Comparing the Information Contents of IMF and OECD Macroeconomic Forecasts*

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Abstract

The paper compares the information contents of two of the most widely used sets of macroeconomic forecasts, namely, the macroeconomic forecasts produced by the International Monetary Fund (IMF) and the Organization for Economic Cooperation and Development (OECD). By testing whether the release of public sector forecasts had systematic impact on subsequent revisions in Consensus (private sector) forecasts, the paper finds that, for the period 1994–2003, private forecasters reacted to the information provided by the IMF on regions (such as non–G7 Europe and Latin America) for which the IMF's forecasts are known to be more accurate or about which information is less available. What determines the information value of public sector forecasts, however, appears complex. The OECD's impact was limited in influencing private sector forecasts for the G7 countries, though it had a superior forecast performance than the IMF. Some herding behavior was observed among private sector forecasters.

Keywords: Macroeconomic forecasting, evaluating forecasts, bootstrapping, herding behavior, IMF forecasts, OECD forecasts, Consensus forecasts, information content of macroeconomic forecasts.

JEL Classification: C53, E17

I. Introduction

This paper compares the information contents of the macroeconomic forecasts produced by two major public sector forecasters, the International Monetary Fund (IMF) and the Organization for Economic Cooperation and Development (OECD), during 1994–2003. In particular, it first provides an overall assessment of the relative accuracy of IMF, OECD and Consensus (private sector) forecasts, and then tests whether the release of public sector forecasts had systematic impact on subsequent revisions in Consensus forecasts[1]. The paper adds to the literature by shedding light on whether public sector institutions provide new information to private sector forecasters of macroeconomic variables.

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[1] Consensus forecasts are provided by Consensus Economics, Inc., a U.K.–based private company that has regularly been publishing the mean forecasts of major private sector forecasters since 1990.

The uniqueness of IMF macroeconomic forecasts comes from the near–universal character of the institution[2]. The IMF's forecasts therefore reflect both its knowledge of individual economies (which it monitors on a regular basis) and its understanding of the interlinkages between them. The IMF's knowledge of economic developments and prospects in individual countries may not be as intimate as that of national authorities or local forecasters, but it has a distinct advantage in understanding how they interact with each other across borders. Because forecasts for all countries are produced simultaneously, moreover, IMF forecasts presumably satisfy the general equilibrium constraints that are binding for the world economy, at least to a greater extent than comparable forecasts produced by other institutions. As such, IMF forecasts receive wide attention when they are released to the public[3].

Likewise, the OECD's forecasts share the advantage of having multilateral perspectives. Unlike the IMF, however, its membership is much smaller, limited mostly to industrial countries. Given their more limited coverage of countries, it is therefore of interest to investigate whether the OECD's forecasts are in some sense outperformed by the IMF forecasts, even for the OECD member countries. As a larger question, we are also interested in knowing whether private sector forecasters find value in the forecasts produced by public international organizations. Batchelor (2001) approached the question of usefulness of IMF and OECD forecasts from the standpoint of their ability to improve the accuracy of private sector forecasts. In this paper, we approach this question in terms of whether or not private sector forecasts have a tendency to move towards IMF or OECD forecasts when they are released. In pursuing this line of investigation, we also incorporate the possibility of herding behavior, as noted previously by Blix et al. (2001) and Gallo et al. (2002) in the context of private sector forecasters.

The paper is organized as follows. Section II explains the data used in this study. Section III provides an overall assessment of IMF and OECD macroeconomic forecasts by comparing them to each other as well as to the forecasts provided by Consensus Economics, Inc. Section IV tests the information content of IMF and OECD forecasts by identifying their impact on Consensus private sector forecasts. Section V presents concluding remarks. Finally, Appendix I lists the sample countries, Appendix II explains the matching of Consensus forecasts with IMF and OECD forecasts, Appendix III provides a breakdown of Consensus forecasters used in our restricted sample, and Appendix IV reports the results obtained from bootstrapped data.

II. Data

The IMF and OECD regularly publish macroeconomic forecasts on member and other countries in their semiannual reports, *World Economic Outlook* (WEO) and *OECD Economic Outlook* (OEO), respectively; the WEO is released in or around April and September, and the OEO in or around June

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[2] The IMF has over 180 member countries.

[3] According to data supplied to the authors by the IMF's External Relations Department, during 2005, there were about 3500 press references world–wide to the semiannual *World Economic Outlook* report. It is believed that many of these references related to the macroeconomic forecasts released therein.

and December. We use the WEO's April issues to obtain the IMF's current–year forecasts, and the September issues for its one year–ahead forecasts; likewise, we use the OEO's June issues to obtain the OECD's current–year forecasts, and the December issues for its year–ahead forecasts.

For the purpose of this study, we focus our attention on real GDP growth and inflation forecasts for 1994–2003 (1991–2003 for relative accuracy tests). The time series of the realized values are taken from the April 2004 issue of the WEO for both growth and inflation[4]. For the OECD's inflation forecasts, we use the time–series of the GDP–based private consumption price index, taken from the OEO. We obtain the realized values of the OECD inflation forecasts from the December 2005 issue of the OEO.

In order to secure a balanced set of data with at least 10 observations for each country, we have restricted the sample to 33 countries for which Consensus Economics has consistently provided forecasts at least since 1994, including G7 countries, 12 countries in (non–G7) Europe, 7 countries in the Asia–Pacific region, and another 7 countries in Latin America (see Appendix I). Although Consensus Economics now provides forecasts for Eastern European countries, we do not include this region because the series are not long enough to provide 10 observations. Because the OECD produces forecasts for a smaller set of countries, tests involving OECD forecasts are naturally based on a subset of the 33 countries. In tests of relative accuracy, Consensus forecasts are chosen so as to best match the timing of the release of IMF and OECD forecasts (see Appendix II).

III. Tests of Relative Accuracy of IMF and OECD Forecasts

Both IMF and OECD forecasts have been a subject of considerable research. As to IMF forecasts, most previous research has generally found them little different from private sector forecasts (Artis, 1997; Loungani, 2000; Timmermann, 2006), but some idiosyncratic differences have also been noted in a few cases. Timmermann (2006), for example, found that the IMF's current–year growth forecasts were generally less biased than Consensus forecasts, but the reverse was true for one year–ahead forecasts. Batchelor (2001) reported that, during 1990–99, Consensus mean forecasts were somewhat more accurate and less biased than IMF (as well as OECD) forecasts (see also Juhn and Loungani, 2002).

It is well known in the literature that an aggregation of individual forecasts tends to perform better than its components (Clemen, 1989). Comparing to individual (as opposed to Consensus mean) forecasts, Blix et al (2001) concluded that IMF forecasts were less accurate than those produced by about 70 percent of private forecasters for the United States, Japan, France, Germany, Italy, and Sweden during the 1990s. The corresponding share of private forecasters who performed better than the OECD (for growth forecasts only) was around 60 percent. Among the private forecasters, these

[4] Some studies have used the actual numbers obtained from the next available publication for each year. A formal test indicates that the difference between the actual numbers so obtained and the April 2004 numbers is not statistically significant.

authors report that only 30 percent of them performed better than the Consensus mean. This may explain part of the reason why Consensus mean forecasts are often found to perform better than IMF or OECD forecasts.

An additional factor that works against public sector forecasts may be the possible political constraints. These public institutions may well share the tendency of national governments to be upbeat about the performance of their economies. In the case of the IMF, for example, it has been found that forecasts are optimistic for countries that are under its lending programs. These weaknesses of public sector forecasts may in part be offset by their stronger multilateral orientation and lack of potential profit incentives. This is an empirical question.

A quick review of the mean errors (MEs) of Consensus, IMF, and OECD forecasts suggests that, during 1991–2004, the current–year forecasts had an overall pessimistic tendency—indicated by negative average errors for growth and positive average errors for inflation (Table 1). The pessimistic tendency for growth is particularly pronounced for larger economies. In the case of one year–ahead forecasts, on the other hand, the pessimism for growth is much less pronounced, with the notable exception of the United States (Table 2). In fact, for most countries, the forecasts even take on an optimistic tendency when the forecast horizon is lengthened. Inflation forecasts for the most part remain pessimistic.

In terms of root mean squared errors (RMSEs), the OECD's current–year forecasts for growth outperformed the others in 19 out of the 23 countries (for which the OECD provided forecasts)[5]. These observations do not change whether the OECD forecasts are compared with the May or April Consensus forecasts[6]. For inflation, the Consensus current–year forecasts outperformed the OECD forecasts in 14 countries. In either case, the IMF's growth forecasts performed rather poorly, except in non–G7 European countries where they outperformed the Consensus forecasts in 9 out of the 12 cases (though they did not outperform the OECD forecasts, except for the Netherlands and Portugal). The results for inflation are more mixed, but the IMF was the worst performer in 10 of the 23 countries for which all three forecasters provided forecasts.

Turning to the year–ahead inflation forecasts, the IMF's performance improves relative to the Consensus forecasts for G7 countries and the Asia–Pacific region. The IMF's forecasts for five of the G7 countries and six of the 7 Asia–Pacific countries are better than the Consensus mean forecasts. Relative to the OECD, the performance is still poor. For growth forecasts, the Consensus and OECD forecasts again performed better for most regions. The Consensus forecasts outperformed the OECD forecasts for inflation, while neither dominated the other for growth forecasts. It should be noted, however, that any difference that may exist in terms of these statistics is not very large and the assessment of relative performance might change depending on the time period.

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[5] Root mean squared errors (RMSEs) and mean absolute errors (MAEs) are the most widely used statistics to make inference on the relative accuracy of two forecast series. Following Öller and Barot (2000), we do not report MAEs because they tend to duplicate the results obtained from the RMSE statistics.

[6] The statements comparing the two sets of forecasts in this section are based on the May Consensus forecasts, although these are not explicitly reported in the tables.

A different picture of the relative performance of the IMF and OECD forecasts emerges, however, when we compare them with the mean of the private sector forecasts for individual G7 countries in the restricted Consensus sample (that includes only those forecasters that consistently provided forecasts over the period—see Appendix III). The MEs of the private sector forecasts in the restricted sample suggest that the growth pessimism for the G7 countries weakens, and the forecasts even become optimistic in some cases (Table 3). The RMSEs, moreover, are larger than those of the Consensus means, and exceed those of the IMF and OECD forecasts. The IMF (as well as the OECD) actually

Table 1. Forecast Errors of Current–Year Consensus, IMF, and OECD Forecasts, 1991–2003

	A. Growth						B. Inflation					
	Mean Errors			Root Mean Squared Errors			Mean Errors			Root Mean Squared Errors		
	Consensus	IMF	OECD	Consensus	IMF	OECD	Consensus	IMF	OECD	Consensus	IMF	OECD
United States	–0.34	–0.41	–0.24	1.06	1.09	0.94	0.08	0.05	0.11	0.27	0.39	0.33
Japan	–0.32	–0.23	–0.21	1.10	1.08	0.90	0.07	0.17	0.00	0.35	0.43	0.42
Germany	–0.91	–0.77	–0.82	3.72	3.64	3.63	0.10	0.04	0.43	0.52	0.48	0.67
France	0.29	0.26	0.20	0.77	0.81	0.65	0.01	0.00	0.22	0.37	0.34	0.57
United Kingdom	–0.43	–0.50	–0.51	0.93	0.96	0.93	0.47	0.59	0.13	0.96	1.06	0.74
Italy	0.29	0.30	0.26	0.72	0.82	0.65	–0.04	–0.03	–0.31	0.43	0.47	0.46
Canada	–0.11	–0.14	–0.11	1.21	1.31	1.14	0.06	–0.04	0.18	0.45	0.54	0.50
Netherlands	–0.20	–0.16	–0.19	1.13	1.12	1.15	–0.02	–0.03	–0.13	0.51	0.58	0.38
Norway	–0.85	–0.11	–0.30	1.42	1.31	1.09	0.38	0.31	0.25	0.57	0.60	0.39
Spain	–0.13	–0.10	–0.13	0.92	0.92	0.77	–0.12	–0.29	–0.19	0.42	0.64	0.36
Sweden	–0.29	–0.25	–0.29	1.34	1.22	1.07	0.15	0.50	0.11	0.65	0.89	0.58
Switzerland	0.69	0.51	0.46	1.22	1.10	1.00	0.22	0.15	0.32	0.63	0.48	0.60
Austria	–0.06	–0.08	–0.22	0.91	0.89	0.83	0.27	0.23	0.13	0.52	0.57	0.95
Belgium	0.03	0.09	–0.03	1.18	1.11	1.00	0.11	0.03	0.13	0.53	0.52	0.80
Denmark	0.05	0.07	0.09	1.24	1.32	0.98	0.11	0.21	0.25	0.37	0.45	0.56
Finland	0.54	0.64	0.43	2.66	2.79	1.85	0.45	0.46	–0.06	0.84	0.85	0.98
Greece	–0.55	–0.45	–0.45	0.63	0.64	0.53	0.99	0.84	–0.12	2.95	2.91	0.44
Ireland	–1.94	–1.53	–1.30	2.97	2.70	2.41	0.10	0.04	0.34	0.77	0.77	1.48
Portugal	0.16	0.20	0.13	1.06	0.87	0.88	0.15	0.13	–0.06	0.82	0.77	0.33
Australia	–0.29	–0.41	–0.35	0.93	1.18	0.90	0.42	0.71	0.48	0.93	1.49	0.67
Indonesia	–0.09	–0.12	–	2.49	2.92	–	–0.73	–0.88	–	3.83	4.63	–
Malaysia	–0.28	–0.35	–	3.24	3.61	–	0.70	0.49	–	1.06	1.18	–
New Zealand	–0.22	–0.08	–0.21	1.62	1.90	1.49	0.21	0.05	0.27	0.63	0.59	0.57
Singapore	–0.69	–1.00	–	3.66	3.93	–	0.65	0.54	–	0.98	0.99	–
Korea	–0.23	–0.44	0.56	2.59	3.02	3.27	0.64	0.50	0.08	1.18	1.30	1.69
Thailand	0.48	0.55	–	3.13	3.46	–	0.72	0.96	–	1.50	1.67	–
Argentina	0.22	0.18	–	3.19	3.78	–	4.37	1.48	–	11.46	2.93	–
Brazil	–0.04	0.07	–	1.93	2.41	–	–126.70	–139	–	262.31	299.99	–
Chile	–0.07	–0.13	–	2.01	2.28	–	0.02	–0.15	–	0.36	0.70	–
Mexico	–0.06	0.03	0.44	1.80	2.03	2.07	0.09	–1.80	0.00	4.31	2.61	3.27
Venezuela	0.29	0.10	–	3.39	4.23	–	1.55	–2.60	–	8.80	7.78	–
Colombia	0.76	0.91	–	2.07	1.99	–	0.29	–0.22	–	1.60	1.50	–
Peru	–0.52	–0.27	–	2.98	3.61	–	–4.78	–6.73	–	12.21	15.85	–

performed better relative to the smaller set of continuously engaged private forecasters in individual G7 countries[7].

Table 2. Forecast Errors of Year–Ahead Consensus, IMF, and OECD Forecasts, 1992–2003

	A. Growth						B. Inflation					
	Mean Errors			Root Mean Squared Errors			Mean Errors			Root Mean Squared Errors		
	Consensus	IMF	OECD	Consensus	IMF	OECD	Consensus	IMF	OECD	Consensus	IMF	OECD
United States	–0.51	–0.68	–0.76	1.50	1.49	1.62	0.36	0.30	0.20	0.61	0.61	0.59
Japan	0.48	0.82	0.22	1.78	1.82	1.53	0.34	0.37	0.17	0.58	0.69	0.62
Germany	0.86	1.13	0.73	1.49	1.71	1.30	0.26	0.09	0.46	0.77	0.76	0.70
France	0.69	0.79	0.48	1.52	1.56	1.20	0.25	0.05	0.35	0.66	0.63	0.66
United Kingdom	–0.22	–0.15	–0.33	1.01	1.06	1.08	1.03	0.88	0.38	1.10	1.04	0.90
Italy	0.83	0.89	0.50	1.38	1.33	0.99	–0.15	–0.24	–0.49	0.74	0.94	0.99
Canada	–0.05	0.02	–0.13	1.75	1.77	1.72	0.32	0.15	0.36	0.94	0.72	0.60
Netherlands	0.26	0.17	0.05	1.56	1.48	1.43	0.03	0.09	–0.04	0.80	0.80	0.48
Norway	–0.72	–0.42	–0.40	1.50	1.53	1.50	0.45	0.34	0.25	1.03	0.89	0.70
Spain	0.27	0.27	0.01	1.40	1.23	1.08	–0.09	–0.32	–0.25	0.58	0.81	0.67
Sweden	0.17	0.19	–0.29	1.82	1.65	1.55	0.43	0.37	0.28	1.32	1.07	1.15
Switzerland	1.08	1.08	0.62	1.61	1.58	1.25	0.69	0.57	0.57	0.98	0.88	0.90
Austria	0.54	0.51	0.25	1.29	1.37	1.07	0.39	0.37	0.15	0.73	0.67	0.95
Belgium	0.53	0.51	0.32	1.63	1.66	1.43	0.30	0.12	0.19	0.72	0.74	0.81
Denmark	0.31	0.18	0.28	1.59	1.71	1.41	0.28	0.25	0.45	0.63	0.54	0.75
Finland	0.38	0.68	0.16	2.41	2.34	2.35	0.76	0.73	–0.25	1.24	1.23	1.43
Greece	–0.42	–0.42	–0.35	0.61	0.64	0.63	1.15	0.69	–0.15	3.08	2.93	0.83
Ireland	–2.33	–1.94	–2.00	3.63	3.26	3.03	0.07	–0.17	0.07	1.16	1.30	1.53
Portugal	0.67	0.81	0.44	1.76	1.77	1.28	0.37	–0.03	–0.08	1.17	0.89	0.51
Australia	–0.27	–0.32	–0.43	0.97	1.10	1.11	0.20	0.64	0.81	1.72	1.70	1.08
Indonesia	1.28	1.28	–	5.85	5.78	–	1.63	–4.47	–	22.28	14.98	–
Malaysia	0.30	0.18	–	5.05	5.05	–	0.67	1.14	–	1.44	1.97	–
New Zealand	–0.65	–0.81	–0.58	1.69	2.33	1.87	–0.02	–0.25	–0.48	0.69	0.59	1.16
Singapore	–0.19	–0.83	–	4.89	4.75	–	0.70	0.56	–	1.28	1.21	–
Korea	0.60	0.49	0.41	5.03	5.21	6.62	0.78	0.22	–0.76	2.75	1.78	1.32
Thailand	1.19	1.26	–	4.89	5.36	–	0.86	0.68	–	2.82	1.96	–
Argentina	2.16	2.46	–	6.07	6.60	–	1.73	2.04	–	12.69	13.63	–
Brazil	0.29	0.55	–	2.17	2.36	–	–128.86	–215	–	347.67	534.78	–
Chile	0.38	0.61	–	2.50	2.83	–	0.18	0.16	–	0.67	1.00	–
Mexico	1.14	1.64	1.25	3.71	3.72	4.13	–3.84	–4.02	–4.89	9.22	9.24	10.89
Venezuela	2.83	3.22	–	5.51	6.03	–	–6.56	–10	–	17.55	18.38	–
Colombia	1.33	1.33	–	2.56	2.54	–	0.52	0.88	–	2.35	2.67	–
Peru	0.04	0.96	–	3.71	4.35	–	–0.64	–3.47	–	5.58	10.10	–

[7] This contrasts with the results earlier reported by Blix et al (2001), which likely reflected their choice of the May Consensus survey. We believe this choice is inappropriate. The IMF's forecasts should be compared with the April Consensus forecasts.

Table 3. Forecast Errors of Current–Year Consensus, IMF, and OECD Forecasts, 1991–2003

A. Growth

	Mean Errors (MEs)				Root Mean Squared Errors (RMSEs)			
	Consensus	Restricted Consensus[1]	IMF	OECD	Consensus	Restricted Consensus[1]	IMF	OECD
United States	–0.34	–0.23	–0.41	–0.24	1.06	1.69	1.09	0.94
Japan	–0.32	0.57	–0.23	–0.21	1.10	1.54	1.08	0.90
Germany	–0.91	–0.11	–0.77	–0.82	3.72	3.95	3.64	3.63
France	0.29	0.94	0.26	0.20	0.77	1.47	0.81	0.65
United Kingdom	–0.43	0.18	–0.50	–0.51	0.93	1.37	0.96	0.93
Italy	0.29	0.97	0.30	0.26	0.72	1.30	0.82	0.65
Canada	–0.11	0.38	–0.14	–0.11	1.21	2.22	1.31	1.14

B. Inflation

	Mean Errors (MEs)				Root Mean Squared Errors (RMSEs)			
	Consensus	Restricted Consensus[1]	IMF	OECD	Consensus	Restricted Consensus[1]	IMF	OECD
United States	0.08	0.20	0.05	0.11	0.27	0.59	0.39	0.33
Japan	0.07	0.13	0.17	0.00	0.35	0.67	0.43	0.42
Germany	0.10	0.08	0.04	0.43	0.52	0.85	0.48	0.67
France	0.01	0.09	0.00	0.22	0.37	0.52	0.34	0.57
United Kingdom	0.47	0.69	0.59	0.13	0.96	1.40	1.06	0.74
Italy	–0.04	–0.34	–0.03	–0.31	0.43	0.58	0.47	0.46
Canada	0.08	0.20	0.05	0.18	0.27	0.59	0.39	0.5

Note: 1. The restricted Consensus sample includes only those private sector forecasters that consistently provided forecasts in Consensus surveys in April from 1991. See Appendix III.

IV. Testing the Information Content of IMF and OECD Forecasts

Identifying the information value of public sector forecasts to private sector forecasters is a difficult task because there are multiple factors that must be taken account of, including the question of when new information arrives and posssible herding behavior among private forecasters. In this section, we attempt to do this by identifying how private sector forecasts react when new forecasts are released by the IMF or the OECD. Controling for the arrival of new information is made tractable by the much higher (monthly) frequency of Consensus forecasts relative to the (semiannual) frequency of IMF and OECD forecasts. As to herding behavior, several studies have suggested that individual private sector forecasts tend to converge to the Consensus mean over time (Blix et al., 2001; Gallo et al., 2002). We control for the possible herding behavior by including, as an explanatory variable, a term showing the reaction of the immediately preceding Consensus forecast to the previous Consensus forecast, as explained below.

In particular, we estimate (in the case of IMF forecasts) the following equation:

$$CONS^{2}_{i,t} - CONS^{1}_{i,t} = \alpha + \beta_1\left(IMF_{i,t} - CONS^{1}_{i,t}\right) + \beta_2\left(CONS^{1}_{i,t} - CONS^{0}_{i,t}\right) + u_{i,t} \quad (1)$$

where, for country i and year t, IMF refers to the relevant IMF forecast, $CONS^1$ is the Consensus forecast immediately preceding the release of the IMF forecast, and $CONS^0$ and $CONS^2$ are the relevant Consensus forecasts immediately before and after $CONS^1$, respectively; α, β_1, β_2 are coefficients to be estimated; and u is an error term. Likewise, we use an analogous regression equation to test the impact of OECD forecasts, as follows:

$$CONS^2_{i,t} - CONS^1_{i,t} = \alpha + \beta_1\left(OECD_{i,t} - CONS^1_{i,t}\right) + \beta_2\left(CONS^1_{i,t} - CONS^0_{i,t}\right) + v_{i,t} \qquad (2)$$

where $OECD$ is the relevant OECD forecast, v is an error term, and all other variables are analogously defined. As noted, the second term in both equation (1) and equation (2) is designed to capture the possible herding behavior among private forecasters. We expect β_1 to be positive and statistically significant if the IMF (or OECD) provides new information to private forecasters.

Given the limited sample size, we estimate equation (1) or (2) by using a GLS panel–data estimator, which has the added advantage of yielding a weighted average of the within–group and between–group estimators (to indicate the overall impact of IMF or OECD forecasts). The GLS panel–data estimator is also designed to adjust forecast revisions by the standard deviations, thus taking into account the underlying forecasting difficulty for individual countries. As robustness checks, we report the results of estimating these equations by three additional estimators: (i) an OLS Prais–Winsten estimator (which is more suitable for a fixed T); a pooled OLS estimator; and (iii) a Generalized Estimating Equations (GEE) estimator. In all these cases, we control for serial correlation and a heteroskedastic error structure accounting for cross–country differences[8]. Bootstrapping is used to generate 1000 replications, as an additional robustness check. The results from the bootstrapped data are reported in Appendix IV.

Table 4 reports the results of estimating equation (1) for IMF forecasts by various methods (the term $IMF–CON^1$ is simply denoted as IMF in the table). All in all, they indicate that, during 1994–2003, the estimated coefficient β_1 is positive and statistically significant for Europe and (for inflation only) the Asia–Pacific region. On the other hand, the IMF forecasts did not seem to have impact on private sector forecasts for G7 countries and Latin America. In the light of the results reported in Section III, these findings may mean that the IMF has greater impact on a region for which it provides relatively more accurate forecasts (recall that the IMF's forecasts for these regions were found to be more accurate than for the other regions).

For year–ahead forecasts, we find that the IMF forecasts had impact on private sector forecasts for Latin America as well. On the other hand, we do not observe a positive impact on private sector forecasters in G7 economies, where the IMF had relatively better performance in year–ahead inflation forecasts (at least in five of the countries). These results suggest that producing better forecasts is not a sufficient condition for the IMF to have impact on private sector forecasters. It is possible that private sector forecasters are giving more weight to the IMF's views on regions for which, given a longer

[8] GLS panel–data estimators yield similar results when we allow for panel–specific or common autocorrelation in errors. For this reason, we only report the results obtained by allowing for panel–specific autocorrrelated errors.

Table 4. Impact of IMF Forecasts on Consensus Forecasts, 1994–2003[1]

		A. Current–Year								B. Year–Ahead							
		I. Growth				II. Inflation				I. Growth				II. Inflation			
		OLS	GLS	OLS P–W	GEE	OLS	GLS	OLS P–W	GEE	OLS	GLS	OLS P–W	GEE	OLS	GLS	OLS P–W	GEE
G7	Constant	0.02	0.00	0.01	0.02	0.01	0.01	0.01	0.01	–0.05	–0.01	–0.03	–0.05	–0.02	–0.02	–0.01	–0.02
		(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.03)	(0.01)	(0.01)	(0.01)	(0.01)
	IMF (β_1)	–0.06	–0.03	–0.05	–0.03	–0.03	0.00	–0.02	–0.02	0.02	0.02	0.01	0.03	0.04	0.04	0.05	0.04
		(0.08)	(0.06)	(0.07)	(0.08)	(0.04)	(0.03)	(0.03)	(0.05)	(0.07)	(0.04)	(0.08)	(0.03)	(0.05)	(0.04)	(0.05)	(0.05)
	Lag (β_2)	0.35	0.35	0.28	0.30	0.34	0.28	0.33	0.32	0.34	0.41	0.39	0.35	0.36	0.37	0.36	0.34
		(0.07)	(0.07)	(0.08)	(0.04)	(0.07)	(0.06)	(0.07)	(0.06)	(0.07)	(0.04)	(0.07)	(0.05)	(0.12)	(0.09)	(0.10)	(0.05)
Europe	Constant	–0.01	0.00	–0.01	–0.01	0.01	0.01	0.01	0.01	–0.03	–0.04	–0.04	–0.03	–0.04	–0.04	–0.04	–0.04
		(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
	IMF (β_1)	0.08	0.08	0.09	0.09	0.13	0.13	0.15	0.13	0.13	0.11	0.13	0.13	0.09	0.09	0.10	0.10
		(0.03)	(0.02)	(0.03)	(0.02)	(0.06)	(0.03)	(0.04)	(0.06)	(0.04)	(0.03)	(0.04)	(0.05)	(0.05)	(0.03)	(0.04)	(0.03)
	Lag (β_2)	0.38	0.35	0.37	0.38	0.55	0.54	0.53	0.53	0.45	0.46	0.47	0.45	0.22	0.24	0.23	0.20
		(0.07)	(0.06)	(0.08)	(0.09)	(0.12)	(0.06)	(0.09)	(0.07)	(0.06)	(0.05)	(0.06)	(0.06)	(0.09)	(0.08)	(0.09)	(0.09)
Asia–Pacific	Constant	0.01	0.02	0.00	0.01	–0.08	–0.03	–0.10	–0.07	–0.11	–0.08	–0.10	–0.11	0.00	–0.03	0.02	0.00
		(0.03)	(0.02)	(0.03)	(0.02)	(0.07)	(0.04)	(0.08)	(0.05)	(0.04)	(0.03)	(0.04)	(0.04)	(0.05)	(0.05)	(0.06)	(0.06)
	IMF (β_1)	–0.02	–0.03	–0.05	–0.01	0.52	0.42	0.53	0.53	–0.05	–0.08	–0.07	–0.06	0.19	0.16	0.20	0.20
		(0.06)	(0.05)	(0.07)	(0.05)	(0.17)	(0.06)	(0.11)	(0.12)	(0.10)	(0.03)	(0.05)	(0.07)	(0.02)	(0.01)	(0.02)	(0.02)
	Lag (β_2)	0.55	0.47	0.55	0.57	0.99	0.78	0.89	0.86	0.45	0.39	0.45	0.45	0.78	0.50	0.81	0.81
		(0.14)	(0.07)	(0.09)	(0.08)	(0.32)	(0.14)	(0.22)	(0.29)	(0.15)	(0.04)	(0.08)	(0.12)	(0.39)	(0.15)	(0.23)	(0.36)
Latin America	Constant	–0.05	0.01	0.00	–0.05	–0.07	–0.18	0.08	–0.09	–0.28	–0.24	–0.26	–0.28	0.37	0.09	0.26	0.37
		(0.08)	(0.06)	(0.07)	(0.07)	(0.56)	(0.09)	(0.44)	(0.34)	(0.09)	(0.06)	(0.08)	(0.03)	(0.34)	(0.16)	(0.37)	(0.47)
	IMF (β_1)	0.01	–0.08	–0.01	0.01	–0.04	–0.11	–0.03	–0.03	0.31	0.32	0.33	0.30	0.62	0.62	0.62	0.62
		(0.14)	(0.07)	(0.09)	(0.13)	(0.13)	(0.03)	(0.09)	(0.18)	(0.15)	(0.08)	(0.10)	(0.08)	(0.01)	(0.01)	(0.01)	(0.01)
	Lag (β_2)	0.03	0.07	0.05	0.05	0.06	0.05	0.06	0.06	0.46	0.54	0.46	0.47	0.40	0.41	0.40	0.40
		(0.02)	(0.03)	(0.04)	(0.02)	(0.02)	(0.00)	(0.01)	(0.02)	(0.28)	(0.14)	(0.15)	(0.24)	(0.01)	(0.01)	(0.01)	(0.01)

Note: 1. Numbers in parentheses are standard deviations.

horizon, information is more limited.

Table 5 reports the results of estimating equation (2) for OECD forecasts (the term $OECD-CON^1$ is simply denoted as OECD in the table). The results on the impact of OECD forecasts are not conclusive when all OECD countries are considered: GLS and GEE estimators yield statistically significant coefficient estimates (only GLS for growth forecasts), but this is not supported by the OLS pooled and Prais–Winsten estimators. We find more consistent results for the smaller groupings: the OECD's current–year and year–ahead forecasts had impact on private sector forecasts for non–G7 Europe, but not for G7 countries. In the case of G7 countries, we again observe that better forecasts did not necessarily lead to greater impact on private sector forecasts (recall that the OECD had more accurate forecasts than the IMF forecasts for the G7 countries).

In both sets of results, there is strong evidence of herding behavior among private forecasters. In three regions (Europe, the G7 and Asia–Pacific), the estimated coefficient of the term CON^1-CON^0 (simply denoted as Lag in both tables) is positive and statistically significant, both for growth and inflation, during the months in which the IMF provided forecasts. Similar findings are observed for the OECD forecasts, although the evidence for inflation is somewhat weaker. These results on the informational content of public sector forecasts and herding behavior among private sector forecasters are generally robust to bootstrapping across all estimation methods for the IMF's and OECD's current–year and year–ahead forecasts, with only a few exceptions (see also Appendix IV, Tables A1 and A2).

Table 5. Impact of OECD Forecasts on Consensus Forecasts, 1994–2003[1]

		A. Current–Year								B. Year–Ahead							
		I. Growth				II. Inflation				I. Growth				II. Inflation			
		OLS	GLS	OLS P–W	GEE	OLS	GLS	OLS P–W	GEE	OLS	GLS	OLS P–W	GEE	OLS	GLS	OLS P–W	GEE
All OECD	Constant	–0.01	–0.02	–0.01	–0.01	–0.02	0.01	–0.03	–0.03	0.00	–0.01	0.00	0.00	–0.02	–0.03	–0.01	–0.02
		(0.02)	(0.01)	(0.02)	(0.01)	(0.04)	(0.01)	(0.04)	(0.03)	(0.02)	(0.01)	(0.02)	(0.01)	(0.05)	(0.01)	(0.03)	(0.02)
	OECD (β_1)	0.07	0.13	0.08	0.07	0.11	0.08	0.14	0.14	0.05	0.08	0.02	0.02	0.11	0.07	0.14	0.15
		(0.09)	(0.02)	(0.05)	(0.06)	(0.09)	(0.02)	(0.13)	(0.06)	(0.06)	(0.02)	(0.05)	(0.05)	(0.07)	(0.01)	(0.11)	(0.02)
	Lag (β_2)	0.25	0.37	0.30	0.24	0.06	0.13	0.11	0.11	0.52	0.45	0.56	0.52	0.03	0.07	0.12	0.15
		(0.11)	(0.05)	(0.11)	(0.15)	(0.07)	(0.03)	(0.09)	(0.03)	(0.19)	(0.04)	(0.11)	(0.15)	(0.25)	(0.04)	(0.19)	(0.06)
G7	Constant	–0.03	–0.04	–0.02	–0.03	0.01	0.01	0.01	0.01	–0.01	–0.02	0.00	–0.01	–0.04	–0.04	–0.04	–0.04
		(0.03)	(0.01)	(0.02)	(0.03)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.00)
	OECD (β_1)	0.06	0.11	0.07	0.07	0.03	0.03	0.03	0.03	0.06	0.06	0.05	0.06	0.02	0.03	0.03	0.02
		(0.11)	(0.06)	(0.10)	(0.06)	(0.02)	(0.02)	(0.02)	(0.02)	(0.06)	(0.05)	(0.07)	(0.06)	(0.03)	(0.02)	(0.02)	(0.02)
	Lag (β_2)	0.57	0.53	0.59	0.56	0.59	0.61	0.62	0.59	0.46	0.48	0.47	0.46	0.27	0.34	0.27	0.27
		(0.14)	(0.08)	(0.14)	(0.14)	(0.12)	(0.12)	(0.12)	(0.06)	(0.12)	(0.09)	(0.10)	(0.10)	(0.19)	(0.11)	(0.13)	(0.08)
Europe	Constant	–0.02	–0.01	–0.02	–0.02	0.02	0.01	0.02	0.02	–0.01	–0.02	–0.01	–0.01	–0.01	–0.01	–0.01	–0.01
		(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
	OECD (β_1)	0.16	0.16	0.14	0.15	0.14	0.12	0.13	0.15	0.08	0.09	0.08	0.08	0.12	0.13	0.10	0.11
		(0.04)	(0.02)	(0.03)	(0.02)	(0.04)	(0.03)	(0.04)	(0.03)	(0.04)	(0.03)	(0.03)	(0.04)	(0.03)	(0.03)	(0.02)	(0.02)
	Lag (β_2)	0.33	0.30	0.42	0.34	0.46	0.39	0.44	0.42	0.33	0.32	0.36	0.33	0.14	0.14	0.10	0.11
		(0.10)	(0.08)	(0.12)	(0.06)	(0.11)	(0.09)	(0.10)	(0.09)	(0.08)	(0.07)	(0.08)	(0.06)	(0.08)	(0.07)	(0.07)	(0.09)

Note: 1. Numbers in parentheses are standard deviations.

V. Conclusion

The macroeconomic forecasts provided by the IMF, the OECD, and Consensus Economics during 1991–2003 were close to each other, but the OECD forecasts were somewhat better for growth and the Consensus forecasts likewise outperformed the others for inflation. When different groups of countries were considered, the IMF forecasts performed better for Europe and, to a lesser extent, for the Asia–Pacific region (in the case of year–ahead forecasts only). All three sets of forecasts had a pessimistic bias for industrial countries over the current year horizon, but the pessimism almost dissappeared for growth when the forecasting horizon was lengthened to one–year ahead.

Our analysis for 1994–2003 indicated that the IMF's forecasts had a positive impact on private sector forecasts for non–G7 Europe, the Asia–Pacific region (for inflation only), and Latin America (for year–ahead forecasts only). It may be that private forecasters give greater weight to information provided by the IMF on regions for which its forecasts are known to be more accurate or for which information is less available. On the other hand, the OECD forecasts had positive impact on private sector forecasts in non–G7 European countries, but not in the G7 countries, despite the fact that the OECD forecasts performed better than the IMF forecasts. Further research is needed to identify what determines the information value of public sector forecasts to private sector forecasters.

References

Artis, M. J. (1997) "How Accurate Are the WEO's Short–term Forecasts? An Examination of the World Economic Outlook," *Staff Studies for the World Economic Outlook,* Washington, D. C.:

International Monetary Fund.

Batchelor, R. A. (2001) "How Useful Are the Forecasts of Intergovernmental Agencies? The IMF and OECD versus the Consensus," *Applied Economics,* 33, 225–335.

Blix, M., J. Wadefjord, U. Wienecke, and M. Ådahl (2001) "How Good Is the Forecasting Performance of Major Institutions," *Economic Review (Penning– och Valutapolitik),* 3, 37–68, Stockholm: Sveriges Riksbank.

Clemen, R. T. (1989) "Combining Forecasts: A Review and Annotated Bibliography," *International Journal of Forecasting,* 5 (4), 559–581.

Gallo, G. M., C. W. Granger, and Y. Jeon (2002) "Copycats and Common Swings: The Impact of the Use of Forecasts in Information Sets," *IMF Staff Papers,* 49 (1), 4–21.

Juhn, G. and P. Loungani (2002) "Further Cross–Country Evidence on the Accuracy of the Private Sector's Output Forecasts," *IMF Staff Papers,* 49 (1), 49–64.

Lenain, P. (2002) "What Is the Track Record of OECD Economic Projections?" mimeo, Paris: OECD.

Loungani, P. (2000) "How Accurate Are Private Sector Forecasts? Cross–Country Evidence from Consensus Forecasts of Output Growth," *IMF Working Paper* 00/77.

Öller, L. and B. Barot (2000) "The Accuracy of European Growth and Inflation Forecasts," *International Journal of Forecasting,* 16 (3), 293–315.

Timmermann, A. (2006) "An Evaluation of the World Economic Outlook Forecasts," *IMF Working Paper* 06/59.

Appendix I. Sample Countries[1]

G7	Europe	Asia–Pacific	Latin America
United States*	Netherlands*	Australia*	Argentina
Japan*	Norway*	Indonesia	Brazil
Germany*	Spain*	Malaysia	Chile
France*	Sweden*	New Zealand*	Mexico*
United Kingdom*	Switzerland*	Singapore	Venezuela
Italy*	Austria*	Korea*	Colombia
Canada*	Belgium*	Thailand	Peru
	Denmark*		
	Finland*		
	Greece*		
	Ireland*		
	Portugal*		

Note: 1. The countries included in tests involving OECD forecasts are indicated by an asterisk.

Appendix II. Matching the Consensus Forecasts with IMF and OECD Forecasts

How to match monthly Consensus forecasts with the appropriate semiannual IMF and OECD forecasts is a critical element of our empirical strategy, because the timing of the release of these forecasts is not perfectly synchronized. In order to determine the most appropriate choice of Consensus forecasts, it is important to know the sequence by which IMF and OECD forecasts are produced and released to the public[9].

Both IMF and OECD forecasts involve three critical dates: (i) cut–off date for data and information; (ii) date of release to the public, through a press conference or the website; and (iii) date of publication in printed format. We follow Lenain (2002) and use the second date as the date on which forecasts are deemed released for the purpose of this analysis, i.e., April and September (with a few exceptions in the early 1990s) for the IMF forecasts, and May and November for the OECD forecasts. The Consensus forecasts that are used to test the relative accuracy of the IMF and OECD forecasts are as follows:

Selection of Consensus Forecasts for Relative Accuracy Tests, 1991–2003

	Comparison with IMF forecasts	Comparison with OECD forecasts
Current–year forecasts, 1991–2003	April[1]	May[2]
Year–ahead forecasts, 1992–2003	September[3]	November[4]

Notes: 1. May for Latin America, 1993; 2. June for Latin America, 1991–92, 1994–2000; 3. October for Latin America, 1992–2000; 4. December for Latin America, 1992–2000.

In assessing the impact of IMF or OECD forecasts on private sector forecasts, we use three Consensus surveys: (i) the survey immediately before the release of IMF or OECD forecasts (at time t_1); (ii) the last survey before t_1 (at time t_0); and (iii) the first survey following t_1 (at time t_2). The IMF's April and the OECD's May forecasts occasionally preceded the respective release of Consensus surveys, creating some irregularities in the choice of Consensus forecasts, as follows:

Selection of Consensus Current–Year Forecasts for Impact Tests in Equation (1), 1994–2003

Time of survey	t_0	t_1	t_2
Latin America	February[1]	April[2]	June[3]
All others	March[4]	April[5]	May[6]

Notes: 1. previous December, 1993, 1998, and 2000; 2. March, 1993 and 2002–03; February, 1998 and 2000; 3. May, 1993 and 2001; April, 1998, 2000, and 2002–03; 4. February, 1998 and 2000; 5. March, 1998 and 2000; 6. April, 1998 and 2000.

Selection of Consensus Year–Ahead Forecasts for Impact Tests in Equation (1), 1994–2003

Time of survey	t_0	t_1	t_2
Latin America	June[1]	August[2]	October
All others	August[3]	September[4]	October[5]

Notes: 1. May, 1993; August, 2001–02; 2. July, 1993; September, 2001–02; 3. September, 1995 and 2001; 4. October, 1995 and 2001; 5. November, 1995 and 2001.

[9] This, however, ignores the possibility that some of the individual forecasts included in the Consensus surveys are in fact prepared much before the release of the Consensus forecasts for each month.

Selection of Consensus Current–Year Forecasts for Impact Tests in Equation (2), 1994–2003

Time of survey	t_0	t_1	t_2
Latin America	February[1]	April[2]	June[3]
All others	April[4]	May[5]	June[6]

Notes: 1. April, 1996 and 2001; March, 2002–03; 2. June, 1996; April, 2002–03; 3. July, 1996; May, 2002–03; 4. May, 1996; March, 2002–03; 5. June, 1996; April, 2002–03; 6. July, 1996; May, 2002–03.

Selection of Consensus Year–Ahead Forecasts for Impact Tests in Equation (2), 1994–2003

Time of survey	t_0	t_1	t_2
Latin America	August[1]	October[2]	December[3]
All others	October[4]	November[5]	December[6]

Notes: 1. October, 1993 and 1995; September 2001–02; 2. December, 1993 and 1995; 3. following february, 1994 and 1996; 4. November, 1993 and 1995; 5. December, 1993 and 1995; 6. following January, 1993 and 1995.

Appendix III. Restricted Consensus Sample

In some applications, we use a restricted sample of private forecasters, which consists of firms or institutions that participated in Consensus surveys for at least ten years between 1991 and 2003, as follows:

Forecasters included in the Restricted Consensus Sample, 1991–2003

United States	Toyota	BNP Banque Paribas	**Canada**
Chemical Bank	UBS	Banque D'Orsay	Bank of Montreal (BMO)
DuPont		Credit Lyonnais	BMO Nesbitt Burns
Eaton Corporation	**Germany**	COE–CCIP	Caisse de dépôt
Credit Suisse First Boston	Bankgesellschaft Berlin/Berliner Bank	GAMA	Canadian Imperial Bank of Commerce (CIBC)
Global Insight/WEFA	Bayerische Landesbank	JP Morgan Chase	Conference Board of Canada
Ford	BHF Bank	OFCE	CIBC Wood Gundy
General Motors	Commerzbank	Rexecode/Ipecode	National Bank of Canada
Griggs & Santow	Delbrück & Co	Societe Generale	Richardson Greenshields
JP Morgan Chase	Deutsche Bank	Total Fina Elf	Royal Bank of Canada (RBC)
Merrill Lynch	DGZ Dekabank		RBC Dominion Securities
Northern Trust	Dresdner Bank	**United Kingdom**	Royal Trust
Standard & Poor's	DZ Bank/DG Bank	Barclays Bank	Scotiabank
United States Trust	FAZ Institute	Cambridge Econometrics	
Wells Capital	Helaba Frankfurt	Citigroup	**Italy**
Wachovia/First Union/CoreStates Financial	HSBC Trinkaus & Burkhardt	Confederation of British Industries	Banca Intea/Banca Commerciale–Cariplo
	Hoechst AG	Goldman Sachs	Centro Europa Ricerche
Japan	HypoVereinsbank	HSBC/James Capel	Confindustria
Mizuho/DKB–Fuji–IBJ	IfW–Kiel	Liverpool Macroecon Research	ENI
Daiwa Institute	MM Warburg	JP Morgan Chase	Fiat SpA
JP Morgan Chase	Sal Oppenheim	Lehman Brothers	ISCO–ISAE
Merrill Lynch	SEB Bank/BfG Bank	London Business School	Prometeia
Nikko Citigroup	UBS	ITEM Club	RASFIN
Nomura Research Institute	Westdeutsche Landesbank	Morgan Stanley	UniCredit Banca Mobiliare
Shinsei Bank/LTCB	WGZ Bank	Merrill Lynch	
Smith Barney		Schroders	
Sumitomo Life	**France**	UBS	
Tokai/Sanwa Res/UFJ Inst	Credit Commercial de France	Williams de Broe	
Japan Ctr for Econ Res	Natexis Banques Populaires		

Appendix IV. Tests Based on Bootstrapped Data

Table A1. Impact of IMF Forecasts on Consensus Forecasts, 1994–2003[1]

		A. Current–Year								B. Year–Ahead							
		I. Growth				II. Inflation				I. Growth				II. Inflation			
		OLS	GLS	OLS P–W	GEE	OLS	GLS	OLS P–W	GEE	OLS	GLS	OLS P–W	GEE	OLS	GLS	OLS P–W	GEE
G7	Constant	–0.01	0.00	0.01	0.02	0.04	0.01	0.01	0.01	–0.05	–0.01	–0.03	–0.05	–0.02	–0.02	–0.01	–0.02
		(0.02)	(0.01)	(0.01)	(0.01)	(0.11)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.04)	(0.03)	(0.01)	(0.01)	(0.01)	(0.01)
	IMF (β_1)	–0.02	–0.03	–0.05	–0.03	0.03	0.00	–0.02	–0.02	0.02	0.02	0.01	0.03	0.04	0.04	0.05	0.04
		(0.07)	(0.07)	(0.10)	(0.07)	(0.22)	(0.06)	(0.05)	(0.05)	(0.08)	(0.04)	(0.05)	(0.04)	(0.05)	(0.06)	(0.05)	(0.05)
	Lag (β_2)	0.05	0.35	0.28	0.30	0.06	0.28	0.33	0.32	0.34	0.41	0.39	0.35	0.36	0.37	0.36	0.34
		(0.04)	(0.08)	(0.05)	(0.05)	(0.20)	(0.09)	(0.09)	(0.09)	(0.09)	(0.04)	(0.05)	(0.06)	(0.13)	(0.06)	(0.06)	(0.06)
Europe	Constant	–0.01	0.00	–0.01	–0.01	0.04	0.01	0.01	0.01	–0.03	–0.04	–0.04	–0.03	–0.04	–0.04	–0.04	–0.04
		(0.02)	(0.01)	(0.02)	(0.01)	(0.11)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)
	IMF (β_1)	–0.02	0.08	0.09	0.09	0.03	0.13	0.15	0.13	0.13	0.11	0.13	0.13	0.09	0.09	0.10	0.10
		(0.07)	(0.03)	(0.03)	(0.02)	(0.22)	(0.06)	(0.06)	(0.06)	(0.04)	(0.04)	(0.04)	(0.04)	(0.05)	(0.04)	(0.04)	(0.03)
	Lag (β_2)	0.05	0.35	0.37	0.38	0.06	0.54	0.53	0.53	0.45	0.46	0.47	0.45	0.22	0.24	0.23	0.20
		(0.04)	(0.12)	(0.10)	(0.09)	(0.20)	(0.07)	(0.07)	(0.09)	(0.07)	(0.07)	(0.06)	(0.06)	(0.09)	(0.12)	(0.11)	(0.10)
Asia–Pacific	Constant	–0.01	0.02	0.00	0.01	0.04	–0.03	–0.10	–0.07	–0.11	–0.08	–0.10	–0.11	0.00	–0.03	0.02	0.00
		(0.02)	(0.02)	(0.02)	(0.02)	(0.11)	(0.05)	(0.09)	(0.06)	(0.04)	(0.03)	(0.03)	(0.03)	(0.04)	(0.05)	(0.06)	(0.04)
	IMF (β_1)	–0.02	–0.03	–0.05	–0.01	0.03	0.42	0.53	0.53	–0.05	–0.08	–0.07	–0.06	0.19	0.16	0.20	0.20
		(0.07)	(0.06)	(0.05)	(0.06)	(0.22)	(0.12)	(0.15)	(0.16)	(0.10)	(0.08)	(0.09)	(0.08)	(0.10)	(0.09)	(0.09)	(0.09)
	Lag (β_2)	0.05	0.47	0.55	0.57	0.06	0.78	0.89	0.86	0.45	0.39	0.45	0.45	0.78	0.50	0.81	0.81
		(0.04)	(0.08)	(0.10)	(0.11)	(0.20)	(0.52)	(0.62)	(0.62)	(0.16)	(0.09)	(0.12)	(0.12)	(0.49)	(0.31)	(0.36)	(0.35)
Latin America	Constant	–0.01	0.01	0.00	–0.05	0.04	–0.18	0.08	–0.09	–0.28	–0.24	–0.26	–0.28	0.37	0.09	0.26	0.37
		(0.02)	(0.08)	(0.07)	(0.07)	(0.11)	(0.21)	(0.66)	(0.41)	(0.09)	(0.03)	(0.03)	(0.04)	(0.37)	(0.36)	(0.66)	(0.41)
	IMF (β_1)	–0.02	–0.08	–0.01	0.01	0.03	–0.11	–0.03	–0.03	0.31	0.32	0.33	0.30	0.62	0.62	0.62	0.62
		(0.07)	(0.13)	(0.13)	(0.13)	(0.22)	(0.19)	(0.27)	(0.26)	(0.15)	(0.08)	(0.09)	(0.09)	(0.24)	(0.25)	(0.29)	(0.27)
	Lag (β_2)	0.05	0.07	0.05	0.05	0.06	0.05	0.06	0.06	0.46	0.54	0.46	0.47	0.40	0.41	0.40	0.40
		(0.04)	(0.03)	(0.02)	(0.02)	(0.20)	(0.16)	(0.17)	(0.17)	(0.32)	(0.32)	(0.39)	(0.40)	(0.32)	(0.15)	(0.21)	(0.22)

Note: 1. Numbers in parentheses are standard deviations.

Table A2. Impact of OECD Forecasts on Consensus Forecasts, 1994–2003[1]

		A. Current–Year								B. Year–Ahead							
		I. Growth				II. Inflation				I. Growth				II. Inflation			
		OLS	GLS	OLS P–W	GEE	OLS	GLS	OLS P–W	GEE	OLS	GLS	OLS P–W	GEE	OLS	GLS	OLS P–W	GEE
All OECD	Constant	–0.01	–0.02	–0.01	–0.01	–0.02	0.00	–0.03	–0.03	0.00	–0.01	0.00	0.00	–0.02	–0.02	–0.01	–0.02
		(0.02)	(0.01)	(0.02)	(0.01)	(0.03)	(0.01)	(0.04)	(0.03)	(0.02)	(0.01)	(0.02)	(0.01)	(0.05)	(0.01)	(0.02)	(0.02)
	OECD (β_1)	0.07	0.13	0.08	0.07	0.11	0.08	0.14	0.14	0.05	0.06	0.02	0.02	0.11	0.08	0.14	0.15
		(0.09)	(0.03)	(0.06)	(0.06)	(0.13)	(0.06)	(0.13)	(0.13)	(0.06)	(0.04)	(0.06)	(0.05)	(0.13)	(0.03)	(0.06)	(0.06)
	Lag (β_2)	0.25	0.37	0.30	0.24	0.06	0.13	0.11	0.11	0.52	0.50	0.56	0.52	0.03	0.08	0.12	0.15
		(0.13)	(0.11)	(0.18)	(0.19)	(0.27)	(0.15)	(0.15)	(0.14)	(0.19)	(0.08)	(0.18)	(0.16)	(0.34)	(0.11)	(0.13)	(0.14)
G7	Constant	–0.03	–0.04	–0.02	–0.03	0.01	0.01	0.01	0.01	–0.01	–0.01	0.00	–0.01	–0.04	–0.04	–0.04	–0.04
		(0.03)	(0.02)	(0.04)	(0.03)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.03)	(0.02)	(0.01)	(0.00)	(0.00)	(0.00)
	OECD (β_1)	0.06	0.08	0.07	0.07	0.03	0.03	0.03	0.03	0.06	0.07	0.05	0.06	0.02	0.03	0.03	0.02
		(0.12)	(0.07)	(0.08)	(0.07)	(0.02)	(0.02)	(0.02)	(0.02)	(0.06)	(0.07)	(0.07)	(0.05)	(0.03)	(0.02)	(0.02)	(0.02)
	Lag (β_2)	0.57	0.60	0.59	0.56	0.59	0.62	0.62	0.59	0.46	0.51	0.47	0.46	0.27	0.32	0.27	0.27
		(0.15)	(0.19)	(0.16)	(0.17)	(0.12)	(0.09)	(0.08)	(0.08)	(0.12)	(0.11)	(0.10)	(0.10)	(0.21)	(0.13)	(0.10)	(0.09)
Europe	Constant	–0.02	–0.01	–0.02	–0.02	0.02	0.01	0.02	0.02	–0.01	–0.01	–0.01	–0.01	–0.01	–0.01	–0.01	–0.01
		(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
	OECD (β_1)	0.16	0.15	0.14	0.15	0.14	0.11	0.13	0.15	0.08	0.08	0.08	0.08	0.12	0.11	0.10	0.11
		(0.04)	(0.03)	(0.02)	(0.02)	(0.04)	(0.03)	(0.04)	(0.03)	(0.03)	(0.05)	(0.05)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)
	Lag (β_2)	0.33	0.39	0.42	0.34	0.46	0.35	0.44	0.42	0.33	0.34	0.36	0.33	0.14	0.09	0.10	0.11
		(0.11)	(0.10)	(0.06)	(0.07)	(0.12)	(0.09)	(0.10)	(0.10)	(0.08)	(0.07)	(0.07)	(0.06)	(0.08)	(0.10)	(0.09)	(0.10)

Note: 1. Numbers in parentheses are standard deviations.