Staff growth in international organizations:
A principal-agent problem? An empirical analysis

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Abstract The analysis covers 27 international organizations in the years 1950–2001. From
the first to the last year, staff increased at a compound average rate of 3.2% per annum,
while the number of member states rose by only 2.5%. The pooled analysis of 817 obser-
vations (including task proxies and organization dummies) reveals that (i) the elasticity of
staff to membership is much larger than unity (1.36), (ii) United Nations organizations have
significantly more staff, (iii) international organizations in the United States and Switzer-
land have significantly less staff, (iv) heterogeneity in terms of per capita income limits the
size of an international organization and that (v) its staff is larger if its membership com-
prises many industrial or (former) communist countries. In a reduced sample, the financing
share of the largest contributor in combination with the party or programmatic orientation
of its government has a significantly negative effect on staff because the size of the largest
financing share determines the incentive to monitor. U.S. exit from an international organi-
zation reduces its staff significantly. Most of these results depend on the condition that the
non-stationary component of staff size is not taken account of by time dummies or trends.

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1 Introduction

One of the most striking post-war phenomena is the spectacular growth of the number and size of international organizations. Almost all of them have increased their competencies, membership, budget and staff on a long term basis. There are many explanations for this historical tendency but, as a matter of principle, all of them can be grouped into one of two classes: those drawing on the normative theory of international organizations, and those based on positive political economy.[1]

In the first group, we find the widespread view that technical progress necessitates closer coordination or centralization of policies because the falling cost of transportation, information and communication has strengthened market integration and interdependence and because growing environmental spillovers have increased international non-market interdependence.

Positive political economy, in contrast, explains the behavior of individual actors and institutions without recourse to normative arguments. The growth of international organizations is attributed to the self-interested utility-maximizing behavior of rational politicians and civil servants, including international bureaucrats who have a vested interest in the expansion of their organization.

Just as governments are supposed to be agents of their (median) voters, international organizations are appointed as agents of their member governments. Since both agents are only imperfectly controlled by their principals, there is a two-stage principal-agent problem. Thus, the lack of democratic control is likely to be especially severe in the case of international organizations.[2]

Several empirical observations support the principal-agent hypothesis:

 (i) Input quantities and costs have been shown to be not significantly related to the size of their task.[3]
 (ii) Input quantities and costs have been shown to depend significantly on factors which, according to the normative theory, should play no role.[4]
(iii) After-tax salaries at international organizations tend to be at least 50% higher than the salaries of comparable officials in the member states.[5]

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[1]For this distinction, a critique of the normative theory and a principal-agent approach to international organization see Frey (1984a, 1984b, 1997), Vaubel (1986, 2006), Sandler (1992: 127 f.) and political scientists like Lyne et al. (2002) and Nielson and Tierney (2002, 2003).

[2]Frey and Stutzer (2006a, 2006b) and Tullock (2006) discuss an interesting proposal how the democratic deficit could be addressed. According to Frey and Stutzer, a (large) group of Trustees, "selected from all citizens by lot, would have to approve all changes in the ground rules of the international organization. In addition, 10% of the members could demand a Trustee vote about any other issues on the agenda of the international organization or whether to recall top managers of the international organization."

[3]For instance, IMF staff size does not depend on the balance of payments problems of those member states whose international reserves are below average relative to imports (Vaubel 1991, Table 6; 1996, Table 2A). Similarly, staff size and real administrative expenditure at the IBRD are not affected by the number of new credits (Vaubel 1996, Table 2B).

[4]For example, IMF lending depends on the electoral cycle (Vreeland 1999; Przeworski and Vreeland 2000; Dreher 2003, 2004; Dreher and Vaubel 2004), the date of the next quota review and the quota share of the ten largest contributors (Vaubel 1991, Tables 6, 7). Its policy conditions become more, rather than less severe when the world economy moves into recession (Cooper 1983). Similarly, the rate of increase of IDA lending rises prior to the date of the next regular replenishment (Vaubel 1996, Tables 3B, 4), and IBRD staff depends negatively on the financing share of the ten largest contributors.

[5]Frey (1997) for the EC and OECD, Vaubel (1991) for the IMF.

The economic theory of bureaucracy distinguishes four types of bureaucratic inefficiency:

 (i) The quantity of output may be too large (Niskanen 1971; Migué and Bélanger 1974) or too small (Peacock 1983).
 (ii) The quantity of inputs may be too large (Migué and Bélanger 1974).
(iii) The input price may be too high (Migué and Bélanger 1974).
(iv) The technology of production may be inefficient—e.g., too labor-intensive (Orzechowski 1977).

Since the quantity of inputs, notably of labor, can be measured most easily and accurately, the following quantitative analysis focuses on the explanation of staff size. However, staff growth is merely one aspect of a more general problem, and we expect that our results can be generalized.

Section 2 will state our hypotheses and derive the explanatory variables. Section 3 contains the empirical evidence. In the first part of Sect. 3 we present descriptive statistics and a panel-data analysis for the full sample. The second part is devoted to a panel-data analysis with interactions between the largest financing share and the ideology of the government in the main contributing country in a reduced sample. Section 4 highlights the most important empirical results and draws some policy conclusions.

2 Hypotheses

Agency slippage has a tendency to increase with the number of principals (Olson 1965: 55; Hardin 1982). Thus, bureaucratic inefficiency in international organizations is likely to rise with the number of member states. There are several reasons for this. First of all, as the number of member states grows, the financing share of each member state and hence its share in the revenue from controlling the international bureaucracy decline. The governments, the media and the citizens of the member states lose interest in monitoring the performance of the international agent.

Moreover, as the number of principals grows, each of them faces rising costs of persuading the others that action has to be taken to control the agent.

Finally, the principals' cost of information rises because the growth of membership increases the size of the organization, the average distance between principals and agents, and the language barrier.[6]

Since the increasing number of member states reduces the revenue from control and raises the cost of information and decision making for the principals, it weakens their interest in monitoring the agent and contributes to bureaucratic inefficiency. If the bureaucratic inefficiency takes the form of excess inputs, especially labor, we would expect that the staff of international organizations grows faster than their membership. In other words, ceteris paribus, the elasticity of staff with respect to membership should be larger than 1.[7]

However, a larger than unitary elasticity may also be due to technical diseconomies of scale. For example, the cost of coordination within the international organization is likely

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[6]There may also be cases in which the language cost does not increase with membership—for example, when, initially, there have been several working languages in the organization and when the new members shift the balance in favor of one of these working languages which then displaces the other(s).

[7]For a similar test see Nellor (1984) who analyzes spending on police in 75 U.S. metropolitan areas.

to rise more than proportionately.[8] Thus, a larger than unitary elasticity is not a sufficient condition for the presence of principal-agent problems.

Moreover, staff may grow faster than membership because the new members are larger than the existing members. Historically, however, the opposite tends to be the case, and this is also what public choice theory—more specifically, Olson's theory of collective action (1965)—would predict. A large country can internalize a large share of the benefits of a collective good provided by the international organization. Thus, large countries have the strongest incentive to establish the organization and to keep it going. Later entrants are likely to be smaller because they benefit less.[9] This consideration implies that the staff of international organizations should grow more slowly than the number of member states. We shall allow for the size of the member states by measuring its effect on the financing share of the largest contributor in the second part of the empirical section.

There is another reason to expect a less than proportional growth of staff: the increasing heterogeneity of the membership. The founding members are likely to have very similar preferences. If the organization turns out to be successful or powerful, additional countries will join in spite of their somewhat divergent preferences. The European (Economic) Community and Union is a good example. It started with a hard core of six central European countries. At each round of enlargement (UK, Ireland and Denmark; Southern enlargement; Sweden and Finland but not Austria; Eastern enlargement), more peripheral countries joined. As the preferences of the members become more and more heterogeneous, fewer tasks are transferred to the international organization. Its growth should slow down, and the elasticity of staff to membership should fall (Vaubel 1995: 72; Streit and Voigt 1996). This is the well-known trade-off between widening and deepening.

However, the reverse has also been suggested: disagreement among principals may be exploited by a bureaucratic agenda setter (McCubbins et al. 1989), the fear of stalemate may induce them to grant more power of discretion to the international agency (Koremenos 2002), or their disunity may impede institutional reform (Nielson and Tierney 2003).

Like all bureaucracies, international organizations may suffer from inefficiencies which are not due to principal-agent problems. According to Parkinson (1957), bureaucracies expand even when their tasks are being reduced; they grow simply because they exist or because they have grown in the past. A possible reason is that each new organization is at the same time an organized interest group employing its resources to increase its power, prestige and amenities. If so, it should be much easier to set up a new international organization than to abolish it. The establishment of the organization alters the political equilibrium. The growth of an international organization reinforces its influence and thereby facilitates further growth. In Beer's words, "centralization . . . breeds further centralization" (1973: 75). An increase of the demand for its output raises its employment by more than an equal fall of demand reduces its employment. Thus, its staff expands even if demand fluctuates around a constant mean.[10] Parkinson's Law implies a positive time trend, a positive autoregressive component of staff growth or a positive effect of staff size on staff growth.

Some further control variables are required. The efficiency of an international organization may depend on whether it is part of, or attached to, the United Nations, on the type of

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[8]If n is the number of bureaucrats in the organization, the number of, e.g., bilateral coordinating relationships among them is given by the formula $n!/2(n-2)!$ and, therefore, increases much faster than n does.

[9]Similarly, when the organization shrinks, small countries are likely to be the first to leave (as free riders), and each withdrawal causes a larger reduction of personnel. However, there are exceptions: the first country to leave EFTA (in 1972) was the UK, its largest member.

[10]For a formal exposition see Vaubel (1994: 158 f.).

countries that are members and on its location. For example, international agencies which have their seat in an industrial country may employ less staff, ceteris paribus, because they have to pay higher local salaries or because they operate in a more efficient environment.

Finally, any attempt to explain staff size in international organizations has to allow for the differences and changes in their tasks. If the principals assign more tasks to the organization, obviously its staff has to expand. The principals' willingness to do so may depend on the world business cycle and, as mentioned, on the heterogeneity of their preferences.

3 Empirical analysis

To test our hypotheses, we have tried to collect staff data from all major international organizations and for as many years as possible. Our data set covers 27 international organizations within the period 1950–2001—there are 817 observations in all. About 75,000 persons were employed by these organizations around the millennium. The complete names and data sources are listed in the appendices. Unfortunately, quite a few organizations were unable or unwilling to provide time series data about their staff.[11] If these are the least efficient organizations, our sample will be subject to selection bias, and our analysis will understate the bureaucratic problems. However, since we are focusing on the most important and largest international organizations and since these may also be the least efficient, the selection bias may also go the other way.

Table 1 shows staff size and membership in the first and last year of each period. Three of the 27 organizations (Commonwealth, EFTA and NATO) will not be included in the regressions because their membership does not increase at all over the whole time span (Commonwealth, EFTA) or increases only very recently (NATO). As reported in Table 1, the average rate of staff growth in the remaining 24 organizations was 3.2% per annum (unweighted). The rate was highest for the UN High Commissioner for Refugees (6.9%), the International Bank for Reconstruction and Development, the World Intellectual Property Organization (6.3% each) and the International Finance Corporation (6.1%).

Since the mid-1980s, however, staff has decreased in seven international organizations. As Table 2 demonstrates, the annual compound average rate of decline since 1985 has been 3.7% in the Food and Agricultural Organization (FAO), 2.1% in the UN Education and Science Organization (UNESCO), 1.2% in the International Labor Organization (ILO), 0.9% in the International Civil Aviation Organization (ICAO), 0.8% in the World Health Organization (WHO) and the World Meteorological Organization (WMO) and, out of sample, 0.3 percent in the Secretariat of the North Atlantic Treaty Organization (NATO). Moreover, Table 2 reveals that staff growth has decelerated in almost all organizations of the sample (from 4.6% prior to 1985 to 1.2% thereafter).[12] In most cases, this was due to U.S. influence.[13] Only three organizations (ESA, WIPO, BIS) raised their staff growth. Nevertheless,

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[11] These are the African Development Bank, the Arab Fund for Economic and Social Development, ASEAN, the Asia-Pacific Economic Cooperation Secretariat, the Inter-American Development Bank, the Organization of African Unity, the South Asian Association for Regional Cooperation, the UN Industrial Development Organization and the World Food Program.

[12] Table 2 contains only those 22 organizations for which staff data are available prior to 1980.

[13] In some cases, the United States cut its contributions unilaterally (e.g., to the U.N., FAO and WHO from 1986 onward). In other cases (ILO, UNESCO), the United States temporarily left the organization. The U.K. and Singapore also withdrew from UNESCO in 1984. Britain re-entered in 1997, the U.S. in 2002. Barber Conable, the new President of the World Bank, enforced substantial cuts of personnel in 1987. Probably, most international organizations experienced a structural break in the mid-1980s. We do not test for it because it is not important for our subject.

Table 1 Staff size and the number of member states, 27 international organizations

Organization	Period	Staff				Number of member states			$\varepsilon_1 =$ (4)/(7)
		First year (1)	1985 (2)	Last year (3)	Δ% p.a. overall (4)	First year (5)	Last year (6)	Δ% p.a. (7)	(8)
ADB	1981–2000	1,257	1,553	2,058	2.6	44	59	1.6	1.6
BIS	1950–2000	142	314	500	2.5	28	49	1.1	2.3
CARICOM	1973–2000	74	182	221	4.1	4	15	0.5	0.8
CoE	1980–2000	764	830	1,216	2.4	21	44	3.8	0.6
EC/EU	1968–2000	9,026	19,781	30,777	3.9	6	15	2.9	1.3
ESA	1974–2000	1,462	1,376	1,718	0.6	11	14	0.9	0.7
FAO	1963–1999	4,096	6,951	4,072	0	106	175	1.4	0
GATT/WTO	1953–2001	35	300	368	5.0	32	142	3.2	1.6
IAEA	1964–2000	661	1,964	2,136	3.3	82	130	1.3	2.5
IBRD	1953–1998	433	5,700	6,800	6.3	53	182	2.8	2.3
ICAO	1963–2000	503	875	759	1.1	101	187	1.7	0.6
IFAD	1978–2000	80	174	265	5.6	55	126	3.8	1.5
IFC	1964–2001	118	433	1,063	6.1	78	175	6.2	1.0
ILO	1963–1999	1,445	2,838	2,393	1.4	108	174	1.3	1.1
IMCO/IMO	1963–2000	43	251	274	5.1	54	157	2.9	1.8
IMF	1950–2001	444	1,646	2,976	3.8	47	184	2.7	1.5
ITU	1964–1999	372	742	770	2.1	116	188	1.4	1.5
OECD	1961–2001	1,008	(1,827[a])	2,291	2.1	20	30	1.0	2.1
UNESCO	1963–1999	2,379	3,171	2,348	0	109	188	1.5	0
UNHCR	1986–2000	2,138	n.a.	5,423	6.9	41	60	2.8	2.5
UPU	1963–2000	57	141	151	2.7	121	189	1.2	2.3
WHO	1963–1999	2,655	4,477	4,000	1.1	117	193	1.4	0.8
WIPO	1974–2001	157	288	817	6.3	36	177	6.1	3.3
WMO	1963–1999	114	295	264	2.4	125	185	1.1	2.2
Unweighted arithmetic average:					3.2			2.5	1.28
					(3)/(1)			(6)/(5)	
Sum:		29,463	n.a.	73,660	2.5	1,515	3,038	2.01	1.24
Out of sample[b]:									
Common-wealth	1992–2000	431	n.a.	305	−4.2	54	54	0	–
EFTA	1964–2000	144	71	71	−1.9	7	4	−1.5	1.3
NATO	1959–2001	603	1,134	1,083	1.4	15	19	2.4	0.6

[a]1988

[b]Not used in regression analysis

Table 2 Staff growth before and after 1985

Organization	Prior to 1985	Δ% p.a.	After 1985	Δ% p.a.	ΔΔ%
BIS	1950–85	2.3	1985–2000	3.2	0.9
CARICOM	1973–85	7.8	1985–2000	1.3	−6.5
EC/EU	1968–85	4.7	1985–2000	3.0	−1.7
ESA	1974–85	−0.5	1985–2000	1.5	2.0
FAO	1963–85	2.4	1985–1999	−3.7	−6.1
GATT/WTO	1953–85	6.9	1985–2001	1.3	−5.6
IAEA	1964–85	5.3	1985–2000	0.6	−4.7
IBRD	1953–85	8.4	1985–1998	1.4	−7.0
ICAO	1963–85	2.5	1985–2000	−0.9	−3.4
IFAD	1978–85	11.7	1985–2000	2.8	−8.9
IFC	1964–85	6.4	1985–2001	5.9	−0.5
ILO	1963–85	3.1	1985–1999	−1.2	−4.3
IMCO/IMO	1963–85	8.3	1985–2000	0.6	−7.7
IMF	1950–85	3.8	1985–2001	3.8	0
ITU	1964–85	3.3	1985–1999	0.3	−3.0
OECD	1961–88	2.3	1988–2001	1.6	−0.7
UNESCO	1963–85	1.3	1985–1999	−2.1	−3.4
UPU	1963–85	4.2	1985–2000	0.5	−3.7
WHO	1963–85	2.4	1985–1999	−0.8	−3.2
WIPO	1974–85	5.7	1985–2001	6.7	1.0
WMO	1963–85	4.4	1985–1999	−0.8	−5.2
Unweighted arithmetic average		4.6		1.2	−3.4
Out of sample:					
EFTA	1964–85	−3.3	1985–2000	0.0	3.3
NATO	1959–85	2.5	1985–2001	−0.3	−2.8

Table 1 indicates that the staff of all 24 international organizations for which the 1985 data are available, grew from 55,487 (1985) to 67,100 around the millennium, i.e., by more than 21%.

It may be of interest to compare these growth rates with the growth of civilian government employment within member states.

Table 3 reports the levels and annual rates of change of civilian government employment in the 18 OECD countries for which comparable data in or around 1966, 1985 and 2000 are available.[14] As can be seen, the unweighted average rate of personnel growth over the entire period has been much smaller at the national level (2.1% p.a.) than at the international level (3.2% p.a.). The same is true for each of the two subperiods. At the national level, too, the growth rate of personnel has declined after 1985 (from 3.2% to 0.6% p.a.). In percentage points, the decline is smaller at the national level (−2.6) than at the international level (−3.4)

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[14]On average, the time series of staff in international organizations start in 1966.

Table 3 Civilian government employment in OECD countries (in 1,000)

Country	Period	First year (1)	1985 (2)	Last year (3)	Δ% p.a. overall (4)	Prior to 1985	Δ% p.a. (5)	After 1985	Δ% p.a. (6)	ΔΔ% (7)
Australia	1966–1999	505	1112	1164	2.6	1966–1985	4.2	1985–1999	0.3	−3.9
Austria	1966–1994	334	574	714	2.8	1966–1985	2.9	1985–1994	2.5	−0.4
Belgium	1966–1998	367	618	654	1.8	1966–1985	2.8	1985–1998	0.4	−2.4
Canada	1966–1999	1108	2410	2892	2.9	1966–1985	4.2	1985–1999	1.3	−2.9
Denmark	1966–1999	264	725	785	3.4	1966–1985	5.5	1985–1999	0.6	−4.9
Finland	1966–1995	171	431	457	3.4	1966–1985	5.0	1985–1995	0.6	−4.4
France	1966–1999	2822	4501	5382	2.0	1966–1985	2.5	1985–1999	1.3	−1.2
Germany (West)	1966–1999	2886	4617	4177	1.1	1966–1985	2.5	1985–1999	−0.7	−3.2
Ireland	1966–1999	102	157	168	1.5	1966–1985	2.3	1985–1999	0.5	−1.8
Italy	1966–1999	1777	2976	3201	1.8	1966–1985	2.8	1985–1999	0.4	−2.4
Japan	1966–1999	3489	4792	5160	1.1	1966–1985	1.7	1985–1999	0.7	−1.0
Netherlands	1966–1997	399	620	646	1.6	1966–1985	2.3	1985–1997	0.3	−2.0
New Zealand	1967–1989	167	218	211	1.1	1967–1985	1.5	1985–1989	−0.8	−2.3
Norway	1966–1999	199	481	671	3.8	1966–1985	4.8	1985–1999	2.4	−2.4
Sweden	1966–1999	524	1347	1212	2.6	1966–1985	5.1	1985–1999	−0.8	−5.9
Switzerland	1966–1994	196	338	417	2.7	1966–1985	2.9	1985–1994	2.4	−0.5
Great Britain	1966–1999	3676	4997	3380	−0.3	1966–1985	1.6	1985–1999	−2.8	−4.4
USA	1966–1999	8928	14227	19209	2.3	1966–1985	2.5	1985–1999	2.2	−0.3
Unweighed arithmetic average					2.1		3.2		0.6	−2.6

but proportionately it is larger at the national level (-81%) than at the international level (-74%).

Over the whole period, the number of member states increased on average by 2.5%, i.e., much less than staff, in the 24 international organizations. Dividing average staff growth by average membership growth, we obtain an elasticity (ε_1) of 1.28. The largest elasticities, e.g., elasticities larger than 2.0, are observed in UNHCR, IAEA, BIS, UPU, WMO and OECD (in this order).

Alternatively, adding all staff in the initial and the final years, respectively, and adding all memberships in the same way, we see that membership doubled, whereas staff expanded by a factor of 2.5. Computed in this way, the elasticity of staff with respect to membership is 1.24.

However, the larger than unitary elasticity may not only be due to the growth of membership. As already noted, staff size is also affected by the tasks conferred on the international organizations and a host of other factors. To allow for changes in tasks we try two different methods.

Where possible, we use output proxies. In the case of the IMF, the IBRD and the IFC, these are simply the number of agreements, projects or programs, respectively. In the case of the European Union, we add the number of directives, regulations, decisions, international agreements, recommendations and opinions, EU court decisions, White and Green Papers.

For the other organizations, we estimate time series regressions and use the unexplained residuals to discover important changes in tasks which are then captured by dummies.[15]

In Table 4, staff (ln) is regressed on the number of member states (ln), the task proxies and organizational dummies. The sample contains 817 annual observations. As the time periods differ among the organizations, the panel is unbalanced. We use panel-corrected standard errors as has been suggested by Beck and Katz (1995). The first column of Table 4 reports the results (except for the intercept and dummies[16]). As can be seen, the regression coefficient of the membership variable ($\ln M_t$) is 1.36. This is larger than one at the one percent level of significance.

In column 2, we add three lags of the dependent variable.[17] The coefficient of the membership variable remains significantly positive but the long-run elasticity drops to 0.82. The long-run elasticity is also smaller than one if, instead of, or in addition to, the three lags, time dummies are added (columns 3 and 4).

In columns 5 and 6, the time dummies are replaced by an exponential time trend (t) and its square (t^2). Without the lags (in column 5), the regression coefficient of the membership variable is 1.02. This is significant but not significantly larger than one. The coefficient of t is

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[15]This procedure is based on the assumption that changes in tasks and changes in membership are not closely correlated because simultaneous "deepening" and "widening" would overstrain the organization's capacity for change. A rudimentary partial-adjustment model is estimated in each case:

$$\ln S(t) = b0 + b1 \ln M(t) + b2 \ln S(t-1) + u,$$

S is the number of staff and M the number of member states. The estimates are not adjusted for autocorrelation of the residuals because the autocorrelated residuals are potential indicators of changes in tasks. Task dummies have been defined wherever predicted staff deviated from actual staff in the same direction for a substantial number of years and where these deviations could be explained by important changes in tasks. They are listed in Appendix 2. The estimating equations and the residuals are not reported because they serve a purely heuristic purpose. They are available on request.

[16]The coefficients of the organization dummies cannot be interpreted because they may reflect differences in tasks or differences in efficiency.

[17]The optimal lag length has been chosen with Akaike's information criterion.

Table 4 Staff as a function of membership, panel data, constant elasticity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Number of member states (ln)	1.36	0.09	0.92	0.043	1.02	0.085	0.06
	(0.00)	(0.00)	(0.00)	(0.16)	(0.00)	(0.00)	(0.06)
t					0.053	0.005	
					(0.00)	(0.00)	
t^2					−0.001	−0.0001	
					(0.00)	(0.00)	
Task proxies	yes	yes	yes	yes	yes	yes	yes
Organization dummies	yes	yes	yes	yes	yes	yes	no
Time dummies	no	no	yes	yes	no	no	yes
Lagged endogenous variables:							
$t-1$		1.07		1.08		1.06	1.03
		(0.00)		(0.00)		(0.00)	(0.00)
$t-2$		−0.04		−0.06		−0.04	−0.06
		(0.00)		(0.31)		(0.40)	(0.30)
$t-3$		−0.14		−0.13		−0.15	−0.08
		(0.00)		(0.00)		(0.00)	(0.02)
Long-run elasticity of number							
of member states	1.36	0.82	0.92	0.39	1.02	0.65	0.55
Procedure	OLS	OLS	OLS	OLS	OLS	OLS	GMM
Obs.	817	748	817	748	817	748	708
R^2	0.976	0.998	0.983	0.998	0.981	0.998	

p-values in parentheses

significantly positive (5.3% per annum) which is consistent with Parkinson's Law. However, as the significantly negative coefficient of t^2 demonstrates, the rate of staff growth decelerated over time. This indicates that the growth of staff is not positively correlated with the level of staff. As can be shown, the simple correlation is significantly negative in most cases.

In column 7, the basic equation (column 1) is re-estimated with the lagged dependent variable and in first differences according to the Generalized Method of Moments (GMM) estimator suggested by Arellano and Bond (1991). Once more, the regression coefficient of the membership variable is significantly positive but the long-run elasticity is smaller than one.[18]

Taken together, the results of Table 4 demonstrate that the elasticity of staff with respect to membership is only significantly larger than one if the non-stationary component in the staff series is not removed or accounted for. The larger than unitary elasticity in column 1 is due to a common trend of $\ln S_t$ and $\ln M_t$. This was to be expected but it implies that the t-statistics may not conform to the t-distribution. Thus, we cannot be sure that the difference between the measured elasticity of 1.36 and unity is statistically significant.

In Table 5, we replace the organizational dummies by seven cross-sectional variables:

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[18]The Sargan test of over-identifying restrictions and the Arellano-Bond test of second-order autocorrelation of the residuals accept the specification at conventional levels of significance.

Table 5 Staff as a function of membership and other variables, panel data

	(1)	(2)
Number of member states (ln)	0.81	−0.036
	(0.00)	(0.00)
Seat dummies:		
United States	−1.39	0.03
	(0.00)	(0.03)
Switzerland	−1.01	0.009
	(0.00)	(0.17)
Rest of Europe	−0.20	0.002
	(0.06)	(0.80)
UN organization	1.00	0.002
	(0.00)	(0.81)
Share of industrial countries	0.02	0.0006
	(0.00)	(0.00)
Share of communist countries	0.01	0.0001
	(0.00)	(0.00)
Coefficient of variation of per capita income	−1.20	0.095
	(0.00)	(0.00)
Real growth in industrial countries	−0.02	0.002
	(0.00)	(0.15)
EU output proxy	0.001	0.00
	(0.00)	(0.18)
IBRD output proxy	0.01	0.00
	(0.00)	(0.14)
IFC output proxy	0.002	0.00
	(0.00)	(0.81)
IMF output proxy	0.05	0.00
	(0.00)	(0.76)
ESA dummy	0.36	−0.02
	(0.00)	(0.09)
ILO dummy	1.70	0.006
	(0.00)	(0.65)
IMCO dummy	−2.44	0.14
	(0.01)	(0.00)
Lagged endogenous variables:		
$t-1$		1.20
		(0.00)
$t-2$		−0.06
		(0.29)
$t-3$		−0.15
		(0.00)
Obs.	817	748
R^2	0.523	0.997

p-values in parentheses

Table 6 Characteristics of international organizations

Organization	Seat	Median year	Industrial countries (percent)	Communist countries (percent)	Dispersion of per-capita income[a]
ADB	Philippines	1991	37	10	1.11
BIS	CH	1976	65	21	0.51
CARICOM	Guyana	1986	0	0	0.62
CoE	F	1990	100	0	0.50
EC/EU	B	1984	100	0	0.31
ESA	F	1987	100	0	0.34
FAO	I	1981	16	9	1.45
GATT/WTO	CH	1977	29	7	1.16
IAEA	AU	1987	24	10	1.36
IBRD	US	1976	18	3	1.37
ICAO	CAN	1982	16	9	1.46
IFAD	I	1989	16	4	1.61
IFC	US	1983	19	1	1.42
ILO	CH	1981	15	7	1.46
IMCO/IMO	UK	1982	21	6	1.34
IMF	US	1976	18	4	1.37
ITU	CH	1982	15	9	1.45
OECD	F	1981	100	0	0.41
UNESCO	F	1981	17	6	1.46
UNHCR	CH	1993	43	2	1.11
UPU	CH	1981	15	10	1.46
WHO	CH	1981	16	10	1.45
WIPO	CH	1988	13	11	1.47
WMO	CH	1981	13	8	1.45

[a]Coefficient of variation

– three seat dummies which take the value 1 if the international organization has its seat in the United States, Switzerland or the rest of Europe, respectively,
– a dummy for UN organizations,
– the shares of industrial or communist countries among the member states, respectively, in the median year of the time series at hand and
– the coefficient of variation of per-capita income of the member states in the median year of the respective time series.

The data of these cross-sectional variables are reported in Table 6. We do not use logarithms because this would reduce the coefficient of determination in column 1. For computational economy, the composition of membership has been analyzed only in the median year because the cross-sectional variability is likely to be much larger than the intertemporal variability.

Since our additional variables have either only a cross-sectional or only a time dimension, no organization or time dummies are included. However, we report a version that contains

three lags of the dependent variable. Moreover, the output proxies and task dummies are included, and their coefficients are reported.

Table 5, column 1, indicates that the staff of an international organization is significantly smaller if its seat is in the United States or Switzerland. Moreover, location in the rest of Europe has a marginally significant negative effect. This may be due to higher labor costs or the mentality of the host country.

UN organizations employ significantly more staff. Surprisingly, the correlations between staff size and the share of industrial or communist countries are significantly positive. Apparently, the representatives of these countries are more willing to pay.

As expected, the coefficient of variation of per-capita income has a significantly negative effect on staff size, i.e., heterogeneity of membership limits the size of the organization. Surprisingly, real growth in the industrial countries reduces staff significantly. All task proxies take significant coefficients and, except for the IMCO dummy, all have the expected sign.

The coefficient of the membership variable is smaller than one (0.81). But for estimating the membership effect, Column 1 of Table 5 is less reliable than Column 1 of Table 4 because it replaces the organization dummies by specific cross-sectional variables.

Column 2 of Table 5 adds three lags of the endogenous variable. The short and long-run effect of the size of membership is now significantly negative, and ten of the other variables lose their significance. This confirms the impression gained from Table 4 that the theoretical relationship between staff and membership cannot be identified if the non-stationary component of the staff series is accounted for by lags of the dependent variable, time dummies or trends.

Table 5 does not contain an analysis in first differences because the relevant explanatory variables do not vary over time.

As explained in Sect. 1, the growing number of member states may cause bureaucratic problems in several ways:

1. It reduces each member's benefit of controlling the international organization.
2. It increases each member's cost of negotiation.
3. It raises each member's cost of information.
4. It may generate diseconomies of scale.

To isolate the first of these four channels, we now allow for the financing share of the largest member state, i.e., the largest national contribution as a percentage of all contributions.[19] Since data on contributions are more difficult to come by—the BIS, for example, refuses to disclose them, the sample reduces to 17 organizations. If the growth of membership leaves the absolute contribution of the largest member state unchanged, the change of its percentage contribution should be inversely proportional to the change of membership. The simple correlation between the largest percentage contribution and the number of member states is indeed significantly negative ($r = -0.24$) but not very large.

Table 7 displays the percentage contributions in the initial and the final year. The most rapid decline occurred in the IFC and the IBRD.[20] But while the largest percentage contri-

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[19]This is a simplification, of course. Vaubel (1991, 1996) uses the share of the ten largest contributors. Nielson and Tierney (2002) compute the Herfindahl–Hirschman index of the largest member states accounting for 60% of the votes. In the case of 17 international organizations, computational economy requires a simpler proxy. Nielson and Tierney (2003: 252) hypothesize that "pressure on the agent from any actor other than the proximate principal will not result in significant behavioral change".

[20]For the IBRD, Vaubel (1996) confirms in a more fully specified estimate that the percentage contribution of the ten largest member states has a significantly negative effect on real administrative expenditure.

Table 7 Largest contribution in percent

Organization	Period	First year (1)	Last year (2)	Rate of change p.a. (3)	Staff growth p.a. (4)	ε_2 $= (4)/(3)$
EC/EU	1971–1999	34	26	−1.0	4.2	−4.2
FAO	1963–1987	32	25	−1.0	3.0	−3.0
GATT/WTO	1953–2000	17	16	−0.1	5.1	−51.0
IAEA	1963–1987	32	26	−0.9	4.1	−4.6
IBRD	1953–1987	35	20	−1.6	8.0	−5.0
ICAO	1963–2000	32	25	−0.7	.2	−0.3
IFC	1964–1987	36	24	−1.7	6.6	−3.9
IMF	1950–2001	34	17	−1.3	3.9	−3.0
UNESCO	1963–1999	31	17	−1.7	0	0
WHO	1964–1988	31	25	−0.9	1.9	−2.1
						−7.71[a]
Average		24	19	−1.1	3.7	−3.36[b]
Organizations experiencing positive rate of change:						
EFTA	1964–2000	30	49	0.5		
IFAD	1978–1987	19	20	0.6		
IMCO/IMO	1968–1987	11	12	0.5		
ITU	1964–1999	05	07	1.0		
UPU	1963–2000	03	06	1.9		
WIPO	1974–1987	05	06	1.4		
WMO	1963–1999	24	25	0.1		

[a]Average of elasticities

[b]Elasticity of average rates of change

bution declined in ten organizations, it increased in seven. The unweighted average of the rate of decline in the first group is −1.1% per annum. With an average staff growth of 3.7% p.a. in this sample, this implies an elasticity (ε_2) of 3.36, i.e., larger than 1. For the group of seven organizations in which the largest percentage contribution increased, the elasticity is, of course, positive. For both groups together, the unweighted average elasticity is exactly unitary and negative.

Once more, the descriptive analysis is followed by a pooled time-series/cross-section regression and, once more, EFTA is omitted from the sample. If the largest financing share is simply added to the regressions of Table 4, it takes a positive coefficient which is contrary to the hypothesis. The explanation is probably that U.S. monitoring of international organizations intensified in the second half of the period when the financing share of the largest contributor—in almost all cases the U.S.—showed a decline. The increase of U.S. monitoring was due to political changes in the U.S., especially the advent of the Reagan administration in 1980. Thus, we interact the U.S. financing share with U.S. partisan or programmatic variables in Table 8.

Table 8 Staff as a function of membership, largest financing share and party orientation panel data, 17 international organizations, constant elasticities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Number of member states (ln)	1.41 (0.00)	0.87 (0.00)	0.93 (0.00)	1.41 (0.00)	0.87 (0.00)	0.17 (0.00)	1.43 (0.00)	0.84 (0.00)	0.16 (0.00)
U.S. exit dummy	−1.85 (0.00)	−1.39 (0.01)	−0.29 (0.05)	−0.77 (0.00)	−0.66 (0.00)	−0.17 (0.00)	−0.44 (0.00)	−0.82 (0.00)	−0.17 (0.00)
Interaction (ln) of largest financing share with:									
* dummy for U.S. membership	−0.05 (0.07)	0.003 (0.90)	−0.02 (0.08)						
* dummy for U.S. membership * dummy for Republican U.S. presidency				−0.04 (0.00)	−0.02 (0.00)	−0.004 (0.28)			
* dummy for U.S. membership/emphasis on international peace in presidential party							−0.05 (0.03)	0.02 (0.04)	−0.003 (0.75)
* dummy for U.S. non-membership (= Germany as largest contributor)	−0.62 (0.00)	−0.37 (0.13)	−0.09 (0.17)						
* dummy for U.S. non-membership * right wing government in main contributing country				−0.08 (0.24)	−0.03 (0.65)	−0.03 (0.10)			
* dummy for U.S. non-membership/emphasis on international peace in governing parties of main contributing country							−0.03 (0.54)	−0.08 (0.04)	−0.03 (0.00)
t		0.054 (0.00)			0.051 (0.00)			0.058 (0.00)	
t^2		−0.001 (0.00)			−0.001 (0.00)			−0.001 (0.00)	

Table 8 (*Continued*)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Task proxies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Organization dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Time dummies	no	no	yes	no	no	yes	no	no	yes
Lagged dependent variables	no	no	3	no	no	3	no	no	3
Obs.	484	484	446	484	484	446	484	484	446
R^2	0.9885	0.9908	0.9982	0.9888	0.9908	0.9982	0.9884	0.9908	0.9982

p-values in parentheses

We distinguish among international organizations as to whether they include the U.S. as a member and the largest contributor or not, i.e., we estimate separate regression coefficients for the U.S. financing share (where and when the U.S. is a member) and for the financing share of another country if that country is the largest member (column 1). In our sample, there is only one international organization which never included the U.S., namely the EU, and the largest contributor is Germany. We also add a dummy for periods in which the U.S. temporarily left and stayed outside an international organization (UNESCO) because any U.S. exit exerts downward pressure on staff size even though the largest financing share drops.[21]

Column 1 of Table 8 reveals that the U.S. financing share has a negative but marginally insignificant effect on staff size while the German financing share in the EC/EU has a significantly negative effect. The coefficient of the dummy for U.S. exit from UNESCO is significantly negative as expected. The membership coefficient is significantly larger than 1. With the exception of the U.S. exit dummy, however, these significant results disappear when the non-stationary component is accounted for by time trends, time dummies and lags of the dependent variable (columns 2 and 3).

In column 4, the largest financing share is not only separated according to whether the U.S. or Germany is the largest contributor. It is also interacted with the partisan orientation of the government (right wing = 1). Both regression coefficients are negative but only the U.S. coefficient is significant. It remains significant when the time trends are included (column 5) but it turns insignificant when the battery of time dummies is added (column 6). This is not surprising because a partisan change in the U.S. presidency affects almost all international organizations at the same time so that the interaction varies mainly over time.

If, in column 4, the dummy for Republican U.S. presidents is not interacted (multiplied) with the U.S. financing share, it does not take a significantly negative coefficient. Thus, the staff of international organizations of which the U.S. is a member does not simply depend on the party of the president but on the joint influence of party politics and the financing share of the U.S.

In column 7, the largest financing share is not interacted with a dummy for the governing parties but with an index coding the emphasis on international peace in the governing parties' programs (Budge et al. 2001). Since the main contributor's commitment to international cooperation should raise rather than reduce the staff of international organizations, the largest financing share is divided by this index. Once more, the effect is significantly negative for the U.S. but not for Germany (in the EC/EU). If the non-stationary component in the staff series is accounted for by time trends or time dummies and lags, the negative effect disappears for the U.S. but—surprisingly—turns significant in the case of Germany (columns 8 and 9).

Explanatory power and the significance of the interaction effect are larger in equation 4 than in equation 7. Thus, parties seem to matter more than their election programs—in both the U.S. and Germany. In any case, the incentive to monitor combined with the party orientation of the government seems to contribute to explaining why the staff of international organizations expands faster than the number of member states.

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[21]The decrease in the number of member states does not adequately capture this effect. Note that U.S. exit from ILO does not require a dummy because, owing to lack of data about financing shares, ILO could not be included in the sample.

4 Conclusion

Our empirical analysis shows that there is no "iron law" of bureaucratic growth in international organizations. Staff numbers may decline as was the case in the FAO, ICAO, ILO, UNESCO and WHO. Moreover, staff growth has decelerated on average since the mid-1980s when the Reagan administration clamped down on many international organizations. As our final regression analysis indicates, staff size is not simply a function of the Presidential party or the financing share (the incentive to monitor) on the part of the U.S. Staff size depends on the interaction between these two factors. If there is a Republican president, a clampdown on staff growth in international organizations is possible even though the U.S. financing share has been declining. If the United States leave an international organization, its staff shrinks significantly. As we have also seen, staff size can be reduced by keeping the organization separate from the United Nations and by locating its head office in an industrial country, notably the U.S. or Switzerland.

In any case, since staff size depends negatively on (an interaction with) the financing share of the largest contributor (his incentive to monitor), there is evidence of a principal-agent problem.

Appendix 1

List of international organizations

ADB:	Asian Development Bank
BIS:	Bank for International Settlements
CARICOM:	Caribbean Common Market Secretariat
Commonwealth:	Commonwealth of Nations
CoE:	Council of Europe
EC / EU:	European Community / European Union
EFTA:	European Free Trade Area
ESA:	European Space Agency
FAO:	Food and Agricultural Organization
GATT / WTO:	General Agreement on Tariffs and Trade / World Trade Organization
IAEA:	International Atomic Energy Organization
IBRD:	International Bank for Reconstruction and Development
ICAO:	International Civil Aviation Organization
IFAD:	International Fund for Agricultural Development
IFC:	International Finance Corporation
ILO:	International Labor Organization
IMCO / IMO:	International Maritime (Co-operation) Organization
IMF:	International Monetary Fund
ITU:	International Transport Organization
NATO:	North Atlantic Treaty Organization
OECD:	Organization for Economic Co-operation and Development
UNESCO:	United Nations Education and Science Organization
UNHCR:	United Nations High Commissioner for Refugees
UPU:	Universal Postal Union
WHO:	World Health Organization
WIPO:	World Intellectual Property Organization
WMO:	World Meteorological Organization

Appendix 2

List of task dummies

ESA:	from 1985:	Ariane V
ILO:	from 1965:	International Training Center
IMCO / IMO:	from 1967:	Legal Committee
ITU:	from 1993:	new constitution

Appendix 3

Data sources

A) Yearbook of United Nations: Staff, member states and financing shares of the following organizations: FAO, IAEA, ICAO, IFAD, ILO, IMCO / IMO, IMF, ITU, UNESCO, UPU, WHO, WIPO, WMO.

B) Data obtained directly from the organization: ADB, BIS, CARICOM, Commonwealth, CoE, EC / EU, EFTA, ESA, GATT / WTO, NATO, OECD, UNHCR.

C) Other source (staff and contributions):
ADB: Annual Report; Yearbook of International Organization.
BIS: Annual Report; Yearbook of International Organization.
EC / EU: Budget vademecum.
EFTA: Annual Report; Yearbook of International Organization.
ESA: Annual Report.
GATT / WTO: Annual Report; Budget Estimates.
IBRD: Annual Report; Yearbook of International Organization.
IFC: Annual Report.

D) Civilian government employment: Cusack (2004).

E) Task Proxies:
EU: Alesina et al. (2001), Table 5 (as the authors have collected and report only five-year averages, the annual data have been derived by linear interpolation).
IBRD, IFC, IMF: Annual Reports.

F) Seat: The Europa Directory of International Organizations, London 1999.

G) Per capita income: Alan Heston, Robert Summers and Bettina Aten, Penn World Table Version 6.1, Center for International Comparisons at the University of Pennsylvania (CICUP), October 2002.

H) Real growth in the industrialized countries: OECD Statistical Compendium (2001) and OECD Economic Outlook (2002). For the OEEC until 1960, we have approximated this variable by computing a weighted average of the growth rates of the six largest economies (U.S., Canada, Japan, Germany, France and the U.K.).

I) Emphasis on international peace in pre-election program of governing party: Budge et al. (2001). In the case of coalition governments, the junior partner was given a weight of one third.

References

Alesina, A., Angeloni, I., & Schuknecht, L. (2001). *What does the European Union do?* Working Paper 8647, National Bureau of Economic Research.

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Review of Economic Studies*, *58*, 277–297.

Beck, N., & Katz, J. N. (1995). What to do (and not to do) with time-series cross-section data. *American Political Science Review*, *89*, 634–647.

Beer, S. (1973). The modernization of American federalism. *Publius*, *3*, 49–95.

Budge, I., Klingenmann, H.-D., Volkens, A., Bara, J., & Tannenbaum, E. (2001). *Mapping policy preferences: estimates for parties, electors, and governments 1945–98*. Oxford: Oxford University Press.

Cooper, R. (1983). Panel discussion. In J. Williamson (Ed.), *IMF conditionality* (pp. 569–577). Cambridge: Institute for International Economics.

Cusack, T. R. (2004). *Data on public employment and wages for 21 OECD countries*. Berlin: Wissenschaft-szentrum.

Dreher, A. (2003). The influence of elections on IMF program interruptions. *Journal of Development Studies*, *39*, 101–120.

Dreher, A. (2004). The influence of IMF programs on the re-election of debtor governments. *Economics & Politics*, *16*(1), 53–75.

Dreher, A., & Vaubel, R. (2004). Do IMF and IBRD cause moral hazard and political business cycles? Evidence from panel data. *Open Economies Review*, *15*, 5–22.

Frey, B. S. (1984a). The public choice view of international political economy. *International Organization*, *38*, 199–223.

Frey, B. S. (1984b). *International political economics*. Oxford: Martin Robertson.

Frey, B. S. (1997). The public choice of international organizations. In D. Mueller (Ed.), *Perspectives on public choice* (pp. 106–123). Cambridge: Cambridge University Press.

Frey, B. S., & Stutzer, A. (2006a). Strenghening the citizens' role in international organizations. *The Review of International Organizations*, *1*, 27–44.

Frey, B. S., & Stutzer, A. (2006b). Reply to Gordon Tullock. *The Review of International Organizations*, *1*, 47–48.

Hardin, R. (1982). *Collective action*. Baltimore: Johns Hopkins University Press.

Koremenos, B. (2002, May). *Delegation to international organizations*. Memo prepared for the Conference on Delegation to International Organizations, Brigham Young University, Utah.

Lyne, M., Nielson, D., & Tierney, M. (2002, Dec.). *Principal problems within international organizations*. Paper presented at the Harvard Workshop on Delegation to International Organization, Cambridge.

McCubbins, M. D., Noll, R. G., & Weingast, B. R. (1989). Structure and process, politics and policy: Administrative arrangements and the political control of agencies. *Virginia Law Review*, *75*, 431–482.

Migué, J.-L., & Bélanger, G. (1974). Toward a general theory of managerial discretion. *Public Choice*, *17*, 27–43.

Nellor, D. C. (1984). Public bureau budgets and jurisdiction size. *Public Choice*, *42*, 175–183.

Nielson, D. L., & Tierney, M. (2002, April). *Principals and interests: Agency theory and multilateral development lending*. Paper presented at the Midwest Political Science Association meeting, Chicago.

Nielson, D. L., & Tierney, M. (2003). Delegation to international organizations: Agency theory and World bank environmental reform. *International Organization*, *57*, 241–276.

Niskanen, W. A. (1971). *Bureaucracy and representative government*. Chicago: University of Chicago Press.

Olson, M. (1965). *The logic of collective action*. Cambridge: Harvard University Press.

Orzechowski, W. (1977). Economic models of bureaucracy: Survey, extensions and evidence. In T. Borcherding (Ed.), *Budgets and bureaucrats* (pp. 229–259). Durham: Duke University Press.

Parkinson, C. N. (1957). *Parkinson's law, or the pursuit of progress*. Harmondsworth: Penguin.

Peacock, A. (1983). Public X-inefficiency: Informational and institutional constraints. In H. Hanusch (Ed.), *Anatomy of government deficiencies* (pp. 125–138). Heidelberg: Springer.

Przeworski, A., & Vreeland, J. R. (2000). The effect of IMF programs on economic growth. *Journal of Development Economics*, *62*, 385–421.

Sandler, T. (1992). *Collective action*. Ann Arbor: The University of Michigan Press.

Streit, M. E., & Voigt, S. (1996). Toward ever closer union – or ever larger? Or both? Entry to the European Union from the perspective of constitutional economics. In D. Schmidtchen & R. Cooter (Eds.), *Constitutional law and economics of the European Union* (pp. 223–247). Cheltenham: Edward Elgar.

Tullock, G. (2006). Comment on strengthening the citizens' role in international organizations by B. S. Frey and A. Stutzer. *Review of International Organizations*, *1*, 45–46.

Vaubel, R. (1986). A public choice approach to international organization. *Public Choice*, *51*, 39–58 (Reprinted and revised in R. Vaubel & T.D. Willett (Eds.), *The political economy of international organizations. A public choice approach* (pp. 27–45), Boulder: Westview Press).

Vaubel, R. (1991). The political economy of the International Monetary Fund: A public-choice analysis. In R. Vaubel & T.D. Willett (Eds.), *The political economy of international organizations. A public choice approach* (pp. 204–244). Boulder: Westview Press.

Vaubel, R. (1994). The political economy of centralization and the European community. *Public Choice*, *81*, 151–190.
Vaubel, R. (1995). *The centralization of Western Europe*. London: Institute of Economic Affairs.
Vaubel, R. (1996). Bureaucracy at the IMF and the World Bank. *The World Economy*, *19*, 195–210.
Vaubel, R. (2006). Principal-agent problems in international organizations. *Review of International Organizations*, *2*(1), 125–138.
Vreeland, J. R. (1999). The IMF: Lender of last resort or scapegoat? Yale University.