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NEED/IMPORTANCE OF THE STUDY

STATEMENT OF THE PROBLEM

OBJECTIVES

HYPOTHESES

RESEARCH METHODOLOGY

RESULTS & DISCUSSION

FINDINGS

RECOMMENDATIONS/SUGGESTIONS

CONCLUSIONS

SCOPE FOR FURTHER RESEARCH

ACKNOWLEDGMENTS

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APPENDIX/ANNEXURE

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CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

JOURNAL AND OTHER ARTICLES

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

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BUDGETARY TRADE-OFFS BETWEEN MILITARY AND EDUCATION/HEALTH EXPENDITURES IN DEVELOPING COUNTRIES: A PANEL DATA ANALYSIS

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ABSTRACT

Though controversy remains among the defense economists about the nature of trade-off between military expenditure and other government expenditures, it is commonly believed, particularly in developing countries, that defense expenditures have an opportunity cost in terms of foregone other government expenditures. This paper examines empirically the existence of a budgetary trade-off among military, education and health expenditures in 14 developing countries for the time period 1999-2005 applying panel data analysis. The main findings of the article suggest that there is a positive association between military and education expenditure, and negative trade-off between military expenditure and health expenditure. Positive association between military and education expenditure indicates that government allocates the funds for defense and education sector independent of the government expenditures. Negative relationship between military expenditure and external debt growth indicates that defense sector's budget is fully funded by internal resources.

KEYWORDS

Trade-off, Military expenditure, Health expenditure, Education expenditure, External debt, Panel data analysis.

INTRODUCTION

There has been widespread concern that the large military expenditures (milex) made by both developed and developing countries have substantial impact on economic growth. Military as an organized and disciplined forces helps in the process of modernization, provides technical skills, educational training and creates infrastructure necessary for economic development and also rescues the society when a country falls in trouble like natural disaster. In the absence of such dynamic considerations, however, it may compete for scarcely available human resources with the more productive civilian economy and so may have adverse effects. Crowding out may occur within the government budget so that milex reduces other items of net government spending. If there is a potential trade-off between defense and economic services, development may be retarded.

Health, education and military expenditure are the three major components of national budget of any country. Do countries with high military burden detract their social and economic welfare? This question may be severe, particularly in developing countries, where public demands exceed existing resources. Governments of developing countries face difficulties for allocating budgets in various public sectors owing to scarce resources. It is clear that governments of developing countries on any activity mean that those particular funds cannot be spent on others, possibly highly desirable activities. It has been widespread concern among researchers that large defense expenditures made by developing countries have substantial costs in terms of economic welfare. The use of any resource has an opportunity cost in the alternative instances that are foregone; it is a common thesis though that some burdens are more burdensome than others. Moreover, if the military expenditure of any country reduces health, education or other social services expenditures, it may hamper economic growth and development. It is likely that military expenditure may contribute to human capital formation particularly in developing nations as they conduct and administer many schools, colleges, universities, medical colleges as well as receive good physical training and various skills. However, the effect of this kind of human capital on the economy might be delayed and costly. If milex as a part of government expenditure reduces civilian consumption, more productive civilian investment, health and education expenditure and infrastructure development, and creates a balance of payments problem, these reduction effects of milex is termed as crowding out effect of milex. Milex may retard economic growth by crowding out effect. Negative impact of milex on the economy would indicate the presence of crowding out effect. Analyzing the trade-off relations between milex and other government expenditures would help to identify the nature of the crowding out effect.

This study is an attempt to broaden the scope of the literature, where the relationship among the health, education and milex in 14[1] developing countries for the time period 1999-2005 applying panel data analysis. The rest of the article is organized as follows. The second part of this article will present a literature review within the framework of budgetary trade-offs between milex and social expenditures of the government. The third part of this study will explain the econometric procedure, data source and interpret the empirical results. The final part will draw some conclusions.

LITERATURE REVIEW

A number of researchers have examined empirically the extent, direction, and form of budgetary trade-off between military expenditure and other social expenditures of government like education, health expenditure etc. The first research regarding the trade-off between military expenditure and other social government expenditures begins with the study of Russet (1969) who finds a negative trade-off. After his work, number of researchers analyze in the context using time series, cross-section of individual country, group of countries applying various econometric techniques. Some find negative trade-off, some other find no trade-off and positive trade-off. Therefore, there is no consensus among the defense economists about the direction of trade-off. Peroff and Podolak (1979) investigate the trade-off relation between defense and health expenditure of the US economy for the period 1929-1974. They examine this relation by constructing equations emphasizing the following fours:

I) Years of peace and years of war,
II) The size of the defense share of the budget,
III) Different stages of the budgetary process (in the federal health and federal health research models only), and
IV) The type of funding used to finance increased public expenditures (in the private health-defense models only).

[1](Bangladesh, Burundi, Mongolia, Pakistan, (Low-income countries) Colombia, El Salvador, Iran, Morocco, (Lower middle-income countries) Peru, Lebanon, Oman, South Africa, Turkey and Cambodia (Upper middle income countries).

Overall, they find no trade-off between defense and health expenditure in the US economy. Verner (1983) examines empirically the trade-offs between education and defense expenditure using time series data over the period 1948-1979 for 18 Latin American countries. He finds that estimation output of 11 countries reveal statistically significant results. Among them, only one country indicates negative trade-offs. Remaining 10 countries reveal positive trade-offs. Finally, he suggests that the politics of the budgetary process in so far as education and defense is concerned, may differ considerably from country to country. Harris et al. (1988) tests the existence of trade-offs between defense and health/education expenditures in 12 Asian countries for the period 1967-1982 and find that these trade-offs are rare. Hess and Mullan (1988) investigate the trade-off between military and education expenditure for 77 LDCs using cross-section data. They find that these nations with greater milex tend to have a significantly larger share of GNP for education. Davis and Chan (1990) investigate the security-welfare trade-off in the case of Taiwan using time series data over the period 1961-1985. They find no evidence of any substitution between milex and social development as measured by physical quality of life index (PQLI). Apostolakis (1992) empirically tests the trade-off relationship between defense and other public needs for 19 Latin American countries for the period 1953-1987. Public needs include all public expenses allocated for health, education, social security and public works. In the time series and cross section analysis, estimation results dominate negative trade-off between milex and health, education and social security and welfare but positive trade-off between milex and public works. Frederiksen and Looney (1994) examine the effects of the changes of defense burden of Pakistan on budgetary allocations of economic services programs and administrative/social programs whether defense budgets have been increased or maintained either at the expense of economic and social programs using short-run impact and long-run adjustment models during the period between 1973 and 1986. They find that in the short-run and long run, there is a trade-off between expenditure on military and infrastructure program. However, in two cases, they find no trade-off between military expenditure and social programs. Ozsoy (2002) examines the existence of trade-off between education, health and military expenditure for Turkey using time 1925-1998. He argues that due to historical, economical, political and social differences among countries, time series analysis is more appropriate than cross-sectional analysis. All the estimated results reveal that the negative trade-off exists between defense and education and also defense and health expenditure. Sensen (2002) estimates the trade-off between security expenditure and non-security expenditures such as education, health, general administration, infrastructure and social services using time series data from 1983 to 1998 in Turkey. Internal and external security expenditures are considered as security expenditures. Defense expenditure is defined as external security expenditure. He finds no trade-off between security and non-security government services. Yildrim and Sezgin (2002) attempt to analyze the trade-off between defense spending and spending on education and health in Turkey using time period 1924-1996. The main findings of this article suggest that while military spending decisions are made independently of health and education expenditure, there are trade-offs between defense and welfare spending. While the trade-off is negative between defense and health, it is positive between defense and education. Moreover, it appears that there is a competition between education and health expenditure in the budgeting process.

One argument behind the negative military-welfare trade-off is that government funded research and development is primarily concentrated in the military industry, while non-military research and development programs are much less amply funded. Hence, military expenditure retards innovation or the improvement in areas such as housing, education and health (Apostolakis, 1992). Support for the proposition of negative trade-off has been provided by, among others, Russet (1969), Debelko and McCormick (1977), Dickson (1977), Pluta (1979), Deger (1985), Harris et al. (1988), Apostolakis (1992), Frederiksen and Looney (1994), Ozsoy (2002), Yildirim and Sezgin (2002). Another argument suggests that there is no negative or even a positive relationship between military expenditure and social programs. Accordingly modern society moves towards a warfare-welfare state in which decision makers must buy off the electorate with welfare goods (Peroff and Podolok, 1979; Apostolakis, 1992). No trade-off and positive trade-off are reported among others Peroff and Podolok (1979), Harris et al. (1988), Hess and Mullan (1988), Davis and Chan (1990), Frederiksen and Looney (1994), Sensen (2002), Yildirim and Sezgin (2002). A short presentation of articles issued on the budgetary trade-off between military expenditure and other social services is given below:

TABLE- 1: A SHORT PRESENTATION OF ARTICLES ISSUED ON THE BUDGETARY TRADE-OFF BETWEEN MILEX AND OTHER SOCIAL SERVICES

Author	Date of Publication	Time Period	Region	Social services	Findings
Peroff and Podolok	1979	1929-74	USA	Health	No trade-off
Verner	1983	1948-79	Latin American Countries (18)	Education	11 countries indicate significant result. Among them, 10 countries reveal positive trade-off. Only 1 shows
Harris et al.	1988	1967-82	Asian Countries (12)	Education	6 countries reveal positive trade-off. 1 country reveals negative trade-off. 5 countries reveal no trade-off.
				Health	3 countries indicate positive trade-off. 3 countries show negative trade-off. 6 countries indicate no trade-off
Hess and Mullan	1988	1982-83	LDCs (77)	Education	No trade-off
Davis and Chan	1990	1961-85	Taiwan	Social Development (as indexed by the rate of change in its physical quality of life index (PQLI)	No trade-off
Apostolakis	1992	1953-87	Latin American Countries (19)	Health, Education, Social Security and Welfare	A statistically significant negative substitution prevails in 14 countries and 1 country indicates positive trade-off. 18 countries indicate negative trade-off between milex and education expenditure. 13 countries indicate negative trade-off between milex and social security and welfare. 13 countries indicate positive trade-off between milex and public works. 2 countries indicate negative trade-off between milex and public works.
				Public Works	Negative trade-off
Frederiksen and Looney	1994	1973-86	Pakistan	Total Economic Services	Negative trade-off
				Health and Education	No trade-off
				Public Services, Social Security / Welfare, Recreation / Religious Program	Positive trade-off
OZsoy	2002	1925-98	Turkey	Education and Health	Negative trade-off
Sensen	2002	1983-98	Turkey	Non-Security Expenditure (Health, General administration, Infrastructure, Social Services)	No trade-off
Yildirim and Sezgin	2002	1924-96	Turkey	Health	Negative trade-off for health
				Education	Positive trade-off for education

METHODOLOGY OF THE STUDY

MODEL CONSTRUCTION

For examining the trade-off relations between defense and other government sectors, an inter-temporal welfare function has been postulated. The model assumes that a country maximizes its intertemporal welfare function subject to constraints. Here, for the study, it has been assumed that the utility function of a country depends on civilian and military allocation of the government and output only.

The inter-temporal welfare function is given by,

$$W = \int_0^{\infty} e^{-\rho t} u(C, Y, M) \text{ ---------- } (1)$$

$u(\cdot)$ is utility function, ρ is rate of time preference. Note $\frac{\delta u}{\delta C} = u_1$ >0, $\frac{\delta u}{\delta Y} = u_2 > 0, \frac{\delta u}{\delta M} = u_3 > 0$ (assume), $u_{11} < 0, u_{22} < 0, u_{12} > 0, u_{21} > 0, u_{12} = u_{21}$

Here, $C =$ Civilian Expenditure (Health, Education, Infrastructure development etc.)

$Y =$ GDP (Gross Domestic Product)

$M =$ Military Expenditure

$Y =$ State variable, $C, M =$ Control variable

Here, Harrod-Domar growth model is postulated for the constraint of the welfare function.

$$\Rightarrow \dot{Y} = (\frac{s}{\theta} - \sigma)Y$$ (A '●' represents time derivative) Here, $s = \frac{S}{Y}$ (Savings rate)

$\theta = \frac{K}{Y}$ (Amount of capital required to produce a single unit of output in the economy)

$\sigma =$ Depreciation cost

$$\Rightarrow \dot{Y} = (\frac{I+G}{K} - \sigma)Y$$ Here, $S = I + G$

S= Savings, I= Investment, G= Government expenditure

$$\Rightarrow \dot{Y} = (\frac{I+C+M}{K} - \sigma)Y$$

$$\Rightarrow \dot{Y} = (\alpha + \frac{C}{K} + \frac{M}{K})Y \text{ ---------- } (2)$$

Let, $(\frac{I}{K} - \sigma) = \alpha$

The country maximizes W given by (1), subject to equation (2), with C, M as the control variables and Y as state variable, using the Maximum Principle and forming the Hamiltonian.

$$H = e^{-\rho t} u(C, Y, M) + \pi(\alpha + \frac{C}{M} + \frac{M}{K})Y \text{ ---------- } (3)$$

Here, H is maximized over the set of C and the following equation can be derived,

$$\pi = -\frac{e^{-\rho t} u_1 K}{Y} \text{ ---------- } (4)$$

Further, the equation of motion for the co-state variable π

$$\dot{\pi} = -\frac{\partial H}{\partial Y} = -\left[e^{-\rho t} u_2 + \pi(\alpha + \frac{C}{K} + \frac{M}{K}) \right]$$

$$\Rightarrow \dot{\pi} = e^{-\rho t} (\frac{u_1 K \alpha}{Y} + \frac{u_1 C}{Y} + \frac{u_1 M}{Y} - u_2) \text{ ---------- } (5)$$

From equation (4) $\pi = -\frac{e^{-\rho t} u_1 K}{Y}$

$$\dot{\pi} = \frac{\rho e^{-\rho t} u_1 K}{Y} - \frac{e^{-\rho t} u_{11} \dot{CK}}{Y} - \frac{e^{-\rho t} u_{12} \dot{YK}}{Y} - \frac{e^{-\rho t} u_{13} \dot{MK}}{Y} \text{ ----------(6)}$$

From equation (5) and (6),

$$\frac{\rho e^{-\rho t} u_1 K}{Y} - \frac{e^{-\rho t} u_{11} \dot{CK}}{Y} - \frac{e^{-\rho t} u_{12} \dot{Y} K}{Y} - \frac{e^{-\rho t} u_{13} \dot{M} K}{Y} = e^{-\rho t}\left[\frac{u_1 K \alpha}{Y} + \frac{u_1 C}{Y} + \frac{u_1 M}{Y} - u_2\right]$$

$$\Rightarrow \dot{C} = \frac{\rho u_1}{u_{11}} - \frac{u_{12}}{u_{11}}\dot{Y} - \frac{u_{13}}{u_{11}}\dot{M} - \frac{u_1 \alpha}{u_{11}} - \frac{u_1 C}{u_{11} K} - \frac{u_1 M}{u_{11} K} - \frac{u_2 Y}{u_{11} K} \text{ ----------(7)}$$

In this respect, steady state equilibrium would be reached if milex, civilian expenditure and GDP growth are changed at the same rate. So, the steady state equilibrium is defined by

$$\dot{C} = \dot{Y} = \dot{M} = 0$$

$$0 = \frac{\rho u_{11}}{u_{11}} - 0 - 0 - \frac{u_1 \alpha}{u_{11}} - \frac{u_1 C}{u_{11} K} - \frac{u_1 M}{u_{11} K} - \frac{u_2 Y}{u_{11} K}$$

$$-u_1 \alpha - \frac{u_1 C}{K} - \frac{u_1 M}{K} - \frac{u_2 Y}{K} + \rho u_1 = 0 \text{ ----------(8)}$$

For a given value of C, taking total differentials of equation (8), the following equation can be derived,

$$\Rightarrow \frac{dY}{dM} = \frac{(\alpha - \rho) u_{13} + \frac{u_{12}}{K}}{u_{12}(\rho - \alpha) - \frac{u_{13}}{K} + \frac{u_{12}}{K} + \frac{1}{K}} \text{ ----------(9)}$$

From equation (9), the study finds that for examining the effect of milex on the output, it is needed to identify the trade-off relations between milex and other civilian expenditure of the government that is shown from the term $(u_{13} = \frac{\partial C}{\partial M})$.

METHODS OF ESTIMATION

This study only investigates the budgetary trade-off between military, health and education expenditures. Developing country's budget remains incomplete without debt. Therefore, the present study considers external debt growth in the trade-off analysis assuming as an explanatory variable. The following three equations are used to investigate the budgetary trade-off applying panel data method:

$$H/G_{it} = \alpha_0 + \alpha_1 E/G_{it} + \alpha_2 M/G_{it} + \alpha_3 EDg_{it} + U_{it} \text{ ----------(I)}$$

$$M/G_{it} = \beta_0 + \beta_1 E/G_{it} + \beta_2 H/G_{it} + \beta_3 EDg_{it} + U_{it} \text{ ----------(II)}$$

$$E/G_{it} = \gamma_0 + \gamma_1 H/G_{it} + \gamma_2 M/G_{it} + \gamma_3 EDg_{it} + U_{it} \text{ ----------(III)}$$

Where, $H/G_{it} =$ Health expenditure as a proportion of general government expenditure for country i and year t,

$E/G_{it} =$ Education expenditure as a proportion of general government expenditure for country i and year t,

$M/G_{it} =$ Military expenditure as a proportion of general government expenditure for country i and year t,

$EDg_{it} =$ External debt growth for country i and year t,

$U_{it} =$ Disturbances

EMPIRICAL RESUTLS

The data for this study consist of military expenditure, health expenditure, education expenditure and external debt for 14 developing countries. The data for educational expenditures, health expenditures, military expenditures and external debt are taken from World Development Indicator (WDI). All data are converted to purchasing power parity form. In order to find out the trade-off relationship between milex and health and education expenditure balanced micro panel data of 14 countries over the period 1999-2005 are considered in this study. The two panel data estimation techniques are (i) the fixed effects model (FEM) and (ii) the random effects model (REM) or error components model (ECM). The two models can generate considerably different results. FEM is appropriate in situations where the individual-specific intercept may be correlated with one or more regressors. Again, FEM cannot estimate the effect of individual-specific fixed characteristics. Whereas, REM is appropriate in situations where the omitted effects are uncorrelated with the explanatory variables (Baltagi, 2005). Breusch and Pagan (BP) and Hausman tests can be used to decide between FEM and REM. Therefore, the study first examines model (I) which methods of panel data are appropriate for the model. Empirical findings of BP and Hausman tests of model (I) are shown in Table-2:

TABLE-2: SUMMARY RESULTS OF BP AND HAUSMAN TESTS OF MODEL (I) FOR TRADE-OFF ANALYSIS

Model	Null hypothesis	Tests	Results
$H/G_{it}=\alpha_0+\alpha_1 E/G_{it}+\alpha_2 M/G_{it}+\alpha_3 EDg_t+U_{it}$	Ho : no individual effect	BP=220.92*** (6.63490)	Null hypothesis Rejected
	Ho : no correlation between the individual effects and other variables	Hausman=18.06*** (11.3449)	Null hypothesis rejected

*** denotes significant at 1%. Values in brackets are χ^2 statistic.

Based on BP and Hausman tests, we find that of the two alternatives the fixed effects model is the better choice. From the estimation output of fixed effects model, we observe that there is a negative association between health and milex but positive with education expenditure. We perform Wooldridge (2002) test for autocorrelation in panel data where indicate the presence of autocorrelation (results not reported here). Therefore, we finally estimate model (I) by panel corrected standard error (PCSE) method. The estimation output also indicates the existence of negative trade-off between health and milex. However, education expenditure is positively correlated with health expenditure. Stata output of panel corrected standard error (PCSE) method of model (I) is given below in equation form:

$$H/G_{it}=0.0972563+0.0980265E/G_{it}-0.0380394M/G_{it}-0.0092808EDg_{it} \quad \text{---------- IV)}$$

(0.0100643) (0.0554164) (0.0459239) (0.0123987)
0.000 0.077 0.407 0.454

Here, values in brackets are standard error and values in parentheses are p-values.

Model (II) considers education, health expenditure and external debt growth as explanatory variables and milex as dependent variable. Again, to find out appropriate estimation method, the study performs BP and Hausman tests. Empirical findings of BP and Hausman tests of model (II) are shown in Table-3. Based on BP and Hausman tests the study finds that of the two alternatives the random effects model is the better choice.

TABLE-3: SUMMARY RESULTS OF BP AND HAUSMAN TESTS OF MODEL (II) FOR TRADE-OFF ANALYSIS

Model	Null hypothesis	Tests	Results
$M/G_{it}=\beta_0+\beta_1 E/G_{it}+\beta_2 H/G_{it}+\beta_3 EDg_t+U_{it}$	Ho : no individual effect	BP=199.14*** (6.63490)	Null hypothesis rejected
	Ho : no correlation between the individual effects and other variables	Hausman=3.75 (11.3449)	Null hypothesis is not rejected

*** denotes significant at 1%. Values in brackets are χ^2 statistic.

From the estimation output of random effects model, the study finds that there is a negative trade-off between health expenditure and milex. But positive trade-off exits between education expenditure and milex as before. The study applies Feasible Generalized Least Square (FGLS) method that considers heteroskedasticity of the panel data and corrects autocorrelation simultaneously. The estimation output indicates that there is a negative trade-off between milex and health expenditure and external debt growth. Stata output of Feasible Generalized Least Square (FGLS) method of model (II) is given below in equation form:

$$M/G_{it}=0.1952111+0.0196079E/G_{it}-0.456870H/G_{it}-0.0767372EDg_{it} \quad \text{---------- (V)}$$

(0.011159) (0.1154695) (0.0983124) (0.0215136)
0.000 0.865 0.000 0.000

Here, values in brackets are standard error and values in parentheses are p-values.

For the third model, empirical findings of BP and Hausman tests of model (III) are shown in Table-4. Again, based on BP and Hausman tests the study finds that of the two alternatives, the fixed effects model is the better choice.

TABLE-4: SUMMARY RESULTS OF BP AND HAUSMAN TESTS OF MODEL (III) FOR TRADE-OFF ANALYSIS

Equation	Null hypothesis	Tests	Results
$E/G_{it}=\gamma_0+\gamma_1 M/G_{it}+\gamma_2 H/G_{it}+\gamma_3 EDg_t+U_{it}$	Ho : no individual effect	BP=170.78*** (6.63490)	Null hypothesis Rejected
	Ho : no correlation between the individual effects and other variables	Hausman=16.29*** (11.3449)	Null hypothesis is not rejected

*** denotes significant at 1%. Values in brackets are χ^2 statistic.

Again, from the fixed effect estimation of model (III), the study finds that there is a positive relation between education expenditure and health expenditure and milex. In addition, the coefficients of these variables indicate statistically significant with desired level. The study performs Wooldridge (2002) test for autocorrelation in panel data where indicate the presence of autocorrelation (results are not reported here). Therefore, we finally estimate model (III) by panel corrected standard error (PCSE) method. The results of this method are shown in equation (VI) where it has been observed that there is a negative trade-off between education expenditure and milex. However, it is not statistically significant. Again, positive relation exists among education, health and external debt growth. Only the coefficient of health expenditure shows statistically significant result. Stata output of panel corrected standard error (PCSE) method of model (III) is given below in equation form:

$$E/G_{it}=0.105504+0.3054845H/G_{it}-0.0233337M/G_{it}+0.0079484EDg_{it} \quad \text{---------- VI)}$$

(0.0168009) (0.1345733) (0.0654186) (0.0654186)
0.000 0.023 0.721 0.670

Here, values in brackets are standard error and values in parentheses are p-values.

From the estimated equations, the study finds some statistically significant results. Equation (IV) indicates positive relation between education and health expenditure. The other two coefficients are not statistically significant. Estimated equation (V) indicates negative association between health and military expenditure and negative association between external debt growth and milex. The other coefficient is not statistically significant. The last estimated equation indicates positive association between health and education expenditure. The other two coefficients are not statistically significant. Therefore, the study finds the existence of negative trade-off between milex and health expenditure and negative influence of external debt growth.

CONCLUSION

This study has taken an attempt to provide an empirical explanation and a response to the ongoing trade-off between education, health and military expenditures debate by using data from 14 developing countries for the period 1999-2005. From the study, it has been observe that there is a negative trade-off between milex and health expenditures indicating that increase in military expenditure reduces spending on health expenditure. Additionally, there is a positive relationship between milex and education expenditure and education and health expenditure. The absence of a negative trade-off between education and milex may be explained by other factors as well. Negative relationship between external debt growth and milex indicate that military is fully funded by internal resources. From the investigation, it appears that government allocates the funds for defense sector independent of other government expenditures. Health and education expenditures share the remaining resources between themselves and other sectors of government expenditures. A substantial body of literature has shown that military expenditure may have growth depressing effect in developing countries. Negative trade-off relation between military and other social expenditures of the government may cause the depressing growth effect of the developing countries. It is clear that in order to identify growth effect of milex, it is needed to examine the existence of trade-off among government expenditures. Further research should concentrate on testing the trade-off relationship between milex and other government expenditures considering longer period.

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