4

Trade and the Demand for Social Insurance

If increased international economic integration has constituted a key aspect of the postwar experience, a second striking feature has been the growth of government. Before World War II, the share of government expenditures in GDP averaged 21 percent in today's advanced industrial countries. By the mid-1990s, this figure had more than doubled to 47 percent (table 4.1). The increase in the role of government was particularly striking in countries such as the United States (from 9 to 34 percent), Sweden (from 10 to 69 percent), and the Netherlands (from 19 to 54 percent).

The increase in social spending, and income transfers in particular, drove the expansion of government in the postwar period. Figure 4.1 shows the record on such spending since 1960 for five member economies of the Organization for Economic Cooperation and Development (OECD): France, Germany, the United Kingdom, the United States, and Japan. In all five, spending on income transfers steadily increased until the early to mid-1980s and stabilized (or fell somewhat) thereafter. While most measures of government activity would show an increase over the postwar period, the rise in transfers stands out the most. This reflects the rise of the "welfare state," which many sociologists and political scientists consider "a key ingredient in the postwar consolidation of universal democracy" (Esping-Andersen 1994, 714).[1]

Economists have paid surprisingly little attention to the relationship between the growth of government and the intensification of international

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1. See Lindert (1994) for a quantitative account of the evolution of social spending.

**Table 4.1 Growth of government expenditure among industrial
countries, 1870-1994** (percentage of GDP)

| Country	Late 19th century (about 1870)	Pre-World War I (about 1913)	Post-World War I (about 1920)	Pre-World War II (about 1937)	Post-World War II (1960)	1980	1994
Austria	n.a.	n.a.	14.7	15.2	35.7	48.1	51.5
Belgium	n.a.	n.a.	n.a.	21.8	30.3	58.6	54.8
Canada	n.a.	n.a.	13.3	18.6	28.6	38.8	47.4
France	12.6	17.0	27.6	29.0	34.6	46.1	54.9
Germany	10.0	14.8	25.0	42.4	32.4	47.9	49.0
Italy	11.9	11.1	22.5	24.5	30.1	41.9	53.9
Japan	8.8	8.3	14.8	25.4	17.5	32.0	35.8
Netherlands	9.1	9.0	13.5	19.0	33.7	55.2	54.4
Norway	3.7	8.3	13.7	n.a.	29.9	37.5	55.6
Spain	n.a.	8.3	9.3	18.4	18.8	32.2	45.6
Sweden	5.7	6.3	8.1	10.4	31.0	60.1	68.8
Switzerland	n.a.	2.7	4.6	6.1	17.2	32.8	37.6
United Kingdom	9.4	12.7	26.2	30.0	32.2	43.0	42.9
United States	3.9	1.8	7.0	8.6	27.0	31.8	33.5
Average	8.3	9.1	15.4	20.7	28.5	43.3	49.0
Australia	n.a.	n.a.	n.a.	n.a.	21.2	31.6	37.5
Ireland	n.a.	n.a.	n.a.	n.a.	28.0	48.9	43.8
New Zealand	n.a.	n.a.	n.a.	n.a.	26.9	38.1	35.7
Average	n.a.	n.a.	n.a.	n.a.	25.4	39.5	39.0
Total average	8.3	9.1	15.4	20.7	27.9	42.6	47.2

n.a. = not available

Source: Tanzi and Schuknecht (1995).

economic integration. At first glance, the coexistence of these two trends appears spurious—a coincidence arising from the confluence of diverse determinants. For example, in a recent in-depth study Tanzi and Schuknecht (1995) attribute the expansion of government spending to determinants that are largely unrelated to the growth of trade: the Great Depression, changing beliefs about the economy and the efficacy of laissez-faire, the consequences of democratic populism, and interest-group pressures.

Political scientists, however, have read much more into the simultaneous expansion of trade *and* governments in the postwar period. Indeed, the relationship between dependence on trade and the scope of the government has been an ongoing preoccupation in the literature on comparative politics. Katzenstein (1985, 55), for example, has argued that it is no accident that small, highly open European economies such as Sweden, Austria, and the Netherlands have large governments. Governments in these economies have sought to provide a cushion against the risks of

Figure 4.1 Spending on social protection in five OECD countries, 1960-91 (as share of GDP)

percent
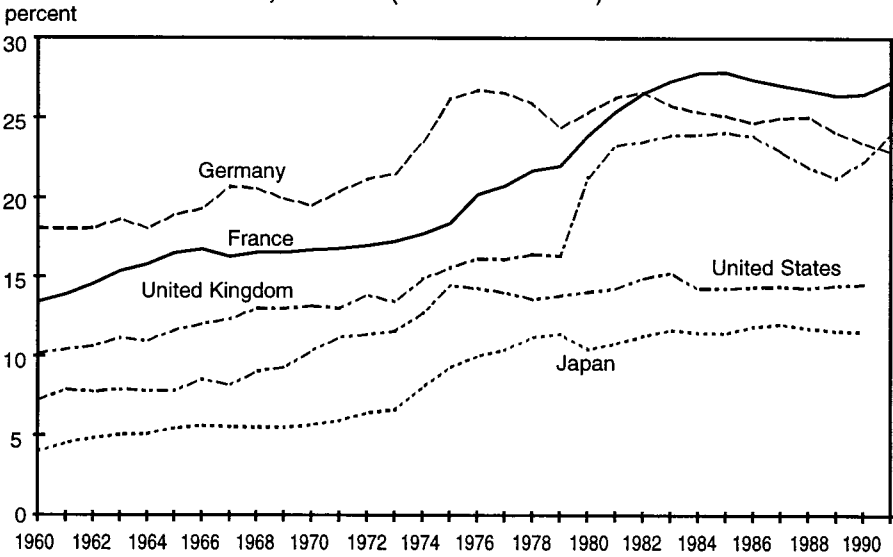
Source: Data supplied by Roberto Perotti, from original OECD sources.

exposure to international economic forces and have done so by extending their powers. As he notes (1985, 55):

> It was only in the 1950s and 1960s—that is, during the time of international liberalization—that the public sector assumed such a prominent role in the small European states. . . . In 1956-57 the share of social security expenditures in national income was identical, 13 percent in both the small European and the large industrial states; but by 1971 the small European states were on the average spending 20.9 percent of their GNP on social security compared to 14.3 percent for the large industrial states. . . . [T]he growth of public spending during the postwar years in "conservative" Switzerland exceeded the growth of spending in "socialist" Britain. [footnotes omitted]

Katzenstein (1984, 1985) has documented in detail how these small European states "complement[ed] their pursuit of liberalism in the international economy with a strategy of domestic compensation" (1985, 47)— entailing, among other policies, investment programs, incomes policies, industrial subsidies, and income transfers. Cameron (1978) and Garrett and Mitchell (1996) make similar arguments.

A closer look at the evidence indeed confirms that the relationship between openness to trade and the growth of government may not be a coincidence. Turning from time-series to cross-sectional evidence, for example, one uncovers a surprisingly robust positive association across

**Figure 4.2   Relationship between openness and public
expenditures in 23 OECD countries**

government expenditures as percentage of GDP
(excluding interest), 1990-92

lagged exposure to trade as share of GDP, 1980-89
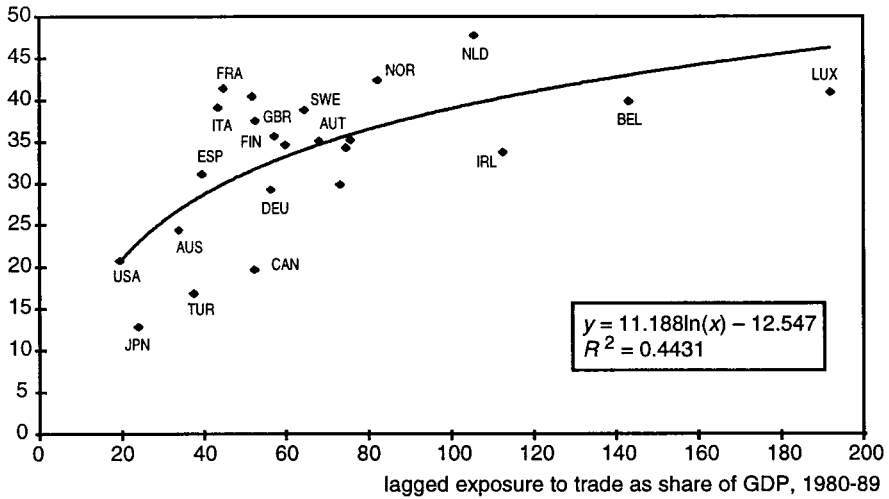
Source: Rodrik (1996).

countries between the degree of exposure to international trade and the
importance of the government in the economy. The point can be made
with the help of two figures, reproduced from Rodrik (1996). Figure 4.2
shows the relationship between the share of government expenditures in
GDP (excluding interest payments) and lagged exposure to trade (export
plus imports divided by GDP) for 23 OECD countries during the early
1990s. The figure reveals an unmistakable positive association between
openness and size of government. A semilogarithmic regression equation
fits the data extremely well, explaining 44 percent of the cross-country
variance in government expenditures. At one end of the distribution are
the United States and Japan, which have the lowest trade shares in GDP
and (along with Turkey and Canada) the lowest shares of government
spending. At the other end are Luxembourg, Belgium, and the Nether-
lands, economies with very high degrees of openness and large govern-
ments.

Neither is the relationship confined to OECD economies. Figure 4.3
displays the *partial* correlation between openness and government con-
sumption for 115 countries. I have controlled here for other potential
determinants of government size, such as per capita income, demographic
and economic structure, country size, and geography. The figure shows
that there is a remarkably tight empirical association between openness to

Figure 4.3 Partial correlation between openness and government consumption in 115 countries (controlling for per capita income, urbanization, dependency ratio, area, and region)

log of government consumption as a percentage of GDP, 1985-89

log of openness, 1975-84
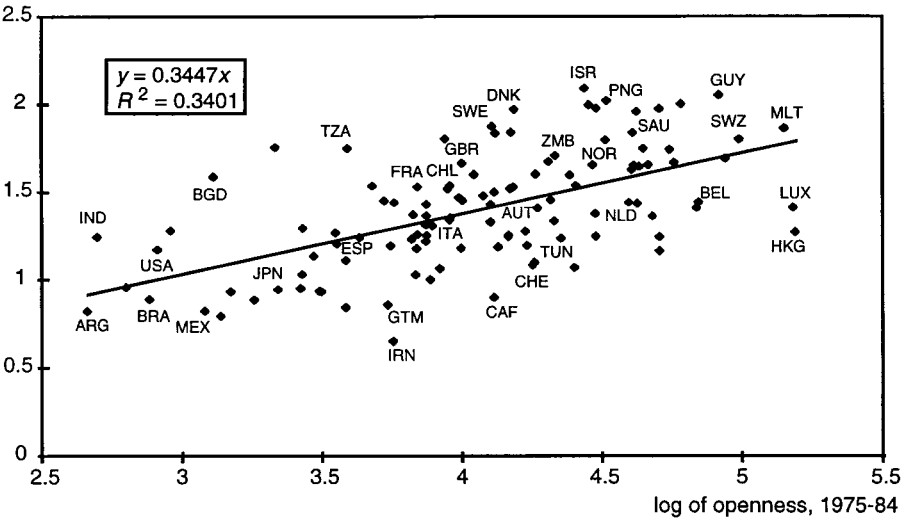
trade and government consumption in this large cross-section of countries. Furthermore, exposure to trade in the early 1960s is a statistically significant predictor of the expansion in government size over the subsequent three decades in the same large sample of countries. These results turn out to be extremely robust. Further details are provided in Rodrik (1996).

What should we make of this? I will argue that the puzzle is solved by considering the importance of social insurance and the role of government in providing cover against external risk. Societies that expose themselves to greater amounts of external risk demand (and receive) a larger government role as shelter from the vicissitudes of global markets. In the context of the advanced industrial economies specifically, this translates into more generous social programs. Hence the conclusion that the social welfare state is the flip side of the open economy!

More evidence on this point is presented below. The main theme of this chapter is that globalization presents this dilemma: it results in increased demands on the state to provide social insurance while reducing the ability of the state to perform that role effectively. Consequently, as globalization proceeds, the social consensus required to maintain domestic markets open to international trade is endangered. With domestic political support for trade eroding, a return to old-style protectionism becomes a serious possibility.

The point that government policies lose their effectiveness in highly open economies should not be controversial. In particular, it is obvious that governments are constrained in raising taxes on footloose factors. When capital is perfectly mobile across national borders, for example, a domestic tax on capital is borne fully by immobile factors and not at all by capital itself.[2]

But if it is true, as argued above, that these immobile groups will demand more generous social programs as the price for accepting greater amounts of external risk, we have the makings of a serious conflict. In order to square the circle, governments have been forced to raise taxes on labor while reducing taxes on capital, as I will show later in the chapter.

Because some of these ideas may strike the reader as fanciful, or at least unsubstantiated, this chapter will focus on the empirical evidence. I will present three types. First, I will use cross-country evidence from a broad sample of countries to show that external risk does matter: the greater the exposure to external risk, the greater the aggregate income and consumption risk to which domestic residents are subjected.

Second, drawing a distinction between *openness* and *exposure to external risk*, I will show that higher levels of government spending (as a share of GDP) are associated with greater exposure to external risk and that, once external risk is explicitly controlled for, governments in more open economies do not spend more. Hence the positive correlation between openness and size of government discussed above seems to have exposure to external risk as its root cause.

Third, I will use panel evidence on different types of government spending and of taxes for the advanced industrial countries since the 1960s. With panel data, I cannot separately control for external risk because my risk variable uses data on terms-of-trade variability over a two-decade period. But the panel approach has the advantage of providing information about how government activity has responded to *changes* in international economic integration in each country, holding constant the risk characteristics of each country's trade (the latter being absorbed into the fixed effects).[3] Thus, controlling for country and year effects, I find that increases in openness have resulted in *reductions* in social spending and

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2. This is, of course, one reason for the movement toward ''unitary'' taxation—that is, the taxation of foreign-owned firms on the basis of their global income. Some have argued that by appropriately designing the tax regime (and effectively taxing ''old'' capital but not ''new'') a government can continue to collect substantial revenue from capitalists despite open borders (see, e.g., Wallerstein and Przeworski 1995). I do not find such arguments very persuasive. Aside from the problem of time inconsistency—there is always the temptation to redefine old capital—it is not clear that the Wallerstein-Przeworski proposal would raise adequate revenue in the long run.

3. Fixed effects control for country-specific variables that are not otherwise included as regressors in the regressions.

government consumption. This depressing effect on spending is larger in countries with no restrictions on capital mobility. Further, I will present evidence that the distribution of the tax burden has shifted from capital to labor as integration has advanced: as openness increases, taxes on capital decrease while taxes on labor income increase.

I use a formal model in appendix A to sharpen the argument. The model highlights several things. First, the ability of the owners of capital to move in and out of the domestic economy with relative ease imposes a negative externality on other groups (such as labor) with more limited mobility. This externality arises because capital mobility exacerbates the risks to which immobile groups are exposed. Second, the model shows that a strategy of compensating internationally immobile groups for accepting greater amounts of external risk can work as long as international economic integration is not too advanced. But once globalization moves beyond a certain point, the government can no longer finance the requisite income transfers because the tax base becomes too footloose. Hence at high levels of integration there is a serious conflict between openness and maintaining social consensus.

Is External Risk Important?

I begin by using cross-country evidence from a broad sample of countries to show that exposure to external risk does increase aggregate income and consumption risk. It is not obvious that this should be the case, so the evidence on this point is important. It is entirely possible, on theoretical grounds, that external risk would counteract exposure to *domestic* sources of risk, nullifying the hypothesis of a trade-off between openness and stability. This could happen for a couple of reasons. First, increased international integration of capital markets may allow all domestic residents, including workers, to diversify internationally, reducing consumption risk. Second, world markets being larger than domestic markets, the effects of idiosyncratic, country-specific shocks may be felt less in economies more tightly integrated with world markets.

On the other hand, specialization according to comparative advantage can be expected to result in more concentrated production structures and hence in greater income variability. In addition, a significant part of workers' income is embodied in human capital, which in practice is impossible to diversify even under full capital mobility. Hence it is ultimately an empirical question whether increased exposure to risk of external origin is associated with increased exposure to risk in the aggregate.

Table 4.2 provides rather strong evidence that the answer is affirmative. This table shows the results of regressing indicators of aggregate risk on a measure of external risk across a sample of 105 countries for which the requisite data were available. The measure of external risk I have selected

Table 4.2 Impact of external risk on volatility of income and consumption

Independent variable	Dependent variable (standard deviation of growth rates of)[a]			
	Real GDP adjusted for terms of trade	Real GDP	Real "private" GDP	Real consumption
Constant	0.026*	0.026*	0.025*	0.027*
	(0.003)	(0.003)	(0.003)	(0.004)
Real per capita income, 1975	−4.22E-07	−3.40E-07	−1.42E-07	−7.53E-07
	(3.97E-07)	(3.64E-07)	(3.91E-07)	(7.37E-07)
Socialist countries	0.001	0.001	0.004	0.006
	(0.006)	(0.005)	(0.006)	(0.005)
OECD	−0.012*	−0.012*	−0.013*	−0.013***
	(0.004)	(0.004)	(0.004)	(0.007)
Latin America	−0.006	−0.005	−0.005	−0.005
	(0.004)	(0.004)	(0.003)	(0.004)
East Asia	−0.012*	−0.011*	−0.011*	−0.016*
	(0.003)	(0.003)	(0.003)	(0.006)
Sub-Saharan Africa	0.001	0.002	0.004	0.006
	(0.004)	(0.004)	(0.004)	(0.004)
Exposure to external risk (OPENAVG6092 × TOTDLOGSTD)	0.0007*	0.0004**	0.0006*	0.0012*
	(0.0002)	(0.0002)	(0.0002)	(0.0003)
Number of observations	104	104	104	104
Adjusted R^2	0.39	0.36	0.36	0.48

* = 99% significance; ** = 95% significance; *** = 90% significance.

a. Standard errors in parentheses.

is the one suggested by theory, namely the volatility of the streams of income associated with fluctuations in the external terms of trade. This is calculated as the product of openness ($[x + m]/y$) and the standard deviation of the first logarithmic differences in the terms of trade (with the variable name TOTDLOGSTD).[4] Using an alternative measure of exter-

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4. Formally, let x, m, and y stand for volumes of exports, imports, and GDP, respectively. Let π be the natural logarithm of the price of exports relative to imports (the terms of trade). Let the log of the terms of trade follow a random walk, possibly with drift (a hypothesis that cannot be rejected for most countries). The unanticipated component of the income

nal risk, based on the product concentration of exports, yields very similar results (results for this second measure are not shown here).

The dependent variables are four measures of income or consumption risk, calculated as the standard deviation of the first log differences in real GDP adjusted for the terms of trade, real GDP, real GDP excluding government consumption (denoted as private GDP), and real consumption. Additional dependent variables are per capita income and a range of country-grouping and regional dummies.

The results show that the three measures of income risk, as well as consumption risk, increase with exposure to external risk. This finding is robust to the inclusion of a wide range of additional controls and holds equally well when the sample is restricted to the high-income countries.[5] Note in particular that the estimated coefficient on external risk is largest in the regression on *consumption* risk, which is notable because one might have expected capital mobility to allow diversification of consumption risk (even if income risk cannot be diversified away).

To get a sense of the magnitudes involved, consider the estimated effect on consumption risk of an increase in external risk by one standard deviation. The standard deviation of the external risk variable is 5.6 (which corresponds to a standard deviation in the growth rates of external income of $\frac{1}{2} \times 5.6 = 2.8$ percent). According to the last column in table 4.2, this would be associated with an increase in the standard deviation of consumption growth of $5.6 \times 0.0012 = 0.67$ percent. The median value of the standard deviation of consumption growth in the sample is 2.63 percent. Hence the implied effect is not negligible.

Note further that these aggregate relationships say nothing about the *distribution* of risk within the economy. Presumably, this kind of risk is borne disproportionately by groups with low international mobility. Once its incidence is taken into account, therefore, the problem of external risk is likely to loom larger.

Cross-Country Evidence on Openness, External Risk, and Government Activity

I now turn to a more direct look at the consequences of external risk for government behavior. The evidence presented earlier showed that there is

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effects of a terms-of-trade change can then be expressed (as a percentage of GDP) as $\frac{1}{2}[(x + m)/y][d\pi - \alpha]$, where α is the trend growth rate in the terms of trade. The standard deviation of this is $\frac{1}{2}[(x + m)/y] \times$ standard deviation of $d\pi$.

5. It is also robust to instrumenting for openness, OPENAVG6092 (which in principle is an endogenous variable), by using a set of exogenous geographical and country-size variables (results not shown).

a close association between exposure to trade and the scale of government spending in a broad cross-section of countries. A more systematic look at the evidence suggests that the reason has to do with external risk: exposure to external risk has resulted in demands for a more active government role in the provision of social insurance.

Working with data from a cross-section of countries, it is possible to distinguish empirically between *exposure to external risk* and *openness*, as in the previous section. Intuitively, two economies can be equally exposed to trade yet have quite different levels of exposure to external risk if their terms of trade differ in their volatility. For example, the ratio of trade to GDP is around 20 percent in both Japan and the United States, yet the terms of trade are almost twice as volatile in Japan. New Zealand and the United Kingdom are equally open (around 55 percent), but New Zealand's terms of trade fluctuate twice as much as the United Kingdom's. Note also that the empirical measure of openness used here (total trade divided by GDP) is only a rough proxy for the theoretically relevant measure—the sensitivity of the domestic economy to events on the other side of the border. Imperfect as it is, this measure should capture to some extent the maneuvering room that domestic agents—private and public—have.

In this exercise, both openness and exposure to external risk are entered in the regressions as independent variables explaining the magnitude of government spending. We can then see whether openness is still positively related to government spending once external risk is controlled for.

I use two measures of government spending. One is social security and welfare spending—which includes unemployment compensation, family assistance, and pensions—averaged over 1985-89. Old-age insurance is typically the largest item in social security and welfare spending in the advanced industrial countries. Such insurance is obviously not targeted on dislocations arising specifically from trade. But it does reduce lifetime uncertainty over incomes, and as such it contributes to a greater sense of security, irrespective of the source of the shocks to which incomes are subject. So one would expect to find a positive correlation between exposure to external risk and social security and welfare spending.

The second measure is government consumption (which excludes income transfers as well as public investment), also averaged over 1985-89. This measure has the advantage that it is available for over 100 countries on a standardized basis (thanks to Penn World Tables 1995). Its disadvantage is that the links between government spending on such things as education and the military and the provision of social insurance are more tenuous. Nonetheless, in lower-income countries, where social security and welfare systems are difficult to set up, the evidence suggests that government purchases of goods and services do indeed perform an insurance function.

Table 4.3 Effect of openness and external risk on log of government expenditures as share of GDP by income group and type (averaged over 1985-89)

Independent variable	OECD countries		Countries with 1985 per capita GDP > $4,500		All countries[a]	
	Social security and welfare	Government consumption	Social security and welfare	Government consumption	Social security and welfare	Government consumption
Openness (OPENAVG7584)	−0.170*	−0.005	−0.043***	−0.006***	−0.018	−0.004***
Instability in terms of trade (TOTDLOGSTD)	−134.088*	−8.329	−35.010**	−4.148***	−16.484*	−3.585*
Exposure to external risk (OPENAVG7584 × TOTDLOGSTD)	1.869*	0.070	0.438**	0.067**	0.183***	0.056*
Number of observations	19	22	25	32	68	109
Adjusted R^2	0.75	0.18	0.23	0.09	0.48	0.51

* = 99% significance; ** = 95% significance; *** = 90% significance.

a. Regressions in last two columns include the following other regressors: log(GDPSH585), log(DEPEND90), log(URBAN90), SOC, OECD, LAAM, ASIAE, and SAFRICA. Coefficients on these additional regressors are not shown. See appendix for variable definitions.

The first two columns of table 4.3 focus on the OECD countries. The results with social security and welfare spending strongly support the argument. As expected, exposure to external risk is positively correlated with social security and welfare spending (at the 99 percent confidence level). The coefficient on openness here turns negative (and is also statistically significant). Terms-of-trade volatility, which is entered independently in these regressions, also has a negative and significant estimated coefficient. Taken together, these results suggest that income transfers tend to be largest in economies that are simultaneously very open *and* subject to substantial price risk in world markets. While the sample is small (19), these variables together account for 75 percent of the variation in social security and welfare spending across these countries. By contrast, in this OECD sample, openness and external risk indicators have no explanatory power for spending on government consumption.

The next two columns enlarge the sample to all countries with 1985 GDP per capita above $4,500. The results with regard to social security

and welfare spending are qualitatively the same, although the estimated coefficients are much smaller and the levels of statistical significance lower. The main change now is that the openness and risk variables begin to enter significantly in the regression on government consumption as well, although the overall fit is still not impressive.

The last two columns display results for all countries for which the requisite data are available. These regressions also include additional controls for per capita income, economic structure, demography, and geographic region. The pattern of signs is once again in accord with the expectation, and the estimated coefficients are mostly significant. But note that the variables of interest now do much worse in the regression on social security and welfare spending than they do in the one on government consumption. I attribute this to the fact that social security and welfare spending is largely a mixed bag in lower-income countries, and that most such countries do not have the capacity to run adequate welfare systems. It is plausible that some of the same insurance functions are provided in these countries through government employment and government purchases of goods and services (as captured in government consumption). The regression results displayed in the last column of the table strongly support this hypothesis. See Rodrik (1996) for more evidence on this score.[6]

To summarize, the cross-country evidence provides strong support for the ideas discussed above. Government spending—on social security and welfare in the rich countries and consumption in poorer countries—is highest in countries that are exposed to significant amounts of external risk. Since exposure to external risk is the consequence both of high levels of trade and of volatility in the prices of traded goods, it is the interaction of these two that seems to matter. Holding either one of these constant while varying the other has an ambiguous effect on government spending.

Evidence from Panel Data for the OECD Countries

Cross-country evidence has a number of shortcomings. In particular, drawing inferences from such evidence about the consequences of changes in openness or external risk for any given country is problematic except under very restrictive assumptions. Hence it would be useful to have

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6. Several readers have wondered whether these results may be due to the negative correlation between country size and exposure to trade: larger countries tend to have smaller trade in relation to GDP, and in the presence of scale economies in the provision of public services, we will observe a negative relationship between size and the government share. The answer is that there does not seem to be such a bias. The results discussed here are robust to the inclusion of explicit measures of country size—such as population, total GDP, and land area—on the right-hand side of the regressions (Rodrik 1996).

supplementary evidence drawn from combined cross-country, time-series data using panel techniques. I present this kind of evidence here for the advanced industrial countries for which annual data on social spending and tax rates are available beginning in the mid-1960s.[7] The countries included are most of the OECD members, including Australia, Austria, Canada, Denmark, Finland, France, Germany, Italy, Japan, Netherlands, Norway, Sweden, the United Kingdom, and the United States.

This approach, however, has a problem of its own. Because the external risk variable is constructed using terms-of-trade data over the 1971-90 period, it is not possible to obtain a time-varying measure of external risk that is independent from openness. Therefore, unlike in the previous section, I cannot test to see whether government spending reacts differently to openness and external risk. Terms-of-trade volatility will now be absorbed into the fixed effects for each country. But I can examine how government spending on income transfers (as well as government consumption) has reacted to changes in openness, *after country and year effects are controlled for.*[8]

The results are displayed in table 4.4 for two types of government expenditures: spending that is classified by the OECD as ''spending on social protection,'' which includes income transfers, and government consumption. Both are expressed as percentages of GDP. The explanatory variables include (lagged) openness and GDP per capita, as well as a full set of country and year dummies (coefficients for the latter are not separately shown). I find a negative relationship between income per capita and government spending of both types, which goes against Wagner's law.[9] More relevant for my purposes, I find that social spending and government consumption both respond negatively to lagged increases in openness. The estimated coefficients suggest that an increase in the shares of imports plus exports in GDP of 5 percentage points (which translates into an increase in the measure of openness of 10 percentage points) results in a reduction in social spending of about 0.3 percentage points.

The table also adds as regressors dummy variables for the presence of restrictions on capital mobility, both individually and in interaction with

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7. The data used in this section were made available by Roberto Perotti (spending on social protection) and Gian Maria Milesi-Ferretti (taxes), to whom I am grateful. The original source for the spending data is the OECD.

8. Alternatively, one could try to construct a time-varying estimate of external risk by using terms-of-trade data for shorter subsamples (e.g., using five-year windows). However, the value added from this approach is not quite clear. In the current framework, it is reasonable to suppose that the ''riskiness'' of each country's trade is absorbed into the fixed effect. The panel regressions reported in this section have also been estimated using a random-effects model. The results were essentially identical and so are not presented here.

9. Wagner's law states that the demand for public services is income-elastic, so that the share of government spending in national income increases as incomes rise.

Table 4.4 Relationship between government spending (as percentage of GDP) and openness in OECD countries, 1966-91[a]

Independent variable	Social spending	Government consumption	Social spending	Government consumption
Openness (lagged)	−0.028*** (0.015)	−0.029* (0.013)	−0.064* (0.018)	−0.053* (0.013)
GDP per capita	−0.001* (0.000)	−0.001* (0.000)	−0.001* (0.000)	−0.001* (0.000)
Openness (lagged) × capital account restrictions			0.030** (0.012)	0.021* (0.006)
Capital account restrictions			−0.041 (0.730)	−0.023 (0.353)
F	56.47	10.31	47.85	13.10
Prob > F	0.000	0.000	0.000	0.000
Number of observations	502	571	426	456
R²	0.77	0.35	0.77	0.46

* = 99% significance; ** = 95% significance; *** = 90% significance.

a. Data are annual. Estimated using fixed effects. Year dummies included (coefficients not shown). Standard errors are in parentheses.

openness.[10] The results are interesting in that they show the negative effect of openness on spending to be particularly strong in countries or periods without restrictions on capital mobility. Hence the magnitude of the effect discussed in the previous paragraph is more than doubled in cases where the capital account is entirely free.

How do we relate the results of this section to those of the previous one? They are less conflicting than might at first appear. The question that we are now asking is this: what is the relationship between openness and government spending, holding the volatility of the terms-of-trade constant? The cross-country evidence suggested that the answer is ambiguous because there are offsetting effects to consider. For any given terms-

10. The source for the dummy variables are the summary table in the International Monetary Fund's annual reports on exchange arrangements and exchange restrictions. I am grateful to Andy Rose for making this data set available to me in electronic form.

of-trade risk, an increase in openness increases the demand for social insurance, but it also reduces the ability to finance the requisite spending. Which effect dominates empirically depends on the precise level at which the terms-of-trade volatility is being held constant. For a set of countries with high levels of terms-of-trade volatility, the cross-country results suggest that increased openness will be associated with expanded spending. For countries with low levels of terms-of-trade volatility, on the other hand, such as the OECD countries, the reverse will be true, and increased openness will be associated with reduced government spending. That is indeed what the findings suggest.[11]

The bottom line, therefore, is that increased openness since the mid-1960s has been associated with reductions in government activity in the advanced industrial countries. Hence while countries that are exposed to significant amounts of external risk traditionally have had governments playing a more substantial role in the provision of social insurance, it becomes increasingly difficult to discharge this role as economic integration advances.

The manner in which the dilemma has been resolved on the revenue side is quite interesting (table 4.5). This table shows results from panel regressions similar to those above, except that the dependent variables are now tax rates on labor and capital income, respectively. These tax rates have been estimated from national income accounts by Mendoza, Milesi-Ferretti, and Asea (1996), using a methodology developed by Mendoza, Razin, and Tesar (1994). They are available for 1965-91 for 18 OECD countries.[12] The table shows that taxes on labor respond positively to increases in lagged openness, while taxes on capital respond negatively: the estimated coefficient on openness is positive and statistically significant in the regression on labor taxes, while it is negative and statistically significant in the regression on capital taxes. In other words, there is strong evidence that as economic integration advances the tax burden of social insurance programs is shifted from capital to labor.

More visual evidence is displayed in figure 4.4, which shows the unweighted average of tax rates on capital and labor in four leading industrial countries: France, Germany, the United Kingdom, and the

11. For example, the first column of table 4.3 shows the change in social spending as openness increases, which is given by $-0.170 + (1.869 \times \text{TOTDLOGSTD})$. For levels of TOTDLOGSTD less than $0.170/1.869 = 0.091$, the relationship is negative. The median value of TOTDLOGSTD for the OECD sample is just above this threshold, at 0.092. This assumes, of course, that the cross-country and time-series evidence can be directly compared in this manner. An alternative perspective is that the cross-country evidence reflects some long-run tendencies while the panel evidence is more germane to short-term adjustments.

12. These are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, the Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, the United Kingdom, and the United States.

Table 4.5 Relationship between taxes and openness in OECD countries, 1965-92[a]

Independent variable	Tax rate on labor income	Tax rate on capital income	Tax rate on labor income	Tax rate on capital income
Openness (lagged)	0.108*	−0.122**	0.069*	−0.082
	(0.019)	(0.051)	(0.021)	(0.051)
GDP per capita	0.000	−0.000	−0.000	−0.000
	(0.000)	(0.001)	(0.000)	(0.001)
Openness (lagged) × capital account restrictions			0.061*	0.256*
			(0.020)	(0.052)
Capital account restrictions			−1.135	−14.330*
			(0.925)	(2.394)
F	45.61	8.43	41.35	8.72
Prob > F	0.000	0.000	0.000	0.000
Number of observations	371	371	343	343
R²	0.80	0.42	0.80	0.46

* = 99% significance; ** = 95% significance.

a. Data are annual. Estimated using fixed effects. Year dummies included (coefficients not shown). Standard errors are in parentheses.

United States. The two trends exhibit a clear turning point in the early 1980s. Since the early 1980s, taxes on capital have come down sharply, while taxes on labor have kept increasing at the same rate as before.

Hence the evidence suggests three things: globalization reduces the ability of governments to spend resources on social programs, it makes it more difficult to tax capital, and labor now carries a growing share of the tax burden.

Recapitulation

It is generally accepted that integration into the world economy reduces the ability of governments to undertake redistributive taxation or implement generous social programs. The evidence discussed above reinforces this presumption. It is less well understood that this may create a serious dilemma where maintaining political support for open markets is con-

Figure 4.4 France, Germany, United States, and United Kingdom: taxes on labor and capital, 1970-91

unweighted averages
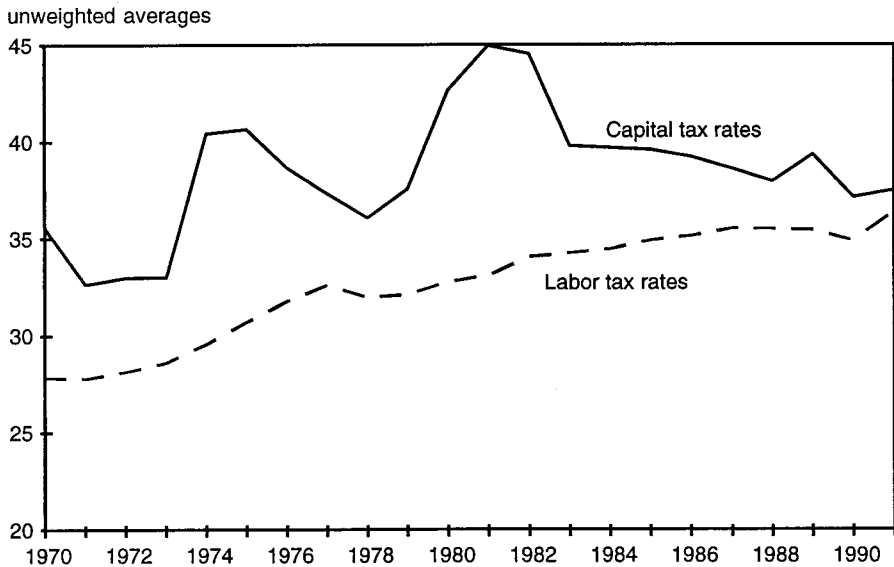
cerned. This chapter provided concrete evidence on that score as well. In particular, it has shown that societies (rich and poor alike) have demanded and received a larger government role as the price of exposing themselves to greater amounts of external risk.[13] I read this evidence as pointing to a tension between the consequences of globalization and the requirements of maintaining the social legitimacy of free trade.

The postwar economic order was based on a bargain that John Ruggie has termed "the compromise of embedded liberalism":

> Societies were asked to embrace the change and dislocation attending international liberalization. In turn, liberalization and its effects were cushioned by the newly acquired domestic economic and social policy roles of governments. (Ruggie 1995, 508)

By any standard, this bargain has served the world economy extremely well. Spurred by liberalization, world trade has expanded phenomenally since the 1950s without causing major social dislocations or generating much opposition in the advanced industrial countries.

Despite the perception of a backlash against the welfare state, the principles behind the welfare state remain highly popular among broad seg-

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13. This argument parallels the view expressed by Sinn (1995, 1996) that the social-welfare state is an insurance mechanism that makes lifetime careers safer and hence encourages beneficial risk taking.

Table 4.6   Public support for social programs (percent favoring)

Program	United Kingdom	United States	Australia	West Germany	Austria	Italy
More spending on health care						
Poorest quartile	90	66	69	54	73	82
Wealthiest quartile	84	54	55	33	59	78
More spending on pensions						
Poorest quartile	87	60	63	51	61	79
Wealthiest quartile	63	37	45	32	50	75
More spending on unemployment benefits						
Poorest quartile	59	47	19	41	27	63
Wealthiest quartile	25	14	7	19	13	52
Government reduction of income differences between those with high and low incomes						
Poorest quartile	58	49	51	63	70	79
Wealthiest quartile	37	22	30	52	62	64

Source: Taylor-Gooby (1989).

ments of society. In the United Kingdom, for example, where the conservative revolution perhaps has gone furthest, one review of opinion polls concludes: "There has been no strong shift against the welfare state. To the contrary the main services are as strongly supported as they have been at any time since the war" (Taylor-Gooby 1985, 51). In the United States, Social Security, Medicare, and unemployment insurance also remain very popular. The share of respondents who reject cuts in Social Security to balance the budget is consistently above 80 percent.[14] A cross-national survey carried out in 1985 at the height of the conservative revolution (summarized in table 4.6) reveals substantial popular support in much of Europe and the United States for expanded spending on social programs. As expected, however, there are also some important class differences in preferences for social spending, particularly in the Anglo-Saxon countries (United States, Britain, and Australia).

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14. One could even argue that the 1980s experienced a shift in US public opinion toward a more positive feeling about the size and power of government. Writing in the conservative journal *The Public Interest* in 1992, Mayer says: "Not only is public opinion today more supportive of domestic spending, it is also less responsive to such conservative themes as taxes and big government" (1992, 15).

But can the bargain of ''embedded liberalism'' be sustained? It is questionable that it can if governments lose their autonomy in generating tax revenues and shaping social policies. In the words of Ruggie again (1994, 2), a ''source of potentially serious problems for the international trade regime [is] the growing inability of governments at home to sustain their part of the social compact on which postwar international liberalization has hinged.'' The fact that confidence in government has declined in most advanced industrial countries (Nye 1996) while support for its welfare functions remain high is indicative of this tension.

I do not mean to suggest that the government is the sole provider of social insurance in modern economies, nor do I imply that such insurance is best provided at the level of national governments. There are mediating institutions, such as local governments, religious organizations, private charities, and the extended family, that play the same role. Many of these, of course, have come under the same kind of pressures under the force of globalization as have national governments. In the future, perhaps social insurance will devolve more to these other institutions and to others that are not yet playing this role. What seems clear is that we need some creative thinking on how to provide social insurance and thereby foster stability in the new global economy.