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The macroeconomic effects of IMF programs in MENA countries

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Using panel data for six Middle East and North African (MENA) countries over the period of 1975 to 2004, this paper analyzes macroeconomic effects of IMF programs. Consistent with the results of previous studies, it is shown that IMF programs have positive effect on balance of payments. However, these programs have negative impacts on investment, inflation and consumption. It is also found that these programs have no effect on the per capita GDP, current account, budget deficits and foreign direct investments in the selected MENA countries. The results suggest that, on average, when a country starts with a balance of payments crisis and IMF involvement enables it to overcome it, this is making macroeconomic situation worse.

Key words: IMF, MENA, stabilization programs.

INTRODUCTION

The primary role of the International Monetary Fund (IMF) is to provide credits to member countries in balance-of-payments difficulties. The basic conception of the IMF's role, as envisioned at Bretton Woods in 1944, was to promote exchange rate stability and provide short-term finance to deal with temporary current account deficits in advanced countries. However, with the breakdown of the "par adjustable peg system" in 1973, the IMF lost its major role as the "guarantor of fixed exchange rates" among advanced countries (Barro and Lee, 2005, p. 1247)¹. In its 64 years of existence, the IMF has been criticized because of its institutional structure and lending practices. Some argue that the IMF is a bureaucratic and nontransparent institution with no accountability for its actions. It has also been suggested that, fund-supported stabilization programs are ineffective and may create moral hazard (Evrensel, 2002; p. 1; Dreher and Vaubel, 2001).

IMF and the World Bank, play a significant role in determining the policy dynamics in many developing countries. As a result of the IMF supported economic

reform programs, many crisis-hit countries in the 1990s have temporarily succeeded in achieving macroeconomic stabilization and the existing studies suggest that IMF programs provide a short-run balance of payments relief to crisis-hit countries². This effort has, however, been accompanied by temporary deceleration of real growth and prolonged recession in some countries (Mallick and Moore, 2005; p. 366). Despite these statements about the value of recent IMF programs, no consensus has emerged about the impact of these programs on the real side of the economy. Most empirical studies using panel data sets and regression techniques find that, IMF-supported programs improve the balance of payments and current account (e.g. Khan, 1990; Conway, 1994; Bagci and Perraudin, 1997; Bordo and Schwartz, 2000), but views on the ultimate output and employment effects are much more divergent (Hutchison, 2001; p. 1).

This paper focuses on the effectiveness of fund-supported stabilization programs for six Middle East and North Africa (MENA) countries (Algeria, Egypt, Jordan, Morocco, Tunisia and Yemen) to see whether the IMF achieves its own goals or not. During the sample period, six countries received any of the two adjustment programs; Standby Agreement (SBA) and Extended Fund Facility (EFF), are studied. Since Structural

JEL classification: E63, F32, F34, F41, N1, O19.

¹Krueger (1998), and Bordo and James (2000) for discussions of the changing role of the IMF.

²Donovan (1982), Doroodian (1993), Conway (1994), Przeworski and Vreeland (2000), and Evrensel (2002).

Adjustment Facility (SAF) and Enhanced Structural Adjustment Facility (ESAF) programs are designed for poverty reduction and growth facility, we did not use the effects of these programs in this study³.

The economy of MENA countries and arrangements with IMF

The Middle East and North Africa (MENA) consists of the predominately Islamic cultures of the Gulf Arab countries, the Levant, the countries of North Africa, plus Iran and the more industrialized country of Israel. MENA region comprises countries with significant distinctions in levels of per capita income, economic diversification, liberalisation, economic and political stability. The region is politically sensitive. Geo-political considerations, the Israeli-Palestinian conflict, the war in Iraq, a process of political transition in the face of strong vested interest groups, religious extremism, and volatility which creates enormous uncertainty, all increase the degree of political sensitivity in the region. This sensitive political environment leads to prudence on the part of the leaders in adopting new policies with long-term benefits but immediate social costs. The region is slow and lagging in reforms. Countries are slow to move on structural reforms and for decades have performed well below their potential.

Oil and strategic rents have enabled many countries to postpone reforms while putting in place social and employment policies, that are proving increasingly unsustainable. Serious governance issues in both the public and corporate sectors are not being adequately addressed. The region has not featured in the upsurge of private capital to developing countries. Distortions continue to thwart competitiveness. On the economic front, MENA is remarkable for its lack of integration—in terms of the extent of economic interaction within the region, and the absence of an effective framework or institutions responsible for formulating and implementing rules and policies to influence, regulate, and supervise economic relations. On the geographical front, the region covers a large, contiguous land mass rich in diverse natural resources (oil, gas, non-fuel minerals, agriculture pockets, etc.)⁴.

In order to understand economic performance of the region and economic reforms from the mid-1980s onwards, it is necessary to divide performance into sub-periods. During the 1973 to 81 period, the region's wealth and industrial structure was concentrated on oil. During this period the region as a whole also enjoyed substantial

inflows of so called Official Development Assistance (ODA) from DAC bilateral donors, non-DAC bilateral donors and multilateral donors. The 1970s was a golden period for the MENA region⁵. It seems that 2007 to 2010 period is going to be a golden period for the oil exporting countries too. GDP growth averaged over 6% per annum, gross domestic savings and capital formation were a respectable 37% and 29% of GDP respectively and both export and import coefficients were high. On the back of this wealth, public expenditure expanded with a strengthening of both state welfarism and state economic activity.

However, when oil prices softened in the 1980s, the structural weaknesses of the economies in the region, especially the over-reliance on oil, became apparent⁶. Growth declined and per capita GDP decreased by an average 1.0% per year in the 1980s, a rate worse than any other developing region, except sub-Saharan Africa. Other economic indicators also pointed in the same direction. The disappointing economic performance of the MENA region in the 1980s can be attributed to a number of factors. Internally, a high population growth rate, poor economic management, corruption, and prolonged heavy protection led to high unemployment and economic inefficiency. It is also worth noting that during the oil boom years, despite having high domestic saving rates and high inflows of foreign aid, investment in the MENA region was well below the saving capacity. Consequently, resources were mostly diverted towards consumption as well as non-productive investments (Harrigan et al., 2006; p. 253). The main macroeconomic indicators of these countries are shown in Table 1. Also the details of IMF lending arrangements with these countries are listed in Table 2.

In recent years, MENA has embarked on wide-ranging reforms to improve the overall environment for growth. These reforms focus in three key areas, trade, business climate and governance. At 5.1%, economic growth in for the Middle East and North Africa region was the lowest among developing regions in 2006 and it was 5.7% in 2007. The top performers in the region were Morocco with 8%, and Egypt with 6.8% growth in 2006, but Iran, which accounted for 20% of the region's output grew at 4.6%, and Algeria, which accounted for 16% of the region's output, grew by only 3%.

Sustained economic growth over 2003 to 2006 in conjunction with economic diversification and ongoing reforms and privatizations, attracted large FDI flows to the MENA region. The net flow of FDI in 2006 nearly

³ While SBAs and EFF provide balance of payments support to middle and high-income developing countries, SAF and ESAF are designed for low-income developing countries. Standbys are provided for a year with a possible extension up to three years. Other programs last longer and imply longer periods of repayment (5–10 years). See Schadler et al. (1993) for more information on these programs.

⁴ See F&D (2003) for detailed information about MENA region.

⁵ This was due to the rising the price of oil in this period. See [Figure 1](#) for the oil prices in these years. The principal economic effects of the Iraqi war stem from the fact that the Middle East accounts for a large share of world oil reserves and from the possibly very adverse impact the war could have on the supply of crude oil.

⁶ Reliance on oil took two forms, direct and indirect. Direct reliance refers to the oil export countries include OPEC countries in the region, along with Egypt and Yemen. Indirect reliance refers to those countries, especially Jordan, Egypt and Yemen, who received large remittances from the oil rich GCC countries.

Table 1. Selected macroeconomic indicators of MENA countries (1975 to 2005).

MENA country	1975	1980	1985	1990	1995	2000	2002	2004	2005
Algeria									
Current account balance	..	1	2	2	..	..	..	..	..
Exports	34	34	24	23	26	41	35	40	48
FDI	1	1	0	0	0	1	2	1	1
GDP growth	5	1	4	1	4	2	5	5	5
GDP per capita	1,632	1,876	2,016	1,833	1,661	1,799	1,875	2,046	2,121
Gross capital formation	45	39	35	29	31	25	31	33	30
Gross domestic saving	36	43	31	27	28	45	41	48	54
Imports	43	30	27	25	29	21	25	26	23
Inflation	8	10	10	17	30	0	1	4	2
Egypt, Arab Republic									
Current account balance	..	-2	-5	5	0	-1	1	5	2
Exports	20	31	20	20	23	16	18	28	30
FDI	0	2	3	2	1	1	1	2	6
GDP growth	9	10	7	6	5	5	3	4	5
GDP per capita	614	878	1,075	1,178	1,264	1,484	1,525	1,577	1,624
Gross capital formation	33	28	27	29	20	20	18	17	18
Gross domestic saving	12	15	15	16	15	13	14	16	16
Imports	41	43	32	33	28	23	23	30	33
Inflation	10	21	12	17	16	3	3	11	5
Jordan									
Current account balance	3	9	-5	-6	-4	1	6	0	-18
Exports	..	40	39	62	52	42	47	53	52
FDI	2	1	0	1	0	10	1	6	12
GDP growth	..	19	3	1	6	4	6	8	7
GDP per capita	1,118	1,931	2,053	1,617	1,722	1,742	1,848	1,989	2,086
Gross capital formation	..	37	21	32	30	21	19	24	24
Gross domestic saving	..	-8	-15	1	8	-6	0	-6	-18
Imports	..	84	74	93	73	69	67	83	93
Inflation	12	11	3	16	2	1	2	3	3
Morocco									
Current account balance	-6	-7	-7	-1	-4	-1	4	2	2
Exports	22	17	25	26	27	31	34	33	36
FDI	0	0	0	1	0	1	0	2	3
GDP growth	8	4	6	4	-7	1	3	4	2
GDP per capita	826	950	998	1,117	1,064	1,197	1,284	1,349	1,356
Gross capital formation	25	24	25	25	21	24	23	25	26
Gross domestic saving	15	15	17	20	14	17	19	18	19
Imports	33	27	33	32	34	38	37	40	43
Inflation	8	9	8	7	6	2	3	1	1
Tunisia									
Current account balance	..	-4	-7	-4	-4	-4	-4	-2	-1
Exports	31	40	32	44	45	45	45	47	48
FDI	1	3	1	1	1	4	4	2	3
GDP growth	7	7	6	8	2	5	2	6	4
GDP per capita	1,130	1,351	1,458	1,501	1,651	2,033	2,120	2,337	2,412
Gross capital formation	28	29	30	27	25	27	26	24	23

Table 1. Contd.

Gross domestic saving	26	24	24	20	21	24	21	21	21
Imports	33	46	38	51	49	48	50	50	51
Inflation	..	..	7	7	6	3	3	4	2
Yemen, Rep.									
Current account balance	..	..	..	15	4	14	5	2	8
Exports	..	..	..	14	51	42	39	39	46
FDI	..	..	..	-3	-5	0	1	1	-2
GDP growth	..	..	..	..	12	4	4	3	3
GDP per capita	..	..	..	456	475	526	537	533	530
Gross capital formation	..	..	..	15	22	19	22	23	27
Gross domestic saving	..	..	..	9	15	25	20	24	35
Imports	..	..	..	20	58	37	40	38	38
Inflation	..	..	..	24	55	5	12	13	12

Source: World Development Indicators (WDI); Inflation (consumer prices, annual %); Current account balance (% of GDP); Exports (exports of goods and services, % of GDP); Gross capital formation (% of GDP); FDI (foreign direct investment, net inflows, % of GDP); GDP growth (annual %); Imports (imports of goods and services, % of GDP); Gross domestic saving (% of GDP); GDP per capita (constant 2000 US\$).

doubled to \$27.5 billion, which is 5.7 times the value in 2000 (\$4.8 billion). The average annual growth rate for FDI net inflows during 1996 to 2006 was 24.7% - highest growth among all regions.

LITERATURE SURVEY OF EMPIRICAL STUDIES

Here the literature on the effects IMF programmes on macroeconomic indicators is reviewed. The study of Ozturk (2008, Table 1) gives a summary of the studies relating to measurement of the effect of IMF programs on macroeconomic variables by using different approaches. With regard to the macroeconomic effects of these programmes, the literature is far from a consensus. These conflicting results may arise from several sources, including differences in the types of IMF programmes that are investigated; differences in the groups of countries that are investigated (e.g., poor developing versus emerging market economies or transition economies); differences in the methodologies that are employed; and how other factors influencing output growth are taken into account (Hutchison and Noy, 2003; p. 1).

The discussion of evaluation methods indicates that all types of program evaluations are problematic, and a perfect solution to the problems of program evaluation does not exist. However, the recognition of these problems is important with regard to the selection of the evaluation method and the interpretation of evaluation results. Empirical studies analyzing the effects of IMF programs have employed a variety of methodologies. As discussed in many studies (Barro and Lee, 2003; Bird, 2001; Haque and Khan, 1998), some of these methodologies possess important shortcomings. In the literature, the most commonly used approaches to measure the

impact of the IMF supported macroeconomic stabilisation programmes have consisted of the before-after approach, the with-without approaches, the actual-versus-target approach, comparison of simulations and generalised evaluation estimator (GEE) approach⁷.

METHODOLOGY, DATA AND MODEL

The choice of the period and country rest on the availability of data. Annually data on macroeconomic variables are obtained from the World Development Indicators (WDI Online, World Bank), IMF International Financial Statistics (IFS) and Penn World Data. The analysis covers the time period of 1975 to 2004 for six MENA countries⁸. Since some of the data are not available for all countries or periods, the panel data are unbalanced and the number of observations depends on the choice of explanatory variables.

The methodology that has been developed by Goldstein and Montiel (1986) was employed for the evaluation of IMF programs in this study. Essentially, this technique, referred to as the General Evaluation Estimator (GEE) or modified control group, involves using policy reaction functions estimated for countries that did not have support from a particular International Financial Institution (IFI) to approximate the counterfactual for countries that did enjoy IFI backing for their program⁹. The GEE is a potentially powerful technique, although, as Goldstein and Montiel (1986) point out, it entails many restrictive assumptions; for example, it must be possible to characterize macroeconomic policy choices in a relatively simple reaction function based on quantifiable data and it must be credible that, the reaction functions estimated for countries that do not receive IFI support describe the counterfactual for countries that do receive such support. Suppose that the target variable is determined according to:

⁷Goldstein and Montiel (1986); Khan (1990); Killick et al. (1992) and Ozturk (2008) for detailed information about these approaches.

⁸Country selection is driven by data availability. The countries included in this study are Algeria, Morocco, Egypt, Tunisia, Jordan and Yemen.

⁹Applications of the GEE can be found in Greene (1989), Khan (1990), Faini et al. (1991), Corbo and Rojas (1992), and Conway (1994).

Table 2. IMF lending arrangements with MENA countries (millions of SDRs).

MENA country	Date of arrangement	Date of cancellation	Amount agreed	Amount drawn
Algeria				
Extended fund facility	May 22, 1995	May 21, 1998	1,169.28	1,169.28
Standby arrangement	May 27, 1994	May 22, 1995	457.20	385.20
Standby arrangement	June 03, 1991	Mar 31, 1992	300.00	225.00
Standby arrangement	May 31, 1989	May 30, 1990	155.70	155.70
Egypt				
Standby arrangement	Oct 11, 1996	Sep 30, 1998	271.40	0
Extended fund facility	Sep 20, 1993	Sep 19, 1996	400.00	0
Standby arrangement	May 17, 1991	May 31, 1993	234.40	147.20
Standby arrangement	May 15, 1987	Nov 30, 1988	250.00	116.00
Jordan				
Standby arrangement	July 03, 2002	July 02, 2004	85.28	10.66
Extended fund facility	Apr 15, 1999	May 31, 2002	127.88	127.88
Extended fund facility	Feb 09, 1996	Feb 08, 1999	238.04	202.52
Extended fund facility	May 25, 1994	Feb 09, 1996	189.30	130.32
Standby arrangement	Feb 26, 1992	Feb 25, 1994	44.40	44.40
Standby arrangement	July 14, 1989	Jan 13, 1991	60.00	26.80
Morocco				
Standby arrangement	Jan 31, 1992	Mar 31, 1993	91.98	18.40
Standby arrangement	July 20, 1990	Mar 31, 1991	100.00	48.00
Standby arrangement	Aug 30, 1988	Dec 31, 1989	210.00	210.00
Standby arrangement	Dec 16, 1986	Apr 30, 1988	230.00	230.00
Standby arrangement	Sep 12, 1985	Dec 15, 1986	200.00	10.00
Standby arrangement	Sep 16, 1983	Mar 15, 1985	300.00	300.00
Tunisia				
Extended fund facility	July 25, 1988	July 24, 1992	207.30	207.30
Standby arrangement	Nov 04, 1986	May 31, 1988	103.65	91.00
Yemen				
Extended fund facility	Oct 29, 1997	Oct 28, 2001	77.90	45.60
PRGF	Oct 29, 1997	Oct 28, 2001	264.75	238.75
Standby arrangement	Mar 20, 1996	June 19, 1997	132.38	132.38

Source: IMF web site (www.imf.org) and Harrigan et al. (2006; p.268).

$$Y_{ij} = \beta_0j + \beta_{jk} x_{ik} + \alpha_{jh} w_{ih} + \beta_j \text{IMF } d_i + \epsilon_{ij} \quad (1)$$

where Y_{ij} is the j th target variable (e.g. current account balance, economic growth and inflation rate) in country i , x_{ik} is a k -element vector of policy variables (e.g. the exchange rate, fiscal deficit, domestic credit, inflation rate) that would be observed in country i in the absence of IMF support, w_{ih} is an h -element vector of foreign exogenous variables (e.g. the terms of trade, international interest rates) for each ih country i , d_i is a dummy variable equal to 1 if an IMF program is in effect during the period in question and zero otherwise, and ϵ_{ij} is a zero mean, fixed variance, serially uncorrelated error. For the j th target variable, β_{jk} and α_{jh} are $k \times 1$ and $h \times 1$ vectors, respectively, of fixed parameters. The parameter $\beta_j \text{IMF}$ measures the effect of the program during this period on variable

y_{ij} .

It is important to note that the definition of β means that, the x_i refers to the policies that would have been adopted in the absence of a program. The vector x_i is therefore directly observable only if there is a fund-supported program; for a non-program x_i must be estimated. One way in which x_i can be estimated is via the simple reaction function:

$$\Delta x_i = \gamma[y_{id} - (y_i) - 1] + \eta \quad (2)$$

Where y_i is a vector of target variables, y_{id} is the vector of their desired values, γ is an adjustment parameter, η_i is a vector of random shocks, and Δ is first-difference operator. Equation (2) basically says that, the change in the country's macroeconomic policy

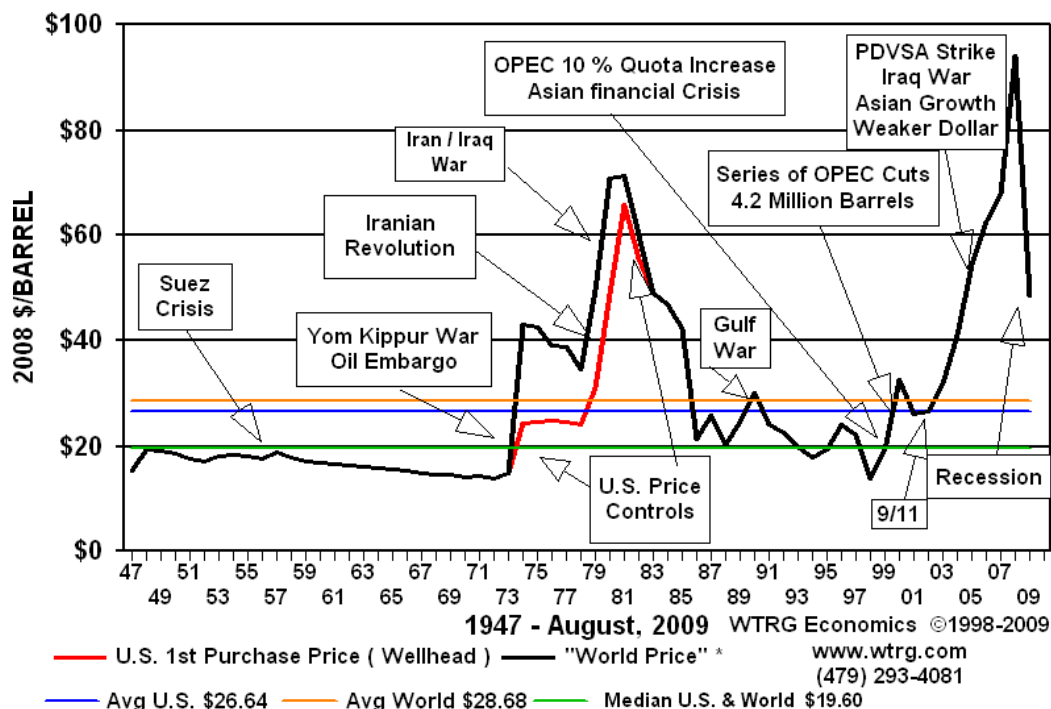


Figure 1. Oil prices, 1947 to 2009. Source: <http://www.wtrg.com/prices.htm>.

policy instruments between the current and previous period will be the function of the difference between the desired values of the target variables during this period and their actual values during the last period.

An alternative to the "before-after" and "with-without" approaches can be derived by using Equation (2), to substitute out the unobservable policy changes that would occur in the absence of a fund program (that is for x_i) from Equation (1). The generalized evaluation estimator is:

$$\Delta y_{ij} = \beta_{oij} - (y_{ij})_{-1} (\gamma \beta_j + 1) + (x_i)_{-1} \beta_j + w' \alpha_j + \beta_j^{IMF} d_i + (\epsilon_{ij} + \eta_i \beta_j) \quad (3)$$

Equation (3) constitutes the basic GEE reduced form model as applied in the previous studies. Econometric estimation of Equation (3) produces an estimate of the β^{IMF} , that is not subject to the criticism levelled at the before-after and the with-without estimators. This equation takes care of the estimation of the counterfactual by controlling for the factors that are systematically related to the policies that would have been followed in the country without the program, which is to include the lag values of the target variables and the policy instruments in the specification (Haque and Khan, 1998; pp. 21-23). The equation would be estimated by OLS estimation.

EMPIRICAL RESULTS

The model is nested as to test the simultaneous effect of: i) the IMF programs, ii) policy shocks, and iii) foreign exogenous variables. It serves our objective of diagnosing the impact of fund-supported programs, while taking into account the effect of other policy options, that might have been adopted in the absence of the programs and foreign

exogenous variables. The model takes the IMF programs, other policy responses and the foreign exogenous variables as different explanatory variables, which makes it easier to gauge the net effect of the fund-supported programs on the target variables. The targeted macro-economic variables are the current account balance, balance of payments, budget deficit, GDP growth, FDI, inflation rate, private investment and consumption.

Equation (3) is estimated for all eight-target variables, discussed previously. As we deal with panel data, the Panel Data Unit Root Test is used to check for stationarity. The results suggested that, the data is stationary for all the target variables at their levels. The final results find no autocorrelation, while the White-Heteroschedasticity test shows no evidence of heteroschedasticity. The statistical parameters for the overall significance are presented in Table 3. The values of R^2 for the equations of the per capita GDP and budget deficit are 0.98 and 0.37, respectively. However, the R^2 is quite low for the foreign direct investment, balance of payments, current account, consumption, investment and inflation. The empirical results of the study is presented in Table 3. The regression results (Table 3) indicate the positive impact of IMF programs on the balance of payments as expected. In other words, IMF programs significantly improve the balance of payments during the program years. The balance of payment estimator provides the result that IMF programs have contributed to the balance of payments balance. The parameter of the IMF (0.78), with the positive sign and statistically significant, shows that IMF

Table 3. Empirical results.

Variable	CAPITA (Y)	BOP	CA	BD	FDI	CONS	INV	INF
Y (-1)	0.996391 [82.32123]	0.005830 [3.227548]	0.002424 [1.894558]	0.006313 [6.347391]	-1.02E-05 [-0.026074]	0.013840 [3.567337]	-0.016633 [-3.986422]	-0.008462 [-5.195359]
IMF	-2.018527 [-0.763803]	0.784602 [2.048352]	0.236407 [0.871423]	0.114031 [0.574615]	-0.034808 [-0.400010]	-1.556549 [-1.837518]	-2.725769 [-2.992020]	-1.271316 [-3.539230]
DC (-1)	-0.489833 [-2.327642]	-0.061154 [-1.841891]	-0.007025 [-0.298763]	-0.050085 [-2.702777]	0.018651 [2.708349]	-0.089653 [-1.329085]	0.106986 [1.474766]	-0.018118 [-0.625098]
C	83.34088 [3.580840]	-4.978824 [-1.470509]	-7.390239 [-3.081856]	-14.00676 [-7.544206]	-0.273203 [-0.376422]	52.74826 [7.070617]	32.28253 [4.023679]	24.71705 [7.582821]
R ²	0.982924	0.104037	0.055782	0.373707	0.067085	0.105270	0.197741	0.231496
Adj. R ²	0.982480	0.078254	0.028610	0.350723	0.038380	0.082030	0.176903	0.210296
F-statistic	2216.122	4.035082	2.052932	16.25996	2.337048	4.529718	9.489486	10.91955
No. of observation	159	144	144	114	135	159	159	150
Cross section	6	6	6	6	6	6	6	6
SEE	60.02424	8.313505	5.888048	4.207200	1.670793	19.23997	20.69177	8.044165

IMF is endogenous, DC and CAPITA are exogenous policy variables. Explanations: Capita (Y- per capita GDP), DC (Domestic Credit), CA (Current Account balance), BOP (Balance of Payments), BD (Budget Deficit), FDI (Foreign Direct Investment), CONS (Consumption), INF (Inflation) and INV (Investment). The regression estimates were obtained using an ordinary least squares (OLS) procedure. Standard errors and t-statistics of coefficients are computed using White's heteroscedasticity-consistent variance-covariance estimator.

IMF programs have brought a considerable decrease in the balance of payments deficit.

The inflation estimator provides the result that, IMF programs have contributed to the decrease in the rate of inflation. The parameter of the IMF (-1.27), with the negative sign and statistically significant, shows that IMF programs have caused a considerable decrease in the rate of inflation, which is a chronic disease for the economy. Balance of payments and inflation are the only areas where the MENA economies have been slightly better off, due to fund supported programs. The decrease in inflation can be explained by decreasing

aggregate demand in economy (the level of consumption and investment are decreased in these countries as a result of fund-supported programs). The results of GDP growth and foreign direct investment indicate that, the IMF programs have lowered economic growth and foreign direct investments. Their coefficients have negative signs, but the results are not statistically significant. Therefore, the IMF programs have no effect on the growth and foreign direct investment. Similar results are also found about the effects of IMF programs on growth in previous studies (Ozturk, 2008) (Table 1).

The results of the investment and consumption indicate that, the IMF programs have negative effects. Their coefficients have negative signs and the results are statistically significant. Therefore, the IMF programs have reduced the investments and the level of consumption in MENA countries. Even there are negative effects on consumption and investment, there is no significance effect on GDP growth. Because the fall in consumption and investment is offset by an increase in exports. The fall in consumption, investment and inflation can be explained with the ortodox programs used by the IMF; because IMF recommends tight fiscal

policy, tight monetary policy and devaluation to the program countries. The regression results for the current account balance show that, the parameter of the IMF indicates a positive impact on the current account balance but it is statistically insignificant (t-statistic is 0.87). Thus, the IMF programs have no effect on current account balance of MENA countries.

The results derived from the budgetary balance suggests that the parameter of the IMF programs has a positive sign but it is statistically insignificant. In other words, IMF programs have no any effect on the budget deficits of program countries. The findings of this study shows that IMF sponsored stabilisation programmes are unsuccessful and MENA countries have been implementing inconsistent macroeconomic policies. When we consider the aim of IMF programs, these results are inconsistent with the effectiveness of stabilisation programmes.

Conclusion

With respect to the central objectives of this paper, the General Evaluation Estimator (GEE) framework was used to investigate the effects of IMF stabilization programs on key macroeconomic variables of six selected Middle East and North African countries for 1975 to 2004 period. The empirical results of our study is similar to those found in the previous studies. The results indicate that IMF programs significantly improve only the balance of payments and inflation during the program years. Although stabilization programs seem to provide short-term relief in balance of payments, these improvements are not sustained during the post-program period.

However, these programs have exert a negative impact on investment and consumption in program countries, and have no effect on per capita GDP, current account, budget deficit and foreign direct investment. The study suggests that IMF supported programs have worsened the domestic investments and level of consumption of MENA countries during the program years. These results can be explained in terms of the programmes applied by the IMF which recommends tight (contractionary) fiscal and monetary policy to the programme countries.

The results suggest that, on average, when a country starts with a balance of payments crisis and IMF involvement enables it to overcome it, this is making macroeconomic situation worse. Thus, this result is inconsistent with the aim of IMF support. Our results are consistent with a large number of studies (Barro and Lee, 2003; Bordo and Schwartz, 2000; Hutchison, 2001; Przeworski and Vreeland, 2000; Stiglitz, 2000) whose claim that IMF programmes do more harm than good for the recipient countries and these results indicate that MENA countries have been implementing inconsistent macroeconomic policies.

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