



Independent Evaluation Office  
*of the* International Monetary Fund



# **An IEO Evaluation of IMF Forecasts: Process, Quality, and Country Perspectives**

## **IMF Training on Forecasting Methods and Forecast Interpretation**

### **BACKGROUND DOCUMENT 2**

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## ABBREVIATIONS

AFR	African Department
APD	Asia and Pacific Department
DL	Distance Learning
ED	Executive Director
EUR	European Department
FAD	Fiscal Affairs Department
FPP	Financial Programming and Policies
HQ	Headquarters
ICD	Institute for Capacity Development
IEO	Independent Evaluation Office
IET	Internal Economist Training
IMF	International Monetary Fund
INS	IMF Institute (now ICD)
JV	Joint Vienna Institute
MCD	Middle Eastern and Central Asia Department
MCM	Money and Capital Markets Department
MDS	Macro Diagnostics
MF	Macro Forecasting
OECD	Organization for Economic Co-operation and Development
OT	Other Training (venues)
PDR	Policy Development and Review Department
RES	Research Department
RTC	regional training center
SPR	Strategy, Policy, and Review Department



## I. INTRODUCTION

1. This background document for the IEO evaluation of “IMF Forecasts: Process, Quality, and Country Perspectives” is based on data provided by the Fund’s Institute for Capacity Development (ICD), the results of a survey conducted by the IEO among country officials and IMF staff, and a number of follow-up interviews with staff and officials of IMF Executive Directors’ offices.
2. The document is organized as follows. Section II presents data on the forecasting training available to IMF staff. The overall range of courses offered to IMF staff is wide and has changed over time: the data employed here refer to attendance at training events between 2005 and 2012.<sup>1</sup> During this period, an IMF economist received on average half a day of training in forecasting principles or techniques.
3. Section III deals with the training on forecasting offered to country officials in Washington, in regional training centers, and in member countries (regularly or as one-off events). Among the courses offered to country officials, three in particular are considered here for their scope in relation to forecasting methods and forecast interpretation: Financial Programming and Policies (FPP), Macro Diagnostics (MDS), and Macro Forecasting (MF).<sup>2</sup> Although only the third of these explicitly focuses on econometric forecasting techniques, the first (FPP) stresses projections as an essential tool for the design and assessment of an adjustment program, while the second (MDS) employs forecasts for diagnosing and understanding economic problems. According to the data, the demand for more specific courses in forecasting is growing fast, with the number of participants in the MF course growing tenfold between 2005 and 2012.
4. Section IV of the paper assesses the value of the training as perceived by recipients: IMF staff and country officials. The analysis is based on the results of the IEO survey, its follow-up interviews, and the latest triennial Training Evaluation Survey conducted by Harris Interactive for the ICD. In general, apart from the course on Financial Programming and Policies (which is mandatory for new IMF staff), courses on forecasting do not seem to be widely attended by staff members. Time may be the major constraint. In addition, staff respondents to the evaluation survey do not find these courses immediately relevant for the work they routinely do, and many stressed that they have no explicit incentive to participate in training events.
5. Section V provides concluding remarks and recommendations.

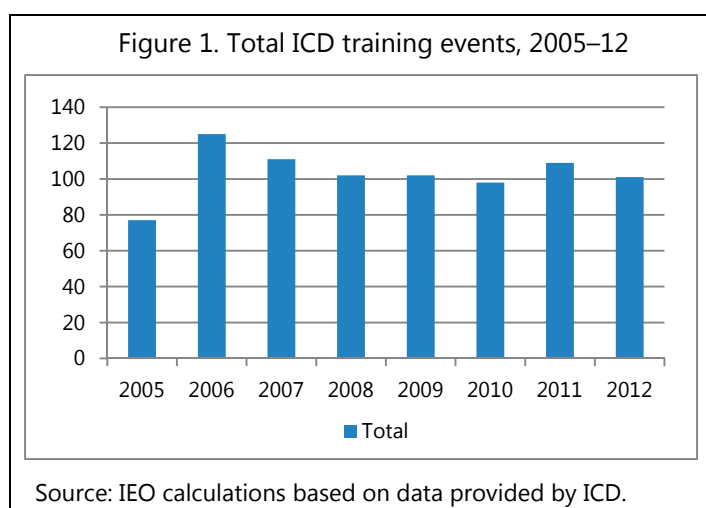
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<sup>1</sup> These events are listed in Annex 1.

<sup>2</sup> A short description of these courses is provided in Annex 2.

## II. COURSES ON FORECASTING OFFERED TO IMF STAFF

6. Among international organizations that systematically produce global forecasts, the IMF is the only one to offer regular training on forecasting to its staff.<sup>3</sup> Within the Institute for Capacity Development (formerly known as the IMF Institute), the Internal Economics Training Program targets mainly IMF staff in Washington—although some of the component courses are open to country officials. The ICD’s training events include not only courses and seminars, but also working luncheons and conferences sometimes organized jointly with other IMF departments. The range of courses and seminars available to IMF staff at headquarters has varied over the years. Besides offering a rather stable set of training events that cover the basic needs of IMF staff, the ICD adjusts quickly to changes in staff demand by inviting renowned experts to speak on topics particularly relevant for current economic policy debate. The annual number of training events varied in the evaluation period: from 77 in 2005 to 125 in 2006 to 101 in 2012 (Figure 1).



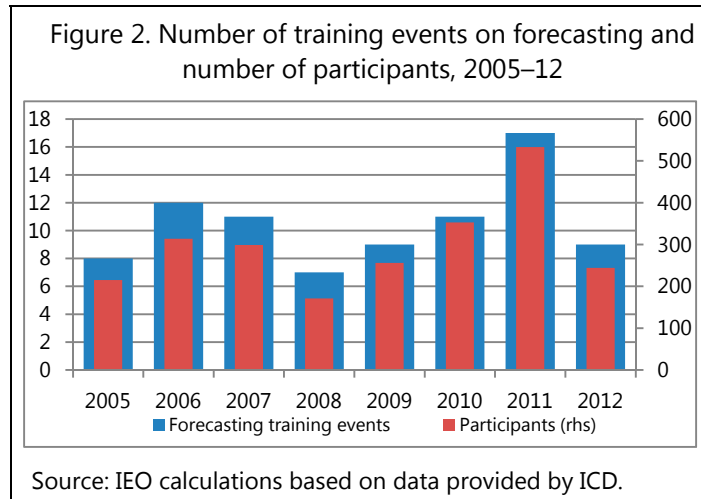
7. The number of forecasting-related courses and seminars<sup>4</sup> offered to IMF staff was 8 in 2005, it peaked at 17 in 2011, and declined to 9 in 2012 (Figure 2). The number of participants in training on forecasting was at its maximum in 2011 (533) (Figure 2).<sup>5</sup>

<sup>3</sup> As confirmed by interviews with these organizations. IMF ICD staff have delivered FPP courses in Brussels at the European Commission and in Frankfurt at the European Central Bank.

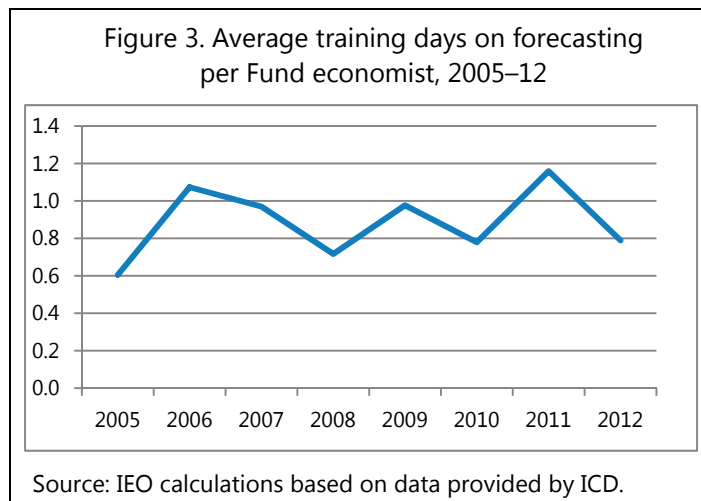
<sup>4</sup> These figures include training events classified as “joint events,” that is, seminars organized jointly by two or more IMF departments.

<sup>5</sup> This figure excludes the number of country officials who participated in these courses.



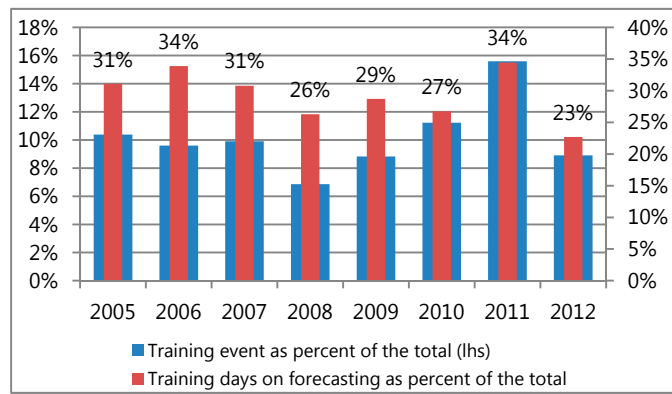


8. On average, an IMF economist received 0.6 days of training in forecasting in 2005 and a maximum of 1.2 days in 2011. The trend in staff training days appeared to be positive starting in 2008, but 2012 marked a quite stark decline, with the average number of days nearly back to the 2005 level (Figure 3).



9. Forecasting was the subject of about 10 percent of the total training events, and of nearly 30 percent of the training days, that the Internal Economics Training Program provided over the evaluation period (Figure 4). The proportion of forecasting-related courses in the total registered an increase, peaking in 2011, but if 2011 is excluded, as an exceptional year for training on forecasting, then the general trend in the proportion would appear to be negative.

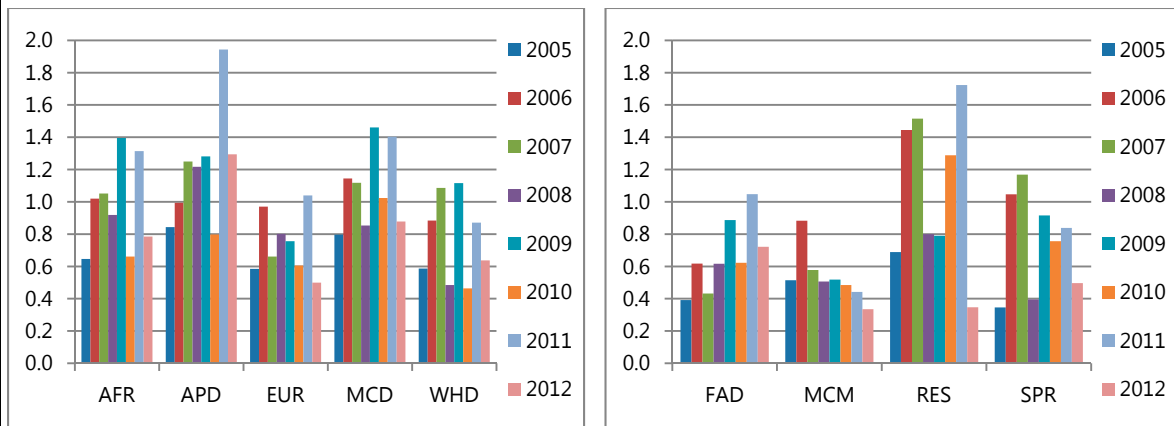
Figure 4. Training events in forecasting: number and days



Source: IEO calculations based on data provided by ICD.

10. Area department economists received more training on forecasting than economists from functional departments (Figure 5). Adjusted by size, the Asia and Pacific Department (APD) consistently received more training on forecasting than the other area departments, while Research (RES) was the first among functional departments (placing only marginally lower than APD).

Figure 5. Training in forecasting: staff participants by area departments and functional departments



Source: IEO calculations based on data provided by ICD.

11. Genberg and Martinez (2014) find a positive relationship between the number of training weeks on forecasting courses received by members of a country team and the accuracy of the projections that the team produces. More precisely, they find a significant negative correlation between the absolute forecasting error and the weeks of training in forecasting taken in the preceding period (2002–07).

### III. COURSES ON FORECASTING OFFERED TO COUNTRY OFFICIALS

12. Capacity development plays a fundamental role in the IMF's crisis-prevention efforts. The ICD offers a series of training events (primarily courses and high-level seminars) to country officials as a way to complement the technical assistance initiatives that are delivered by other functional departments.<sup>6</sup> As macroeconomic management, economic analysis, and policy design are predicated upon accurate forecasts and correct interpretation of economic variables, training on forecasting techniques and analysis receives special attention in the curriculum that ICD offers to member countries' officials.

13. The data underlying this section refer to three courses: Financial Programming and Policies (FPP), Macro Diagnostics (MDS), and Macro Forecasting (MF).<sup>7</sup> These courses have been chosen because they are explicitly designed to cover forecasting techniques (MF) or because they introduce the rudiments of forecasting for policy design purposes (FPP) and for economic analysis and diagnostics (MDS). The courses are regularly offered to country officials. During the period 2005–12, more than 7,000 officials from across the world attended the course on FPP, nearly 1,300 attended the Macro Diagnostics course, and nearly 800 attended the Macro Forecasting course (Figure 6).

14. The evaluation period as a whole saw a decline in the number of FPP courses and participants, partly because budgetary considerations led the Fund to reduce the number of courses it offered at headquarters.<sup>8</sup> But after the eruption of the 2007–09 economic crisis, countries began approaching the IMF for support through various programs and the number of FPP participants rose again in 2011 and 2012.

15. By contrast, MDS and MF have been on a secular positive trend. Macro Forecasting, the latest of the three courses to be introduced into the curriculum, was offered only once in 2005, but seven times in 2012. And based on the demands of country officials recorded in the latest triennial "Training Evaluation Survey" commissioned by the ICD, its supply can be expected to grow further.

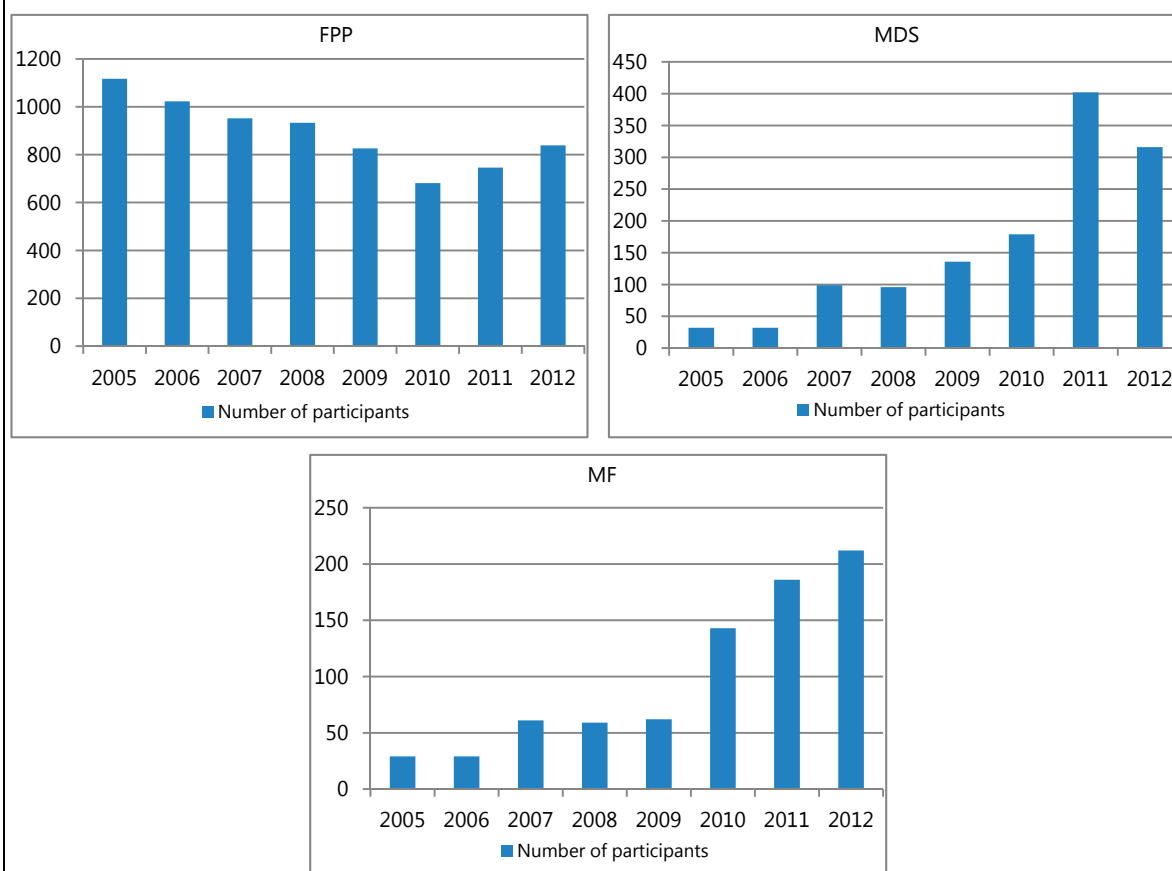
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<sup>6</sup> For example, FAD provides training on fiscal forecasting in the context of the Topical Trust Fund for the Management of Natural Resource Wealth (TTF-MNRW) especially to resource-rich developing countries.

<sup>7</sup> The first two are offered, with some difference in the breadth of topics covered, both at headquarters and at various regional centers, while MF is offered only at regional centers.

<sup>8</sup> The ICD is developing an e-learning version of the FPP that will replace the Distance Learning version of the course (DL-FPP). A pilot version has been launched in January 2014 and a fully fledged version may eventually be offered to the public at large as part of the Institute's strategy for outreach and capacity building.

Figure 6. Training in forecasting: country officials' attendance by course



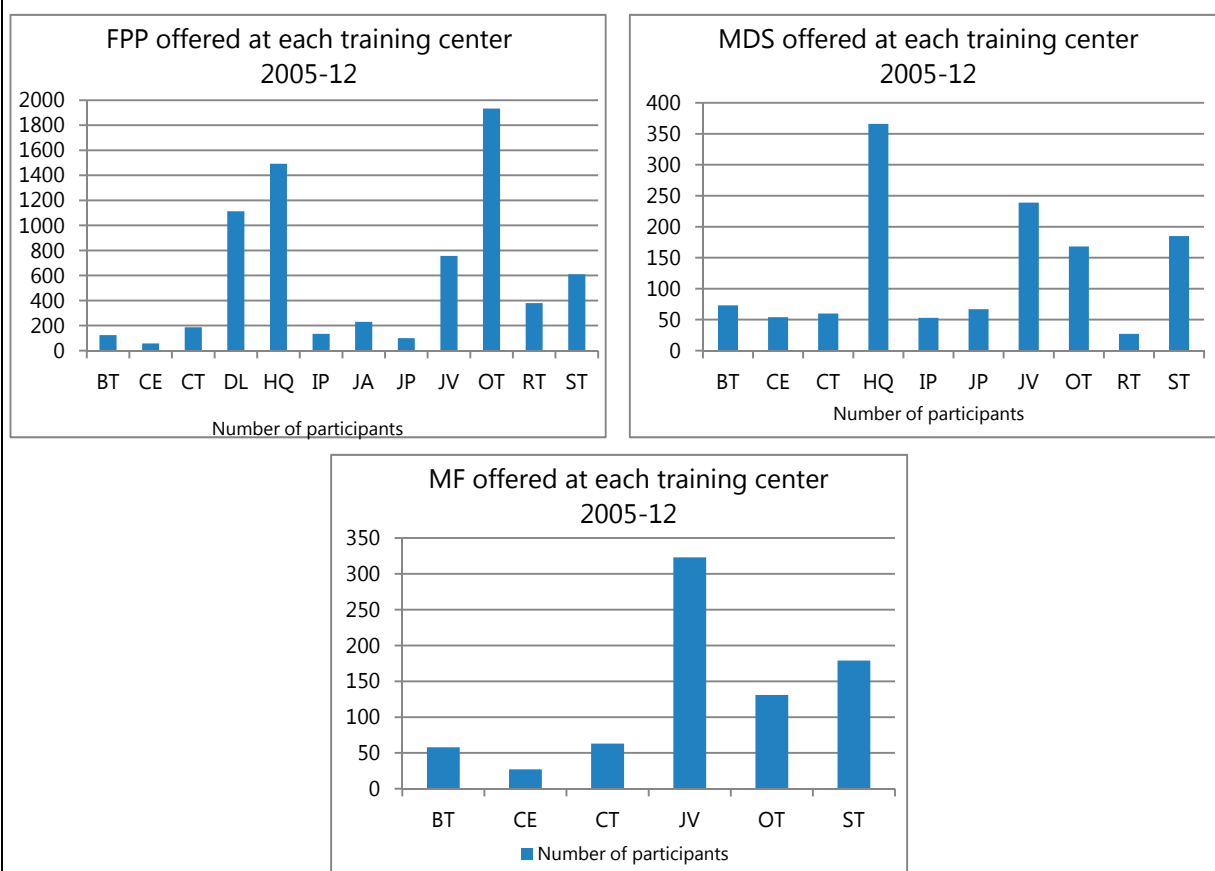
Source: IEO calculations based on data provided by ICD.

16. The IMF strategy for training, like technical assistance, has been to decentralize the provision of courses to the various regions of the globe to provide an appropriately diversified curriculum that meets the demands of nearby member countries. Regional training centers and the Joint Vienna Institute now host the bulk of courses (Figure 7).<sup>9,10</sup>

<sup>9</sup> Joint Regional Training Center for Latin America in Brasilia (BT), Joint China-IMF Training Program (CE), Joint IMF-India Training Program (CT), Joint Africa Institute (JA), Joint Partnership for Africa (JP), Joint Vienna Institute (JV), IMF-AMF Regional Training Program (RT), and IMF-Singapore Regional Training Institute (ST). In 2012 a new center was opened in Mauritius and the number of courses offered in that center is planned to grow and absorb much of the demand for training from the African continent. In addition, in Figure 7, DL stands for Distance Learning and OT stands for Other Training, i.e., special one-off courses offered in member countries.

<sup>10</sup> Note that Macro Forecasting is not offered at HQ for country authorities.

Figure 7. FPP, MDS, and MF courses offered at each training center

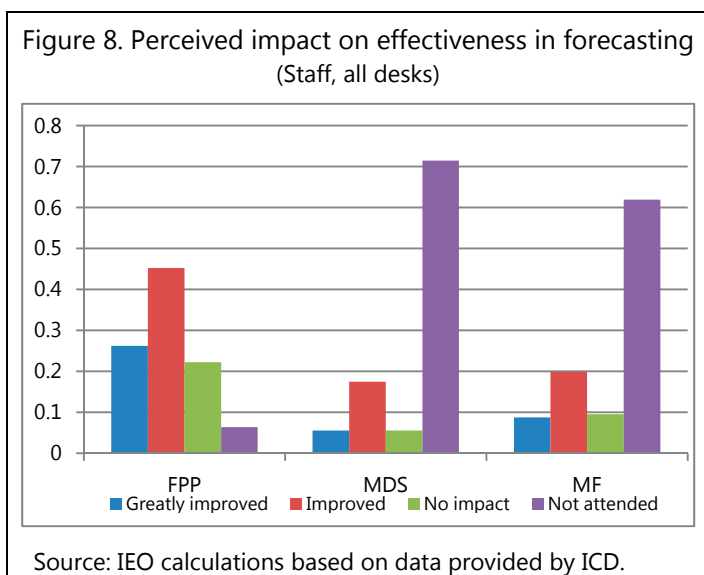


Source: IEO calculations based on data provided by ICD.

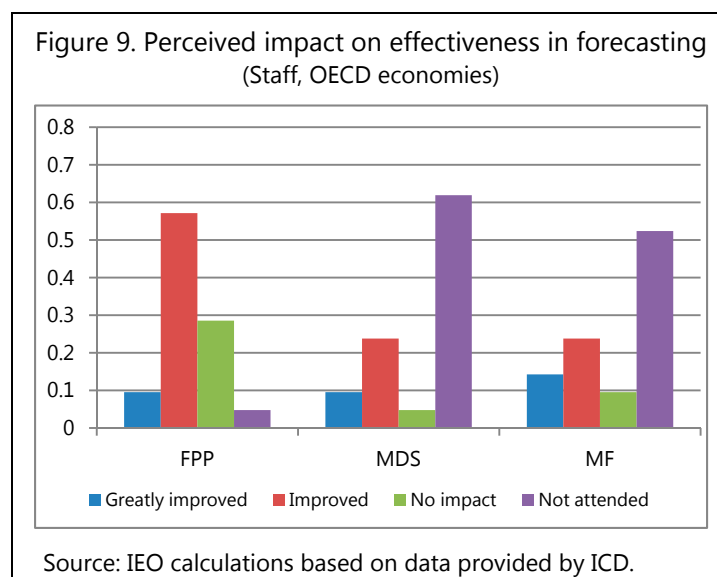
#### IV. IMF STAFF AND COUNTRY OFFICIALS' PERCEPTIONS OF TRAINING

17. This section draws on two sources: a survey prepared by the IEO and a survey commissioned by the ICD as part of the latest triennial review. The IEO survey was conducted among IMF staff, country officials, and finance professionals eliciting their comments on IMF's forecasting processes and their perceptions of the forecasts produced by the IMF. The ICD survey was sent to country officials only. In addition, the IEO evaluation team undertook a series of interviews with IMF desk economists and staff from the offices of several IMF EDs.

18. The survey questionnaire sent to IMF staff included the following question: "To what extent have the following courses provided by the IMF Institute for Capacity Development improved your ability to produce forecasts for your desk?" Out of the 126 survey respondents, about 95 percent had attended the course on FPP (which is part of the compulsory orientation program for new IMF staff), fewer than 30 percent had attended that on MDS, and nearly 40 percent had attended that on MF. Figure 8 shows how the respondents perceived the impact of those courses on the effectiveness in forecasting.



19. Desk economists working on OECD countries—which tend to have richer available databases, “more sophisticated” and “challenging” counterparts, and greater global systemic relevance than other countries—value the effectiveness of FPP somewhat less, and that of MDS and MF, somewhat more than the average of all economists (Figure 9).



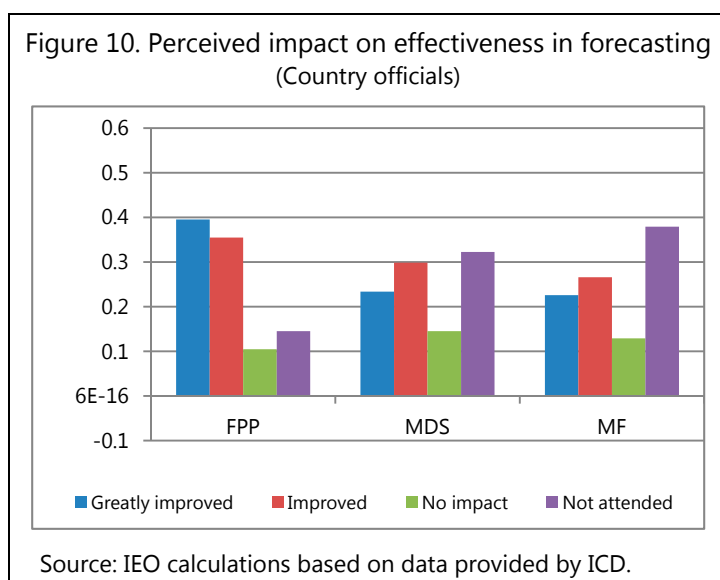
20. According to the interview results, the striking difference between the staff attendance rate of FPP and the other courses may not only be because FPP is the only compulsory course but also partly because (i) the other courses are “too academic” and not immediately relevant for the desk work; (ii) the normal schedule of desk economists is quite busy, leaving no time to devote to such courses (particularly the longer ones), especially because the institution does not give the right incentives to participate in such events if they

do not have an immediate return. A few interviewees even suggested that a course on forecasting should be made compulsory like the FPP.

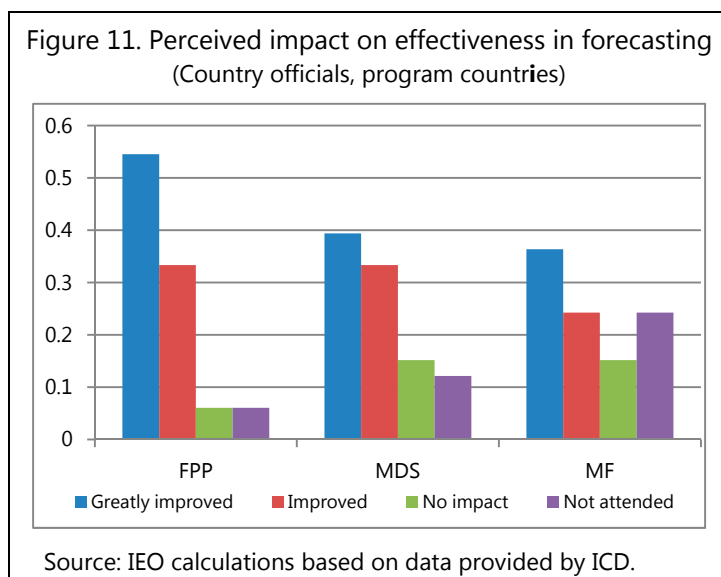
21. Furthermore, interviewees expressed a general feeling that a set of tool kits for forecasting should be developed to tackle the various needs of desks exposed to different situations dictated by data quality and availability. Training events should then be organized to teach the use of such toolkits.

22. The evaluation survey questionnaire sent to country officials asked “To what extent have the following courses provided by the IMF Institute for Capacity Development improved your ability to produce and interpret forecasts for your country?” Out of 124 respondents, about 85 percent had attended the course on FPP, almost 70 percent a course on MDS, and slightly more than 60 percent a course on MF.

23. Compared with the average across all member countries, officials from program countries claim a significantly larger positive impact of these courses on their ability to produce and interpret forecasts (Figures 10 and 11).



24. Officials from low-income countries and emerging markets expressed significantly more appreciation for the courses than did officials from advanced economies. And those from African countries expressed significantly more appreciation than those from Asian and Pacific countries.



25. In 2012, Harris Interactive was contracted by the IMF to assess the effectiveness of the IMF training program and to compare the results with five previous training evaluation surveys, the latest of which had been conducted in 2009. Some of the results in the Harris survey provide interesting additional evidence on country authorities' perceptions about courses centered on forecasting. With 71 percent of respondents asking for an increase in the offering of such courses, it appears evident that forecasting and economic modeling have top priority in the authorities' training list.

## V. CONCLUSIONS AND RECOMMENDATIONS

26. The IMF is unique among international institutions in providing training in forecasting both to its staff and to member countries' officials. According to Genberg and Martinez (2014), training in forecasting, along with accumulated experience, appears to support better forecasting performance. Furthermore, the results from the evaluation survey of country officials suggest that the perceived benefit of training in forecasting, which is high across the membership, is higher in lower-income countries and highest in program countries. In program countries, such courses have not only increased the capacity to produce and interpret forecasts, but also have fostered the development of a language that is common to IMF missions, ultimately promoting countries' ownership of adjustment programs.

27. Two main recommendations follow from the above analysis:

- (i) To increase the effectiveness of internal training, courses on forecasting should provide the Fund's country desks with tools that are more readily employed in their routine work. In cooperation with RES, forecasting toolkits could be developed and disseminated. Of course, the offer needs to strike a balance between training in specific techniques, which may become rapidly obsolete, and in more "academic" or theory-oriented material that may be conducive to the



development of the next generation of tools. At the same time, incentives to attend training courses should be provided.

- (ii) Resources devoted to capacity building through training should be directed to the highest marginal benefit. The survey results suggest that low-income program countries are the recipients for which the value added is highest. This has obvious implications for the type of training events and material that should be developed.

**REFERENCE**

Genberg, H., and Martinez, A. (2014), “On the Accuracy and Efficiency of IMF Forecasts: A Survey and Some Extensions,” IEO Background Paper No. BP/14/04 (Washington: International Monetary Fund).

## ANNEX 1. LIST OF TRAINING EVENTS FOR IMF STAFF

## IET Training Events (CY 2005–12)

	Length in days	Number of participants	Title
<b>2005</b>			
Courses			
	2.50	25	Forecasting in Macroeconomics and Finance
	5.00	32	Macroeconometric Modeling and Forecasting Using EViews
	5.00	38	Basic Econometrics Using EViews
	2.50	23	Topics in Applied Time Series Analysis
	1.50	39	Vector Autoregressions
Financial Programming and Policies			
	6.00	29	Financial Programming and Policies Workshop
	6.00	30	Financial Programming and Policies Workshop
Seminars			
	0.50	35	Macroeconomic Forecasting: 15 Years of Experience and New Developments
<b>2006</b>			
Courses			
	5.00	36	Econometric Modeling and Forecasting
	2.50	31	Forecasting in Macroeconomics and Finance
	2.50	37	Macroeconomic Policy Analysis with VAR Models
	4.50	34	Empirical Modeling of Macroeconomic Time Series
	5.00	35	Macroeconometric Modeling and Forecasting Using EViews
	2.50	24	Topics in Applied Time Series Analysis
	1.50	35	The Use of VARs in Economics
	5.00	31	Basic Econometrics Using EViews
Financial Programming and Policies			
	6.00	17	Financial Programming and Policies Workshop
	6.00	19	Financial Programming and Policies Workshop
	6.00	27	Financial Programming and Policies Workshop
	6.00	27	Financial Programming and Policies Workshop
<b>2007</b>			
Courses			
	5.00	34	Econometric Modeling and Forecasting
	2.50	32	Forecasting in Macroeconomics and Finance
	2.50	32	Topics in Applied Time Series Analysis
	5.00	35	Macroeconometric Modeling and Forecasting Using EViews
	4.50	39	Empirical Modeling of Macroeconomic Time Series
	5.00	32	Basic Econometrics Using EViews
	1.50	37	The Use of VARs in Economics
Financial Programming and Policies			
	6.00	19	Financial Programming and Policies Workshop
	6.00	14	Financial Programming and Policies Workshop
	6.00	28	Financial Programming and Policies Workshop
Seminars			
	0.50	38	Exchange Rate Models Are Not As Bad As You Think

**IET Training Events (CY 2005–12) (continued)**

	<b>Length in days</b>	<b>Number of participants</b>	<b>Title</b>
<b>2008</b>			
Courses			
	2.50	41	Forecasting in Macroeconomics and Finance
	5.00	28	Econometric Modeling and Forecasting
	5.00	34	Macroeconometric Modeling and Forecasting Using EViews
	5.00	37	Empirical Modeling of Macroeconomic Time Series
	5.00	33	Basic Econometrics Using EViews
Financial Programming and Policies			
	6.00	15	Financial Programming and Policies Workshop
	6.00	28	Financial Programming and Policies Workshop
<b>2009</b>			
Courses			
	5.00	13	Econometric Modeling and Forecasting
	2.50	32	Forecasting in Macroeconomics and Finance
	5.00	33	Macroeconometric Modeling and Forecasting Using EViews
	5.00	30	Empirical Modeling of Macroeconomic Time Series
	5.00	35	Basic Econometrics Using EViews
Financial Programming and Policies			
	6.00	14	Financial Programming and Policies Workshop
	6.00	44	Financial Programming and Policies Workshop
	6.00	55	Financial Programming and Policies Workshop
	0.50	43	Patterns and Stories: A Forecaster's View of the U.S. Economy
<b>2010</b>			
Courses			
	4.50	24	Econometric Modeling and Forecasting
	2.50	35	Forecasting in Macroeconomics and Finance
	5.00	34	Basic Econometrics Using EViews
	5.00	34	Financial and Macroeconomic Simulation Modeling and Forecasting Using EViews
	2.50	22	Advanced Dynamic Modeling and Forecasting
<b>Joint Event</b>			
INS-FAD			
	0.50	71	Early Warning Exercise (SPR and FAD)
Financial Programming and Policies			
	6.00	26	Financial Programming and Policies
	6.00	43	Financial Programming and Policies
Seminars			
	0.50	20	Combination Forecasts
INS-MCM			
	0.50	35	Early Warning Exercise (MCM)
INS-RES			
	0.50	47	Early Warning Exercise (RES)

**IET Training Events (CY 2005–12) (concluded)**

	<b>Length in days</b>	<b>Number of participants</b>	<b>Title</b>
<b>2011</b>			
Courses			
	5.00	24	Empirical Modeling of Macroeconomic Time Series
	2.50	37	Forecasting in Macroeconomics and Finance
	2.50	32	Macroeconomic Modeling with VARs
	5.00	31	Macroeconometric Modeling and Forecasting Using EViews
	5.00	32	Econometric Modeling and Forecasting
	2.50	22	Advanced Dynamic Modeling and Forecasting
	1.50	32	Forecasting
	5.00	37	Basic Econometrics Using EViews
	2.00	28	Volatility Modeling Using EViews
	2.00	28	Factor Models in EViews
Financial Programming and Policies			
	5.00	37	Financial Programming and Policies Workshop
	6.00	44	Financial Programming and Policies Workshop
INS-RES			
	0.50	32	Early Warning Exercise (RES)
	5.00	24	Constructing Baseline Forecasts and Risk Assessments with the Global Projection Model
Seminars			
	0.50	30	Forecast Combinations
<b>Joint Events</b>			
INS-SPR			
	0.50	87	Early Warning Exercise (SPR-FAD)
INS-MCM			
	0.50	36	Early Warning Exercise (MCM)
<b>2012</b>			
Courses			
	2.50	25	Forecasting in Finance and Macroeconomics, and Their Interface
	5.00	35	Basic Econometrics Using EViews
	2.00	17	Volatility Modeling Using EViews
	2.00	23	Factor Models in EViews
	1.00	32	Forecasting Using Bayesian Techniques
	1.00	13	Combination Forecasts
Financial Programming and Policies			
	6.00	42	Financial Programming and Policies
	6.00	48	Financial Programming and Policies
	6.00	28	Financial Programming and Policies

## ANNEX 2. SUMMARY OF COURSE CONTENTS

Data discussed in the text of this document refer to three courses that are offered regularly to country authorities: Financial Programming and Policies, Macro Diagnostics, and Macro Forecasting. The Financial Programming and Policies course is offered in various forms. The version held at headquarters in Washington is now four weeks long, but has been shortened from seven weeks four years ago. The Distance Learning version of this course has two segments: the distance learning segment lasting eight weeks and a residential segment lasting two weeks, offered at IMF headquarters, or in Vienna hosted by the Joint Vienna Institute, or at regional training centers. The Macro Diagnostics is offered in a four-week format at headquarters in Washington and in a two-week format at regional training centers. Unlike the other two, the two-week Macro Forecasting course is offered only at regional training centers.

The official description of the three courses, extracted for the ICD and JVI catalogue, is reproduced below for convenience.

### **Financial Programming and Policies**

At regional centers (Joint Vienna Institute):

#### *Target audience:*

Mid- to senior-level officials, primarily in ministries such as finance, economy, and planning, or in central banks, who provide advice on macroeconomic and financial policy or who are involved in policy implementation.

#### *Course description:*

This two-week course is an overview of the four-week FPP course offered at IMF headquarters in Washington D.C. The course, presented by the IMF's Institute for Capacity Development, aims at extending participants' understanding of the design and implementation of macroeconomic and financial policies, drawing on the IMF's experience in economic surveillance, the design of financial programs, and the provision of technical advice to member countries. The course covers: - the principal features of the different accounts used in macroeconomic analysis (i.e., the national income, balance of payments, fiscal, and monetary accounts), the interrelations among these accounts, and forecasting methods for each sector - the diagnosis of macroeconomic performance and analysis of the effects of macroeconomic and structural policies on the main variables of interest to policymakers, including output, prices, and the balance of payments and - the preparation of a macroeconomic policy program. The course material is presented in a framework that emphasizes the complementarity of macroeconomic stabilization policies and structural reforms and the importance of policy coordination for sustained growth. Selected macroeconomic and structural adjustment programs implemented by member countries are

used to illustrate how policies can be adapted to changing economic circumstances. The course includes a series of workshops in which participants are divided into groups, under the guidance of counselors, to develop sectoral forecasts and prepare macroeconomic policy programs for a case study country. At IMF headquarters:

*Target audience:*

Mid-level officials providing advice on macroeconomic and financial policies or involved in policy implementation (course requires substantial background).

*Course description:*

This four-week course, presented by the IMF's Institute for Capacity Development, aims at extending participants' understanding of the design and implementation of macroeconomic and financial policies, drawing on the Fund's experience in economic surveillance, the design of financial programs, and the provision of technical advice to member countries. The course covers: - the principal features of the different accounts used in macroeconomic analysis (i.e., the national income, balance of payments, fiscal, and monetary accounts) and the interrelations among these accounts, and forecasting methods for each sector - the diagnosis of macroeconomic performance and analysis of the effects of macroeconomic and structural policies on the main variables of interest to policymakers, including output, prices, and the balance of payments and - the preparation of a macroeconomic policy program. The course material is presented in a framework that emphasizes the complementarities between macroeconomic stabilization policies and structural reforms and the importance of policy coordination for sustained growth. Selected macroeconomic and structural adjustment programs implemented by member countries are used to illustrate how policies can be adapted to changing economic circumstances.

## **Macro Diagnostics**

At regional centers (Joint Vienna Institute):

*Target audience:*

Mid- to senior-level officials, either in central banks or in ministries such as finance and economy, who are closely involved in assessing overall macroeconomic developments and prospects.

*Course description:*

This course, presented by the IMF's Institute for Capacity Development, is offered in both a four-week format at IMF Headquarters and a condensed two-week version at the Institute's regional training centers. This course aims to strengthen participants' ability to assess a country's macroeconomic situation, emphasizing practical tools for use in day-to-day

macroeconomic analysis of developments in complex economies. The course draws heavily on actual country experiences, emphasizing diagnostic and analytic tools that typically are not well covered in macroeconomics textbooks or in university courses. The lectures and corresponding workshops cover three broad types of assessments: - The current state of the macroeconomy, including developments in aggregate productivity and demand, inflation, labor markets, asset markets, and the external sector. - Fiscal and monetary policies from a positive (rather than normative) perspective. Are these policies expansionary or contractionary? What impacts do these policies have on the macroeconomy, and why? - Medium-term prospects for the country, including sustainability of public and external debt trajectories, potential misvaluation of the real exchange rate, and balance sheet vulnerabilities in a country's financial sector, non-financial corporations, and public sector. Participants are expected to actively participate in discussions throughout the course. For practical workshops that implement the diagnostic and analytical tools presented in the lectures, participants are divided into small groups, each directed by a counselor.

At IMF headquarters:

*Target audience:*

Mid- to senior-level officials in central banks and ministries of finance or economy directly involved in diagnosing the state of the macroeconomy and making projections.

*Course description:*

This course, presented by the IMF's Institute for Capacity Development is offered in both a four-week format at IMF Headquarters and a condensed two-week version at the Institute's regional training centers. This course aims to strengthen participants' ability to assess a country's macroeconomic situation, emphasizing practical tools for use in day-to-day macroeconomic analysis of developments in complex economies. The course draws heavily on actual country experiences, emphasizing diagnostic and analytic tools that typically are not well covered in macroeconomics textbooks or in university courses. The lectures and corresponding workshops cover three broad types of assessments: - The current state of the macroeconomy, including developments in aggregate productivity and demand, inflation, labor markets, asset markets, and the external sector. - Fiscal and monetary policies from a positive (rather than normative) perspective. Are these policies expansionary or contractionary? What impacts do these policies have on the macroeconomy, and why? - Medium-term prospects for the country, including sustainability of public and external debt trajectories, potential misvaluation of the real exchange rate, and balance sheet vulnerabilities in a country's financial sector, non-financial corporations, and public sector. Participants are expected to actively participate in discussions throughout the course. For practical workshops that implement the diagnostic and analytical tools presented in the lectures, participants are divided into small groups, each directed by a counselor.



## **Macro Forecasting**

### *Target audience:*

Mid- to senior-level officials involved in developing forecasts that are used in the design and implementation of macroeconomic policy.

### *Course description:*

This two-week course, presented by the IMF's Institute for Capacity Development, aims to strengthen participants' macroeconomic forecasting and modeling skills through the application of modern econometric techniques. Lectures are designed to include a discussion of underlying theory, live presentations of empirical analyses on a personal computer, and hands-on learning by participants in a computer lab. The course focuses on four aspects of empirical model building and forecasting: - data and model properties, including stationarity, non-stationarity and cointegration - dynamic specification, including the use of error correction models - model evaluation and model design and - forecast uncertainty, forecasting for policy, and policy analysis and - combination forecasts. Participants apply the techniques to a case study country for which they estimate a model, evaluate it, and then use the model for forecasting.