EPZs), with 1 indicating violations found and 0 indicating otherwise, based on the same three sources used in the construction of *FACB index unweighted* and *FACB index weighted*.

For all the above indicators except FACB in EPZs, higher values are associated with stronger FACB rights, with their normalization from 0 to 10 facilitating comparison of coefficient estimates.

Indicators of FACB rights are for the mid-1990s. More precisely, unionization rate data are for 1995 or the nearest available year. Freedom House indices are constructed as five-year averages for the 1993 to 1997 period. For the FACB indices constructed from coding textual information, events that occurred between 1993 and 1997 inclusive are coded. The OECD indicators are constructed for the mid-1990s (OECD, 1996) and the late 1990s (OECD, 2000), and we use both. In part, the cross-country approach used here results from information constraints for years prior to the mid-1990s for the indicators of worker rights newly constructed from coding textual sources. In short, much of the textual information used to construct these indicators is considerably sketchier for earlier years when existent at all. The unionization rate and the OECD indices are also not available as time series. However, cross-country models may also be preferable to, for instance, fixed-effects models, given the ineluctable measurement error associated with such qualitative indicators and the sensitivity of fixed-effects models to measurement error.

Shown in Table 1 are various descriptive statistics for the above indicators, along with annual average GDP per capita from 1993 to 1997 in current US dollars and in current PPP international dollars, including the number of observations per variable and the number of countries per region. Regional breakdowns by mean values are useful in evaluating the impact of particular regions on overall results.

4. The Trade Model and Industry Classifications by Labor Intensity

The Gravity Model of International Trade

We employ a gravity trade model to evaluate the relationship between FACB rights and international trade. It is referred to as a gravity model in analogy with the

Table 1. Descriptive Statistics for GDP per Capita and Indicators of Democracy and FACB Rights: Mid-1990s

Number of countries	No. of obs.	OECD 23 Mean	Latin America–Caribbean 26 Mean	Non-OECD East Asia–Pacific 16 Mean	South Asia 7 Mean	Transition countries 8 Mean	Sub-Saharan Africa 37 Mean	Middle East–North Africa 18 Mean	All regions 135 Mean	Std. dev.	Coeff. of var.	Max.	Min.
1 GDP/cap (US$)	135	22,502	3,073	5,457	521	2,443	637	6,745	6,318	9,191	1.45	38,633	107
2 GDP/cap (PPP)	131	20,267	5,584	6,144	1,988	6,772	1,635	8,916	7,428	7,636	1.03	28,116	473
3 Unionization rate	86	32.79	15.27	16.99	14.63	48.16	13.71	28.69	23.30	17.95	0.77	77.20	2.00
4 FH civil liberties index	134	9.08	6.70	4.03	3.33	6.41	3.70	3.24	5.32	3.00	0.56	10.00	0.00
5 FH political rights index	134	9.71	7.37	4.42	4.82	7.28	3.58	3.17	5.69	3.55	0.62	10.00	0.00
6 FACB index unweighted	133	7.99	4.73	3.68	3.06	5.48	5.39	4.26	5.25	3.12	0.59	10.00	0.00
7 FACB index weighted	133	8.24	5.01	4.05	3.19	5.81	5.52	4.51	5.48	3.01	0.55	10.00	0.00
8 OECD FACB index 1996	74	9.71	6.30	3.67	4.17	10.00	4.56	3.33	6.53	3.47	0.53	10.00	0.00
9 OECD FACB index 2000	74	9.86	6.30	4.33	4.17	10.00	4.56	3.33	6.66	3.36	0.50	10.00	0.00
10 FACB in EPZs	133	0.04	0.42	0.20	0.57	0.00	0.17	0.06	0.20	0.40	2.04	1.00	0.00

Sources: See the Appendix.

determinants of the strength of gravitational pull, in that the volume of trade between countries is hypothesized to be positively determined by a country's "mass" and negatively determined by the distance between countries. The model has a solid empirical record as well as theoretical foundations. The consistency of the gravity model with trade theory based on relative factor endowments and the Heckscher–Ohlin principle and also other trade theories is shown by Anderson (1979), Bergstrand (1985, 1989), Deardorff (1998), Feenstra et al. (1998), and Evenett and Keller (2002). This theoretical consistency is relevant for our study in that we evaluate not just total trade but manufacturing industry trade with breakdowns by the labor intensity of production. The suitability of the gravity model for our purposes is suggested, for instance, by our inclusion of independent variables for population and land area, which in the context of our specification provide identical controls for relative endowments of labor and land, as in Rodrik (1996) and Flanagan (2003).

Our study relies on Van Beers (1998) and Rose (1999) regarding model specification—for both core gravity and supplemental independent variables—as well as sensitivity analysis. We follow Van Beers (and differ from Rose) in taking as the dependent variable exports from one country to another (rather than total trade between pairs of countries as in Rose), and consequently independent variables are constructed, whenever it is meaningful to do so, in pairs for exporting and importing countries, including for indicators of FACB rights. We take this approach because, as with Van Beers, this better enables us to evaluate the relationship between labor standards in a country and that country's exports.

Our model basically refers to the 1993 to 1997 period. Exports are for the 1993 to 1999 period, providing a somewhat lagged response to independent variables and yielding a slightly better modeling fit. For bilateral trade data, we rely on the *World Trade Analyzer* database. Following the conventions of this database, we evaluate samples of up to 135 "countries," eight of which are in fact comprised of groups of countries or regions. Thus the full sample is actually made up of 162 countries or regions, for which there are discrete data for 135.[1] For the sake of expediency, we refer to these simply as "countries" or each as a "country" hereafter.

The equation for the benchmark trade model is:

$$\log(exports_{xm}) = c + \log(distance_{xm}) + \log(GDP/cap_x) + \log(GDP/cap_m)$$
$$+ \log(pop_x) + \log(pop_m) + \log(area_x) + \log(area_m)$$
$$+ common\ border_{xm} + 1\ landlocked_{xm} + 2\ landlocked_{xm}$$
$$+ 1\ island_{xm} + 2\ island_{xm} + RTA_{xm} + exchange\ rate\ (88-92)_{xm} + \varepsilon,$$

where log refers to the natural logarithm, c is a constant, ε is an error term, x refers to the exporting country, m refers to the importing country, and the definitions of the remaining variables are as follows, with the conventional expected signs of coefficient estimates on independent variables in parentheses:

- $exports_{xm}$ = exports from country x to country m, annual average for the 1993 to 1999 period in thousands of current US dollars.
- $distance_{xm}$ = surface (great circle) distance between the geographic centers of countries x and m in miles (negative).
- GDP/cap_x and GDP/cap_m = national income per person in country x and m, respectively, annual average for 1993 to 1997 in current US dollars (positive for both).
- pop_x and pop_m = population in country x and m, respectively, annual average for the 1993 to 1997 period (positive for both).

Taken together with GDP/cap_x and GDP/cap_m, pop_x and pop_m make up the measures of country "mass" and the four together with $distance_{xm}$ make up the core gravity model, with the remaining independent variables of a supplemental nature as regards the extent of work done in accounting for cross-country variation in trade:

- $area_x$ and $area_m$ = land area in square kilometers (negative for both).
- $common\ border_{xm}$ = 0 if countries do not share a common border and 1 if they do (positive).
- $1\ landlocked_{xm}$ = 1 if one of the two countries is landlocked and 0 otherwise (negative).
- $2\ landlocked_{xm}$ = 1 if both of the countries are landlocked and 0 otherwise (negative).
- $1\ island_{xm}$ = 1 if one of the two countries is an island and 0 otherwise (positive).
- $2\ island_{xm}$ = 1 if both of the countries are islands and 0 otherwise (positive).
- RTA_{xm} = 0 if countries are not in a regional trade agreement and 1 if they are (positive).
- $exchange\ rate\ (88–92)_{xm}$ = exchange rate volatility between country x and m, constructed as the standard deviation of the monthly log growth rate of the bilateral exchange rate for the 1988 to 1992 period (negative).

Main regressions are done with and without conventional regional dummy variables (in pairs with countries as both exporters and importers), for the sake of testing the robustness of results and facilitating comparison with previous studies. These regional dummy variables are for Latin America–Caribbean, non-OECD East Asia–Pacific (referred to as East Asia hereafter), South Asia, the transition countries, Sub-Saharan Africa, and Middle East–North Africa. The excluded region is for countries that were OECD members prior to 1990 (also applicable for the non-OECD East Asia–Pacific regional dummy variable). Coefficient estimates on the included regional dummy variables should be interpreted relative to this excluded region. Benchmark models are then introduced into these, one at time, the eight different indicators of FACB rights, in pairs for exporting and importing countries, with a particular interest in testing the hypothesis that stronger FACB rights in a country are associated with lower exports from that country.[2]

Econometric results are based on ordinary least squares, Tobit, and weighted least squares estimation, with standard errors derived using White corrections except for Tobit estimation for which we use Huber/White corrections. Results reported are coefficient estimates and significance symbols (two-tailed, with *, **, and *** indicating significance at 10%, 5%, and 1% levels, respectively), and—for benchmark regressions only—t-statistics on coefficient estimates, the number of observations ("N" in tables), adjusted R^2's, and F-statistics.

Industry Classifications by Labor Intensity and Benchmark Model Results

We evaluate trade with breakdowns for total trade, total manufacturing trade, and, within manufacturing, for labor-intensive, capital-intensive, and in-between industries. In the *World Trade Analyzer* database, total trade differs from manufacturing trade mainly in that it includes primary goods.

Within manufacturing, regressions rely largely on industry classifications by labor intensity of our own construction, which sum to the manufacturing total. This was done as follows. Labor coefficients were created as five-year annual averages for the 1993 to 1997 period for those countries that were the largest merchandise exporters and

importers for 1995 and for which there were no problems with the availability of data. We focus on these countries as it is their experience that provides the clearest sense of what it takes to be successful in international goods markets. This yielded a group of 29 countries. The labor coefficients were constructed largely at the three-digit ISIC (International Standard Industrial Classification) rev. 2 level using the *UNIDO Industrial Statistics Database*. The exception is that we created a separate industry that combines office, computing, and accounting machinery (ISIC 3825) and radio, television, and communication equipment (ISIC 3832), as these goods figure importantly in exports from developing to developed countries. We rank these 29 industries by taking the average ordinal ranking of labor coefficients across countries. For the main regressions, we classify the top nine industries as labor-intensive, the middle 11 as in-between, and the bottom nine as capital-intensive.

This method yields what seem to be reasonable industry classifications, shown in Table 2.[3] Labor-intensive industries are similar to those characterized as such by other studies and include the needle trades and other light manufacturing for which the product can generally be readily conveyed by hand and for which there do not appear to be prohibitive technological barriers preventing poorer developing countries from competing in international goods markets (at least for many types of products within each of these industries). This is in general contrast with industries we have classified as capital-intensive or in-between. The industries categorized as capital-intensive are those for which the product lends itself to production by highly automated "continuous-process" technologies (Chandler, 1977). In-between are all machinery-producing industries, a set of closely-allied industries making products of rubber and plastic, glass and glass products, and other nonmetallic mineral products, as well as printing and publishing and paper and paper products.

In addition to our own classification scheme, we use a categorization of labor-intensive and capital-intensive manufacturing industries constructed by UNIDO (1981) and employed by Van Beers (1998). We put manufacturing industries that are classified as neither labor-intensive nor capital-intensive by UNIDO into an in-between category such that three categories sum to the manufacturing total. The two most important data sources used to construct this classification scheme are for India (based on capital per employee) and the US (based on value-added per employee) using data for the year 1965.

We use two additional classifications of less skilled labor-intensive manufacturing that are narrower in scope than the labor-intensive manufacturing industry group we have constructed. First is that employed by Busse (2001, 2002), which is comprised of textile yarn and fabrics (SITC 65), glass, glassware, and pottery (664–666), furniture and bedding (82), travel goods and handbags (83), apparel (84), footwear (85), and baby carriages, games, toys, and sporting goods (894). All the component industries of this group are contained within our labor-intensive industry group with the exception of glass and glass products (ISIC 362 or SITC 664, 665), which we include in the in-between industry group.

Second is that employed by Krause (1987), which is comprised of textile yarn and fabrics (SITC 65), nonmetallic mineral manufactures (66), furniture and bedding (82), travel goods and handbags (83), apparel (84), and footwear (85). All its component industries are contained within our labor-intensive industry group except for nonmetallic mineral manufactures (SITC 66), which in our classification is split between labor-intensive and in-between industries. This classification also differs from our labor-intensive industry group and that employed by Busse in that it does not include baby carriages, games, toys, and sporting goods (SITC 894).[4]

Table 2. Manufacturing Industry Classification by Labor Intensity

Rank	ISIC rev. 2 codes	Labor-intensive manufacturing industries
1	322	Manufacture of wearing apparel, except footwear
2	324	Manufacture of footwear, except vulcanized or molded rubber or plastic footwear
3	361	Manufacture of pottery, china, and earthenware
4	332	Manufacture of furniture and fixtures, except primarily of metal
5	321	Manufacture of textiles
6	390	Other manufacturing industries[a]
7	331	Manufacture of wood and wood and cork products, except furniture
8	381	Manufacture of fabricated metal products, except machinery and equipment
9	323	Manufacture of leather and products of leather, leather substitutes and fur, except footwear and wearing apparel

Rank	ISIC rev. 2 codes	In-between manufacturing industries
10	342	Printing, publishing, and allied industries
11	385	Manufacture of professional and scientific, and measuring and controlling equipment not elsewhere classified, and of photographic and optical goods
12	362	Manufacture of glass and glass products
13	355	Manufacture of rubber products
14	356	Manufacture of plastic products not elsewhere classified
15	382 minus 3825	Manufacture of machinery except electrical (except 3825)
16	369	Manufacture of other nonmetallic mineral products
17	383 minus 3832	Manufacture of electrical machinery apparatus, appliances, and supplies (except 3832)
18	3825 plus 3832	Manufacture of office, computing, and accounting machinery (3825) and radio, television, and communication equipment and apparatus (3832)
19	384	Manufacture of transport equipment
20	341	Manufacture of paper and paper products

Rank	ISIC rev. 2 codes	Capital-intensive manufacturing industries
21	311 plus 312	Food manufacturing
22	352	Manufacture of other chemical products
23	371	Iron and steel basic industries
24	372	Nonferrous metal basic industries
25	354	Manufacture of miscellaneous products of petroleum and coal
26	313	Beverage industries
27	314	Tobacco manufactures
28	351	Manufacture of industrial chemicals
29	353	Petroleum refineries

Note: [a] Comprised of manufacture of jewelry and related articles, musical instruments, sporting and athletic goods, and manufacturing industries not elsewhere classified.
Source: Full industry names are from the United Nations Statistics Division, at http://unstats.un.org/unsd/cr/ registry/

Shown in Table 3 are results of the benchmark models with regional dummy variables for total trade, total manufacturing trade, and our three industry groups by labor intensity. For total trade and total manufacturing trade, bilateral trade among the 135 countries yields well over 13,000 observations after accounting for missing values. Adjusted R^2's are greater than 0.70, similar to Rose's (1999) model evaluating 1990 data. The main difference between benchmark model results with and without regional dummy variables is that with these variables statistical significance is lost for the coefficient estimates on RTA_{xm} and *exchange rate (88–92)$_{xm}$* for total trade and total manufacturing trade, though it does hold for some industry groups within manufacturing trade.

For total trade and total manufacturing trade, there are statistically significant positive coefficient estimates on the regional dummy variables for East Asia and South Asia as exporters. Coefficient estimates are particularly large for East Asia, suggesting that the region exports nearly four times more total manufacturing trade than the OECD region, after accounting for determinants of trade as per the model.[5] Moreover, East Asia is estimated to have high relative exports for all three manufacturing industry groups, ranking highest to lowest by labor-intensive, in-between, and capital-intensive manufacturing industries. This accords with the view that East Asian export success has come to be diversified across a wide range of manufacturing industries. Note too that these coefficient estimates are a good deal larger than those for the regional dummy variable for East Asia as an importer and indeed that the estimate for East Asia as an importer is negative for labor-intensive trade. This pattern of diversification for East Asia as an exporter contrasts with South Asia as an exporter, for which there are high relative exports only for labor-intensive manufactures.

For the Middle East–North Africa as an exporter, there are statistically significant negative coefficient estimates on the regional dummy variable for all five categories of trade. Coefficient estimates for Middle East–North Africa as an importer are also significantly negative for total trade, total manufacturing trade, and labor-intensive trade, reflecting the region's generally weak integration into international goods markets. We also see negative coefficient estimates on the regional dummy variable for Latin America–Caribbean as an exporter for four of five categories of trade, which are statistically significant for total manufacturing trade and in-between manufacturing trade. It is in fact the comparatively weak trade performance of the Middle East–North Africa and Latin America–Caribbean regions combined with their generally weaker-than-average FACB rights (Table 1) that play an important role in accounting for the overall results of our analysis. While East Asia also has weaker-than-average FACB rights, it is worth noting that there are fewer countries in our sample in East Asia (16) than in Middle East–North Africa (18) or Latin America–Caribbean (26), let alone the two latter regions combined, which together make up one-third of our sample.

The strong positive coefficient estimate on the regional dummy variable for East Asia suggests a potential problem in the interpretation of the causal determinants of trade. For in the absence of regional dummy variables, coefficient estimates on any measure introduced into the trade model tending to have similar values for countries in the East Asia region might suggest that this measure is a causal determinant of export performance. A very similar question of interpretation occurred in the empirical literature on the effects of income inequality on long-run economic growth. While earlier studies found evidence that greater income inequality had a negative impact on long-run economic growth, this result was not found to be robust with respect to the inclusion of regional dummy variables (Deininger and Squire, 1998). This was also a story of Asia, which has (on average) relatively low-income inequality and relatively

Table 3. Benchmark Trade Model Results with Regional Dummy Variables (authors' industry classification)

	Total trade	Total mfg. trade	Labor-intensive mfg. trade	In-between mfg. trade	Capital-intensive mfg. trade
c	−32.096***	−31.125***	−29.128***	−32.150***	−28.076***
	(−66.313)	(−63.931)	(−54.620)	(−60.203)	(−49.435)
$\log(distance_{xm})$	−1.458***	−1.552***	−1.516***	−1.549***	−1.560***
	(−50.246)	(−53.061)	(−48.310)	(−50.186)	(−47.986)
$\log(GDP/cap_x)$	1.377***	1.497***	1.237***	1.630***	1.340***
	(66.887)	(72.817)	(55.781)	(73.260)	(54.981)
$\log(GDP/cap_m)$	0.982***	0.928***	0.977***	0.912***	0.820***
	(48.809)	(46.544)	(45.439)	(41.762)	(35.199)
$\log(pop_x)$	1.157***	1.178***	1.221***	1.238***	0.973***
	(66.912)	(69.072)	(65.345)	(66.196)	(46.373)
$\log(pop_m)$	1.059***	0.969***	0.817***	0.793***	0.967***
	(65.577)	(60.473)	(46.563)	(43.783)	(51.050)
$\log(area_x)$	−0.059***	−0.094***	−0.182***	−0.162***	0.010
	(−4.615)	(−7.416)	(−13.047)	(−11.811)	(0.649)
$\log(area_m)$	−0.146***	−0.128***	−0.103***	−0.040***	−0.126***
	(−11.844)	(−10.378)	(−7.744)	(−2.916)	(−8.554)
common border$_{xm}$	0.913***	0.908***	0.857***	1.041***	0.781***
	(7.140)	(6.953)	(6.347)	(8.049)	(5.862)
1 landlocked$_{xm}$	−0.555***	−0.641***	−0.441***	−0.385***	−0.831***
	(−13.132)	(−15.147)	(−9.440)	(−8.371)	(−16.169)
2 landlocked$_{xm}$	−0.436***	−0.647***	−0.579***	−0.334**	−1.040***
	(−3.198)	(−4.905)	(−3.973)	(−2.287)	(−6.072)
1 island$_{xm}$	−0.084*	−0.076*	−0.327***	−0.008	0.084
	(−1.904)	(−1.706)	(−6.721)	(−0.163)	(1.612)
2 island$_{xm}$	0.458***	0.585***	0.199	0.366***	0.817***
	(3.534)	(4.679)	(1.394)	(2.669)	(5.203)
RTA$_{xm}$	0.022	0.025	0.133***	−0.051	0.142***
	(0.504)	(0.568)	(2.773)	(−1.050)	(2.800)
exchange rate (88–92)$_{xm}$	−0.062	−0.053	−0.355*	−0.474**	0.110
	(−0.383)	(−0.319)	(−1.867)	(−2.454)	(0.562)
Latin America–Caribbean$_x$	−0.054	−0.155**	−0.007	−0.747***	0.317***
	(−0.841)	(−2.359)	(−0.102)	(−10.050)	(4.160)
Latin America–Caribbean$_m$	−0.168**	0.184***	−0.081	0.893***	0.395***
	(−2.374)	(2.643)	(−1.118)	(11.538)	(4.857)
non-OECD East Asia–Pacific$_x$	1.135***	1.344***	2.023***	1.172***	0.786***
	(15.174)	(17.937)	(24.819)	(14.655)	(9.156)
non-OECD East Asia–Pacific$_m$	0.102	0.182**	−0.158*	0.731***	0.385***
	(1.298)	(2.302)	(−1.908)	(8.193)	(4.147)
South Asia$_x$	0.678***	0.952***	1.832***	−0.012	0.114
	(6.140)	(8.558)	(15.284)	(−0.098)	(0.804)
South Asia$_m$	−0.468***	−0.387***	−0.542***	0.324**	−0.127
	(−3.953)	(−3.281)	(−4.339)	(2.570)	(−0.920)
Transition countries$_x$	−0.010	0.232***	−0.392***	0.192**	0.435***
	(−0.129)	(2.831)	(−4.121)	(2.135)	(4.520)
Transition countries$_m$	−0.674***	−0.704***	−0.481***	−0.192*	−0.564***
	(−7.199)	(−7.487)	(−4.859)	(−1.833)	(−5.014)
Sub-Saharan Africa$_x$	0.437***	0.003	0.133	0.009	0.235**
	(4.765)	(0.035)	(1.360)	(0.093)	(2.105)
Sub-Saharan Africa$_m$	−0.177*	0.212**	0.151	0.834***	0.344***
	(−1.944)	(2.363)	(1.544)	(8.379)	(3.256)
Middle East–North Africa$_x$	−0.658***	−0.781***	−0.763***	−1.257***	−0.573***
	(−9.556)	(−11.582)	(−10.478)	(−17.211)	(−7.341)
Middle East–North Africa$_m$	−0.556***	−0.345***	−0.291***	0.319***	0.085
	(−7.995)	(−5.015)	(−4.005)	(4.313)	(1.086)
N	13,743	13,199	10,995	11,269	11,400
Adjusted R^2	0.751	0.765	0.728	0.761	0.673
F-statistic	1597.181	1655.468	1134.780	1380.811	905.337

Notes: *z*-Statistics appear in parentheses. *, **, and *** indicate two-tailed significance at 10%, 5%, and 1% levels, respectively.

high growth rates. As with this literature, we regard results for models including regional dummy variables as more definitive in that they control for unspecified cross-regional variation and are driven by cross-country variation. However, we present main results with and without regional dummy variables, which facilitates comparison with prior studies surveyed above that did not include regional dummy variables.

5. Empirical Findings

Main Results

The FACB and democracy indicators are introduced one by one into the benchmark models. Each indicator is introduced pairwise for the exporting and importing country (as with log(GDP/cap), log(pop), and log($area$) in the benchmark models). Shown in Table 4 are coefficient estimates on the FACB and democracy indicators *for the exporting country* in the context of the benchmark models, with and without regional dummy variables and using four industry group classifications. Given space constraints, our presentation focuses hereafter on these coefficient estimates, which provide estimates of the effects of FACB rights and democracy on exports, while bilaterally controlling for the extent of FACB rights and democracy in the importing country. Light shading indicates that stronger FACB rights and democracy are associated with significantly higher exports (10% level or higher), and dark shading indicates that stronger FACB rights and democracy are associated with significantly lower exports.

  Based on our own industry classification and including regional dummy variables, coefficient estimates of statistical significance generally suggest that stronger FACB rights and democracy are associated with higher exports, with the unionization rate for capital-intensive trade the exception. For total manufacturing trade, for instance, taking the coefficient estimate at face value suggests that a one-unit increase in the civil liberties index (on a scale of 0 to 10) would result in 9.0% higher exports. For the six main qualitative indicators (from Freedom House, the OECD, and of our own construction), coefficient estimates are largest for in-between trade. With regional dummy variables, we see that stronger FACB rights and democracy are most often associated with higher labor-intensive exports, with results strongly statistically significant for the two Freedom House indices and of borderline (10%) statistical significance for the weighted version of our FACB index and the OECD 2000 index. Without regional dummy variables, stronger rights are most often estimated to be associated with lower labor-intensive exports, though results are statistically significant only for the unionization rate and the dummy variable for violations of FACB rights in EPZs and are of borderline significance for our unweighted FACB index. The exceptions are the Freedom House indices, which remain significantly positive. This is one of the more robust findings of this study—that coefficient estimates on the Freedom House indices are generally positive and statistically significant, suggesting that countries with stronger civil liberties and political rights have higher exports, after controlling for other determinants of exports. This result for the Freedom House indices holds very strongly for labor-intensive manufacturing exports, regardless of the definition of labor-intensive manufacturing industries, with and without regional dummy variables, and throughout the sensitivity analysis.

  Based on the UNIDO industry classification with regional dummy variables, for labor-intensive trade, we see that stronger FACB rights and democracy are estimated to be associated with higher exports, with or without regional dummy variables. Of the four classifications of labor-intensive manufactures, it is the UNIDO classification that

Table 4. Trade Model Results by Industry Classification and with and without Regional Dummy Variables

	With regional dummy variables					Without regional dummy variables				
Authors' industry classification	Total trade	Total mfg. trade	Labor-intensive mfg. trade	In-between mfg. trade	Capital-intensive mfg. trade	Total trade	Total mfg. trade	Labor-intensive mfg. trade	In-between mfg. trade	Capital-intensive mfg. trade
Unionization rate$_x$	0.000	0.003 ***	0.000	0.010 ***	-0.003 *	-0.001	0.005 ***	-0.005 ***	0.012 ***	-0.001
FH civil liberties index$_x$	0.059 ***	0.090 ***	0.115 ***	0.128 ***	0.028 **	0.061 ***	0.082 ***	0.077 ***	0.127 ***	0.059 ***
FH political rights index$_x$	0.045 ***	0.064 ***	0.069 ***	0.095 ***	0.023 **	0.046 ***	0.066 ***	0.059 ***	0.092 ***	0.046 ***
FACB index unweighted$_x$	0.026 ***	0.041 ***	0.008	0.064 ***	0.030 ***	0.029 ***	0.029 ***	-0.013 *	0.077 ***	0.024 ***
FACB index weighted$_x$	0.031 ***	0.047 ***	0.016 *	0.081 ***	0.030 ***	0.034 ***	0.035 ***	-0.007	0.093 ***	0.027 ***
OECD FACB index 1996$_x$	0.013	0.060 ***	0.009	0.125 ***	0.049 ***	-0.008	0.027 **	-0.019	0.044 ***	0.008
OECD FACB index 2000$_x$	0.017	0.072 ***	0.027 *	0.139 ***	0.048 ***	0.001	0.044 ***	0.002	0.072 ***	0.016
FACB in EPZs$_x$	-0.211 ***	-0.364 ***	0.072	-0.312 ***	-0.426 ***	-0.227 ***	-0.315 ***	0.145 **	-0.496 ***	-0.305 ***
UNIDO industry classification		Labor-intensive mfg. trade	In-between mfg. trade	Capital-intensive mfg. trade			Labor-intensive mfg. trade	In-between mfg. trade	Capital-intensive mfg. trade
Unionization rate$_x$		0.006 ***	0.001	0.005 ***			0.008 ***	-0.001	0.009 ***
FH civil liberties index$_x$		0.134 ***	0.091 ***	0.056 ***			0.111 ***	0.122 ***	0.087 ***
FH political rights index$_x$		0.106 ***	0.056 ***	0.039 ***			0.094 ***	0.087 ***	0.062 ***
FACB index unweighted$_x$		0.034 ***	0.053 ***	0.020 **			0.035 ***	0.041 ***	0.037 ***
FACB index weighted$_x$		0.047 ***	0.054 ***	0.028 ***			0.046 ***	0.044 ***	0.046 ***
OECD FACB index 1996$_x$		0.051 ***	0.039	0.063 ***			0.020	0.011	0.037 ***
OECD FACB index 2000$_x$		0.065 ***	0.020	0.089 ***			0.042 ***	0.011	0.064 ***
FACB in EPZs$_x$		0.042	-0.519 ***	-0.300 ***			-0.028	-0.223 **	-0.406 ***

Table 4. Continued

	With regional dummy variables	Without regional dummy variables
Krause's industry classification	*Labor intensive mfg. trade*	*Labor-intensive mfg. trade*
Unionization rate$_x$	−0.005 ***	−0.005 ***
FH civil liberties index$_x$	0.101 ***	0.048 ***
FH political rights index$_x$	0.079 ***	0.050 ***
FACB index unweighted$_x$	−0.004	−0.032 ***
FACB index weighted$_x$	0.002	−0.028 ***
OECD FACB index 1996$_x$	−0.007	−0.039 ***
OECD FACB index 2000$_x$	0.023	−0.013
FACB in EPZs$_x$	0.214 ***	0.197 ***
Busse's industry classification	*Labor-intensive mfg. trade*	*Labor-intensive mfg. trade*
Unionization rate$_x$	−0.005 ***	−0.005 ***
FH civil liberties index$_x$	0.102 ***	0.046 ***
FH political rights index$_x$	0.072 ***	0.046 ***
FACB index unweighted$_x$	−0.020 **	−0.049 ***
FACB index weighted$_x$	−0.013	−0.045 ***
OECD FACB index 1996$_x$	−0.043 **	−0.057 ***
OECD FACB index 2000$_x$	−0.016	−0.030 **
FACB in EPZs$_x$	0.324 ***	0.295 ***

Notes: *, **, and *** indicate two-tailed significance at 10%, 5%, and 1% levels, respectively. Light shading indicates that stronger FACB rights are associated with significantly higher exports (10% level or higher); while dark shading indicates that stronger FACB rights are associated with significantly lower exports.

provides the strongest association between stronger FACB rights and higher labor-intensive manufacturing exports.

For Krause's classification of labor-intensive goods with regional dummy variables, we find statistically significant coefficient estimates suggesting that stronger civil liberties and political rights are associated with higher exports, though we find the opposite result for the unionization rate and the dummy variable for FACB violations in EPZs. For our two FACB indices and the two OECD indices, we find coefficient estimates not significantly different from zero, consistent with the view that changes in FACB rights have no effect on labor-intensive exports one way or another. Without regional dummy variables, we find statistically significant negative coefficient estimates on our two FACB indices and the OECD 1996 index. We see again that, whether or not one includes regional dummy variables, they can have a substantive impact on estimates of the relationship between FACB rights and exports of labor-intensive manufactures.

It is with the classification used by Busse that we find the strongest negative relationship between FACB rights and exports of labor-intensive manufactures, and here too results vary considerably with and without the inclusion of regional dummy variables. Without regional dummy variables, we find statistically significant coefficient estimates suggesting that stronger FACB rights are associated with lower labor-intensive exports for all measures, except for the Freedom House indices for which the opposite holds. Including regional dummy variables in the model, coefficient estimates on our weighted FACB index and the OECD 2000 index are no longer significantly different from zero.

We find then that depending on the classification of labor-intensive industries and the inclusion of regional dummy variables, it is possible to get statistically significant results of opposite sign on the unionization rate, our two FACB indices and the two OECD indices—that is, for five of the eight indicators we evaluate (five of the six specifically addressing FACB rights). There is a sense then in which none of the coefficient estimates on these five indicators are robust, at least with respect to labor-intensive trade. This seems a useful result in itself, and provides insight into why different studies on these issues might come to different findings using the same indicators.

That said, we believe that we have reasonable grounds for taking as more definitive those results based on our own classification of industries by labor intensity and with the inclusion of regional dummy variables in the trade model. Similarly with the income inequality-growth literature, we argue that regional dummy variables belong in the trade model so that key results are driven by cross-country variation rather than unspecified cross-regional variation that may be proxied by any measure a region tends to have in common.

Regarding industry classifications, we prefer our classification to that by UNIDO in that it is based on more countries and more up-to-date data. Regarding Krause's and Busse's industry classifications, one concern is that both classify the glass and glass products industry as labor-intensive, which we argue is largely not apt for the products from these industries that figure most prominently in international trade. More generally, it is important that any ranking of industries by labor or skill intensity use qualitative criteria to determine appropriate thresholds and thus industry groups. This is particularly so from the viewpoint of poorer developing countries, for which it seems preferable to include the full range of industries that do not impose prohibitive technological barriers to production for international markets. It is on these grounds that we prefer modeling results based on our own industry classification and including regional dummy variables, and we proceed with sensitivity analysis accordingly. As

regards the different industry classifications, this of course does not affect results for total trade or total manufacturing trade.

Sensitivity Analysis

The eight panels in Table 5 present findings from different tests of the sensitivity of results, for comparison with the upper left panel of Table 4. We first drop the measure of exchange rate volatility from the model, as this variable is missing for a number of countries. For total trade and total manufacturing trade, for instance, this yields over 500 additional observations. For labor-intensive trade, this leads to a significant positive coefficient estimate for our unweighted FACB index, and for capital-intensive trade to a loss of statistical significance for the unionization rate.

In addition to missing values in the raw trade data, there are a number of values that are zero and that thus drop out of the sample when we convert to natural logarithms, thus left-censoring the sample. We first address this with Tobit estimation, for which the main changes are for a loss of statistical significance (10%) for our weighted FACB index and the OECD 2000 index for labor-intensive goods. Following Rose (1999), we next address the issue of zero values by setting the log of small trade values (less than US$50,000) to zero. For total trade and total manufacturing trade, this yields over 800 additional observations. Again we see the loss of statistical significance (10%) for the OECD 2000 index for labor-intensive goods and in addition the loss of statistical significance for the unionization rate for capital-intensive exports.

Weighted least squares estimation is generally used as a correction for heteroskedasticity, which we address with White corrections. Following Rose, we use weighted least squares to give greater weight to the observations of larger countries, using both the natural logarithm of $(GDP_x GDP_m)$ and $(pop_x pop_m)$ as weights. Using the former, the only substantive differences are the loss of borderline statistical significance (10%) for our weighted FACB index for labor-intensive manufactures and the loss of statistical significance on the unionization rate for capital-intensive manufactures. For the latter weight, we see in addition the loss of borderline statistical significance for our weighted FACB index and for the OECD 2000 index for labor-intensive manufactures.

FACB rights and democracy may themselves be determined by a range of economic and social factors, and here we are particularly concerned with the endogeneity of FACB rights and democracy with respect to *de facto* trade openness. Following Brown's (2000) suggestion (but focusing more narrowly on endogeneity with respect to trade openness), we regress the six main qualitative indicators of FACB rights and democracy on a constant, the ratio of total trade (exports plus imports) to GDP and this ratio squared and use the residuals from these regressions in the trade model, with results shown in the lower right panel of Table 5. Compared with our main results, coefficient estimates are in every instance less strongly positive and, for total trade and labor-intensive trade, sometimes negative, though never significantly so. Our weighted and unweighted FACB indices are no longer statistically significant for total trade and capital-intensive trade, and indeed there is a general weakening of statistical significance for capital-intensive trade. For total manufacturing trade and in-between manufacturing trade, coefficient estimates all remain positive and statistically significant. For total manufacturing trade, for instance, coefficient estimates suggest that a one-unit strengthening of rights (on a scale of 0 to 10) would be associated with between a 1.7% (for our unweighted FACB index) and 7.8% (for the civil liberties index) increase in exports.

Table 5. Trade Model Sensitivity Analysis Results

Left block

Authors' industry classification, w/ regional dummy variables	Total trade	Total mfg. trade	Labor-intensive mfg. trade	In-between mfg. trade	Capital-intensive mfg. trade
Dropping exchange rate (88–92)$_{xm}$ from the model					
Unionization rate$_x$	0.001	0.004 ***	0.000	0.009 ***	-0.002
FH civil liberties index$_x$	0.068 ***	0.097 ***	0.117 ***	0.130 ***	0.046 ***
FH political rights index$_x$	0.053 ***	0.071 ***	0.075 ***	0.100 ***	0.036 ***
FACB index unweighted$_x$	0.033 ***	0.048 ***	0.015 *	0.070 ***	0.040 ***
FACB index weighted$_x$	0.038 ***	0.054 ***	0.023 ***	0.086 ***	0.042 ***
OECD FACB index 1996$_x$	0.013	0.061 ***	0.008	0.124 ***	0.054 ***
OECD FACB index 2000$_x$	0.018 ***	0.074 ***	0.027 *	0.139 ***	0.053 ***
FACB in EPZs$_x$	-0.201 ***	-0.361 ***	0.085	-0.302 ***	-0.441 ***
Tobit estimation					
Unionization rate$_x$	0.000	0.003 ***	0.000	0.010 ***	-0.003 **
FH civil liberties index$_x$	0.059 ***	0.090 ***	0.115 ***	0.128 ***	0.028 **
FH political rights index$_x$	0.046 ***	0.066 ***	0.071 ***	0.101 ***	0.025 **
FACB index unweighted$_x$	0.027 ***	0.041 ***	0.007	0.066 ***	0.032 ***
FACB index weighted$_x$	0.031 ***	0.048 ***	0.014	0.083 ***	0.032 ***
OECD FACB index 1996$_x$	0.013	0.059 ***	0.006	0.121 ***	0.048 ***
OECD FACB index 2000$_x$	0.017	0.071 ***	0.024	0.135 ***	0.047 ***
FACB in EPZs$_x$	-0.207 ***	-0.356 ***	0.093	-0.281 ***	-0.416 ***
Setting log of small trade values (less than US$50,000) to zero					
Unionization rate$_x$	0.000	0.004 **	0.001	0.011 ***	-0.003 ***
FH civil liberties index$_x$	0.088 ***	0.120 ***	0.135 ***	0.148 ***	0.053 ***
FH political rights index$_x$	0.065 ***	0.087 ***	0.082 ***	0.115 ***	0.043 ***
FACB index unweighted$_x$	0.034 ***	0.049 ***	0.013	0.069 ***	0.045 ***
FACB index weighted$_x$	0.039 ***	0.056 ***	0.023 **	0.085 ***	0.045 ***
OECD FACB index 1996$_x$	0.003	0.057 ***	-0.006	0.136 ***	0.044 **
OECD FACB index 2000$_x$	0.010	0.074 ***	0.016	0.156 ***	0.049 **
FACB in EPZs$_x$	-0.145 **	-0.372 ***	0.085	-0.324 ***	-0.451 ***

Right block

Authors' industry classification, w/ regional dummy variables	Total trade	Total mfg. trade	Labor-intensive mfg. trade	In-between mfg. trade	Capital-intensive mfg. trade
*Weighted least squares using log(GDP$_x$ * GDP$_m$) as weight*					
Unionization rate$_x$	0.001	0.004 ***	0.000	0.010 ***	-0.002
FH civil liberties index$_x$	0.057 ***	0.091 ***	0.116 ***	0.135 ***	0.031 **
FH political rights index$_x$	0.043 ***	0.064 ***	0.070 ***	0.101 ***	0.024 **
FACB index unweighted$_x$	0.024 ***	0.039 ***	0.006	0.065 ***	0.032 ***
FACB index weighted$_x$	0.028 ***	0.046 ***	0.014	0.083 ***	0.033 ***
OECD FACB index 1996$_x$	0.011	0.058 ***	0.009	0.126 ***	0.051 ***
OECD FACB index 2000$_x$	0.014 ***	0.070 ***	0.028 *	0.139 ***	0.050 ***
FACB in EPZs$_x$	-0.217 ***	-0.374 ***	0.068	-0.320 ***	-0.433 ***
*Weighted least squares using log(POP$_x$ * POP$_m$) as weight*					
Unionization rate$_x$	0.001	0.004 ***	0.000	0.010 ***	-0.002
FH civil liberties index$_x$	0.054 ***	0.086 ***	0.109 ***	0.128 ***	0.029 **
FH political rights index$_x$	0.040 ***	0.059 ***	0.064 ***	0.093 ***	0.021 **
FACB index unweighted$_x$	0.022 ***	0.038 ***	0.005	0.065 ***	0.034 ***
FACB index weighted$_x$	0.026 ***	0.044 ***	0.012	0.082 ***	0.034 ***
OECD FACB index 1996$_x$	0.002	0.050 ***	-0.004	0.119 ***	0.050 ***
OECD FACB index 2000$_x$	0.006	0.063 ***	0.016	0.133 ***	0.052 ***
FACB in EPZs$_x$	-0.199 ***	-0.353 ***	0.087	-0.293 ***	-0.414 ***
Using "residual" versions of indicators[a]					
Unionization rate$_x$					
FH civil liberties index$_x$	0.049 ***	0.078 ***	0.101 ***	0.119 ***	0.014
FH political rights index$_x$	0.042 ***	0.060 ***	0.065 ***	0.093 ***	0.018 *
FACB index unweighted$_x$	0.000	0.017 **	-0.012	0.041 ***	0.008
FACB index weighted$_x$	0.004	0.022 ***	-0.006	0.057 ***	0.008
OECD FACB index 1996$_x$	-0.014	0.031 **	-0.025	0.081 ***	0.031 *
OECD FACB index 2000$_x$	-0.010	0.045 ***	-0.007	0.097 ***	0.032 *
FACB in EPZs$_x$					

Notes: *, **, and *** indicate two-tailed significance at 10%, 5%, and 1% levels, respectively. Light shading indicates that stronger FACB rights are associated with significantly higher exports (10% level or higher), while dark shading indicates that stronger FACB rights are associated with significantly lower exports.
[a] "Residual" versions of these indicators are the residuals from regressing these indicators on a constant, the ratio of total trade to GDP, and this ratio squared.

We take the coefficient estimates on these "residual" versions of indicators and use them to derive estimates of changes in total manufacturing exports associated with changes in FACB rights and democracy using example pairs of countries within regions as reference points. More specifically, we estimate what would be the percent change and absolute change in total manufacturing exports if an example country within a region strengthened its current level of FACB rights and democracy to the level of another example country in a region, shown in Table 6.

For Guatemala and Uruguay, for example, if civil liberties in the former as measured by the Freedom House index were to strengthen to the level of the latter, our results suggest that this would result in an estimated 35.6% increase in total manufacturing exports for Guatemala, equivalent to current US$494 million relative to actual 1999 exports. The OECD indices provide estimates somewhat smaller in magnitude, and our FACB indices estimates that are smaller yet but still equivalent to US$133 and US$192 million for the unweighted and weighted indices, respectively. The estimates in Table 6 are meant to be suggestive and one should not take them too literally. Nonetheless, they provide a sense that there may be non-negligible economic benefits associated with the strengthening of democracy and FACB rights.

Taking the results of Tables 4 and 5 together, a summary of our main robust results is represented in Table 7, with breakdowns for total trade, total manufacturing trade, and labor-intensive manufacturing trade and for democracy and FACB rights. In sum, we find robust relationships between stronger democracy and higher total exports, total manufacturing exports and labor-intensive manufacturing exports as well as between stronger FACB rights and higher total manufacturing exports, and no robust relationships between FACB rights and total exports and labor-intensive manufacturing exports.

6. Conclusion

For more aggregate trade flows, we find a robust result that stronger FACB rights are associated with higher total manufacturing exports and that stronger democracy is associated with higher total exports and total manufacturing exports. These results are consistent with the view that stronger FACB rights and democracy enhance export competitiveness, not hinder it. These results might seem surprising in light of the highly visible export successes of a number of countries having comparatively weak FACB rights and democracies, most obvious being a number of East Asian countries. The value of cross-country analysis, though, is that it tells us whether the experience of these countries is representative in this regard (after accounting for the determinants of exports as per the trade model). Our results on total trade and total manufacturing trade suggest, rather, that the East Asian experience is anomalous in the broader global context. For one must also be mindful of the less visible export failures of a great many countries having weak FACB rights and democracies, and indeed that such countries are among the most weakly integrated into global markets.

While such cross-country analysis is useful in determining representative patterns, it is of less help in understanding causal determinants of these patterns, and the result of a positive correlation between stronger FACB rights and democracy and stronger export performance begs for explanation. This is particularly so in light of the findings of prior studies that stronger FACB rights and democracy, using the same measures as the present study, are associated with higher labor costs even after accounting for labor productivity. For one ought to expect that higher wages would have a negative impact on exports, all else being equal, particularly for exports of labor-intensive goods.

Table 6. Changes in Total Manufacturing Exports Associated with Changes in Democracy and FACB Rights between Example Countries

	FH civil liberties index	FH political rights index	FACB index unweighted	FACB index weighted	OECD FACB index 1996	OECD FACB index 2000
Example countries from Latin America–Caribbean						
A. Guatemala	3.75	5.42	2.86	2.48	3.33	3.33
B. Uruguay	8.33	8.75	8.57	8.65	10.00	10.00
% change in total mfg. exports associated with change in democracy and FACB rights from A to B	35.56	20.00	9.59	13.79	20.75	30.17
Change in 1999 total mfg. exports for country A associated with change in democracy and FACB rights from A to B in millions of current US$	494	278	133	192	288	419
Example countries from non-OECD East Asia–Pacific						
A. Indonesia	2.08	0.00	0.48	0.98	0.00	3.33
B. Thailand	4.58	6.67	4.29	5.04	3.33	3.33
% change in total mfg. exports associated with change in democracy and FACB rights from A to B	19.39	39.99	6.39	9.08	10.37	0.00
Change in 1999 total mfg. exports for country A associated with change in democracy and FACB rights from A to B in millions of current US$	6770	13,960	2232	3170	3621	0
Example countries from South Asia						
A. Pakistan	3.33	6.25	1.43	2.78	3.33	3.33
B. India	5.00	5.83	5.71	5.34	6.67	6.67
% change in total mfg. exports associated with change in democracy and FACB rights from A to B	12.93	–2.50	7.19	5.72	10.37	15.09
Change in 1999 total mfg. exports for country A associated with change in democracy and FACB rights from A to B in millions of current US$	1049	–203	584	464	842	1224

Table 6. *Continued*

	FH civil liberties index	FH political rights index	FACB index unweighted	FACB index weighted	OECD FACB index 1996	OECD FACB index 2000
Example countries from Sub-Saharan Africa						
A. Zimbabwe	3.33	3.33	3.81	4.44	3.33	3.33
B. South Africa	7.08	7.92	5.71	5.49	6.67	6.67
% change in total mfg. exports associated with change in democracy and FACB rights from A to B	29.09	27.50	3.20	2.35	10.37	15.09
Change in 1999 total mfg. exports for country A associated with change in democracy and FACB rights from A to B in millions of current US$	247	234	27	20	88	128
Example countries from Middle East–North Africa						
A. Syria	0.00	0.00	0.00	0.00	0.00	0.00
B. Jordan	5.00	5.00	5.71	6.69	3.33	3.33
% change in total mfg. exports associated with change in democracy and FACB rights from A to B	38.79	30.00	9.59	14.97	10.37	15.09
Change in 1999 total mfg. exports for country A associated with change in democracy and FACB rights from A to B in millions of current US$	180	139	44	69	48	70

Notes: Based on coefficient estimates for total mfg. trade from the lower right panel of Table 5 using "residual" versions of indicators and thus accounting for endogeneity with respect to *de facto* trade openness. Index values for Indonesia and South Africa are for these countries alone and not for the country groups defined in the Appendix.

Table 7. Summary of Main Robust Results for Full Sample of Countries

	Total trade	Total mfg. trade	Labor-intensive mfg. trade
Democracy	+	+	+
FACB rights	None (0)	+	None (0)

Consistent with this expectation, we do not find such a consistent positive correlation for labor-intensive goods with respect to FACB rights. We do, however, find a robust relationship between stronger democracy (measured by the Freedom House civil liberties and political rights indices) and higher labor-intensive exports. This relationship holds for all four definitions of labor-intensive manufacturing industries, with and without regional dummy variables, and throughout the sensitivity analysis. This is consistent with the view that democracy is beneficial for the export performance of labor-intensive manufactures.

We find, in contrast, statistically significant results of opposite sign for five of our six indicators specifically addressing FACB rights depending solely on which of the four definitions of labor-intensive manufacturing industries is used and whether we include regional dummy variables in the model. Using our preferred definition of labor-intensive manufacturing industries and including regional dummy variables, we find that there is essentially no relationship between FACB rights and labor-intensive exports. The less positive relationship for labor-intensive manufacturing exports than total manufacturing exports is consistent with the theoretical expectation that labor-intensive industries are particularly sensitive to higher labor costs resulting from stronger FACB rights. In light of the Heckscher–Ohlin principle, this suggests that stronger FACB rights are of particular concern for developing countries' export competitiveness. However, this concern holds only in a relative sense—relative to total manufacturing exports—since we do not find solid evidence that stronger FACB rights have an adverse impact on the exports of labor-intensive manufactures but rather that there is essentially no relationship. It is worth recalling too that the exceptional export performance of the non-OECD East Asian countries holds across the range of manufacturing industries, for labor-intensive and capital-intensive industries and those in-between. Insofar, then, as other developing countries seek to emulate this pattern of diversified success, what matters is the relationship between total manufacturing exports and FACB rights.

Taking the results for total manufacturing trade and labor-intensive manufacturing trade together suggests that possible negative effects through labor costs of stronger FACB rights and democracy are offset by other positive effects of stronger FACB rights and democracy. We have suggested in the introduction to this paper that these positive effects may be related to the greater economic and social stability enjoyed by countries with stronger FACB rights and democracy, with such stability in turn facilitating export competitiveness. But clearly this is only a tentative hypothesis requiring further investigation.

Appendix: Data Sources

Trade data: Statistics Canada (2001).
Area and geographic center of countries, common borders, landlocked, and island:
  Central Intelligence Agency (2001).

Unionization rate: ILO (1999).
Freedom House indices: Freedom House (2000).
FACB indices: constructed by authors.
OECD indices: OECD (1996, 2000).
Manufacturing value-added, output, and employment: UNIDO (2000, 2001).
Exchange rates: IMF (2002).
Regional trade agreements: World Trade Organization (2001).
All other data: World Bank (2001).

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Notes

1. Information on these eight country groups as well as on how independent variables for them are constructed is available on request.

2. Rather than using GDP per capita and population as paired measures of country "mass," one could also use GDP per capita and GDP, as in Rose (1999), or GDP and population, as in Van Beers (1998). We prefer our specification on the grounds that GDP per capita and population are the least correlated of the three possible pairs and provide intuitively additive elasticities with respect to trade flows. Practically speaking, however, it makes no difference in this

particular context which pair one chooses, as any pair yields almost identical coefficient esti-mates and standard errors on all other independent variables in the model.

3. The list of largest merchandise exporters and importers is from The Economist Intelligence Unit's *World Trade Report* (EIU, 1996). We constructed industry classifications both by employ-ment to value-added ratios and employment to output ratios, with the ranking shown in Table 2 based on the former. In practice, the difference between the two classifications comes to little. Most importantly, the labor-intensive industry group remains identical. The only differ-ence in the other industry groups is that food products and paper and paper products move in opposite directions from capital-intensive to in-between industries, depending on which ratio is used.

4. The only exception to this regarding our classification and Busse's is that we include SITC 8946 not under ISIC 390 but rather under ISIC 382 minus 3825, as per the UN (2003) correspondence table, and the latter industry we classify as in-between.

5. $e^{1.344} = 3.83$, where 1.344 is the coefficient estimate on the dummy variable for total manu-facturing trade for East Asia as an exporter.