GLOBALIZATION, DOMESTIC POLITICS, AND SOCIAL SPENDING IN LATIN AMERICA
A Time-Series Cross-Section Analysis, 1973–97

By ROBERT R. KAUFMAN and ALEX SEGURA-UBIERGO*

"HAS globalization gone too far?" This question—also the title of a recent book by Dani Rodrik[1]—has been asked for over a century in Latin America. The issues it raises, however, have acquired special force in the last twenty-five years, as once-closed import-substituting economies have been transformed by structural reforms that have linked them far more closely to international trade and capital markets. As they do in other parts of the world, the specific effects of this transformation on Latin American societies remain unclear. Nevertheless, it seems quite apparent that it has brought about important modifications in the balance of political power and has altered the margins of choice available to domestic governments.

This article examines one of the most controversial aspects of this economic opening: its impact on governments' fiscal commitments to social security, health, and education. Many have argued that the new era of neoliberal reforms has undermined the thin protections that states in the region had provided to at least some of their citizens during earlier periods of ISI. Regardless of whether this is the case, the central challenge for the future is whether badly damaged welfare systems

[1] See Rodrik, *Has Globalization Gone Too Far?* (Washington, D.C.: Institute for International Economics, 1997).

can be reconstructed and expanded in ways that will shield citizens exposed to new market forces and enable them to compete effectively in the current era of globalization.

We explore these issues through an analysis of changes in social security transfers and of health and education expenditures in a time-series cross-sectional analysis in fourteen Latin American countries from 1973 to 1997. The countries are Argentina, Bolivia, Brazil, Chile, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Mexico, Paraguay, Peru, Uruguay, and Venezuela.[2]

We examine three sets of issues. First, has integration into global markets in fact constrained social spending? On this question, we draw heavily on the distinction drawn by Geoffrey Garrett[3] between an "efficiency" hypothesis, which posits that increasing exposure to international competition will induce governments to roll back social expenditures, and a "compensation" hypothesis, which emphasizes incentives to invest in human capital and to respond to political demands for protection against risk. We then examine the extent to which such outcomes might be influenced by two additional sets of domestic political and institutional factors: the balance of partisan power and the electoral pressures of democratic institutions.

Consistent with Garrett's findings for a larger global sample, we show that trade integration has a consistently negative effect on aggregate social spending and that this is compounded by openness to capital markets. This is the strongest and most robust finding in our study. Against at least some of the studies of OECD countries, moreover, the political variables have weak and inconsistent impacts on aggregate social spending. Neither popularly based governments nor democracies consistently spend more or less than conservative governments or autocratic regimes.

We also find, however, that globalization and domestic politics have a much more complex impact when social expenditures are disaggregated into social security transfers, on the one hand, and human capital spending on health and education, on the other. The negative effect of international economic integration operates primarily in the area of social security transfers (mainly pensions), while health and education expenditures are far less vulnerable. Each type of spending also appears to be influenced by different political factors. Popularly based governments

---

[2] Because of missing or noncomparable data, we were unable to include Colombia, Cuba, Haiti, Honduras, Nicaragua, and Panama.

[3] Garrett, "Globalization and Government Spending around the World" (Paper presented at the annual meeting of the American Political Science Association, Atlanta, September 1–5, 1999).

tend to protect expenditures devoted to pensions and other welfare transfers, which have primarily benefited middle-class and union constituencies. The shift to democracy has a positive impact on health and education spending, which reaches a larger segment of the population.

Our study is distinctive, we believe, because it deploys broader measures of social spending than are found in most other samples of less developed countries and because these are examined on an annual basis over a relatively long period of time. In our analysis we use (1) a pooled time-series error-correction model, estimated through Ordinary Least Squares with panel-corrected standard errors to correct for panel heteroskedasticity and spatial correlation; (2) a lagged dependent variable to model the time dynamics and correct for serial correlation; and (3) country and time dummies to control for fixed effects. Compared with Generalized Least Squares (GLS) and Maximum Likelihood (ML) models, our procedure establishes a high threshold for estimating conventional levels of significance.[4] Such estimates are more reliable in the sense that the estimation of the standard errors is more efficient and consistent.

We present our analysis in the following steps. In the first section we outline the main theoretical arguments about how globalization and domestic politics might influence social spending in Latin America. The second section discusses the variables and the model used in the analysis. The third section presents our findings for changes in aggregate social spending. The fourth shows the impact of economic and political variables when spending is disaggregated into transfers, on the one hand, and into health and education expenditures, on the other. The last section presents the conclusions.

I. The Argument: Globalization, Domestic Politics, and Social Spending in Latin America

The "Efficiency" and "Compensation" Hypotheses

We begin by considering contending hypotheses about the effects of globalization on social spending. As Garrett[5] has noted, these reflect two quite contradictory sets of arguments that cannot be resolved without empirical research. Each offers very different propositions about

[4] Nathaniel Beck and Jonathan Katz, "What to Do (and Not to Do) with Time-Series Cross-Section Data," *American Political Science Review* 89 (September 1995); and idem, "Nuisance versus Substance: Specifying and Estimating Time-Series Cross-Section Models," *Political Analysis* 6 (July 1996).

[5] Garrett (fn. 3).

the interests and resources of labor and capital and about the economic and political options that governments face.

The efficiency hypothesis rests on the assumption that high levels of social spending reduce competitiveness in global markets. This effect can operate through several channels. Increases in social spending might be linked, for example, to higher payroll taxes that increase the cost of labor and reduce the competitiveness both of exports and of domestic products exposed to import competition. Increases in fiscal expenditures can also undermine competitiveness by driving up interest rates, crowding out private investment, and increasing the value of the real exchange rate. Therefore, as business groups become increasingly exposed to international competition, they can be expected to press governments to reduce social expenditures. Integration into capital markets would presumably compound this pressure, since it increases the exit opportunities available to asset holders.

At the same time we might also expect a decline in labor's capacity to resist reductions in social spending. The Hecksher-Ohlin theorem, it is true, can be taken to imply the opposite: that in labor-abundant LDCs, the expansion of trade would lead to an increase in returns to labor and to an increase in its bargaining power vis-à-vis capital.[6] For a number of reasons, however, this has not generally been the case in Latin America. First, as Rodrik[7] argues with respect to LDCs in general, capitalists, having greater exit options than do workers, are in a better position to close their plants or relocate as the cost of labor increases. Against theoretical expectations, moreover, trade liberalization in many parts of Latin America has contributed to increasing demand for skilled workers, rather than for low-skill ones;[8] and even where this is not the case, the large pool of rural and informal sector workers creates a slack in the labor market that cannot be reduced quickly.[9] Finally, Latin American unions have been based in the public sector and import-substituting industries, both of which have been seriously weakened by trade liberalization. As economies become more exposed to international competition, therefore, the incentives for governments to curb social spending grow more powerful, while the political costs of doing so decline.

[6] Ronald Rogowski, *Commerce and Coalitions* (Princeton: Princeton University Press, 1989).

[7] Rodrik (fn. 1), 46.

[8] Barbara Stallings and Wilson Peres, *Growth, Employment and Equity: The Impact of Economic Reform in Latin America and the Caribbean* (Washington, D.C.: Brookings Institution Press, 2000).

[9] Nita Rudra, "Globalization and the Decline of the Welfare State in Less Developed Countries," *International Organization* (forthcoming).

The compensation hypothesis posits just the reverse effect. It focuses on the welfare state as a mechanism for offsetting the social costs of international integration and for contributing to the development of human capital. In OECD countries this hypothesis is supported by studies that show a very strong empirical association between economic openness, large public sectors, and generous welfare systems.[10] Of course, we should not automatically expect similar developments in Latin America, where both factor endowments and political histories are obviously very different from those of the developed countries. Even so, studies by both Garrett and Rodrik show empirically that, as in developed countries, openness to trade leads to larger public economies in LDCs as well.[11]

There are several reasons why the unsettling effects of increasing international competition might lead governments of LDCs to expand commitments to social spending. First, regardless of their specific role in the international economy or the net economic gains brought about by trade liberalization, countries that increase their exposure to international markets are likely to experience social dislocations, uncertainty, and unequal distributive effects. This in turn creates a potential for political instability and/or backlash against market-oriented economic policies. Governments and businesses would have an incentive to keep these threats at bay by providing welfare transfers to social sectors or geographic regions that had fallen behind in the process of change.

As in developed countries, moreover, increasing exposure to trade may also strengthen incentives to use social spending to enhance the skill level and productivity of the labor force. To the extent that public investment in human capital provides a collective good for the private sector, business groups might welcome or even press for these expenditures. This is because when large welfare states enhance labor skills and ensure political stability, they may provide collective goods that enhance the competitiveness of the economy in international markets. We therefore note here that the term "compensation hypothesis" is rather misleading if one assumes that expanding social spending is necessarily less efficient than cutting it back.

---

[10] See, for example, David Cameron, "The Expansion of the Public Economy: A Comparative Analysis," *American Political Science Review* 72 (December 1978); and Peter Katzenstein, *Small States in World Markets* (Ithaca, N.Y.: Cornell University Press, 1985).

[11] Garrett (fn. 3); and Rodrik (fn. 1).

DOMESTIC POLITICS

Whether governments adopt efficiency or compensation strategies may also depend on the means citizens have to mobilize around economic interests and to hold governments accountable. Two additional sets of political and institutional factors may therefore also influence social spending as economies become more open. One of these is the balance of power among interest groups and party organizations. In the OECD countries strong unions and social democratic governments have often been the paramount forces behind the expansion of welfare systems. Conceivably, they are also important forces for resisting cutbacks, although this is a matter of some dispute in the OECD cases.[12]

In Latin America, as in other LDCs, unions are notoriously weak, at least in comparison with their counterparts in Western Europe; moreover, cross-national differences within the region are extremely difficult to measure systematically. A recent study by Nita Rudra[13] attempts to circumvent the measurement problem by focusing on variations in labor-market conditions as a proxy for the bargaining power of organized labor. In a global sample of LDCs, she finds that social security spending varies positively with the ratio of skilled to unskilled labor and varies negatively with the pool of surplus labor. Nonetheless, still lacking are the more direct and reliable indicators of organizational strength (membership, cohesion, and so on) that characterize studies of the OECD.

Our more direct approach to this problem focuses on the political orientation and constituent base of the parties supporting incumbent presidents. As we discuss below, the social security transfers advocated by popularly oriented parties in Latin America sometimes benefit their labor constituencies, but they may also have a negative impact on the incomes of rural and informal sector workers. Even when the transfers pursued by such parties do not reach the very poor, however, we can hypothesize that social spending is more likely to be sustained under presidents who have been elected with their support.

Finally, within the Latin American and LDC context, we need to ask more explicitly whether democracy itself makes a difference—a matter of some dispute in the literature on economic and social reform. One view is that the general distinction does not have much explanatory sig-

---

[12] Paul Pierson, "The New Politics of the Welfare State," *World Politics* 48 (January 1996); and Alexander Hicks, *Social Democracy and Welfare Capitalism: A Century of Income Security Politics* (Ithaca, N.Y.: Cornell University Press, 1999).
[13] Rudra (fn. 9).

nificance and that it is more important to focus on more specific features of constitutional design, party systems, and partisan politics.[14] An alternative perspective rests on a relatively straightforward theoretical point: democratic rulers face pressures from a mass electorate to deliver social services and are thus more likely than authoritarian rulers to respond to demands for compensation.

Resolving this issue is complicated by the fact that, as noted above, many social services are inequitably distributed in Latin America.[15] Nevertheless, they do reach significant portions of the middle- and working-class population—those social sectors most likely to turn out at the polls. For this reason, the distinction between electoral democracies and autocracies may be a potentially important causal factor in spending decisions. In fact, a recent study by Brown and Hunter[16] shows that Latin American democracies are more likely to maintain social security, health, and education expenditures in the face of economic downturns. We in turn build on their work by asking whether the impact of political regimes is affected by integration into international markets.

The Latin American Sample

These issues and related questions have received considerable attention in quantitative studies of OECD countries, and more recently they have been explored in global samples.[17] Our Latin American sample cannot draw on the refined data sets available for the OECD and it lacks the wide empirical scope of the broader samples. However, there are advantages to focusing on the countries of Latin America.

First, unlike many other LDCs and transition economies, many Latin American countries have long had occupationally based welfare systems modeled along European lines, with defined-benefit pension plans, health services, and family allowances. By the 1920s the groundwork

[14] Stephan Haggard and Robert R. Kaufman, *The Political Economy of Democratic Transitions* (Princeton: Princeton University Press, 1995).

[15] The distributional impact of social spending is still subject to empirical debate. One important study conducted under the auspices of the UN Economic Commission on Latin America and the Caribbean finds that social spending had a positive impact on the lowest quintile in Argentina, Brazil, Chile, and Colombia. See Rossana Mostajo, "Gasto social y distribución del ingreso: caracterización e impacto redistributivo en países seleccionados de América Latina y el Caribe," *Serie Reformas Económicas* 69 (Santiago: ECLAC, 2000).

[16] David S. Brown and Wendy Hunter, "Democracy and Social Spending in Latin America, 1980–92," *American Political Science Review* 93 (December 1999). See also George Filho Avelino, "Economic Crisis, Democratization, and Social Expenditure in Latin America, 1980–1994" (Ph.D. diss., Stanford University, 2000).

[17] See the studies by Garrett (fn. 3); Rodrik (fn. 1); and Rudra (fn. 9).

for these systems had been established in Argentina, Uruguay, and Chile. During the 1930s and 1940s a second wave of countries followed suit, including Brazil, Costa Rica, Mexico, Venezuela, Panama, and Colombia.[18]

Notwithstanding distributive inefficiencies and inequities, social safety nets and services covered significant portions of their respective societies. By the 1980s estimates were that coverage reached from 62 to 96 percent of the economically active population in at least five countries (Uruguay, Argentina, Chile, Brazil, and Costa Rica) and from 45 to 53 percent of the same population in Panama, Mexico, and Venezuela.[19] By the standards of developed countries, of course, this was not a very good record. Nevertheless, at the onset of Latin America's "great transformation," such welfare systems constituted an important part of the "social contract" connecting citizens with the state.

The Latin American sample is also interesting because of the political transformations that have swept the region over the past two decades. Latin American countries were among the first non-European states to join the third wave of democratization. The fact that these political transitions occurred more or less concurrently with economic openings gives special salience to the question of whether democracies can mitigate the potential negative effects of globalization.

Finally, the limited cross-national scope of our sample is partly offset by the coverage and reliability of the available data. This is particularly important with respect to the measurement of the dependent variable. Although coverage of social spending contains a number of problems, it does add some important dimensions to other studies of LDCs. The aggregate measures of government spending used in Rodrik's and Garrett's[20] global samples are imperfect substitutes for social spending, at least in Latin America. Measured as a percentage of the GDP, central government spending and social spending are highly correlated (.81); but the simple correlation between government spending and social spending per capita is only .51, and it is even lower (.31) with the share of social spending in the public budget. Finally, spending data in several other important studies have not included health and education expenditures, or they cover a more limited period of time.

As with these other measures, the validity of our data is compro-

---

[18] Carmelo Mesa-Lago, *Social Security in Latin America: Pressure Groups, Stratification, and Inequality* (Pittsburgh, Pa.: University of Pittsburgh Press, 1978).

[19] Carmelo Mesa-Lago *Ascent to Bankruptcy: Financing Social Security in Latin America* (Pittsburgh, Pa.: Pittsburgh University Press, 1989), 41.

[20] Garrett (fn. 3); and Rodrik (fn. 1).

mised by the fact that some of the most serious problems of LDC welfare systems involve defects in the organization and distribution of benefits, rather than in financing per se.[21] For this reason, as we have suggested, all types of spending measures are imperfect proxies for the actual payoffs that citizens receive. It is plausible to assume, however, that even relatively efficient and equitable delivery systems will require significant financial commitments from the public sector. The spending measures used in this study and others provide at least a rough indication of the resources governments are prepared to devote to social needs.

II. The Variables and the Model

The Variables

SOCIAL SPENDING

Our social spending variables are based on annual IMF data for public spending on social security, health care, and education.[22] These expenditures in turn are measured in three ways: in per capita 1995 dollars, as a percentage of GDP, and as a share of central government spending net of interest payments on the public debt. Interest payments are excluded from government spending totals, because they are in part the product of accumulated long-term debt that cannot be reduced quickly by the government in power, whereas we are interested in how these governments establish budget priorities. We present findings for each specification of the dependent variable, because each captures different kinds of welfare effort. As just noted, the fiscal share of social expenditures reflects priorities set within the public sector. Spending as a percentage of GDP indicates allocative priorities within the national economy as a whole. Welfare dollars per capita measure the value of the resources potentially available to recipients.

Unfortunately, as in other large-N studies of public spending in developing countries, annual data are available only for central government spending.[23] This presents a serious problem for our analysis,

[21] Evelyne Huber, "Options for Social Policy in Latin America: Neoliberal versus Social Democratic Models," in Gosta Esping-Andersen, ed., *Welfare States in Transition: National Adaptations in Global Economies* (London: Sage Publications, 1996); and Joan Nelson, "The Politics of Pension and Health-Care Delivery: Reforms in Hungary and Poland," in Janos Kornai, Stephan Haggard, and Robert R. Kaufman, eds., *Reforming the State: Fiscal and Welfare Reform in Post-Socialist Countries* (New York: Cambridge University Press, 2000).

[22] International Monetary Fund, *Government Finance Statistics* (Washington, D.C.: IMF, various years).

[23] Garrett (fn. 3) uses general government consumption expenditures, but this is based on cross-sectional averages and does not include transfer payments.

because in the late 1980s a number of federal systems began shifting some responsibility for social programs to state governments. We deal with this problem in a number of ways, although none is fully satisfactory. First, while the main impulses for fiscal decentralization did not occur in most countries until the 1990s, our data set extends back to the early 1970s. And even with decentralization, federal governments retained responsibility for pensions and many other social services. Finally, we find no important differences in the results of our model when we exclude Brazil and Argentina, the two most decentralized countries during most of the period covered in the model.

After declining during the fiscal crises of the 1980s, social spending within Latin America as a whole rose substantially during the 1990s, a period in which the region also became increasingly integrated into the world economy. On the surface the concurrence of spending increases and economic opening would appear to support the compensation hypothesis. It is impossible to assess the causal connection between the two trends, however, without also taking account of the effects of other factors that can also influence social spending. That is what we do in this article.

It is important to emphasize, moreover, that the rate of change varied considerably from one country to the next. Over the twenty-five-year period covered by our model, the average annual change in spending per capita was $7.30, whereas the standard deviation was $52.39. The changes as a percentage of the budget and of GDP averaged .16 and .08 percent, respectively, while the standard deviations were 4.82 and 1.31. During the upward trend of the 1990s annual rates of change varied from a low of −1.7 percent in Honduras to 22 percent in Peru, and even by the end of the decade, spending in El Salvador, Guatemala, and Venezuela remained below pre-1980 highs.[24] So there is enormous variation in the dependent variable.

GLOBALIZATION

Exposure to international markets is measured in two ways. Following conventional practices in most of the literature on globalization,[25] trade

[24] Economic and Social Commission on Latin America and the Caribbean (ECLAC), *Social Panorama of Latin America* (Santiago, Chile: ECLAC, 1999).

[25] See, for example, Alexander M. Hicks and Duane H. Swank, "Politics, Institutions and Welfare Spending in Industrialized Democracies, 1960–1982," *American Political Science Review* 86 (September 1992); Evelyne Huber and John Stephens, *Development and Crisis of the Welfare State: Parties and Policies in Global Markets* (Chicago: University of Chicago Press, 2001); Torben Iversen and Thomas R. Cusack, "The Causes of Welfare State Expansion: Deindustrialization or Globalization?" *World Politics* 52 (April 2000); Rodrik (fn. 1); and Garrett (fn. 3).

integration is calculated as imports + exports/GDP. This measure is affected by the size of the economy and by changes in the exchange rate, but the inclusion of country dummies and exchange-rate variables as regressors in our model corrects for these effects.

For openness to international capital markets, we use an index of capital account liberalization developed by Morley, Machado, and Pettinato[26] that reflects (1) the extent of sectoral control on foreign investment, (2) limits on profit and interest repatriation, and (3) controls on external credits by national borrowers and capital outflows. We use this policy index instead of a more direct measure of capital flows, because flows often indicate macroeconomic volatility rather than openness, especially in such an unstable region as Latin America. As with the use of trade ratios, this choice follows a practice common in the literature on globalization.[27]

POPULARLY BASED PRESIDENTS

To gauge the relative balance of partisan power, finally, we have coded all democratic heads of state in terms of the political orientation of their party base. Presidents are coded as popularly based if their parties have close historical links with labor unions (for example, the Peronists in Argentina or Acción Democrática in Venezuela) and/or if their parties have long-standing programmatic orientations toward "the popular sector" (for example, the MNR in Bolivia or the PLN in Costa Rica). It is important to emphasize that our coding deliberately does *not* take into account whether individual presidents themselves were conservative or left leaning in their own social policy preferences; in fact, some popularly based leaders like Carlos Saúl Menem lean decisively to the right. The question, however, is whether their policy behavior is constrained by their constituent base or partisan supporters—an issue that should be resolved empirically, rather than by definition. Again, this approach parallels a question typically asked about OECD countries, namely, whether parties of the left behave differently from conservative ones once they arrive in government.

We have also coded a number of autocratic regimes as popularly based, according to the way specialists have characterized their principal support coalitions or their strategies for building political support. One example is the military regime that took power in Peru in 1968; a

[26] Samuel Morley, Roberto Machado, and Stefano Pettinato, "Indexes of Structural Reform in Latin America" (Santiago, Chile: ECLAC Economic Development Division, LC/L.1166, January 1999).

[27] See Garrett's discussion of these issues (fn. 3); and Dennis Quinn, "The Correlates of Change in International Financial Regulation," *American Political Science Review* 91 (September 1997).

second is the dominant-party regime in Mexico. Although we have more confidence in the validity of this coding in democratic regimes, it is of interest to see whether popular bases determine behavior independently of regime type.

DEMOCRACY

Finally, following Alvarez, Cheibub, Limongi, and Przeworski, we use a dichotomous measure of democracy, based on Keith and Gurr's Polity III data set.[28] Countries were ranked by subtracting the 10-point "autocracy" scale from the 10-point "democracy" scale. Any country scoring at least 6 points is coded as democratic, and the rest are coded as authoritarian.[29] As noted in the preceding section, we would expect democratically elected governments to have a positive effect on changes in welfare spending as their countries become more integrated into the international economy.

CONTROL VARIABLES

We have examined the impact of a large number of control variables, including population size, urbanization, public debt, government revenues, dummies for inflation, exchange rate, and GDP shocks, logged GDP, and GDP growth. Most of these were excluded from the final model in order to avoid problems of multicollinearity and to enhance the clarity of our presentation. Our eventual choices of which controls to include in the final model were based on the strength of our initial theoretical expectations, the completeness of data coverage, and the Chow and Aiken information tests to determine the contribution of the controls to the total variance explained in the model. It should be emphasized, however, that none of the controls excluded from this model altered our basic substantive findings.

   The final specification of the model incorporates the effects of demographic composition by including controls for the age of the population or, where relevant, the percentage of dependents who are children or elderly. GDP/capita controls for Wagner's law, which holds that the size of government increases with the wealth of the economy. We also

---

[28] Michael Álvarez, Jose Antonio Cheibub, Fernando Limongi, and Adam Przeworski, "Classifying Political Regimes," *Studies in Comparative International Development* 31 (Summer 1996); and Keith Jaggers and Ted Robert Gurr, *Polity III: Regime Type and Political Authority, 1800–1994* (ssdc.ucsd.edu/ssdc/icp06695.html), consulted September 2000.

[29] We have also tried other specifications of democracy such as (1) using a continuous measure or (2) changing the cutting point from 6 to 7 or 5. We did not see any significant changes in the results.

include an output gap variable used by OECD economists. Derived by comparing the actual value of GDP in a given year with the value predicted by the underlying growth trend, it can be used to assess the effects of the business cycle on social spending. A positive sign would indicate that these effects are procycle, whereas a negative relation would show a countercyclical pattern. As a control, the output gap measure eliminates the possibility that the effects of other variables are actually caused by these cyclical relationships.

Since changes in social spending may actually be an effect of more general changes in government expenditure, we include the latter as another control; and exchange-rate fluctuations are also included to take account of their possible effects on trade and capital account openness. Following Krugman,[30] we estimate the real exchange rate by multiplying the nominal rate in each country by the ratio of local consumer price inflation to the U.S. CPI index. A more complete description of all of these variables is provided in Appendix 1.

Finally, the model also takes into account the impact of both time and fixed effects. Decade dummies are used to account for the important differences in regional and international conditions over the course of our time period. The first covers 1973 to 1981, the years prior to the debt crisis. The second extends from 1982 to 1990, years that were generally marked by economic recession and painful structural adjustments. The last covers the period of economic recovery that took place during the first half of the 1990s.[31] Country dummies are included in all of the specifications of the model. These correct for factors that might impact a country's economic openness and/or welfare spending over the long run, such as the size of the population and territory, wealth, and long-term political history.

THE MODEL

Our construction of the time-series model takes into account the important distinction between the analysis of cross-national differences and the analysis of changes within individual countries over time.[32] Cross-national differences in the size of the welfare state are likely to be invariant over time, because they are influenced by historical factors at work over long periods or by structural conditions that change only

---

[30] Paul Krugman, *International Economics* (New York: Addison-Wesley Longman, 1999).

[31] We also ran the regressions substituting year dummies for decade dummies. This did not significantly affect the results.

[32] See Garrett (fn. 3); and Huber and Stephens (fn. 25).

slowly. The causes of such differences are best assessed statistically through analyses in which the key explanatory variables (openness, left strength, and so on) are expressed as long-term properties of the system.[33] In this connection, we mention in passing that, in contrast to the OECD cases, cross-sectional OLS regressions for Latin America show no significant relationship between openness and the size of government. Some countries with open economies, such as Panama, do have large governments, but many other small, open Central American societies do not. These results, moreover, are unaffected by controls for GDP and democracy.

In this article, however, we are interested in *changes* in social spending, which are presumably influenced more directly by dynamic processes of globalization and by contemporaneous political pressures. We use an error-correction model that is well suited for just such a purpose. As discussed in the introduction, we have taken particular care to deal with the most common problems that affect time-series cross-sectional models. We have followed the methodology suggested by Beck and Katz,[34] whereby the use of Ordinary Least Squares with panel-corrected standard errors deals with the problem of panel heteroskedasticity and spatial correlation and the lagged dependent variable corrects for serial correlation.

We use country dummy variables and time dummies to control for country-specific and time-specific fixed effects. The use of fixed effects is becoming the norm in panel studies of the welfare state and is particularly important in our model, since most variables vary more across units than over time. The use of panel-corrected standard errors usually produces rather conservative results, since it tends to increase the standard errors of the estimates. Moreover, the inclusion of dummy variables tends to deflate the statistical significance of the other regressors.[35] While this method carries some risk that causal hypotheses will be rejected prematurely, it also increases our confidence that results which do emerge as significant are not the consequence of unsound statistical assumptions or inappropriate econometric methods.[36]

---

[33] Garrett (fn. 3).

[34] Beck and Katz (fn. 4).

[35] Lois Sayrs, *Pooled Time Series Analysis* (London: Sage Publications, 1989).

[36] The failure to address these technical problems has called into question the findings of a number of earlier studies. For example, in a replication of Hicks and Swank's (fn. 25) influential study of OECD spending, only four of thirteen political and institutional variables reach conventional levels of significance when panel corrected standard errors are used; see Beck and Katz (fn. 4).

The generic version of the model can be specified as[37]

$$\Delta Y_{i,t} = D\alpha + Y_{i,t-1} \cdot \beta_0 + \Delta X_{i,t-1} \cdot \beta_k + X_{i,t-1} \cdot \beta_j + T\lambda + \varepsilon_{i,t} \qquad (1)$$

where $Y_{i,t}$ is welfare expenditures in country i during year t, X is a vector of independent variables, D is a vector of country dummy variables or fixed effects, and T is a vector of time effects. Specifications of the dependent variable are measured as first-differences, and the independent variables include the lagged level of welfare expenditures, the lagged level of each independent variable, and the yearly changes (Δ) in the independent variables.

This type of model is based on the idea that the dependent and independent variables are in a long-run equilibrium relationship but that there are also important short-term or temporary effects.[38] As noted above, the Δ variables on the right-hand side of the equation measure first-difference changes that are used to estimate annual changes in the dependent variable. Their overall impact on spending depends on the magnitude of the regression coefficient (β_k) associated with the first-difference variable and the extent to which the change persists over time, which in turn depends on the coefficient of the lagged dependent variable (ϕ). In other words, if a 10 percent change in Δ trade is sustained in subsequent years, the effect will be larger than if the change is subsequently reversed.

The coefficients (β_j) of the *levels* variables ($X_{i,t-1}$) measure long-term effects on the dependent variable. They allow us to assess whether trends in the independent variable are causally related to long-term trends in the dependent variable. When the regression coefficient (β_j) is statistically significant, it indicates that there is a long-term causal relationship between these trends. The strength of that relationship is estimated by dividing the regression coefficient (β_j) by ($-\phi$), the yearly rate at which the unpredicted annual changes in the Y variable return to the trend line (see Appendix 2).

The inclusion of both first-difference and levels variables is a statistical requirement of the error-correction model. The interpretation of their causal role, however, requires theoretical and conceptual judg-

---

[37] This model is equivalent to the one described by Beck and Katz (fn. 4), in which the authors explain the importance of separating short-term from long-term effects in dynamic models (see Appendix 2).

[38] See William Greene, *Econometric Analysis*, 4th ed. (Upper Saddle River, N. J.: Prentice Hall, 2000), 733–35; Anindya Banerjee, Juan Dolado, John Galbraith, and David Henry, *Co-Integration, Error Correction, and the Econometric Analysis of Non-Stationary Data* (Oxford: Oxford University Press, 1993).

ments. The demographic measures used as control variables, for example, change slowly from year to year, and their effects are most likely to work through the levels variables. In other cases both first-difference changes and long-term trends may have substantive meaning. Thus, for example, the first-difference variables for democracy or popularly based governments can be presumed to measure the effects of a regime transition or change of government in a given year, while the levels variables measure the longer-term effect of these changes within a given country. To the extent that the effects of trade on spending work through the lobbying efforts of business groups exposed to international competition, they are most likely to be felt over the long term. As we suggest below, however, governments that link structural reforms to spending reductions may also produce important short-term effects captured by first-difference variables.

III. Results for Aggregate Social Spending

The estimates for changes in aggregate levels of spending are shown in Table 1. To enhance the clarity of presentation, we do not include country dummies in the table and also do not show the first-difference effects of several control variables that would appear to work primarily as longer-term trends. Overall, the models explain between about 35 and 46 percent of the variance in social spending. This is a reasonably good fit. A model using only levels variables typically leads to much higher R^2, but this is only because the lagged dependent variable artificially inflates the total variance explained.

Coefficients of the control variables go in the expected direction most of the time and are uniformly consistent with expectations when they reach standard thresholds of statistical significance. Not surprisingly, trends in central government spending have an important impact: as the size of the central government increases, so does welfare spending per capita and as a percentage of GDP. The impact of the output gap is significant for spending/GDP and positive in the other specifications, an indication that social spending in Latin America tends to be procyclical. The coefficients for the decade dummies measure the effects on spending in the 1970s and 1980s, compared with that of the 1990s, the omitted category. As expected, the fact that these coefficients are negative and significant indicates that, when all else is held constant, spending in the 1970s and 1980s was lower than in the l990s. As noted, moreover, even where the individual control variables do not reach standard significance levels, Chow tests and Aiken information criteria

TABLE 1
DETERMINANTS OF SOCIAL SPENDING IN
14 LATIN AMERICAN COUNTRIES[a]
(1973–97)

	D.welfcap	D.welfpub	D.welfgdp
L. GDPCAP	0.04578***	0.00084	−0.00015
	(2.95)	(0.77)	(0.65)
L. OUTPUT GAP	1.16775	0.18411	0.08660***
	(0.86)	(1.02)	(2.64)
L. AGE65	26.62502**	−0.72316	0.16036
	(2.56)	(0.66)	(0.82)
L. GOVERNMENT	2.91540***	0.24923	0.08819***
	(3.22)	(1.38)	(3.72)
D. GOVERNMENT	10.19899***	−0.20322	0.26326***
	(8.92)	(0.69)	(10.68)
L. EX.RATE	0.00665	−0.00168	−0.00022
	(0.92)	(1.08)	(1.13)
D. EX.RATE	0.02540	0.00278	0.00070*
	(1.56)	(0.75)	(1.66)
L. TRADE	−0.89904***	−0.07027**	−0.01662**
	(3.04)	(1.99)	(2.48)
D. TRADE	−1.47504***	−0.10286**	−0.03935***
	(4.61)	(2.30)	(5.05)
L. CAPITAL	−0.44671*	0.06978**	−0.00007
	(1.89)	(2.21)	(0.01)
D. CAPITAL	0.20770	0.09792*	0.00104
	(0.51)	(1.78)	(0.13)
L. DEMOCRACY	−12.32505	0.08369	−0.19032
	(1.52)	(0.06)	(1.04)
D. DEMOCRACY	−15.96276	1.05218	−0.52492
	(1.05)	(0.40)	(1.59)
L. POPULAR	−11.20824*	1.17233	−0.04741
	(1.73)	(1.18)	(0.32)
D. POPULAR	2.07271	2.41128**	0.04107
	(0.29)	(2.11)	(0.25)
Dec-70	−38.24258***	−6.36836***	−0.92348***
	(3.41)	(3.46)	(3.40)
Dec-80	−36.30183***	−4.56418***	−0.93233***
	(4.61)	(3.14)	(4.85)
Lagged DV	−0.28097***	−0.61602***	−0.27955***
	(3.14)	(4.78)	(4.28)
Constant	−378.22368***	32.19257**	1.81409
	(2.63)	(2.42)	(0.66)

TABLE 1 (*cont.*)

	D.welfcap	D.welfpub	D.welfgdp
R-squared	0.4600	0.3589	0.4567
Prob>Wald Chi2	0.0000	0.0001	0.0000
Observations	284	284	284

* significant at 10%; ** significant at 5%; *** significant at 1%; panel-corrected z-statistics in parentheses

ᵃIn Tables 1–4 variables preceded by "L" are measured in levels; variables preceded by "D" are measured in first differences (the first differences of the first three control variables were, in most cases, not significant and are therefore not shown). Estimation is made with an error correction model that is robust to unit roots (see Appendix 2). The Lagrange multiplier test indicates that the model is not affected by serial correlation. The model is estimated with fixed effects (Least Squares Dummy Variables model). To save space, country dummies are not shown. The country dummy for Argentina was omitted to avoid perfect collinearity. An F-test for the significance of the fixed effects indicated that, at a 5 percent (or better) level of significance, the fixed effects belong in the model. The correlation between the fixed effects and the regressors is about 0.8. Hence, the model cannot be estimated with random effects. The model was estimated with the "xtpcse" command in STATA 7.0 Alternative estimation techniques such as "rreg" (robust regression), maximum likelihood, generalized method of moments, or the Arellano-Bond estimator did not produce substantive changes in our main results. We therefore preferred to use OLS with panel-corrected errors, as suggested by Beck and Katz (fn. 4, 1995 and 1996), due to its relative simplicity and the ease of interpreting results.

show that they generally contribute significantly to the overall variance in the model.

Turning now to the substantive variables highlighted in the general discussion of globalization, the most striking finding is the strong negative effects of trade openings. Both the long- and short-term effects cross the high thresholds of significance of the error-correction model across all specifications of the dependent variable. The model shows that the effects of trade integration are independent of the conjunctural circumstances of the 1980s and 1990s, the business cycle, demographic changes, exchange-rate fluctuations, and fixed country effects. The trade variables are also robust against a battery of other controls that we eventually chose not to include in the model, including inflation, inflation crises, exchange-rate shocks, and sudden drops in the GDP.[39]

The coefficients for trade levels can be interpreted as an indication

[39] A sequential series of regressions, which excluded one country at a time, shows that these results are not driven by any given country. To check for possible outliers, we used robust regressions that use D-beta and Cook distances to correct for unusually deviant observations; the results obtained were very similar.

that secular shifts in the preferences and relative power of business sectors exposed to increases in international competition curb social spending over the long term. In that respect, they are quite consistent with the efficiency hypothesis. As discussed in Appendix 2, the substantive impact of this variable is estimated by dividing the regression coefficient (β_i) by the negative value of the lagged dependent variable (ϕ). With all else held constant, a 10 percent increase in long-term trade between 1973 and 1997 produces an average decrease of over $31 per capita in social spending; that comes to over 10 percent of the regional average of $255. At least five countries (Chile, Costa Rica, the Dominican Republic, Mexico, and Uruguay) experienced much larger increases—from 25 to 50 percent—in the ratio of trade to GDP. In those cases the predicted decrease in spending would range from about $78 to $156. Under the same conditions, spending would decline by about 1.5 to 3.0 percent of GDP; and between 2.9 and 5.8 percent as a share of government spending, against regional averages of about 7.0 and 46 percent, respectively.

The short-term effect of an increase in trade is also important, and the cumulative impact can be quite substantial if it is sustained over time. For example, there were twenty-two instances in which countries experienced at least a 10-point increase in their ratio of trade to GDP. We can simulate the effects of such an increase in Mexico, which is more or less at the mean of the sample in terms of social spending and where trade actually grew by an even greater amount in 1995. Holding all else constant but assuming a one-year 10-point increase in trade, spending during the first year would decline by about $15 per capita, by 0.4 percent of the GDP, and by a more modest 1 percent of government spending. If the onetime increase in trade is subsequently sustained (as it was in Mexico), the cumulative effect after five years leads to a decline in spending from $200 to about $155 per capita, and from 6.3 to 5.1 percent of GDP. The cumulative drop in budget share is considerably smaller, but still slips from 46.6 to 45 percent.[40]

Although these first-difference effects are generally strong, they are difficult to interpret in the same way as the long-term effects of the levels variables. Whereas the latter may reflect direct or anticipated pressure of business groups, it seems less likely that such pressures would be mobilized or anticipated so quickly on a year-to-year basis. An alternative explanation is that the short-term effects reflect assumptions made by policymakers themselves about the relation between structural re-

[40] See Appendix 1 for the formula used in these calculations.

form and fiscal adjustment. If liberal reformers view such adjustments as a necessary condition of efficient trade competition, for example, they might initiate curbs on social spending independently of pressure from business interests, conceivably as a component of an overall reform package.

As a check on this possibility, we reestimated our model, replacing our trade-ratio variable with an index of trade policy liberalization developed by Morley, Machado, and Pettinato.[41] The effects of the first-difference changes in trade policy were remarkably similar to Δ trade, whereas the coefficients for the long-term effects of policy were not significant. The implication is that different causal mechanisms drive social spending reductions in the short and the long run. In the short run these reductions result from the initiatives of macroeconomic policy elites. If these reforms are sustained and trade expands over the longer run, the downward pressures on spending may reflect structural changes in the economy and the broader interests of producer groups themselves.

Unlike trade, capital account liberalization does not have a consistent impact on social spending (see Table 1); the significance of the effects is sensitive to the other variables included in the model and the signs are not robust across alternative specifications of social spending.[42] One implication is that the main pressure for reducing expenditures comes from producer interests exposed to competition, rather than from a more general concern with establishing credibility in international financial markets. For producers, increases in welfare expenses imply higher payroll taxes, which have a direct impact on their bottom line. They therefore have an incentive to lobby directly against expanding welfare commitments.[43] Holders of liquid assets worry more about aggregate macroeconomic fundamentals than about welfare expenditures or labor costs per se.

The reduction of controls on the movement of capital, however, does expand exit options for producers; and when capital openness is interacted with trade increases (see Table 2), the long-term effects of the interaction *are* consistently negative and reach standard levels of significance for spending per capita and as a share of the budget.[44]

Figure 1 illustrates how to interpret the impact of the interaction co-

[41] Morley, Machado, and Pettinato (fn. 26).

[42] Quinn (fn. 27) also finds a positive relation in his study of OECD countries, as does Garrett (fn. 3) in his global sample.

[43] See Jeffry Frieden, *Debt, Development, and Democracy* (Princeton: Princeton University Press, 1991); and Rodrik (fn. 1).

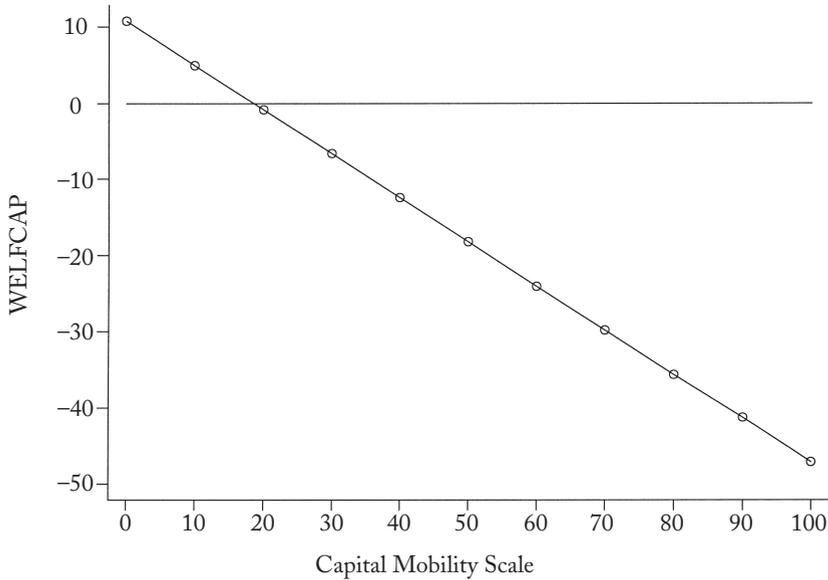[44] Note that in the interaction model, the simple coefficients for trade and capital are necessary as

FIGURE 1

CONDITIONAL EFFECT OF A 10% INCREASE IN TRADE ON SOCIAL SPENDING PER CAPITA, CONDITIONAL UPON DEGREE OF CAPITAL MOBILITY[a]

[a]This figure has been created using the interaction coefficient between the level variable for trade and the level variable for capital mobility (see Table 2). The uninteracted coefficient for trade (0.3124) measures the impact of trade on social spending when capital mobility is 0. To capture long-term effects, the conditional coefficient needs to be divided by the lagged dependent variable (in absolute terms) and then multiplied by the pertinent level of capital mobility.

efficients shown in Table 2.[45] The figure unpacks these coefficients and allows us to trace the way trade increases affect spending at different levels of capital-account openness. The x-axis plots the index of capital openness from 0 to 100. At every 10-point interval on this scale, we estimate the effect of a 10 percent increase in trade on per capita social spending; these estimates are plotted on the y-axis.

The figure shows that if the capital account were totally closed, a 10 percent expansion of trade might have a positive effect on spending; but

TABLE 2

DETERMINANTS OF SOCIAL SPENDING IN 14 LATIN AMERICAN COUNTRIES,
1973–97[a]

(INCLUDES AN INTERACTION COEFFICIENT BETWEEN TRADE AND
CAPITAL MOBILITY)

	D.welfcap	D.welfpub	D.welfgdp
L. GDPCAP	0.05211***	0.00122	−0.00011
	(3.27)	(1.11)	(0.48)
L. OUTPUT GAP	0.77892	0.17950	0.08657***
	(0.57)	(1.05)	(2.62)
L. AGE65	34.91644***	−0.64500	0.25328
	(2.93)	(0.52)	(1.15)
L. GOVERNMENT	3.30616***	0.29859	0.09605***
	(3.51)	(1.58)	(3.98)
D. GOVERNMENT	10.25068***	−0.19431	0.26407***
	(8.82)	(0.65)	(10.49)
L. EX.RATE	0.00711	−0.00247	−0.00025
	(0.92)	(1.51)	(1.20)
D. EX.RATE	0.02375	0.00195	0.00070
	(1.36)	(0.50)	(1.54)
L. TRADE	0.30471	0.08263	−0.00682
	(0.46)	(0.93)	(0.53)
D. TRADE	−1.49695***	−0.07054	−0.03724***
	(4.11)	(1.46)	(4.33)
L. CAPITAL	0.26930	0.15297**	0.00451
	(0.59)	(2.42)	(0.65)
D. CAPITAL	0.09342	0.08632	−0.00035
	(0.22)	(1.59)	(0.04)
L. DEMOCRACY	−9.04328	0.84851	−0.13790
	(1.08)	(0.56)	(0.70)
D. DEMOCRACY	−16.96761	1.02375	−0.51814
	(1.11)	(0.39)	(1.56)
L. POPULAR	−17.68635**	0.66099	−0.09809
	(2.38)	(0.62)	(0.57)
D. POPULAR	3.57339	3.59734***	0.11421
	(0.50)	(3.05)	(0.63)
Dec-70	−0.01802**	−0.00223*	−0.00013
	(2.22)	(1.82)	(0.89)
Dec-80	−0.01474	−0.00193	−0.00015
	(1.54)	(1.54)	(0.82)
L. trade*capital	−34.78092***	−6.32199***	−0.86041***
	(2.86)	(3.31)	(2.95)

TABLE 2 *(cont.)*

D. trade*capital	−34.16169***	−4.79902***	−0.90888***
	(4.02)	(3.20)	(4.40)
Lagged DV	−0.30021***	−0.64301***	−0.28627***
	(3.24)	(4.89)	(4.32)
Constant	−546.11518***	23.32253	0.32960
	(3.21)	(1.62)	(0.11)
R-squared	0.4724	0.3757	0.4613
Prob>Wald Chi2	0.0000	0.0013	0.0000
Observations	273	273	273

* significant at 10%; ** significant at 5%; *** significant at 1%; panel-corrected z-statistics in parentheses

ᵃ See Table 1 (fn. a).

as is shown by the uninteracted coefficient of trade levels in Table 2, this is not statistically significant. In the real world, scores on the capital index ranged from 20 to almost 90, and the effects of trade turn sharply and significantly negative as the capital account is opened. At a level of 90 points, which most countries approximated by the late 1990s, a 10 percent increase in trade would predict a decline of $41 in per capita spending. We obtained comparable results for each of the other two specifications of spending; as capital controls are removed, trade has an increasingly negative and significant effect on spending.

We defer until the next section an extended discussion of the political variables but note here that, with our aggregate specifications of social spending, the effects are generally weak and if anything go against expectations. Against much of the literature on the OECD countries, popularly based governments actually appear to spend significantly less per capita than alternative governments, although in the short term they do spend a greater share of the budget.

Democratic regimes also have no predictable impact on aggregate social expenditures; and we found no robust interaction effects between democracy and any of the other independent variables used in the model. In contrast to Brown and Hunter,[46] for example, once globalization variables were entered into the model, democracy appeared no more responsive than dictatorships to demographic and political pressures and no less resistant to downturns in the economy. It is quite possible, of course, that these null and counterintuitive results are the product of measurement error. We will argue in the following section,

[46] Brown and Hunter (fn. 16).

however, that we can get a better understanding of the effects of the
political variables if we examine their impact on different *types* of social
spending.

IV. Welfare Spending Disaggregated: Pensions and Health and Education

Expenditures on social security, health, and education have typically
been combined in analytical overviews of social spending in Latin
America.[47] There are reasons to believe, however, that they may be in-
fluenced by different political logics. In this section, therefore, we dis-
aggregate social spending and reexamine separately the effects of the
globalization and political variables on social security transfers and on
human capital expenditures on health and education.

There are several reasons why social security expenditures might be
especially susceptible to the efficiency pressures of trade integration and
therefore less likely to be defended by democratic regimes. First, most
of the spending in this category goes to pension payments. As these are
financed in part through payroll taxes that have a direct and transparent
impact on the cost of labor, one might expect business groups to press
especially hard for holding them down.

Even more important, pension benefits are typically the most regres-
sive component of social spending.[48] The social security category does
include antipoverty programs and targeted assistance to the poor, but
pension payments themselves flow mainly to the middle class and to
workers in the formal sector, while the costs of financing large pension-
fund deficits are socialized through general taxation or inflation.[49]
Thus, with the possible exception of a few very comprehensive pension
systems such as those in Uruguay or Costa Rica, cutbacks in the
pension component of social security spending may be less likely to
generate widespread popular protest than has been the case in many
European countries.[50]

Conceivably, the political constraints and opportunities are different
in the case of human capital expenditures on health and education. Al-
though health insurance is also sometimes a component of the wage
bill, these expenditures generally have a smaller direct impact on labor

---

[47] See ECLAC (fn. 24); and Brown and Hunter (fn. 16).
[48] See ECLAC (fn. 24); and Stallings and Peres (fn. 8).
[49] Mesa-Lago (fn. 19).
[50] For a discussion of the European cases, see Gøsta Esping-Andersen, *The Three Worlds of Welfare Capitalism* (Princeton: Princeton University Press, 1990); and idem (fn. 21). See also Pierson (fn. 12).

costs; and from the point of view of employers, they may have more substantial payoffs as investments in human capital.

There is also a greater likelihood of strong political opposition to cutbacks in these areas. Despite inequities and the severe inadequacy of social service delivery systems, human capital expenditures typically reach a larger segment of the population than pensions.[51] In-depth country studies of Argentina, Brazil, Chile, and Colombia, for example, show that spending on health and education constitutes about 75 percent of the total social expenditures received by families in the lowest income quintile and has a positive impact on the overall distribution of income.[52]

In short, as Latin American economies become more integrated into global markets, incumbent governments may have stronger political incentives to protect health and education expenditures than to protect social security. In fact, the simple correlation (Pearson's r = −0.52) between these measures as a percentage of the budget does imply a rather sharp trade-off. Particularly in an era of hard budget constraints, governments appear to be under considerable pressure to set priorities.

Tables 3 and 4 show how expenditures in social security and in health and education are affected by the variables used in the general model. In each specification of spending, the cumulative impact of these variables remains relatively strong; the R^2 ranges from .30 to 45, and the estimates for both the globalization and political variables are very much in line with our expectations.

Let us look first at the globalization variables in the two tables. Table 3 shows that the impact of the trade variable that we saw in the general model works primarily through its effects on pensions and transfers. Trade openings have a uniformly negative effect on social security spending, in both the short run and the long run. The coefficient for capital openness is significant only with long-term per capita expenditure, but all but one of the others are negative as well. And although we do not display the results, the effects of the interaction are identical with those found in the general model: capital account liberalization compounds the effect of trade.

The models for health and education expenditures (Table 4) show a very different picture. First, although five of the six signs for trade continue to be negative, none reaches even a 0.1 level of significance. Thus, we cannot reject the hypothesis that trade has no effects on this cate-

[51] See ECLAC (fn. 24).
[52] See Mostajo (fn. 15).

TABLE 3
DETERMINANTS OF SOCIAL SECURITY SPENDING IN
14 LATIN AMERICAN COUNTRIES[a] (1973–97)

	D.sscap	D.sspub	D.ssgdp
L. GDPCAP	0.02908***	−0.00088	−0.00014
	(2.62)	(1.03)	(0.68)
L. OUTPUT GAP	1.24428	0.37265**	0.08093**
	(0.98)	(2.30)	(2.48)
L. AGE65	21.19791**	0.17069	0.24539
	(2.06)	(0.17)	(1.24)
L. GOVERNMENT	2.83378***	0.33744**	0.08555***
	(4.02)	(2.52)	(4.82)
D. GOVERNMENT	7.48964***	0.13620	0.17224***
	(7.52)	(0.61)	(7.65)
L. EX.RATE	0.00372	−0.00270**	−0.00020
	(0.54)	(2.30)	(1.13)
D. EX.RATE	0.02053	0.00426	0.00061
	(1.34)	(1.46)	(1.59)
L. TRADE	−0.90592***	−0.06344**	−0.01908***
	(3.16)	(2.09)	(3.05)
D. TRADE	−1.36058***	−0.12208***	−0.03658***
	(3.97)	(3.11)	(4.32)
L. CAPITAL	−0.37124*	0.01552	−0.00295
	(1.73)	(0.63)	(0.66)
D. CAPITAL	−0.02702	−0.00227	−0.00873
	(0.08)	(0.05)	(1.16)
L. DEMOCRACY	−17.09170**	−1.44737	−0.37006*
	(2.00)	(1.18)	(1.82)
D. DEMOCRACY	−20.87167	−1.02922	−0.61415**
	(1.42)	(0.52)	(2.05)
L. POPULAR	−9.62654	2.79490***	0.06050
	(1.36)	(2.71)	(0.35)
D. POPULAR	16.63647**	3.96490***	0.55272**
	(1.99)	(3.46)	(2.52)
Dec-70	−42.70732***	−6.68163***	−1.04712***
	(3.85)	(4.68)	(4.03)
Dec-80	−37.53505***	−4.80568***	−0.97314***
	(4.85)	(4.16)	(5.71)
Lagged DV	−0.26595***	−0.56006***	−0.33047***
	(3.03)	(5.42)	(4.68)
Constant	−228.76248*	32.88103***	1.50973
	(1.83)	(3.00)	(0.59)
R-squared	0.3754	0.3723	0.3848
Prob>Wald Chi2	0.0000	0.0000	0.0000
Observations	284	284	284

* significant at 10%; ** significant at 5%; *** significant at 1%; panel-corrected z-statistics in parentheses
    [a]See Table 1 (fn. a).

TABLE 4
DETERMINANTS OF HEALTH AND EDUCATION EXPENDITURES IN
14 LATIN AMERICAN COUNTRIES[a] (1973–97)

	D.humcap	D.humpub	D.humgdp
L. GDPCAP	0.02482***	0.00081	−0.00007
	(5.26)	(1.59)	(0.81)
L. OUTPUT GAP	−0.53871	−0.13127	−0.00671
	(0.75)	(1.07)	(0.27)
L. DEPENDENTS	−0.32490	−0.05597	−0.00592
	(1.63)	(1.35)	(0.86)
L. GOVERNMENT	0.72537*	−0.04439	0.04446***
	(1.86)	(0.52)	(3.13)
D. GOVERNMENT	2.74380***	−0.29154**	0.09617***
	(4.75)	(2.03)	(5.23)
L. EX.RATE	0.00110	0.00178	0.00003
	(0.44)	(1.56)	(0.26)
D. EX.RATE	0.00350	−0.00085	0.00028
	(0.67)	(0.36)	(1.03)
L. TRADE	−0.18819	−0.01729	−0.00443
	(1.48)	(0.65)	(0.96)
D. TRADE	−0.17520	0.00936	−0.00533
	(1.02)	(0.25)	(0.81)
L. CAPITAL	−0.05147	0.04568**	0.00583*
	(0.50)	(2.38)	(1.85)
D. CAPITAL	0.26331	0.09700***	0.00802
	(1.35)	(2.62)	(1.34)
L. DEMOCRACY	7.71009**	1.85676**	0.22071*
	(2.02)	(2.01)	(1.77)
D. DEMOCRACY	2.67727	2.49207*	0.01699
	(0.53)	(1.83)	(0.10)
L. POPULAR	−4.87457	−1.40306*	−0.16366
	(1.32)	(1.68)	(1.14)
D. POPULAR	−12.89505**	−1.75167	−0.44433**
	(2.32)	(1.58)	(2.18)
Dec-70	2.74960	1.76608	0.15769
	(0.48)	(1.54)	(0.76)
Dec-80	−4.28160	0.97024	−0.07972
	(1.09)	(1.20)	(0.56)
Lagged DV	−0.50365***	−0.47954***	−0.49991***
	(6.15)	(6.03)	(5.40)
Constant	−128.27304***	−1.97991	0.45990
	(3.95)	(0.38)	(0.60)
R-squared	0.4609	0.3048	0.3961
Prob>Wald Chi2	0.0000	0.0000	0.0000
Observations	284	284	284

* significant at 10%; ** significant at 5%; *** significant at 1%; panel-corrected z-statistics in parentheses
  [a]See Table 1 (fn. a).

gory of expenditure. Even more interesting, both capital openness co-
efficients show positive and significant effects on budget shares, ar-
guably the most direct indication of government spending priorities;
they are also significant for spending as a percentage of GDP over the
long run. These results are considerably less stable than those for trade
in alternative specifications of the model, so it is important to be cau-
tious in the weight we attach to them. Nevertheless, they do provide
support for the compensation argument.

The implications of the political variables are perhaps even more in-
teresting. Unlike in the general model, a substantial number of the co-
efficients for democracy and partisanship are significant in Tables 3 and
4, and they appear to highlight the importance of the trade-offs we
have noted between social security and human capital expenditures.

Table 3 shows that popularly based governments have a significant
short-term effect in all three specifications of the model. Over the long
term the budgetary priority attached to social security is also likely to
be higher during years when popularly based governments are in power.
When all else is held constant, such governments can be predicted to
raise budget shares by about 5 percent. As argued, such spending prior-
ities tend to be consistent with the preferences of the trade union base
of these leaders and/or the ideological preferences of their party
supporters.

Conversely, democracies appear to have a negative effect on such
programs. Although the impact on budgetary allocations is negligible,
there are statistically significant effects on social security spending per
capita and as a share of GDP in both the short and the long term. Since
we initially hypothesized that elected governments might respond dis-
proportionately to middle- and working-class voters who support such
programs, this came as something of a surprise. We must add, more-
over, that results are—unlike trade—sensitive to the specification of the
model and did not uniformly reach standard levels of significance with
other estimation techniques. Even so, the results are in line with what
we know about the inequitable features of such programs, and they in-
dicate that, at a minimum, democracies can cut expenditures without
much concern for an electoral backlash.

This speculation receives additional support when we turn to the
results for health and education spending shown in Table 4. The im-
pact of popularly based governments is negative, now across all three
specifications of social spending. This suggests that popularly based
governments are inclined to squeeze human capital expenditures, pos-
sibly to protect pension spending. By contrast, transitions to democracy

(D-democracy) lead quickly to an increase in budget allocations for human capital. Over the long term democratic regimes produce spending increases in all three specifications of the model. Expenditures rise by about $15 per capita (about 7 percent over the regional average) and by .45 of GDP (about 18 percent over the regional average). Democratic governments increase the fiscal share of health and education by about 4 percent (16 percent over the regional average).

Of course, we cannot be entirely sure of the causal mechanisms behind this result; democratic regimes may also be responding, for example, to pressures from health workers and teachers unions, which tend to be among the strongest components of organized labor. Some pressure may also be coming from enlightened international and domestic capitalists interested in increasing labor skills. When we contrast the impact of democracy on human capital expenditures with its impact on social security, however, it is plausible to infer that the preferences of a mass electorate are also playing a role.

V. Conclusions

Like most statistical studies, our findings leave open a variety of questions, many of which can be answered only by more qualitative research methods. In the first section and elsewhere in the article, we have discussed a number of explanations for the relations we have found between globalization, political pressures, and social expenditures. In many instances, however, we cannot be sure about which of a number of causal mechanisms actually affect outcomes. We have discussed this issue at some length in the case of the short- and long-term effects of trade liberalization; we cannot be certain about the extent to which cutbacks in aggregate social spending and in social security reflect producer pressures, the initiatives of government decision makers, or the indifference or even opposition of sectors that are excluded from benefits. Similar questions can be raised about other findings as well, for example, the positive effects of capital openness on investments on health and education spending or the inclination of popularly based governments to reduce these expenditures.

To answer such questions requires a closer analysis of the organization of social service systems, of who has benefited from them in the past, and of who stands to gain or lose from changes in the future. As noted briefly in the introduction, some of the most vexing challenges of second-phase welfare reforms have less to do with the amount of financing than with the way financing is allocated and with how delivery

systems are organized. Such issues are often best analyzed through case studies and small-N comparisons that provide close examinations of the politics of the budget process and of bargaining over the design and implementation of social services.

If our analysis cannot definitively uncover the causal mechanisms that underlie the statistical findings, however, it does provide a frame of reference that might orient future research. Three sets of conclusions are of particular importance. The first concerns the contending arguments about the effects of trade integration on the welfare state: the overwhelming weight of evidence favors the efficiency over the compensation hypothesis. Although we cannot be entirely sure about why this is so, we can infer from our findings that trade integration does change power resources in ways that lead to a reduction in pensions and other transfers, the components of social spending that provide the most direct protections from vulnerability to market forces. Even in the case of health and education expenditures, moreover, there is no evidence that expansion of trade encourages states to enlarge the size of their welfare commitments. Indeed, if anything, trade openings have a negative impact on these components of social spending as well.

Integration into global capital markets has a more ambiguous effect. On the one hand, it does appear to encourage increases (or discourage decreases) in spending on health and education, possibly as a way to upgrade the quality of the labor force available to foreign investors. On the other hand, capital account liberalization also compounds the negative effects of trade openings on social security expenditures. Presumably this is because it increases the leverage of producers of traded goods who seek to contain the cost of labor. As their economies become more closely linked to capital markets, they can make more credible threats to liquidate their assets and shift them elsewhere.

A second important conclusion is that it is important to distinguish between the different types of social spending. The distinctions used in this study follow those conventionally used in studies of the UN Economic Commission on Latin America and the Caribbean. Social security transfers are, as just noted, most relevant to the efficiency and compensation hypotheses, since they both add to the wage bill and offer the most direct protection against market forces. Health and education expenditures arguably involve longer-term investments in human capital and are likely to have a greater long-term impact on the distribution of income.

The point that is clearly indicated in this study, however, is that these categories of social spending are influenced by very different sets of po-

litical and economic factors. The good news is that the pronounced constraints that globalization appears to place on social security transfers do not extend to spending on health and education. Possibly because the health and education sectors encompass a wider set of stakeholders, decisions on spending in these areas appear to reflect a very different political logic, much more connected to electoral competition and political participation. Although qualitative case studies of social sector reforms are more concerned with restructuring than with expenditures, it should be noted that they also consistently show distinctions between the politics of pension reform and the politically more difficult challenges related to the restructuring of social service sectors.[53]

We have not attempted to explore the politics of social sector reform in this paper. To maintain the clarity of our presentation, moreover, we have also left for later efforts to analyze differences between expenditures in health and those in education. Given our findings so far, however, an exploration of these questions would be a logical next step for further research.

Our third set of conclusions concerns the way spending is affected by domestic political variables. We show that democratic regimes and popularly based governments do have effects that are independent of the impact of globalization. These effects, however, depend a great deal on the constellation of interests affected by different types of social programs, and they work in very different directions.

Like social democratic governments in Western Europe, popularly based governments in Latin America are an important force for the protection or extension of welfare transfer programs. In Western Europe, however, programs directed toward the large, unionized working class have generally contributed to a reduction of inequality, whereas in Latin America's segmented labor markets benefits for formal sector workers can reinforce the gap between them and those in agriculture and the informal sector. It is perhaps for this reason that we see democracy working systematically to hold down social security spending.

Contrary to the findings of Brown and Hunter,[54] we did not find that democracy had a strong impact on *overall* levels of spending, but this is only because these measure aggregate programs with quite dif-

---

[53] See, for example, Joan M. Nelson, "Social Costs, Social-Sector Reforms, and Politics in Post-Communist Transformations," in Joan M. Nelson, Charles Tilly, and Lee Walker, eds., *Transforming Post-Communist Political Economies* (Washington, D.C.: National Academy Press, 1997).

[54] Brown and Hunter (fn. 16).

ferent social effects. In keeping with their argument that "regimes matter," democratically elected governments did protect expenditures on health and education. Although more nuanced examinations of constitutional design and institutional arrangements can undoubtedly tell us more about such effects, our findings suggest that Latin American democracies do generally support demands for more progressive forms of social spending.

APPENDIX 1: DESCRIPTION AND SOURCE OF VARIABLES

WELFCAP. Social expenditures per capita. Social expenditures include public expenditures in health care, education, and social security programs; measured in 1995 constant U.S. dollars. Source: Created with data from the IMF, *Government Finance Statistics* (various issues).

WELFPUB. Social expenditures as a percentage of central government spending.

WELFGDP. Social expenditures as a percentage of GDP.

GOVERNMENT. Central government spending as percentage of GDP.

GDPCAP. GDP per capita in 1995 constant U.S. dollars. Source: World Bank, *World Development Indicators 2000* .

EXCHANGE RATE. Real exchange rate. Nominal exchange* (U.S.CPI index/National CPI index). Sources: For the nominal exchange rate, *World Development Indicators*; formula for the real exchange rate comes from Krugman (fn. 30).

OUTPUT GAP. Difference between real GDP in local currency units at constant prices and the underlying growth trends, as a percentage of the trend. A Hodrick-Prescott filter (H-P) is used to estimate the underlying growth trend. The H-P filter uses long-run moving average to detrend the output series. The method is used frequently by financial and policy institutions such as the IMF and the OECD. It minimizes the sum squared of deviations of actual output around its trend, subject to a constraint on the variation of the growth rate of trend output. It calculates the trend as the solution to the following minimization problem.

$$\underset{\{y_t^T\}}{\textbf{\textit{Min}}} \sum_{t=1}^{T}[(y_t - y_t^T)^2 + \lambda \left[\left(y_{t+1}^T - y_t^T\right) - \left(y_t^T - y_{t-1}^T\right)\right]^2]$$

where, for each period, the trend values y_t^T minimize the above equation for a given value of the smoothing parameter λ.

DEPENDENTS. Age dependency ratio. Measures the number of dependents over the working-age population. The age dependency ratio is

calculated as the ratio of dependents—the population under age 15 and above age 65—to the working-age population—those aged 15–64. Source: *World Development Indicators*.

AGE65. Percentage of the population over 65. Source: *World Development Indicators*.

TRADE. Imports plus exports as a percentage of GDP. Source: *World Development Indicators*.

CAPITAL. Measures the degree of freedom from government restrictions on capital mobility. The values have been normalized from 0 and 1, with 1 being perfectly free from distortion (no legal restrictions to the flow of capital). We have multiplied the index by 100 to facilitate interpretation in terms of percentages. Source: Morley, Machado, and Pettinato (fn. 26).

DEMOCRACY. Dummy variable with a value of 1 in democratic years and 0 in nondemocratic years. A country is considered democratic if it reaches a score of 6 or higher after subtracting AUTOC from DEMOC in the Polity III data set. Source: Jaggers and Gurr (fn. 28). The values for 1995, 1996, and 1997 come from an update of this study called *Policy IV*.

POPULAR. Dummy variable coded 1 for years in which a popularly oriented president was in office and 0 otherwise. Source: See Table 5.

TABLE 5
CODINGS FOR POPULARLY BASED PRESIDENTS[a]
(1973–97)

Country	Presidents	Period
Argentina	Isabel M. de Perón (Peronist Party)	1974–75[b]
	Carlos S. Menem (Peronist Party)	1990–97
Bolivia	Siles Suazo (MNR)	1983–84
	Paz Estensoro (MNR)	1985–89
	Paz Zamora (MIR)	1990–93
	Gonzalo Sánchez de Lozada (MNR)	1994–97
Chile	Salvador Allende (Socialist Party of Chile)	1973
	Patricio Aylwin/Eduardo Frei (Concertación)	1990–97
Costa Rica	José Figueres (PLN)	1973
	Daniel Oduber (PLN)	1974–77
	Luis Alberto Monge (PLN)	1982–85
	Óscar Arias (PLN)	1986–89
	José María Figueres (PLN)	1994–97
Dominican Republic	Antonio Guzmán Fernández (PRD)	1979–82
	Salvador Jorge Blanco (PRD)	1983–86
	Peña Gómez (PRD)	1997

TABLE 5 *(cont.)*

Country	Presidents	Period
Mexico	Luís Echeverría (PRI)	1973–76
	José López Portillo (PRI)	1977–82
	Miguel de la Madrid (PRI)	1983–88
	Carlos Salinas (PRI)	1989–94
	Ernesto Zedillo (PRI)	1995–97
Ecuador	Rodriguez Lara/[c]	1973–76
	Poveda/Duran/Franco[c]	1976–79
	Rodrigo Borja (Democratic Left)	1989–92
Peru	Velasco Alvarado[c]	1973–75
	Alan García (APRA)	1985–90
Venezuela	Carlos Andrés Pérez (AD)	1974–78
	Jaime Lusinchi (AD)	1984–88
	Carlos Andrés Pérez (AD)	1989–92

[a] If a popularly based president takes office between January and June, that year is coded as "popular." If the president takes office between July and December, however, the year is coded "not popular." A similar criterion is applied about presidents leaving office or being deposed. If a president leaves office before June, the year is coded as "not popular" (unless the next president is also popularly based); if the president leaves office between July and December, the year is coded as "popular."

[b] Juan Perón took office in October 1973. The previous president from the Peronist Party, Hector Cámpora, had been sworn in in May and resigned in July. Thus, it did not seem that they were in power long enough to introduce any significant policy changes. We have therefore coded 1973 as "not popular." Isabel Perón became president in July 1974, replacing her husband Juan Perón, who had just died. She was deposed by military coup in March 1976. We have therefore coded as "popular" only 1974 and 1975.

[c] This is a popularly based military president or junta.

APPENDIX 2

The error correction model is given by

$$\Delta Y_{i,t} = \alpha + \Delta X_{i,t-1}\beta_k + \phi \ (Y_{i,t-1} - X_{i,t-1}\Upsilon) + \varepsilon_{i,t} \qquad (1)$$

where, in our case, $Y_{i,t}$ is social expenditures in country i during year t, Δ is the first-difference operator, X is a vector of independent variables, and $\varepsilon_{i,t}$ is a white noise error term. The model describes a short-term equilibrium relationship given by $\Delta Y_{i,t} = \alpha + \Delta X_{i,t}\beta_k + \varepsilon_{i,t}$ and a term ϕ $(Y_{i,t-1} - X_{i,t-1}\Upsilon)$, which measures the deviation from this short-term equilibrium relationship. (Note that $\varepsilon_{i,t-1} = (Y_{i,t-1} - X_{i,t-1}\Upsilon)$). Equation 1 shows that, first, a one-off change in $X_{i,t-1}$ produces a contemporary change in $Y_{i,t}$. This short-term effect is determined by the k-dimen-

sional vector of regressors β_k. Furthermore, when the impact of $X_{i,t-1}$ on $Y_{i,t}$ throws the model off its long-run equilibrium (given by the cointegrating vector $Y^*_{i,t-1} = X^*_{i,t-1}Y$, where the "*" indicates equilibrium), the discrepancy or "error" $(Y_{i,t-1} - X_{i,t-1}Y)$ is corrected at a yearly rate of ϕ.

One way to show in a more intuitive way how to interpret the different short-term and long-term coefficients is to transform equation 1 through a simple mathematical operation: let β_j be defined as $-(\phi Y)$, where both parameters ϕ and Y come from equation 1, then it follows that $Y = \beta_j /- \phi$. Equation 1 can therefore be rewritten as

$$\Delta Y_{i,t} = \alpha + Y_{i,t-1}\phi + \Delta X_{i,t-1}\beta_k + X_{i,t-1}\cdot\beta_j + \varepsilon_{i,t} \qquad (2)$$

Equation 2 is then estimated through OLS. The interpretation of the coefficients is then as follows. The regression coefficient for an independent level variable is a measure of the long-run equilibrium relationship between a vector of cointegrated independent variables (that is, sharing the same long-run trend) and the dependent variable. As noted above, the long-run equilibrium relationship is given by $Y^*_{i,t-1} = X^*_{i,t-1}Y$. The parameter Y (which measures this long-run equilibrium relationship) is not directly observable from equation 2 but can be found by dividing β_j by $-\phi$ (see above).

The importance of the short-term effects $\Delta X_{i,t-1}$ depends, however, on the size of β_k and on how long the effects of changes in $X_{i,t-1}$ persist over time. A one-off change in $X_{i,t-1}$ produces an immediate (contemporary) change in $Y_{i,t}$ that is measured by β_k. If at time t there is a change in $X_{i,t}$ in the opposite direction to the change in $X_{i,t-1}$, then there are no more effects. But if the change in $X_{i,t-1}$ is sustained, then the impact will continue in subsequent periods and can be measured by $\Delta X_{i,t-1}\cdot(1 + \phi)^t$, where t is the number of periods after the initial change. Thus, for example, three years after the initial change $\Delta X_{i,t-1}$, the effect will be $\Delta X_{i,t-1}(1 + \phi)^3$. Since $0 < \phi < -1$, the smaller the value of ϕ, the longer the sustained changes in X will persist over time.