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Original Article

An International Survey of Literature on Military Spending and Economic Growth

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This study is an extensive investigation of military spending and economic growth (1960-2024). The purpose of this study is to profile and summarise earlier work done about military spending and economic growth, which provides new meanings that guide decision-making. It uses meta-analytic and scientometric analysis to bring to light related literature on the military spending-economic growth nexus. This is useful in providing evidence and greater meaning to the scholarly work done so far on the subject. It provides valid information for decision-making about military spending and economic growth. It is anchored on four hypotheses: feedback, growth, conservation and neutrality. The selection of variables, models and techniques, and time periods has contributed to the intensified dissent within the findings. The debate had sparked off controversy that still requires further inquiry. The results are mixed, with 430 observations in this study having dissenting results, and this debate is not yet concluded. The results demonstrate that the growth hypothesis accounts for 72.2 %, feedback 9.8%, conservation 4.9%, and the neutrality hypothesis 13.1%. This study elevates debate for researchers on military spending and economic growth based on credible evidence of empirical work. It furnishes researchers and practitioners with leading antecedents on the nexus. This study is able to synthesise and provide relevant data for evidence-based policy making.

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INTRODUCTION

Studies associated with a literature survey of military spending and economic growth (Milex) have gained prominence among contemporary economic studies. Some studies have advanced the argument that military spending makes a tremendous contribution to overall economic growth. While others find no evidence to support this assertion. These studies, on the whole, have controversial results (Mutumba *et al.* 2021).

The earlier studies were by Dunne *et al.* (2005), Alptekin and Levin (2012), Chen (2012), Dunne and Tian (2013), Churchill and Yew (2018), Yesilyurt and Yesilyurt (2019) and Santamaria *et al.* (2022). Their findings are not conclusive. Therefore, this paper is essential to reconcile and fit any missing parts of the debate in the 'jigsaw' body of knowledge.

This paper seeks to reinvigorate the debate on the dynamic causal relationship of Milex. The overarching interest inherent in this paper is to clearly establish the role military spending has on economic growth. This will guide evidence-based policymaking on military spending in the national budgets. The increase in spending on the military reduces budgetary allocations available for non-military spending (Carter *et al.*, 2021).

The leading view is that investments in military reduce funds available in the budget for non-military spending and have useful ramifications for economic growth (Santamaria *et al.* 2022). This study will be an anchor pin for a greater understanding of the terrain of military spending and economic growth, which will inform evidence-based policy making (Agyapong *et al.* 2020).

Hypotheses on Military Spending and Economic Growth

The major considerations on military spending and GDP have been categorised into four main arguments, namely: growth, conservation, feedback, and neutrality (Konuk *et al.* 2023).

- The growth hypothesis argues that military spending has a one-way causal relationship running from military spending to GDP. This argument fronts the idea that increasing military spending increases economic growth (Ismail 2017). This hypothesis proposes that the target variable of investment should be in military spending, which would spur growth in GDP. With this hypothesis, policies that reduce military spending may have a negative effect on GDP. This hypothesis is supported by Dunne, Smith and Willenbockel (2005), Wijewera & Webb (2009), Ismail (2017) Ajmair *et al.* (2018). The negative results between military spending and GDP is supported by Smith and Willenbockel (2005), Karagol (2006), Aizenman and Glick (2006), Mylonidis (2008), Smith and Tuttle (2008), Pieroni (2009a), Abu-Qarn (2010), Hou and Chen (2013), Arshad *et al.* (2017) and Ahmed *et al.* (2020).

Second, the conservation hypothesis posits a one-way causal relationship running from GDP to military spending. According to these overriding arguments, the reduction in military spending may not have a negative effect on GDP (Kollias *et al.* 2004, Karagianni and Pempetzoglu, 2009; Agyapong, 2020). The target variable is the overall GDP that would 'trickle down' to the military sector. The conservation hypothesis is said to exist if and only if there is a single directional causality from GDP to military spending. If in this hypothesis, economic growth Granger causes military spending, then the growing economy may

be obstructed by other factors like governance, infrastructure, trade openness and/or military spending inclusive (Korhan *et al.* 2015).

(iii) Third, the feedback hypothesis emphasises a duo relationship between military spending and economic growth and their complementarity, for instance (Kollias *et al.* 2004b, Yildirim and Ocal 2006, Wijeweera and Webb 2011). This means a feedback loop between results for short and long run analysis for the same study. The Granger causality test is bidirectional, and this two-way causal relationship has important policy implications. For instance, undertaking a reduction in military spending must be done cautiously so as not to adversely affect the ‘overall health’ of the economy.

(iv) Finally, the neutrality hypothesis considers military spending to be a minute and non-strategic sector of the economy. The military sector’s contribution is one of the least contributions to GDP (Arshad *et al.*, 2017). In this hypothesis, the Granger causality test diminishes, as most times there is ‘no Granger’ causation between the variables of interest, energy conservation policies may not have an adverse impact on economic growth. The neutrality hypothesis, therefore, is supported by the absence of a causal relationship between military spending and economic growth over the long term.

Central Thesis

The overarching idea of this study is to analyse the studies on the military spending and economic growth nexus. This provides a highlight for antecedents that remarkably fit the terrain of empirical literature. The study uses meta-analysis and a scientometric approach to identify and compile different studies on military spending and GDP carried out in both developing and developed economies.

Studies and Antecedents

Studies reviewing military spending and economic growth have been done with contentious results (Dunne *et al.* 2005, Alptekin and Levin, 2012, Chen

2012, Dune and Tian 2013, Churchill and Yew, 2018, Yesilyurt and Yesilyurt 2019, Santamaria 2022). The source of contention arises from variations in theoretical, methodological approaches, sample countries and period of time over which military expenditure is studied (Aziz & Asaddullah 2017). The debate has remained inconclusive, with several arguments advanced.

The above studies covered fewer studies. This study has compiled 430 observations covering the period between 1960 and 2024, and this search has widened the sample, which increases the likelihood of the subjects chosen in the sample being true and representative of the entire population. It clearly enumerates the studies, and this remarkable eye-opener to economics literature.

Fundamentals of this Paper

The fundamental importance of this paper to economics literature is to use scientometric and meta-analytic methods to highlight the salient features of the military spending and economic growth nexus, which will be useful to both economic and social planners in appropriating budgetary resources to the best available alternatives. It will also guide decision-making on economic growth accounting.

Second, this study gathers evidence using observations of empirical works to provide a guide to decision-making on the military spending growth nexus. The selected set is fairly random from a wide range of scholarly works, both published and unpublished, that merit the variables of study. It uses a multivariate framework of analysis to inform both social and economic policy makers on planners on the best variable to manipulate to achieve macroeconomic stability.

Third, it examines empirical works as a useful landmark for scholars to synthesise the debate and be able to internalise how this debate has evolved over time with a view to interrogating the epistemic variants and deriving greater truths and meanings for logical conclusions to be deduced.

Finally, this paper summarises existing literature in a coherent and logical way. This provides a concise and precise narrative of the debate in an easy and interesting way. It provides an analytical tool kit for drawing patterns and new thoughts that will guide policy making.

Road Map

The remainder of this study is organised as an empirical framework. Section 2 is empirical work, which comprises research questions, choice of literature and modelling issues. Section 3 is the methodological framework, interpretation of findings in section 4 and conclusions and recommendations in section 5.

EMPIRICAL FRAMEWORK ON MILITARY SPENDING AND ECONOMIC GROWTH

Although most studies attribute a pioneer paper in this field to Benoit (1973), the earlier studies included Richard (1960), Friedman (1962), Olson (1965, 1982), Hitch and McKean (1965), Olson and Zeckhauser (1966) and Benoit (1973).

However, Emille Benoit popularised the study of *milex*. Benoit's (1973, 1978) findings showed a positive relationship between military spending and growth. Benoit argued that increasing military spending stimulates human resource development through training and education, especially in developing nations where military firms provide valuable skills. Several other studies have shown mixed results, hence the controversy.

This debate has divergent results arising from differing data sets, countries, theories and methodologies. Results from these studies have limited agreement despite using similar datasets. This study will seek to harmonise the conflicting evidence or at least provide a logical explanation for this divergence. It is important that a review of this kind is carried out to highlight key features of the study. This will redirect the debate to making coherent and logical conclusions.

d'Agostino *et al.* (2017) examined OECD countries for panel data running from 1970-2014 using pooled mean group and dynamic fixed effects model. His findings were that military expenditure has a negative effect on economic growth. Topcu and Aras (2017) studied central and eastern European countries using data from 1993- 2013 and found a short-run relationship running from economic growth to military expenditure and a long-run relationship unidirectional form of military expenditure and economic growth to be negative.

Ismail (2018) investigated the relationship between military spending and economic growth of 5 Asian countries (Pakistan, Bangladesh, India, Nepal and Sri Lanka) from 1988- 2013. He found a positive relationship running from military spending to economic growth. Cetin and Guzel (2019) studied the case of Middle East and North Africa (MENA) countries a negative relationship between the two variables was established. Dunne and Smith (2020) show no clear cut and conclude a neutrality hypothesis. It further postulates that increasing military expenditure in the face of foreign aggression has a negative, significant effect on economic growth.

Though Havranek *et al.* (2020) proposed a protocol on presenting a meta-analysis, this is not a 'straight jacket'. A meta-analysis must continue to synthesise unique evidence within its knowledge domain. This study, therefore, continues to demonstrate the extent to which this topic has been handled by different scholars and tabulates this information in Table 1.

Research Questions

The leading questions varied across each of the studies. However, the leading research questions included, but not limited to:

- What is the direction of causality between military spending and economic growth?

- What economic policy mix can be designed to achieve optimal military spending and economic growth?

This study has compiled studies on military spending and GDP ranging from 1960 to 2023, taking care of fairly large samples that exhibit asymptotic advantages over smaller ones.

Choice of Empirical Literature

Empirical works, as demonstrated by Table 1, were selected from digital learning platforms. Data description on web-based search engines was all content on 'Military expenditure and economic growth, Mendley search made between June and September, 2023, on milex gave results of 956,000. The keywords were 'military spending' or 'military expenditure' of 'defence spending' or 'defence expenditure', and 'economic growth'. Studies have emphasised high and low-income countries, in part, with varying availability of the data.

Model Selection

Choice of Variables and Econometric Models

Different studies choose different variables and models; military spending and economic growth were primarily investigated in a variety of ways. Some choose a few variables (like two) while others use a multivariate framework of analysis. What is agreed is that a multivariable framework is superior for overcoming the omitted variables problem (Lu'tkepohl, 1982, 1999). Studies using a multivariate framework of analysis included other variables like capital and labour that were used as controls (Mutumba 2021). Some studies considered total Military spending.

The nature of the estimation model will determine the outcome of the causal relationship (Chen, 2012). Specifically, the econometric methods used to establish the causal relationship were dominated by the Granger test (See 4,18,19,22,23,29,45,46,47,66,81,108,114, 135,148,161, 164,167,

174,175,184,185,190,191,194,197,199,212,216,221,228,238,240,248,253,254,259,263,266,274,316,328,330,347,352,355,400,401,408).

Stationarity was achieved using the Augmented Dickey Fuller (ADF), a long run relationship was established predominantly using Toda Yamamoto (1995), and co-integration was predominantly by Johansen Juselius. Others include Pesaran et al. (2001), Pesaran and Shin (1999).

The dominating models included the Vector error correction mechanism (VECM) (see 230,248, 330, 346,403), Autoregressive distributed lag (ARDL) (See 203, 313,345,391,399,409,412). Other studies used the regression models (see 2, 9, 13, 16, 23, 31, 36, 41, 58, 81, 82, 84, 192,224, 232,296) while those using the ordinary least squares (OLS) included (61, 85, 269, 299, 324,339, 381, 388,403, 410,413). The generalised method of moments (GMM) included (105,201, 269, 283, 316,326,338, 374,381,388, 393, 394, 404, 417). The vector autoregression (VAR) includes (190, 191,257,263,312, 402, 408, 410, 421).

Theoretical Modelling

There is no 'unity of thought' on the theory to analyse military spending and economic growth. It is still contentious. Conventional theories guiding these studies assert that military expenditures reduce investment funds available for productive activities, hence inhibiting economic growth in the 'guns versus butter' debate on one hand (Karadam 2017).

Other studies argue that this expenditure can have spill-overs to other sectors, resulting in economic growth. The debate on the role military spending plays in aggregate output and economic growth is inconclusive.

Neo-classical growth theory assumes the state is a rational economic agent optimising the benefits and costs of defence so as to maximise public interest. According to neo-classical economists, military spending is a true 'public' good that justifies public

spending. The government is a rational economic agent, spending on the military to maximise national interest. Therefore, spending on the military is a trade-off to non-military spending.

In the neo-classical growth theory, it is advanced through Harrod-Domar (see 38), neo-classical production function (see 9, 16, 50, 99, 100, 101, 102, 103, 128, 146, 268, 403, 410, 418, 423), Solow (See 3, 260, 283, 338, 351, 353, 354, 377, 378, 409, 410) and Barro's growth theories (See 110, 169, 172, 210, 260, 283). While others use the Cobb-Douglas Production function (see 305, 386, 410).

The Keynesian theory contends that military spending is a way to increase economic activity through the multiplier in the face of insufficient aggregate demand. Military spending can now be used to increase aggregate supply by increasing capacity utilisation, investment and setting up the military-industrial complex (MIC). This will ultimately increase output and hence economic growth.

The Marxist tradition is controversial inasmuch as the military industrial complex (MIC) is set up, it fuels the 'class struggles'. According to Baran-Sweezy's theory, military spending is needed to sustain capitalism and overcome economic recessions. Monopolistic companies exploit labour by keeping labour costs low, leading to lower consumption levels. Capitalists produce more than what can be consumed by households, leading to a realisation problem. They also constrain any wage rises, which ultimately constrains effective demand. However, with a decline in profits, this would lead to stagnation.

These MIC companies are after maximising profits, yet operating under excess capacity. This under 'consumptionist approach' leads to inadequate consumption. Military spending, on the other hand, is wasteful. It does not create alternative demand to allow the monopolist companies to sell off their

goods and realise profits. So military spending helps avert the stagnation problem.

The Deger and Feder model supports the demand and supply theories, respectively. According to these stability, the correlates of public spending are analysed sector-wide to deduce their contribution to hegemonic stability, while the institutionalist theory by Acemoglu and Robinson (2005) also explains military spending and economic growth through the military industrial complex.

Country and Data Selection

The meta-analysis was interested in military spending and economic growth. The results were profiled, and the countries of study were summarised. Some studies used country-based time series data constituted 31.8% while those across countries using panel data econometrics were 68.2%.

Selection of Observations

This paper used meta-analytic survey methods, and suitable articles became candidates of interest that were chosen purposefully if they suited the selection criteria (Madahani *et al.*, 2017). They were then included in this study, and efforts to reduce publication bias were undertaken.

Observations from search engines were picked using the search criteria with no mention of any specific journal after the selection, as long as its article matched the search order, it was then included. Therefore, a randomised sampling procedure was used.

The final stages of the analysis included journals. Search engines whose articles require subscription only, in this case, would not be included in the search results, and alternative methods outside this study can be used to analyse their data. We have found it useful to implore the use of present the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Moher *et al.*, 2009). As shown in Figure 1.

Inclusion Criteria

This paper took an interest in scholarly work that was deemed to be of high quality. It had undergone peer review and was available on the digital learning platforms.

- (i) This study included peer-reviewed journal articles, mainly available on the academic web-based search engines. The Web of Science, Google Scholar and Mendeley were searched. The studies obtained were vigorously analysed.
- (ii) The study considered economic growth as the dependent variable, while the independent variable was Military expenditure. It is demonstrated that the set of military spending-growth nexus. Many that fell short of that search criteria were dropped from the selection criteria.
- (iii) The identification search brought over 956,000 studies, of which a preliminary survey eliminated duplicates by scrutinising the titles, and those not matching the search criteria were removed, leaving 3855 studies.
- (iv) The eligibility criteria were further read through the abstract, and to eliminate those whose contents did not match the main issues of the military spending economic growth nexus.
- (v) There are other research questions included in this review, including RQN1. What are the most frequently studied countries? RQN2. What is the dominating hypothesis? RQN3. Who are the

most popular publishers? RQN4. What are the leading econometric methods?

Table 1: Meta-analysis -Showing Studies on Military Spending and Economic Growth

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
1	Richardson (1960)	Pittsburgh	Action-reaction model	USA	ME, EG Arms Race	USA, ME→EG
2	Friedman (1962)	Chicago	Regression	USA (1930-1958)	Pol, Econ F, ME, EG	USA, ME→EG (+), PEC(+)
3	Olson (1965, 1982)	Harvard, Yale	Solow	USA	ME, EG, Dem, Inv, Cons	USA, ME→EG (-)
4	Hitch & McKean (1965)	New York)	Correlation	USA	ME, EG	USA, ME→EG(+)
5	Burton & Dyckman(1965)	Economic inquiry	Correlation	USA (California)	ME, EG	USA, ME→EG
6	Olson & Zeckhauser (1966)	Yale	Regressiohn	USA	ME, EG, Alliances	USA, ME→EG(+)
7	Russet (1970)	Yale	Multiple regression	USA	ME, INV, EG	USA, ME→EG
8	Reich (1972)	AEA	Keynesian	USA (1938-1970)	ME, Private Agg. Demand, Other Social service expenditures, MIC	ME→EG
9	Benoit (1973)	ED&CC	NPF, Multiple, Regression	36 Countries, (1950-1965) (1960-1965 for Argentina, China, Czech, India, Israel, Mexico, S.Korea, UAE)	ME, Y, FDI, Human Capital, Civilian GDP,	ME→EG (+)
10	Rothschild(1973)	<i>Kyklos</i>	Correlation, Export-led growth	USA	ME, X, EG	USA, ME→EG (-)
11	Vaksin (1973)		Granger	USA, Thailand	ME, EG	USA, Thailand, ME→ EG
12	Syzmask (1973)	Am.J. Sociology	of Baran Sweezy's Theory of Correlation	18 Richest (1950-1968) (High M/E Israel, USA, UK, Norway, Sweden, France, Australia, Netherlands, West Germany Low M/E: Belgium, Canada, Denmark, Switzerland, Italy, New Zealand, Finland, Austria, Japan)	ME, EG, NME	High ME USA, ME→EG (+) Low ME
13	Kennedy (1974)	London: Duckworth	Regression	LDCs	ME, EG	ME→EG

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
14	Zeitlin (1975)	Am.J. Sociology	of Baran Sweezy's Monopoly Capitalism	USA (1940-1968)	ME, EG	USA, ME→EG (+)
15	Kaldor (1976)	<i>World Development</i>	Marxist	Selected Countries(1963-1973) (Algeria, Chad, Equatorial Guinea, Ethiopia, Gabon, Ghana, Libya, Nigeria, Somalia, Sudan, Tanzania, Uganda, Zambia, Argentina, Brazil, Chile, Cuba, Peru, Venezuela, Burma, Cambodia, China, Taiwan, Indonesia, Korea, South LaOS, Thailand, Vietnam, North Vietnam, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Saudi Arabia, Syria, Yemen (Aden) Yemen)	ME, EG, Arms trade	USA
16	Benoit (1978)	ED&CC	Multiple regression, NPF	44 Countries (1950-1965), (Argentina, India, Israel, Mexico, S.Korea, UAE)	ME, Y, FDI, Foreign Aid	ME→EG (+)
17	Chester (1978)	Cambridge J. of Economics	Granger		ME, Unemployment, EG, Private Investment	ME≠Une (+), ME ≠EG
18	Smith (1977)	JCE	Granger	15 OECD (1954-1973)	ME, EG, Private Investment, Unemployment	ME→Une (+), ME→EG(+)
19	Smith (1978)	JCE	Granger	15 OECD (1954-1973)	ME, EG, Private Investment, Unemployment	ME→Une (+), ME→EG(+)
20	Ostrom & Charles (1978)	<i>APSR</i>	SEM	USA	ME, EG, Arms Race	ME→EG(+)
21	Kaldor (1978)	<i>World Development</i>	PDT	LDCs	ME, EG	ME→EG(-)
22	Neumann (1978)	<i>Orbis</i>	Regression	Iran	ME, EG, External Relations	ME→EG(+)
23	Smith (1980)	JCE	Keynesian Investment Model, Granger	14 OECD (1954-1973)	ME, EG, Private Investment	ME→EG(-)

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
24	Albolfathi (1979)	<i>Working Paper (Colombia)</i>	Regression	USA	ME, War, EG	ME→EG(+)
24	Whynes (1979)	London: Macmillan	Correlation	LDCs	ME, EG	
25	Smith & Smith (1980)	London	Regression	OECD(1960-1977) (Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, South Korea, Spain, Sweden, Switzerland, UK, USA)	ME, EG	ME→EG(+)
26	Faini et al., (1980)	Cambridge	PDR	LDCs	ME, EG, Econ Structure	ME→EG
27	Fontanel (1980)	UN working paper & Grenoble	Demand model	France, Morocco	ME, P, EG	ME→EG
28	Brzoska (1981)	JPR	Granger		ME, EG	ME→EG
29	Chowdury (1981)	JCR	Granger	55 Countries (1962-1977)	ME, EG	
30	Krell (1981)	JPR	OLS	USA (1945–1979)	ME, EG, Strategic Env.	
31	Taylor (1981)	Cambridge	PDT	69 States (1952-1970)	MDE, INV, EG	ME→EG (-), ME→Inv (-)
32	Griffin et al., (1982)	J. of Economics	Regression	USA	ME, EG	USA, ME→EG
33	Frederiksen & Looney (1982)	JED	Correlation	1960-78	ME, EG	ME→EG(+)
34	Chan (1982)		Granger		ME, EG	
35	Fontanel (1982)	Working Paper (WPS)	Deger Model	France, Morocco	ME, EG	ME→EG
36	Palmer (1982)		Correlation		ME, EG	ME→EG
37	Fredericksen & Looney (1983)	<i>Armed Forces & Society</i>	Group Regressions, Benoit's sample and model	44 LDCs (1960-78)	ME, EG	ME→EG (-)
38	Lim (1983)	<i>ED&CC</i>	HD	54 LDCs(1965-1973)	ME, EG	ME→EG (-)
39	Deger & Sen (1982)	JPR	Regression	India	ME, EG	ME→EG (-)

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
40	Small & Singer (1982)	JPE	Correlation	USA	ME, EG	ME→EG (+)
41	Deger & Smith (1983)	JCR	Production function	50 LDCs(1965-78)	ME, EG, Saving, PGR	ME→EG (-)
42	Ball (1983)	ED&CC	Regression Analysis	69 Countries (1952-1970)	ME, Military inputs, EG, Aid	
43	Biswa (1983)	Westview Press	Traditional & Feder-2-sector model	74 LDCs (1981-1989)	ME, EG	ME≠EG
44	Weede (1983)	JCR	Granger		ME, EG	
45	Deger & Sen (1983)	Working Paper	Granger		ME, EG	
46	Leontif & Dutchin (1983)	ED&CC	Granger	USA	ME, EG	ME→EG (+)
47	Landau (1983)	Southern Economic J.	Granger	27 Countries	ME, EG	ME→EG (-)
48	Smith (1983)	JPE	Granger	USA	ME, EG	
49	Ball (1984, 87)	Working Paper	Regression	LDCs	ME, EG	
50	Cappelen & Gleditsch (1984)	JPR	NPF	17 OECD (1960-1980) (Australia, Austria, Belgium, Denmark, France, Germany, Greece, Italy, Netherlands, Norway, Portugal, Sweden, Turkey, UK, USA)	ME, Y, Manufacturing Output, Inv	OECD, ME→EG (-) 7 ME→EG (+) 10Med
51	Faini et al., (1984)	Cambridge		India	ME, EG	India, ME →EG (-)
52	Faini et al., (1984)		Demand-side traditional model	69 Countries (1952-1970)	ME, EG	ME →EG (-)
53	Faini (1984)	ED&CC	PDR	69 LDCs	ME, EG	EG→ ME
54	Murdoch & Sandler,(1984)	JPE	Granger	NATO	ME, EG, Alliances	ME≠EG
55	Cappelen et al. (1984)	JPR	PDT	17 OECD (1960-1980) (Australia, Austria, Belgium, Denmark, France, Germany, Greece, Italy, Netherlands, Norway, Portugal, Sweden, Turkey, UK, USA)	ME, Man Output, Inv, EG	ME →EG (+), ME →Inv(-)
56	Cappelen et al. (1984)	JPR	Regression	10 Mediterranean	ME, EG	ME →EG (-)

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
57	Chan (1985)	ORBIS (Summer)			ME, EG	Survey
58	Deger (1985)	JPE			ME, EG, Inv	ME → EG (-)
59	Kormendi & Meguire (1985)	J. of Monetary Economics	PDT	47 Countries	ME, EG	ME ≠ EG
60	Leidy & Staiger (1985)		Correlation		ME, EG	ME → EG
60	Landau (1985)		Regression		ME, EG	ME → EG
61	Rasler & Thompson (1985a)	APSR	OLS	France, USA, UK, Germany, Japan	ME, GE, Tax, EG	
62	Rasler & Thompson (1985b)	AJPS	Regression	France, Germany, Japan, UK, USA	ME, War, Threat, EG	ME → EG
63	Babin (1986)	University of Maryland	Granger	LDCs	ME, EG	
64	Weede (1986)		Correlation		ME, EG	ME → EG
65	Deger & Sen (1986)	JDE	Regression		ME, EG	EG → ME
66	Joerding (1986)	JDE	Granger	57 LDCs (1962-1977)	ME, EG	EG → ME, ME → EG
67	Ram (1986)	AER	Multiple regression	115 Countries (160-1980)	ME, K, L, Private. Inv, EG	High income, ME → EG (+). Low income ME → EG (-)
68	Deger (1986a)	ED&CC	SEM	50 LDCs	ME, EG	ME → EG
69	Deger & Smith (1986)	JCR	Correlation		ME, EG	ME → EG
70	Biswas & Ram (1986)	ED&CC	Augmented Model	58 LDCs (1960-1978)	ME, EG	ME → EG
71	Looney & Frederiksen (1986)	JPE	Regression		ME, EG	EG → ME
72	Hendry (1986)	JPR	Granger		ME, EG	
73	Landau (1986)	ED&CC	Traditional model	65 LDC (1960-1980)	ME, Educ, EG	ME → EG (+)
74	Looney (1986)	ED&CC	Granger	India, Venezuela	ME, EG	

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
75	Deger (1986b)	London: Routledge	Correlation	LDCs (1965-73)	ME, EG	
76	Ostrom et al. (1986)	APSR	Regression	USA & USSR	ME, EG, Arms Race	
77	Egger et al.(1987)	D&PE	Granger		ME,EG	
78	Cypher (1987)	JEI	OLS	USA	ME, Technical change, EG	ME→EG(+)
79	De Haan (1987)	<i>In The economics of military expenditures</i>	Post-Keynesian Growth Models		ME, Inf, EMP, GDP	
80	Lebovic & Ishaq (1987)	JCR	Pooled TS Cross section, Traditional 3- equation	20 Middle East (LDCS)	ME, EG, Security	ME→EG(-)
81	Lacivita & Fredericksen (1987)	JDE	Granger, Hsiao	21 Countries (Argentina, Burma, Chile, Costa Rica, Dominican Republic. Ecuador, El Salvador, Ghana, Guatemala, India, Sri Lanka, Syria SAF, Colombia, Thailand, Iran Venezuela, Pakistan, Philippines Spain, Turkey)	ME, EG	ME2EG (Columbia, Iran), EG→ME (Burma Ecuador, Sri Lanka Syria), ME→EG (SA, Thailand, Venezuela), ME ≠EG (Argentina, Chile Costa Rica, Dominican Rep, El Salvador, Ghana, Guatemala, India, Pakistan Philippines, Spain, Turkey)
82	Kennedy (1987)	New York	Ram & Feder	USA	ME EG, Ind, terror	ME→EG (-)
83	Chan (1988)	D&PE		Taiwan	ME, EG	
84	Goldstein (1988)	Yale		USA	ME, EG	USA,ME→EG (-)
85	Rasler & Thompson (1988)	JCR	Demand side investment, Hegemonic stability theory, ARIMA, GLS	France (1872- 1973), USA (1946- 1978), UK (1800-1980), Germany(18880-1980), Japan (1880- 1980)	ME, Systemic Leadership, EG	ME→EG(-)
86	Rosh, (1988)	JPR			ME, EG, Arms Race	ME→EG (-)
87	Looney & Fredrecksen (1988, 2000)	JPE			ME, EG	ME→EG

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
88	Babin (1989)	Armed Forces and Society	Two-wave panel regression	LDCs(1965-1981) (Afghanistan, Algeria, Argentina, Bangladesh, Barbados, Bolivia, Botswana, Brazil, Burma, Burundi, Benin, Cambodia, Cameroon, Chad, Chile, China, Colombia, Congo (Brazaville), Costa Rica, Cyprus, D.R., Congo, Dominican Rep., Ecuador, Egypt, El Salvador, Ethiopia, Fiji, Gambia, Ghana, Guinea, Guyana, Haiti, Honduras, India, Indonesia, Iran, Iraq, Israel, Ivory Coast, Jamaica, Jordan, Kenya, Korea, Laos, Lebanon, Lesotho, Liberia, Madagascar, Malawi, Mali, Malta, Mauritania, Mauritius, Mexico, Morocco, Mozambique, Nepal, Nicaragua, Niger, Nigeria, Pakistan, Panama, Papua New Guinea, Paraguay, Philippines, Romania, Rwanda, Sao Tome & Principe, Senegal, Sierra Leone, Singa Pore, Somalia, SAF, Spain, Sudan, Suriname, Swaziland, Syria, Taiwan, Tanzania, Thailand, Togo, Trinidad & Tobago, Tunisia, Turkey, Uganda, Upper Volta, Uruguay, Venezuela, Yemen, Zambia, Zimbabwe)	ME, EG	ME→EG
89	Grier & Tullock (1989)	Working Paper	PDT	113 Countries		ME→EG (-), ME≠EG, Asian, ME→EG (+)
90	Hess (1989)	Cambridge J. of Economics	Regression, 3 Simultaneous equation modelling, 3SLS,	LDCs	ME, Education, EG, HIS	
91	Kupchan (1989)	Survival		USA (1947-1987)	ME, Personal Savings, Transfer payment, L, EG	USA, ME→EG (-, +)

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
92	Smith (1989)	J. of Applied Econometrics	Regression	UK, USA, USSR (1949-1985)	ME, NME, Security, EG	ME→EG
93	Grobar & Porter (1989)	JCR	3 SLS, Benoit's hypothesis	50 LDCs (1965-1973)	ME, EG, Aid, Investment	ME→EG (-)
94	Stanley & Jarrel (1989)		SEM		ME, EG	
95	Gyimah Brempong (1989)	JPR	3 SLS	39 SSA (1973-1983)	ME, EG, L, Inv	ME→EG (-)
96	Aschauer (1989)		SEM		ME, EG	
97	Mintz & Ward (1989)	APSR	Granger	Israel	ME, EG, Strategic Rivals	Israel, ME→EG (+)
98	Thompson & Sharp (1989)		Regression		ME, EG	
99	Alexander (1990)	D&PE	NPF, Sectoral pdn differentials	USA (1952-1988)	ME, EG	USA, ME≠EG
100	Alexander (1990)	DE	NPF, Feder-4 sector model	9 Countries (1974-1986)	ME, EG	ME≠EG
101	Alexander (1990)	D&PE	NPF, Feder-4 sector model	13 Countries (1959-1984)	ME, Inf, EG	ME→EG (-), ME≠EG, Inf→EG (-)
102	Antonakis & Karavidas (1990 a, b)	D& E	NPF	Turkey	ME, EG	
103	Atesoglu & Mueller (1990)	D&PE	NPF	USA(1952-1988)	ME, EG	USA, ME→EG (+)
104	Davis & Chan (1990)	JCR		Taiwan	ME, EG	
105	Mintz & Huang (1990)	APSR	Flexible accelerator, Investment model, GMM	USA	ME, EG	USA, ME→EG (-), Inv→EG (-)
106	Georgiou (1990, 96)	JPR	SEM	Greece(1958-97), Turkey(1958-97)	ME, EG	Turkey, ME→EG (+), Greece
107	Huang & Mintz (1990)	Defence Economics	Ridge estimator, 3 Sector model	USA (1952-1988)	ME, EG	USA, ME≠EG
108	Romer (1990)	WPS	Granger	112 Countries (1960-1985)	ME, EG	ME→EG (-, +)

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
109	Adams, Behrman and Boldin (1991)	Conf. Management & Peace Science	Feder- 3- sector model		ME, EG	ME≠EG
110	Barro (1991)	Working Paper	SEM	98 Countries (1960-1985)	ME, EG	ME→EG (-)
111	Chan and Gustafson (1991)	APSR	Granger	UK (1960-1985)	ME, Private Cons, Relative prices, Public goods, Prices, EG	ME→EG (-), EG →PC
112	Mintz & Huang (1991)	AJPS	Feder- 3- sector model	USA	ME, EG	ME≠EG
113	Brauer (1991)	ED&CC		(Burma 1953-55, 1957, India 1951-79, Malaysia 1967, Pakistan 1951-79, Philippines 1967-76, Madagascar, Nigeria 1966-80, Argentina 1958-78, Brazil 1972-79, Chile 1963, 1965-79 Mexico 1955, 1957-64, 1966-74 Peru 1975, 1977, 1979)	Military Investment, Armed Imports, EG	
114	Chowdury (1991)	JCR	Granger	55 Countries (Afghanistan 1961-84), Algeria (1962-87), Argentina (1961-87), Bolivia 1961-87), Burma (1961-87). Cameroon (1961-87), Burma (1961-87), Chad (1961-87), Chile (1961-87), Columbia (1961-87), Dominican Rep (1961-87), Ecuador (1961-87), Egypt (1961-87), Ethiopia (1961-87), Ghana (1961-87), Guatemala (1961-85), Haiti (1961-85), Honduras (1961-87), Indonesia (1961-87), Iran (1961-85), Iraq (1961-85), Israel (1961-87), Ivory Coast (1961-87), Jamaica (1962-87), Jordan (1961-87), Kenya (1963-87), S.Korea (1961-87), Kuwait (1961-87), Liberia (1961-87), Libya (1961-84), Malawi (1965-87), Malaysia (1964-87), Mexico (1961-87), Morocco (1961-84), Nicaragua (1961-80),	ME, EG	ME ≠EG

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
				Nigeria(1961-87), Panama(1961-84), Paraguay (1961-84), Peru (1961-87), Philippines (1961-87), Saudi Arabia (1961-87), Senegal (161-87), Sierra Leone (1961-84), Somalia (1961-82), Sudan (1961-87), Syria (1961-87), Tanzania(1961-84), Thailand (1961-87), Togo (1962-84), Tunisia (1961-87), Uganda(1963-84), Uruguay (1961-87), Venezuela (1961-87), D.R.Congo (1961-84), Zambia (1963-84)		
115	Ward et al. (1991)	Defence Economics	Feder3 sector	India	ME, EG	India, ME→EG (+)
116	Scheetz (1991)	Defence Economics	Pooled Time series, Deger 3 equation	Latin America (1969-1987), Argentina, Chile, Peru, Paraguay	ME, EG	ME→EG (-)
117	Stewart (1991)	ED&CC	Keynesian	LDCs	ME, NME EG	ME→EG (+), NME→EG (+)
118	Mohamed (1992)				ME, EG	
119	Ward & Davis (1992)	APSR	OLS, Feder 3 type	USA(1946-1996)	ME, EG	ME→EG (-)
120	Moon & Hyub (1992)		Granger		ME, EG	
121	Neil (1992)	ED&CC			ME, EG	
122	Payne and Ross (1992)	Defence Economics		UK, USA, and 11 OECDs	ME, Unemp	
123	Hartley & Russett, (1992)	APSR		USA	ME, EG, Rivals	USA ME→EG (+)
124	Hewitt (1992)	J. of Public Policy		(1972-1988)	ME, EG, Geography	
125	Biswas (1993)	West view		LDCs	ME, EG	
126	Devarajan et al. (1993)	D& PE		14 OECDs (1970-1990)	ME, EG, Health, Educ Inf (Tranp)	ME→EG(-), EDuc→EG(-), Health →EG, Inf→EG
127	Easterly & Rebelo (1993)			62 Countries (1970-1988)	ME, EG, Inv, Taxes, Other Gov Exp, Human	Inv→EG (-), Cons→EG(-), Inf →Private Investment

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
					Capital, Private Investment	
128	Mintz & Atesoglu (1993)	Defense Economics	Neoclassical Growth, Feder	103 Countries(Algeria, Australia, Austria, Belgium, Benin, Bolivia, Fiji, Gabon, Greece, Chile, France, Guyana, India, Japan, Kuwait, Luxembourg, Netherlands, Niger, Portugal, SAF, S. Korea, Switzerland, and Trinidad and Tobago.)	ME, EG	Most, ME→EG(+) ME≠EG
129	Mueller& Atesoglu (1993)		Feder	USA (1948-1990)	ME, EG	USA, ME→EG (+)
130	Chen (1993)		Granger	China (1960 1990)	ME, EG	
131	Park (1993)			S.Korea	ME, EG	
132	Kapopoulos & Lazaretou (1993)			Greece	ME, EG	Greece, ME→EG (+)
133	Landau (1993)	World Bank Working series	Traditional Model	71 LDCS (1969-1989)	ME, EG	ME→EG, EG→ME, 47 countries ME≠EG
134	DeRouen (1994)	Int Interactions	SEM	Latin America	ME, EG	ME→EG (-)
135	Kusi (1994)	JCR	Granger	75 countries	ME, EG	12 Countries ME→EG, 1 country ME2EG 62 country ME≠EG
136	Barro & Lee (1994)			G7	ME, EG	
137	Kollias (1994a)			MENA	ME, EG	
138	Hansson & Henrekson (1994)	<i>Public Choice</i>		14 OECDs	ME, Inv, Educ, Social Security, EG, Transfers	ME→EG (+), ME→EG (-), ME≠EG
139	Hassan (1994)	JPSES	Regression	Turkey	ME, EG	
140	Hsieh and Lai (1994)	Applied Economics		G7 (1885-1987) (Canada, France, Germany, Japan, Italy, UK, USA)	ME, EG	ME→EG (+), ME→EG (-), ME≠EG
141	Lin (1994)	Applied Economics	PDT	64 Countries (1960-1985)	ME, EG, Inv	ME→EG (+), ME→EG (-), ME≠EG
142	Ram (1994)	Illinois State Uni (Unpublished Manuscripts)	FE, Traditional 2-sector model	71 LDCs (1965-73, 1973-80, 1980-1990)	ME, EG	ME→EG (+), ME→EG (-), ME≠EG

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
143	Dix (1994)				ME, EG	
144	Chletsos & Kollias. (1995a)	<i>Cyprus J. of Economics</i>		Greece (1960-1990)	ME, EG	Greece, ME →EG (-)
145	Lipow & Antinori (1995)	<i>JPM</i>		Greece]	ME, EG	ME →EG (-)
146	Mintz & Stevenson (1995)	JCR	Neoclassical Growth, Feder	103 Countries(Algeria, Australia, Austria, Belgium, Benin, Bolivia, Fiji, Gabon, Greece, Chile, France, Guyana, India, Japan, Kuwait, Luxembourg, Netherlands, Niger, Portugal, SAF, S. Korea, Switzerland, Trinidad and Tobago.)	ME, EG	Most, ME→EG(+) ME≠EG
147	Dunne & Mohammed (1995)		Regression	13 SSA (1967-1985)	ME, EG, S	ME→EG (-)
148	Ram (1995)	Handbook of Defence Economics	Granger, Regression Diagnostics	OECD	ME, EG, Inv	
149	Lipor & Antinori (1995)		SEM	Turkey	ME, EG	
150	Chletsos & Kollias (1995b)			Greece (1974-1994)	ME, EG	
151	Macnair et al. (1995)	Southern Econ J	Feder,	10 NATO (1951-1988)	ME, EG	ME→EG (+)
152	Madden & Haslehurst (1995)				ME, EG	
153	Asseery (1996)	Applied Economics			ME, EG	
154	Benabou (1996)	NBER			ME, EG, SI	ME≠EG (≠)
155	Devarajan et al. (1996)		VAR	43 LDCs	ME, Cons, Inv, EG	ME→EG, Con→ EG (+), Inv→EG(-)
156	Kim (1996)	CES	Granger		ME, EG Quality of Life, Urb, PGR	ME→EG(-)
157	Norden (1996)				ME, EG	
158	Knight et al.(1996a)	JIAR		124 (22 MDC, 102LDCS (1975-1990)	ME, EG	ME→EG(+)

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
159	Knight et al.(1996b)	IMF Staff papers	PFE	79 Countries (1975-1990)	ME, EG	ME→EG(-)
160	Cohen (1996)	JPR		Israel	ME, EG	Israel, ME→EG(+)
161	Dunne (1996)	D&PE	Granger		ME, EG	
162	Devarajan et al.(1996)				ME, EG	
163	Bloomberg (1996)				ME, EG	
164	Landau (1996)	QREF	Granger	OECDs (Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, South Korea, Spain, Sweden, Switzerland, UK, USA)	ME, EG	
165	Chen (1996)			Greece	ME, EG	
166	Balfoussias & Stavrinou (1996)			Greece (1960-1992)	ME, EG	
167	Joerding (1996)	JDE	Granger	57 LDCS	ME, EG	ME→EG
168	Paul (1996)	JECS		OECDs (Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, South Korea, Spain, Sweden, Switzerland, UK, USA)	ME, EG	
169	Brumm (1997)	Journal of Macroeconomics	Barro's regression, LISREL's Variant Regression	119 Countries (1974-1989)	ME, EG	ME→EG
170	Brunetti (1997)	JES			ME, EG	ME≠EG
171	Alesina and Perotti(1997)	Oxford			Dem, ME, EG	ME→EG (-) DEM→ EG
172	Barro (1996)		Gastil's index, Barro		Reg, Dem, ME, EG	Barro non-linear effect

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
173	Glom & Ravikumer (1997)				ME, EG	
174	Kollias (1997)		Granger	Turkey (1954-1993)	ME, EG, Dummy	Turkey, ME≠EG
175	Murdoch (1997)	JCR	Granger		ME, EG	
176	Murdoch et al. (1997)	D&PE	Feder & Ram	Asia and Latin America	ME, EG, NME, Public spending, Private Inv	Latin America ME→EG(+)
177	Masih (1997)			LDCs	ME, EG	
178	Heo (1997)			Korea	ME, EG	
179	Antonakis(1997)	JPR		Greece (1960-1990)	ME, EG	
180	Sezgan (1997)				ME, EG	
181	Kollias & Maklydakis (1997)			Turkey	ME, EG	Turkey, ME ≠ EG
182	Coakley (1998)				ME, EG	
183	Crane (1988)	JCE	PDT	Czech, Hungary, Poland	ME, EG	
184	Dunne, Nikolaido, Vouglas (1998)	D&PE	Granger	Turkey	ME, EG	Turkey, ME→EG(+)
185	Ghali (1998)		Granger	10 OECDs (1970:1-1994:3)	ME, EG, X, M,	ME ME ≠ EG
186	Kneller et al. (1998)	Discussion Paper of University of Nottingham		22 OECDs (1970-1995)	ME, EG, Cons, Inv	Cons≠ EG, Inv →EG
187	Batchelor et al. (1999)	JCR		SAF (1964-1995)	ME, NME, EG	SAF, ME→EG(+)
188	Folster & Henreckson. (1999)		PDR	23 OECDs (1970-1995)	ME, Gov Spending, taxes, EG	ME→EG(-) ME→EG(+)
189	Maklydakis (1999)	D&PE	SEM	Greece	ME, EG	
190	Dunne & Nikolaidou (1999)	Working paper, Middlesex University	VAR, Granger	Greece(1960-1996)	ME, EG, Cons	ME→EG(-) Cons≠ EG
191	Dunne & Vougas (1999)	JCR	VAR, Granger	S.AF (1962-1995)	ME, EG	ME→EG(-)
192	Sezgan (1999b , 2000)		Regression		ME, EG	

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
193	Dunne et al. (1999)		VAR		ME, EG	ME→EG (-)
194	Collier (1999)		Granger		ME, EG	
195	Heo (1999a)	JPR	SEM	Turkey	ME, EG	Turkey, ME→EG (-)
196	Heo (1999b)	JPR	Regression	S. Korea	ME, EG	ME→EG
197	Mintz & Stevenson (1999)		Granger		ME, EG	
198	Tanninen (1999)	Applied Economics	PDT	52 Countries (1970-1992)	ME, Cons, EG, Inv. Income inequality, Public goods	ME→EG(+), Cons→EG(-)
199	Dakura et al. (2000)	JPM	Granger	62 LDCs (1975-1995)	ME, EG	23 Countries ME→EG, 7 Countries ME2EG, 18 Countries ME ≠ EG, 14 Countries EG→ME
200	Dunne et al. (2000)	D&PE	Keynesian Simultaneous, 2SLS, 3SLS	SAF (1961-1997)	ME, EG	SAF, ME ≠ EG
201	Blundell et al. (2000)		GMM		ME, EG	
202	Atanasio (2000)		Granger		ME, EG	
203	Batchelor et al. (2000)	D&PE	ARDL	SAF (1989-1996)	ME, EG, Manuf Sector	SAF, ME ≠ EG, ME→Manuf Sector(-)
204	Chong & Calderon (2000)		ECM		ME, EG	
205	Kweka & Morissey (2000)	Credited Research Paper	Regression	Tanzania (1965-1996)	ME, EG	Tz., ME →EG (-)
206	Abu-Bader & Sezgin (2001)		VAR		ME, EG	
207	Castilo et al. (2001)	Working Paper, Def, Tech. Info. Centre, California	Statistical and Case Study	G5 (1870-1939) (France, Germany, Japan, Russia, USA)	ME< Threats, EG	G5 EG→ME
208	Chang (2001)	Applied Economics	Granger	Taiwan, China	ME, EG	China, EG→ME, Taiwan, ME2EG

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
209	Dunne & Nikolaidou (2001)	D&PE	Keynesian Simultaneous model, SLS	Greece (1960-1996)	ME, EG, Threats of war, Savings, trade balance	Greece, ME→EG(-)
210	Stroup & Heckelman (2001)	JAE	PDA, Barro-style	Africa& Latin America (1975-1989)	ME, EG, Military Lbr, Capital, Male Educ	Non linear
211	Dakurah al.(2001)	et Econometrica	AR, Likelihood ratio	Turkey	ME, EG	Turkey, ME→EG
212	Dakurah al.(2001)	et JPM	Granger	62 LDC(1975-1995)	ME, EG	ME→EG 23 Countries ME→EG, 7 Countries ME2EG, 18 Countries ME ≠ EG, 14 Countries EG→ME
213	Fredericksen & McNab (2001)		Regression		ME, EG	
214	Gupta, De Mello, and Sharan 2001;	EJPE	SEM		ME, EG	
215	Lebovic (2001)	JPR	ARDL	Latin America	ME, DEM, EG	
216	Sezgan (2001)		Granger	Turkey	ME, EG	Turkey, ME→EG
217	Mules- Granado et al., (2002)		Regression		ME, EG	
218	Cothorn (2002)		OLS		ME, EG	
219	Lai (2002)	D&PE,	Endogenous		ME, EG	
220	Anywar et al. (2002)		ARDL		ME, EG	
221	Dunne et al., (2002)	JPR	Keynesian, Granger		ME, EG	
222	Atesoglu (2002)		Cointegration	Turkey	ME, EG	Turkey, ME →EG (-)
223	Batchelor et al. (2002)	JPR		SAF	ME, EG, Embargoes	SAF, ME →EG (-)
224	LaRouche (2002)		Regression	Eurasia, Africa, Asian	ME, EG	
225	Shieh (2002)		Granger		ME, EG	
226	Murdoch & Sandler (2002a)	JCR	Cross-sectional and panel FE	85 Countries (1961-1990)	ME, EG, Civil War, YPC, K, Inv	ME→ EG(-)
227	Murdoch & Sandler (2002b)	D&PE	Cross-sectional and panel FE	35 Countries (1961-1995)	ME, EG, Civil War	

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
228	Yildirim & Sezgan (2002)	IRAE	Granger	MENA	ME, EG	ME→EG
229	Biglaiser (2002)		Granger		ME, EG	
230	Perlo & Freeman (2002)	D&PE	PECM	Greece, Portugal, Spain	ME, EG	EG→ME
231	Nikolaidou and Smith, 2002;		ECM		ME, EG	
232	Al-Yousif (2002)	D&PE	Regression		ME, EG	
233	Dunne & Perlo-Freeman, (2003a,b)	IRAE	SEM	LDC	ME, EG	Turkey, ME →EG (+)
234	Yildirim & Sezgan (2003)	D&PE		Turkey	ME, E, EG	
235	Freeman (2003)	IRAE			ME, EG Arms Race	
236	Abu-Bader & Abu-Qarn (2003)			Egypt (1975-1995), Israel (1967-1998), Syria (1973-1998)	ME, EG, GE	ME→EG (-), GE→EG(+) Israel, Egypt), GE→EG (-) Syria)
237	Galvin (2003)	D&PE	SEM (2 & 3 SLS)	64 LDCs	ME, EG	
238	Waheeduzzaman & Rahaman (2003)	JPSES	Granger	SAARC (Pakistan, India, Bangladesh)	ME, EG	
239	Hassan et al. (2003)	JPSES	Regression	SAARC (Pakistan, India, Bangladesh)	ME, EG	
240	Candar (2003)	Bilkhent Doctoral	Uni Deger(Demand)-Feder(Supply Side), Granger	Turkey (1950-2001)	ME, EG	Turkey, ME→EG(+)
241	Plumber & Martin (2003)	Public Choice	SEM	(Algeria, Argentina, Colombia,, Benin, Ecuador, Burkina Faso Paraguay, Burundi, Peru, Cameroon, Uruguay, CAR, Venezuela, Chad, Bangladesh, Egypt, Arab Rep. India, Ethiopia, Indonesia, Ghana, Iran, Islamic Rep. Guinea, Israel, Cote d'Ivoire, Japan, Kenya, Jordan, Malawi, Korea, Mali, Malaysia,	ME, YPC, EG, PGR, GS, Int. Openness, Dem, Human Capital	ME→EG

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
				Mauritania, Nepal, Morocco, Pakistan, Niger, Philippines, Nigeria, Singapore, Rwanda, Sri Lanka, Sierra Leone, Syrian Arab Republic, SAF, Thailand, Togo, Austria, Tunisia, Belgium, Congo, Rep. Denmark, Finland, Italy, Haiti, Zambia, Zimbabwe, France, Canada, Germany, Greece, Costa Rica, El Salvador, Ireland, Guatemala, Netherlands, Honduras, Norway, Jamaica, Portugal, Mexico, Spain, Panama, Sweden, Trinidad and Tobago,, Switzerland, US, Turkey, UK, Bolivia, Australia, Brazil, New Zealand)		
242	Nijkamp & Poof (2004)	JPR	Granger		ME, EG	
243	Staines (2004)	DE			ME, EG	
244	Halicioglu (2004)	Review of Middle East Economics and Finance	CUSUM	Turkey (1950-2002)	ME, EG	Turkey, ME→EG(+)
245	Klein (2004)		SEM	Peru	ME, EG	Peru, ME →EG (-)
246	Coellier (2004)	WPS	Granger		ME, EG	
247	Collier & Hoeffler (2004)	Oxford Economic Papers	ECM		ME, EG, Dev't Aid	
248	Dritsaki (2004)	JPM	VECM, Granger	Greece, Turkey	ME, EG	Greece, Turkey ME2EG
249	Fordham (2004)	JCR			ME, EG Arms Race	
250	Glaeser et al. (2004)				ME, EG	
251	Guaresman & Reit Schuler (2004)	D&PE			ME, EG	
252	Kollias Manolas, and Paleologou (2004a)	JPM	PRT	EU(Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech, Denmark, Estonia, Finland, France, Germany,	ME, EG	

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
				Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, UK)		
253	Kollias, Naxakis and Zarangas (2004b)	D&PE	Granger	Cyprus (1964-1999)	ME, EG	Cyprus, ME2EG
254	Kollias et al. (2004)	JCR	Granger	Turkey	ME, EG	Turkey, ME →EG (-)
255	Ramos (2004)	JPE	SEM		ME, EG	
256	Dunne & Nikolaidou (2005)	Frontiers in Finance and Economics		Greece, Portugal, Spain	ME, EG	
257	Yildirim et al., (2005)	D&PE	VAR	ME & Turkey	ME, EG	
258	Bas (2005)	JCR	Granger		ME, EG	
259	Dunne & Vougas (2005)	D&PE	Granger		ME, EG	
260	Dunne, Smith & Willenbockel (2005)	D&PE	Solow Vs Barro, Feder-Ram		ME, EG	Critical review
261	Koubi (2005)				ME, EG	
262	Stanley (2005, 08)	JCR			ME, EG	
263	Lai, Huang,& Yang (2005)	D&PE,	VAR, Granger	China(1953-2000), Taiwan (1953-2000)	ME, EG	China, ME2EG. Taiwan, ME→EG
264	Lai (2005)	D&PE			ME, EG	
265	Fok, Van Dijk & Franses (2005)				ME, EG	
266	Gonzalez et al. (2005)	Stockholm Working Paper	Granger		ME, EG	
267	Fordham & Walker (2005)	International Studies	SEM		ME, EG, Strategic Rivals, Dem	
268	Mitchell (2005)	Heritage Foundation	Neoclassical growth,	USA	ME, EG, GE	USE, ME →EG, GE →EG (-)

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
			Keynesian controversy			
269	Yildirim & Sezgin (2005)	<i>Trans. Studies Review</i>	PET (POLS, FE, RE, GMM)	92 countries(1987-1997) (Algeria, Angola, Bahrain, Bangladesh, Belgium, Bolivia, Botswana, Brazil, Bulgaria, Burkina Faso, Cameroon, Canada, Chile, China, Taiwan, Colombia, Costa Rica, Denmark, Djibouti, Dominican Rep, Ecuador, Egypt, El Salvador, Ethiopia, Fiji, Finland, France, Germany, Ghana, Greece, Hungary, Iceland, India, Indonesia, Iran, Iraq, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kenya, S. Korea, Kuwait, Lux, Madagascar, Malawi, Malaysia, Malta, Mauritius, Mexico, Mongolia, Morocco, Mozambique, Nepal, Netherlands, New Zealand, Nigeria, Norway, Oman, Pakistan, Panama, Paraguay, Philippines, Poland, Portugal, Romania, Rwanda, Saudi Arabia, Senegal, Sierra Leone, Singapore, SAF, Spain, Sri Lanka, Swaziland, Sweden, Switzerland, Thailand, Tunisia, Turkey, Uganda, United Arab Emirates, UK, USA, Uruguay, Venezuela, Zambia, Zimbabwe)	ME, EG, Dem, Peace	ME→Dem(-), ME→Peace(+)
270	Doucouliafos & Ulubasoglu (2006)		Granger	Turkey	ME, EG	
271	Aizenman & Glick (2006)	<i>Journal of International Trade & Economic Development</i>	PDT		ME, Threats, EG	ME→EG (-)
272	Yildirim et al. (2006)	D&PE	ARDL		ME, EG	

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
273	Yildirim & Ocal (2006)				ME, EG	
274	Kalyoncu and Yucel (2006)		Logarithmic Unit root, Engel-Granger	Turkey (1956-2003), Greece (1956-2003)	ME, EG	Turkey, ME→EG
275	Karagol (2006)			Turkey (1960-2002)	ME, EG	Turkey, ME→EG
276	Kalaitzidakis & Tzoulevelekas (2007)			55countries (1980-1995) (17 OECD, 38 Non-OECD)1980-1995	ME, EG	
277	Mylonidis (2006)	EU working paper		EU (Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Lux, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, UK)	ME, EG, K, L, R&D, Tech, Natural Resources	
278	Bose et al. (2007)	JPR	Granger		ME, EG	
279	Collier & Hoeffler (2007)	Oxford Bulletin of Economics and Statistics	ECM		ME, EG, Dev't Aid	
280	Lee & Chen (2007)	<i>D&PE</i>	Granger	99 Countries 27OECD (1988-2003), (Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, South Korea, Spain, Sweden, Switzerland, UK, USA) 62NonOECD (1983-2003)	ME, EG	EG→ME
281	Kolias (2007)	JCR	Granger		ME, EG	
282	Collier (2007)		Granger, POLS	50 Countries	ME, EG	
283	Yakovlev (2007)	D&PE	PFE, RE, GMM (Arellano& Bond), Solow and Barro	28 Countries (1965-2000) (Argentina, Australia, Belgium, Brazil, Canada, Chile, Denmark, France, Germany, Greece, India, Israel, Italy, Japan,	ME, Net arms Export, EG	Turkey, ME→EG, Others ME→EG (-)

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
				South Korea, Malaysia, Netherlands, Norway, Pakistan, Philippines, Portugal, SAF, Spain, Sweden, Turkey, UK, USA, Venezuela)		
284	Pelaez (2007)		VAR		ME, EG	
285	Rice (2007)	DE	Granger		ME, EG	
286	Sandler & Hartley (2007)				ME, EG	
287	Kollias et al.,(2007)	et JPR	Granger	Turkey	ME, EG	Turkey, ME →EG (-)
288	Kollias al.,(2007)	et D&PE	VAR	EU (Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, UK)	ME, EG	ME→EG
289	Mylonidis (2008)	D&PE	ECM	EU (Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, UK)	ME, EG	Turkey, ME→EG(+)
290	De Dominicis et al.(2008)		Granger		ME, EG	ME→EG
291	Kentor and Kick (2008)			109 countries , 30 OECD)(Australia, Austria,Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal,	ME, EG	

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
				South Korea, Spain, Sweden, Switzerland, UK, USA)		
292	Doucouliaos & Stanley (2008)				ME, EG	
293	Dunne et al.(2008)	D&PE			ME, EG	
294	Dunne & Cuolomb (2008)	War, Peace, and Security			ME, EG	
295	York (2008)				ME, EG	
296	Ozsoy (2008)	D&PE		Turkey	ME, EG	Turkey, ME →EG (-)
297	Smith & Tuttle (2008)	D&PE		USA	ME, EG	USA, ME →EG (-)
298	Nikolaidou (2008)	D&PE		EU (Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, UK)	ME, EG	
299	Hirnisca & Baharom (2009)	JSD	DOLS	ASEAN_5 (1965-2009) (Indonesia, Thailand, Singapore, Malaysia, Philippines)	ME, EG	Indonesia, Thailand, Singapore ME→EG, Singapore ME2EG, Malaysia, Phillipines, ME ≠ EG
300	Daria (2009)				ME, EG	
301	Ando (2009)	<i>IJEPS</i>	PDT, Feder		ME, EG	
302	Wijeweera and Webb (2009)	<i>D&PE</i>		Sri Lanka	ME, EG	
303	Karagiani & Pampetzoglu (2009)			Turkey	ME, EG	Turkey, ME →EG (+)
304	Pieroni (2009a)	Economic Modelling	ME, Endogenous	Africa) (Algeria, Benin, Burkina Faso, Burundi, Botswana, CAR, Chad, Cameroon, Cape Verde, Congo, Djibouti, D.R.Congo, Egypt, Ethiopia, Eritrea, Gambia, Guinea,	ME, K, Pop, NME, Y	

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
				Guinea Bissau, Ghana, Lesotho, Libya, Liberia, Madagascar, Malawi, Mali, Mauritania, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, SAF, Sierra Leone, Somalia Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe)		
305	Pieroni (2009b)	D&PE	Endogenous, CD, PPC,	90 Countries	ME,NME, EG, PGR, PINV, GG	ME→EG (-)
306	Dicle and Dicle(2010)	J.of Comparative Policy Analysis		65 Countries	ME, EG	
307	Jorgenson et al (2010)				ME,EG,	
308	Bond et al. (2010)				ME, EG	
309	Dunne & Uye (2010)	London, Routledge		65 Studies	ME, EG	Comprehensive Review
310	Heo (2010)	Political Research Quarterly	Feder-Ram, Sollow,	USA (1954-2005)	ME, EG	USA, ME ≠ EG
311	Hou (2010)	Uni of Birmingham	Richardson's Action-Reaction model, Cointegration techniques	India & 36 LDCs (1975-2009)	ME, EG, Arms race	India, ME→EG(-)
312	Kollias & Apaleologon (2010)		Trivariate VAR, FE	15 EU	ME, EG	EU, ME ≠ EG
313	Pradhan (2010)		ARDL	China, India, Nepal, Pakistan (1988-2007)	ME, EG, Public Debt	
314	Catoggio (2011)				ME, EG	
315	Alptekin &Levin (2012)	<i>EJPE</i>	ARDL		ME, EG	Meta-analysis
316	Chang et al. (2011)	Economic Modelling	Granger, GMM	90 Countries (1992-2006) (Algeria, Austria, Bahrain, El Salvador, Burundi, Belgium, Cyprus, Guatemala, Cameroon, Denmark, Egypt, Mexico, CAR, Finland, Iran, Nicaragua, Chad, France, Israel,	ME, EG	ME→EG (-)

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
				Panama, Ethiopia, Germany, Jordan, China, Ghana, Greece, Oman, Indonesia, Kenya, Ireland, Saudi Arabia, Japan, Madagascar, Italy, Syrian, South Korea, Malawi, Lux, UAE, Malaysia, Mali, Netherlands, Yemen, Rep., Philippines Mauritania, Norway Bangladesh, Singapore, Morocco, Portugal, India, Taiwan, Niger Spain Nepal Thailand, Nigeria Sweden Pakistan Canada, Rwanda Switzerland Sri Lanka, Senegal Turkey Argentina, Sierra Leone UK, USA Bolivia, SAF, Bulgaria Brazil, Togo Hungary Chile, Tunisia Poland, Colombia, Zambia Romania Ecuador, Zimbabwe Paraguay, Peru, Uruguay, Venezuela, RB, Australia, New Zealand, Fiji)		
317	Safdari et al. (2011)	CBR		Malaysia, Iran, South Korea, Saudi Arabia	ME, EG	ME→EG
318	Wijeweera & Webb (2011)	D&PE		South Asia (1988-2007) (India, Pakistan, Nepal, Sri Lanka and Bangladesh)	ME, EG	ME ≠ EG
319	Yang et al., (2011).	D&PE		106 Countries (1988-2010)	ME, EG, Military Threat	ME→EG (-)
320	Ahmed (2012)	D&PE		25 SSA (1988-2007)	ME, EG, Debt	EF→D(+), ME→D(+)
321	Chen (2012)	Energy Policy	Meta-analysis		ME, EG	
322	D'Agostino et al.(2012)	D&PE		53 Africa (1970-2014)(Algeria, Benin, Burkina Faso, Burundi, Botswana, CAR, Chad, Cameroon, Cape Verde, Congo, Djibouti, D.R. Congo, Egypt, Ethiopia, Eritrea, Gambia, Guinea, Guinea Bissau, Ghana, Lesotho, Libya, Liberia, Madagascar, Malawi Mali, Mauritania, Morocco, Mozambique,	ME, EG, Corruption	ME→EG (-)

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
				Namibia, Niger, Nigeria, Rwanda, SAF, Sierra Leone, Somalia Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe)		
323	Gates et al.(2012)				ME, EG	
324	Dunne (2012)		GLS	1988- 2006	ME, EG	ME→ EG(-)
325	Dunne & Smith (2012)	D&PE			ME, EG	
326	Dunne & Pieroni (2012)		GMM		ME, EG	
327	Dunne & Nikolaidou (2012)	D&PE		EU 15	ME, EG	
328	Farzanegan (2012)	D&PE	Granger	Iran	ME, EG, Sanctions	Iran, ME→ EG(+)
329	Nordhaus et al., 2012)	International Organisation			ME, EG, Strategic Rivals	
330	Shahbaz & Shabbir (2012)	Economic research	Rolling Window, VECM Granger	Pakistan	ME, EG	Pakistan, ME→ EG
331	Wang (2012)	Economic Modelling	Malmquist (MPI)	OECD (Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Iceland, Ireland, Italy, Japan, Lux, Netherlands, New Zealand, Norway, Portugal, South Korea, Spain, Sweden, Switzerland, UK, USA)	ME, EG	ME→ EG
332	Danek (2013)	The Business and Management Review	Regression Analysis	LDCs	ME, EG, Military Threat	
333	Madisson (2013)		GMM	Japan, USSR (1870-1965)	ME, EG	
334	Topcu and Aras (2013)	Actual Problems of Economics	Granger	15 Superpowers	ME, EG	
335	Topcu et al., (2013)	IJEPS	GMM	EU Old VS New	ME, EG	
336	Roberts et al., (2013)				ME, EG	
337	Wang (2013)		Granger		ME, EG	

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
338	Hou & Chen (2013)	D&PE	Augmented Solow, System, GMM	35 LDCs (1975-2009)	ME, EG	ME→EG(-)
339	D'Agostino et al.(2013)	et Uni of Munich	OLS, estimation	IV 53 Africa (1989-2010) (Algeria, Benin, Burkina Faso, Burundi, Botswana, CAR, Chad, Cameroon, Cape Verde, Congo, Djibouti, D.R.Congo, Egypt, Ethiopia, Eritrea, Gambia, Guinea, Guinea Bissau, Ghana, Lesotho, Libya, Liberia, Madagascar, Malawi Mali, Mauritania, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, SAF, Sierra Leone, Somalia Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe)	ME, EG, NME	ME→EG (-)
340	Dunne (2013)			168	ME, EG	
341	Dunne & Tian (2013)	EP&SJ	Metanlysis	170	ME, EG	Review
342	Klein (2013)	D&PE	SEM	PERU (1970-1996)	ME, EG	ME→EG(-)
343	Siddiquia & Ahmed (2013)				ME, EG	
344	Pradhan et al.,(2013)	et IJCEE		22 Countries (1988-2012)	ME, EG	
345	Tiwari & Shahbaz(2013)		ARDL		ME, EG	
346	Tiwari & Tiwari	J. of Cambridge Studies	VECM, in India Dreger, IRF, Engle-Granger		ME, Dom. Savings, Trade, EG	India, ME2EG, DS ≠EG, T≠EG
347	Aye (2014)	D&PE	Bootstrap, Granger non-causality	SAF (1951-2010)	ME, EG	SAF ME ≠ EG
348	Givens (2014)				ME, EG	
349	Chang et al., (2014)	D&PE		China & G7(Canada, France, Germany, Japan Italy, UK, USA)	ME, EG	ME→EG (-)(Canada , UK) ME→EG (+) (China)

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
350	Pan et al. (2014)			10 ME	ME, EG	ME→ EG (+) (Egypt, Kuwait, Lebanon, and Syria); ME2EG (Israel); ME ≠ EG (Jordan, Oman and Saudi Arabia)
351	Yildirim and Ocal (2014)		Augmented Solow	128 Countries	ME, EG	ME→ EG (-)
352	Boldeanu & Constantinescu (2015). I	<i>Transilvania University of Brasov</i>	Granger		ME, EG, GE, Trade, FDI, TO	ME→ EG
353	Dunne and Tian (2015a)	D&PE	(Augmented Solow, Harrod NPF	106 Countries (1988-2010) (Africa N & S. America Asia & Oceania Europe Middle East) (Algeria, Argentina, Australia Albania, Bahrain, Angola, Belize, Bangladesh, Austria, Egypt, Botswana, Bolivia, Brunei, Belgium, Iran, Burkina Faso, Brazil, Cambodia, Bulgaria, Israel, Burundi, Canada, China, P.R. Cyprus, Jordan, Cameroon, Chile, Fiji, Denmark, Kuwait ,Djibouti, Colombia, India, Finland, Lebanon, Ethiopia, Dominican Rep. Indonesia, France, Oman, Ghana, Ecuador, Japan, Germany, Saudi Arabia, Kenya, El Salvador, S. Korea Greece, Syria, Lesotho, Guatemala, Malaysia, Hungary, Madagascar, Jamaica, Mongolia, Ireland, Malawi, Mexico, Nepal, Italy, Mali, Nicaragua, New Zealand, Luxembourg, Mauritania, Panama, Pakistan, Malta, Mauritius, Paraguay, Papua New Guinea, Netherlands, Morocco, Peru, Philippines, Norway, Mozambique, USA, Singapore, Poland, Namibia,	ME, Y, Natural Resources, TO, Aid, Conflict, EG	ME→ EG (-) ME ≠ EG

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
				Uruguay, Sri Lanka, Portugal, Rwanda, Venezuela, Thailand, Romania, Senegal, Russia, Seychelles, Spain, Sierra Leone, Sweden, SAF, Switzerland, Swaziland, Turkey, Tanzania, UK, Tunisia, Uganda)		
354	Dunne and Tian (2015b)	D&PE	(Augmented Solow, Harrod NTP)	Africa (1988-2010) (Algeria, Benin, Burkina Faso, Burundi, Botswana, CAR, Chad, Cameroon, Cape Verde, Congo, Djibouti, D.R.Congo, Egypt, Ethiopia, Eritrea, Gambia, Guinea, Guinea Bissau, Ghana, Lesotho, Libya, Liberia, Madagascar, Malawi, Mali, Mauritania, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, SAF, Sierra Leone, Somalia, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe)	ME, EG	
355	Korhan et al., (2015)	et PEF	Granger	Turkey (1988-2013)	ME, EG	Turkey, EG→ME
356	Korkmaz (2015)	IJEFI		Mediterranean (2005-2012) (Albania, Algeria, Bosnia & Herzegovina, Croatia, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Montenegro, Morocco, Slovenia, Spain, Syria, Tunisia, Turkey)	ME, EG, IT	
357	Malizard (2015, 2016)				ME, EG	ME→EG
358	Papanikos (2015)	AJMS		20 Mediterranean (1988-2013) (Albania, Algeria, Bosnia & Herzegovina, Croatia, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Montenegro, Morocco, Slovenia, Spain, Syria, Tunisia, Turkey)	ME, IT, EG	ME ≠ EG, IT → ME

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
359	Musayer (2015)				ME, EG	
360	Pan, Chang & Wolde-Rufael (2014)	D&PE	Bootstrap	10 Middle East (1988-2010) (Egypt, Kuwait, Lebanon, Israel, Syria, Turkey)	ME, EG	ME→EG (Turkey, Israel), EG→ME (Egypt, Kuwait, Lebanon, Israel, Syria)
361	Cappelen et al., (2016)	JPR		17 OECD (1960-1980)	ME, Manuf. Output, Inv, EG	ME→EG(-), ME→MO(+), ME→Inv (-)
362	Dreze (2016)				ME, EG	
363	Desli (2016)				ME, EG	
364	Dunne and Tian (2016)		Harrod	(1960-2014)	ME, EG	
365	Compton & Paterson (2016)				ME, EG	
366	Bover & Bramer(2016)		Granger		ME, EG	
367	d'Agostino Dunne & Pieroni, (2016).	World Development			ME, Corruption, EG	ME→EG (-)
368	DeGrasse (2016)		Keynesian	USA(1932-19981)	ME, EG	ME→EG (+)
369	Heo &Ye (2016)				ME, EG	
370	Paleologou (2016)				ME, EG	
371	Smith (2016)		Rgression		ME, EG	
372	Frantz & Geddes (2016)				ME, EG	
373	Parlo- Freeman & Skons (2016)	D&PE	GMM		ME, EG	
374	Aziz & Asadullah (2016)	JES	GMM, FE, RE	70 LDCs	ME, EG, Conflict,	ME→EG (+)
375	Lau et al., (2016)	D&PE	ESTAR	37 countries (1988-2012)	K, L, ME, EG	
376	Lawrence et al. (2015)	DE	Granger		ME, EG	
377	Arshad et al., (2017)	Forman JECS	Augmented Solow, LSVD	61 Countries (1988-2015)	ME, EG, Armed Conflict, Arms imports	ME→EG (-), Arms imports→EG (-)
378	Augier (2017)	D&PE	Augmented Solow	China (1952-2012)	ME, EG, NME, POP, CPI, MEXT, NMEXT, INV/GDP	ME→EG (+)

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
379	Cappela Zieliski et al (2017)	JPR	FE, RE	154 Countries (1949-2015)	ME, EG, Int Threats	ME→EG
380	D'Agostino et al.(2017)	D&PE	ECM	1970-2014	ME, EG	ME→EG (-)
381	Aziz & Asadullah (2017)	JECS	GMM, OLS, FE, RE, MLE	70 LDCs (1990-2013)	ME, AC, IC, EC, EG	ME→EG (-)
382	Topcu & Aras (2017)	Eu. Rev.	PCM	Central & Eastern EU(1985-2013) (Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Rep., Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, UK)	ME, EG	
383	Bildrich (2017)		Granger		ME, EG	
384	Shazad et al. (2017)		SEM		ME, EG	
385	Arjima et al.(2017)		Regression	Pakistan (1990-2015)	ME, EG	Pakistan ME →EG (+)
386	Aziz (2017)	JECS	CD	60 Countries (1990-2013)	ME, EG	
387	Dunne and Tian (2017)	Def. Spending, Natural Res. & Conflict	GMM	(1960-2014)	ME, EG	
388	Ismael (2017)	Econ Peace & Sec J	GMM, FRE, CS-OLS	5 South Asian (1988-2013) (Pakistan, Bangladesh, Sri Lanka, India, Nepal)	ME, EG	ME→EG (+)
389	Ismael (2017)	IJEFI	PDT, PFE	South Asian (2005-2014) (Bhutan, Pakistan, Bangladesh, Sri Lanka, India, Maldives, Nepal)	ME,EG,	ME ≠ EG
390	Filges & Hanse(2017)	IRAE	ECM		ME,EG	
391	Karadam et al., (2017)	D&PE	ARDL	ME + Turkey (1988-2012)	ME,EG	
392	Shad et al. (2017)		PDT	61 Countries (1988-2015)	ME, GDPPC	ME→EG (-)
393	Shaik et al. (2017)		GMM	Pakistan(1972-2016)	ME, GDPPC	Pakistan, ME→EG (-)

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
394	Stanley & Doucouligos (2017)		GMM		ME,EG	
395	Ramadhan (2017)	Econ RES	Granger	1996-2014	ME, EG	
396	Kollias et al.(2017)	IRAE	PFE	13 Latin America (1961-2014)	ME, EG	
397	Phirri (2017)		Granger		ME, EG	
398	Ajmair (2018)	APEF	Non-Linear PDT	Pakistan (1990-2015)	ME, Army, EG	Pakistan, ME→ EG(+)
399	Churchill and Yew (2018)	Empirical Economics	Meta-analysis, crowding out		ME, EG	
399	Mair (2018)	Working Paper	ARDL	Pakistan (1990-2015)	ME, Total Army, EG	Pakistan, ME→ EG
400	Bont et al. (2019)		Granger	Romania (1991-2019)	ME, EG	Romania, ME2EG
401	Ju & Ahmed(2019)		Granger	China, India& Pakistan	ME, K, L, YPC, GDP growth	ME→EG(+)
402	Kollias and Paleologou (2019)	Empirical Economics	PVAR	65 Countries(1971-2014)	ME, EG	
403	Sadiku et al (2019)	Int.J	NPF, OLS, VECM	North Macedonia (1999-2017)	CONS. INV, GOV, OPEN, P	CONS. INV, GOV, OPEN, Pare significant
404	Saba and Ngepah (2019)	Econ. Research	GMM, SGMM, Wagner, Keynesian	35 African Countries(1990-2015) (Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Chad, C^ote d'Ivoire, Egypt, Ethiopia, Gambia, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Nigeria, Rwanda, Senegal, Seychelles, Sierra Leone, SAF, Sudan, Swaziland, Togo, Tunisia, Uganda, Zambia, Zimbabwe)	ME, RGDP	EG→ ME(Angola, Botswana, Burkina Faso, Chad, Ethiopia, Kenya, Lesotho, Mali, Mauritania, Mauritius) ME2EG(Cameroon, Cote D'Ivoire, Morocco, Mozambique, Nigeria, Sudan, Uganda, Zambia) ME ≠ EG(Algeria, Burundi, Madagascar, Seychelles, Sierra Leone, Tunisia)
406	Yesilyurt & Yesilyurt (2019)	JPR	Granger		ME, EG	Meta-analysis
407	Zaman (2019)	Economia Politica	PRT	G7 (Canada, France, Italy, Germany, Japan, the UK, the USA)	ME, EG	ME2EG

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
408	Agyapong et al. (2020)	Uni. Of Malta	VAR Granger, Wald	China (1950-2018)	ME, EG	China EG →ME
409	Azam (2020)	Heliyon	PARDL, Panel Humitreschu-Hurlin, Solow	Non-OECD(1989-2018)	ME, EG	ME2EG
410	Dunne & Smith (2020)	D&PE	OLS VAR Neo classical, CD, Solow Swan	1960-2014	ME, EG	
411	Dunne and Tuan (2020)	Oxford Res. Ency. of Politics	Classical Production		ME, EG	
412	Mohanty et al (2020)	JCR	ARDL	India (1970/71-2016/16)	ME, K, L, YPC, EG	India, K→ EG, ME≠EG
413	Usuman et al., (2020)	Env. Sci & Pollution	FMOLS, EKC	SAF (1971-2014)	ME, EG	EC →CO2, DEM ≠ CO2
414	Ahmed et al., (2020)		Granger		ME, EG	
415	Ahmed et al., (2021)	JSD	PRT	G7 (1985-2017) (Canada, France, Italy, Germany, Japan, UK, USA)	ME, EG, EF, REC, Dem, Env. Regulations	
416	Adams & Acheampong (2021)	DE	PDT	Post communist states	ME, EG, Dem, Physical, Human K	ME→EG (+)
417	Desli & Gkoulgkoutsika (2021).	Economic Change. & Restructuring	DCCEE, FE, GMM	NATO (1970-2016)	ME, EG	ME ≠ EG
	Desli & Gkoulgkoutsika (2021).	Economic Change. & Restructuring	DCCEE, FE, GMM	Globe (1960-2017)	ME, EG	ME→EG (-),
418	Khalid & Habimana	D&PE	Wavelet Analysis, Neo-classical Growth	Turkey (2000-2016)	ME, EG	Turkey, ME→EG (-),
419	Zhao et al (2021)	Sust	Dif. In Dif	122 LDCs (1996-2019)	ME, Int. Re, Econ, Pol, reforms, EG	Econ Reg→EG
420	Santamaria et al. (2022)	D&PE	Scientometric analysis	1995-2019	ME, EG	Scientometrics

Sn	Study/Source	Journal	Methodological/ Theoretical Framework	Countries (Years)	Variables	Major Findings
421	Wang & Chen (2022)	D&PE	PVAR, KMCA	126 Countries (1990-2022)	ME, DEM, EG	ME→EG (-), DEM→EG (+)
422	Becker & Dunne (2023)	D&PE	ECM	34 NATO & EU (Varied, 1970-2019)	ME, EG, Infr, O&M, Equip, Pers	
423	Kengdo (2023)	Sustainable future	ARDL	Cameroon	ME, EG, PD, Rent, Inflation	Cameroon, ME→EG (-), ME→PD (+),
424	Konuk et al. (2023)	J. of Knowledge Econ	PRT	G7 (1971-2019)(Canada, France, Italy, Germany, Japan, UK, USA)	ME, EC (Fossils), FD, CO2, EG	USA, FD→ ME (-), EC →CO2 (-) Germany
425	Raifu & Aminu (2023)	Future Business Journal	Method of Moments, Quartile regression, Neoclassical, Marxist and Institutional theory	14 MENA	ME, EG	ME→EG (+),
426	Waterton (2023)	Human Geography	MIC		ME, EG	ME→EG (-),
427	Yolcu Kaladam et al. (2023)	D&PE	PSTR	103 Countries (1988-2019)	ME, EG, S, Inv	ME→EG (-),
428	Budhathoki, Dahal & Bhattarai (2024).	<i>Journal of Business and Management Review</i>	ARDL, KSH	6 South Asia (Afghanistan, Bangladesh, India, Nepal, Pakistan, Sri Lamka) (2000-2022)	ME, EG, Inf, K, Unemp	ME→EG (+), Inf→EG (+),
429	Emmanouilidis (2024).	D&PE	Linear, non linear Barro-style Regression	US (1949-2021)	ME, EG, O&M, Procurement, Mil. Personnel, R&D	ME→EG (+)
430	Inal, et al., (2024)	<i>Kybernetes</i>	Lit survey	(1995-19)	ME, EG, LBR	ME→EG
Sn	Study/Source	Journal	Methodological framework	Countries	Variables	Causality

Source: Adapted from Mutumba, G.S., Odongo, T., Okurut, N.F., Bagire, V. (2021a). A survey of literature on energy consumption and economic growth *Energy Reports* 7 9150-9239

Methodological Framework: OLS- Ordinary Least Squares, Panel OLS- Panel ordinary Least squares, DCCEE Dynamic Common correlation effects Estimator, DOL Dynamic ordinary least squares, DMOLS- Dynamic Modified Ordinary Least squares, IV Instrumental Variable, KMCA – K-Means clustering Algorithm, LSDV Least squares dummy variable, MS- VAR- Markov Switching VAR, GMM Generalised Method of Moments, PDT panel data techniques, PDR Panel data regression, PMG – Pooled Mean Group, MS-VAR, SEM – Simultaneous Equation Modelling VAR Vector Auto Regression, VECM – Vector Error Correction Model

Theory/Model: NPF Neo classical Production function, Solow Growth model, CD Cobb-Douglas, HD Harrod-Domar, KSH- Keynesian Stimulus Hypothesis

Note: Variables AC Armed conflict, GDP Economic growth, Dem Democracy, EC External Conflict, ECON F Economic freedom, EMP Employment, CONS- Consumption, IC Internal Conflict, ESTAR Exponential Smooth Transition Autoregressive, INV- Investment, FD Financial Development, K capital stock, X exports, M, Imports, DI Domestic investment, FDI- Foreign Direct Investment, HIS Human Suffering Index, INF- Inflation, INV/GDP, GOV- Government spending, Manuf. Output- Manufacturing output, ME Military Expenditure, MEXT Military Externality, MIC Military Industrial Complex, NPF- Neoclassical Production function, NME Non-military expenditure, NMEXT Non-military Externality P Price, OP Oil Prices, G Globalisation, GE Government Expenditure, GG- Good Governance, OPEN- Trade Openness, PD- Public Debt, PET Panel Econometric techniques, Pers- Personal Investments, PPC Parametric Partial Correlations Pol F Political Freedom, POP Population, PGR Population Growth rate, PINV Private Investment, REG Regime type, SI Special Interest groups, SUS Sustainability, Trade LIB- Trade Liberalisation.

Countries:

CAR: Central African Republic, EU: European Union, OECD- Organisation of Economic Cooperation and Development, SARCC- South Asian Regional Cooperation Council, SAF: South Africa, SSA – Sub-Saharan Africa

Journals: *AJMS: Athens Journal of Mediterranean Studies*, AEA: American Economic Association, AER: American Economic Review, AJPS: American Journal of Political Science, *APEF: Applied Economic and Finance*, APSR: American Political Science Review, CBR: Chinese Business Review, CES: Comparative Economic Studies, *Cyprus J. of Economics: Cyprus Journal of Economics*, D&PE: Defence & Peace Economics, ED&CC: Journal of economic development and cultural change, EJPE: European Journal of Peace Economics, IJCEE: International Journal of Computational Economics and Econometrics, IJEFI: International Journal of Economics and Financial Issues, IJEPS: *The International Journal of Economic Policy Studies*, IRAE: International Review of Applied Economics, JAE: Journal of Applied Economics, JCE: Journal of Comparative economics, JCR: Journal of Conflict resolution, JED: Journal of Economic Development, JDE: Journal of Development Economics JECS: Journal of Economic studies, JEI: Journal of Economic Issues

JES: Journal of Economic Surveys, JITED: *Journal of International Trade & Economic Development*, JPSES *Journal of Political, Social and Economic Studies*

JPE: Journal of Public Economics, JPR: Journal of Peace Research

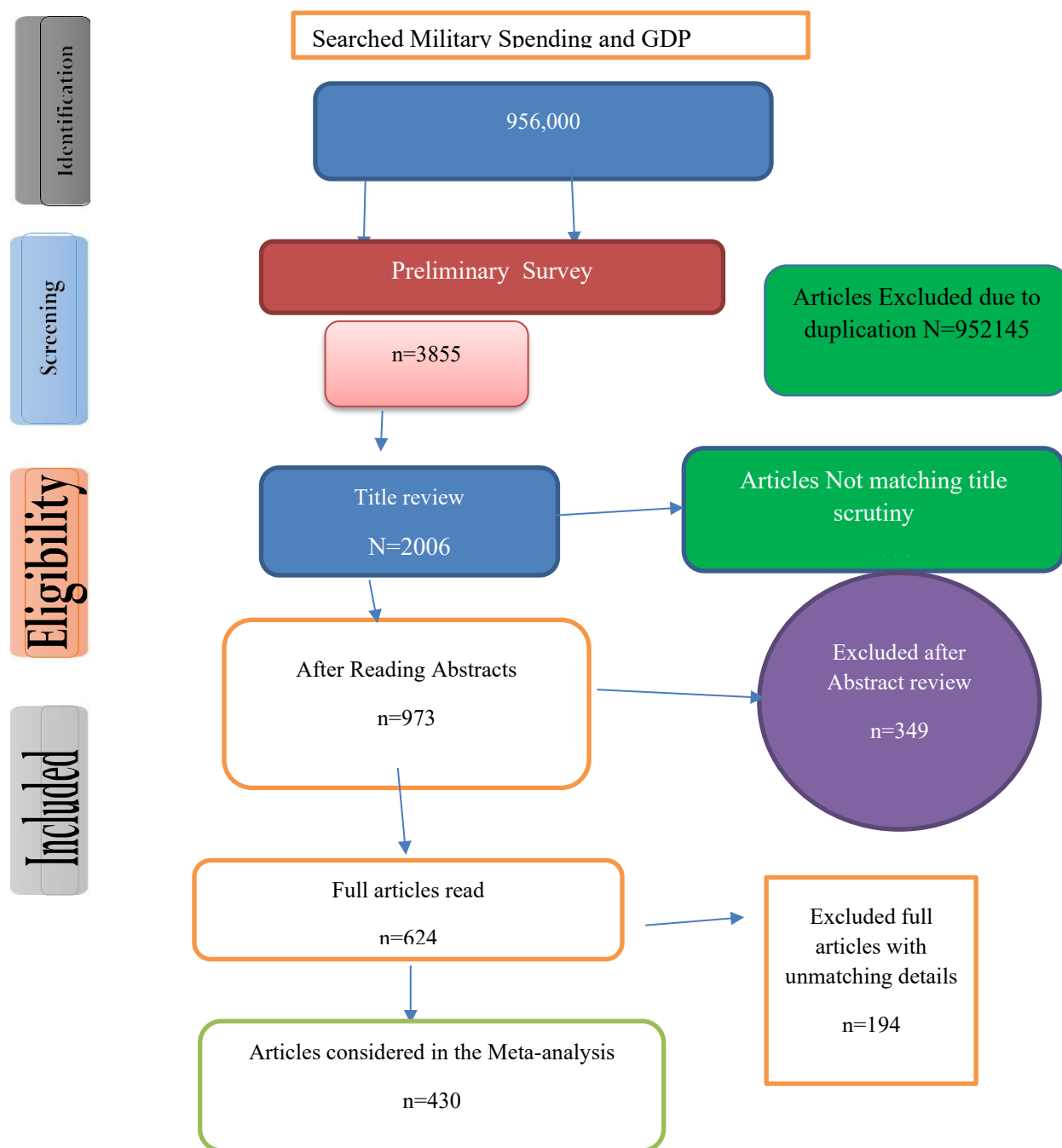
JPSES: Journal of Political, Social & Economic Studies,

JSD: *Journal of sustainable Development*, J. of Public Policy: Journal of Public policy

JPM: Journal of Policy Modelling, PEF- Procedia
Economics and Finance

QREF: The Quarterly Review of Economics and
Finance, SUS: Sustainability

Figure 1: A Flow Chart for the Search and Selection of Observations.



METHODS AND MATERIALS

This study is anchored on scientometric and meta-analytic methods, in which a comprehensive survey of relevant articles was gathered (Santamaria *et al.* 2020). They were then arranged according to

authors, techniques, variables, journals and results (Mardani *et al.*, 2018). This was to allow for an accurate narrative on the spending growth nexus. The choice of a scientometric analysis is because of its rich and extended analysis in the research field

of interest. The meta-analysis is also robust in clearly summarising the scholarly works and maintaining grip over key aspects of the debate.

In order to minimise the publication bias, articles were selected from web-based search engines without selecting any specific journal, such that any journal article had access to being selected as long as its article matched the search order. It was then at the final stages that the journals were included and subsequently analysed. This minimised any publication bias, since the key was getting insights on how far these variables have been studied.

We have found it useful to implore the use of present the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Moher *et al.* 2009) illustrated in figure 1. Variables were put into the search of digitalised academic sites. Several observations were identified.

From these observations identified the screening of the appropriate ones was done, where any return of articles that had a mismatch between the title and its contents were dropped in the preliminary survey, this gave some 3855 observations.

After the screening, an eligibility criterion was applied to these ‘candidates’. In case duplicates were identified, one was removed. This saw observations reduced from 2006 to 973. Thereafter, after reading the abstracts, more observations were dropped if they were not consistent with the tenets of this study. This excluded another 349 since observations were reduced from 973 to 624. Finally, full articles were read, and some 430 observations were included in this study.

FINDINGS AND DISCUSSION

Findings

The findings from all the studies indicated countries with the highest frequency as USA (60), Turkey (40), Greece (37), France (35), UK (32), Portugal (32), Germany (29), Italy (27), India (27), Japan (24), Spain (24), South Korea (21), Pakistan (21),

South Africa (19), Egypt (18), Israel (18) and Canada (17).

Figure 2 displays temporal variations between 1960-1979 had 24 studies (5.7 percent), while 1980-1989 had 65 (15.4 percent). Between 1990-1999 had 101 (23.9 percent), 2000-2009 had 115 (27.2 percent), while from 2010 to 2023 had 118 (27.9 percent).

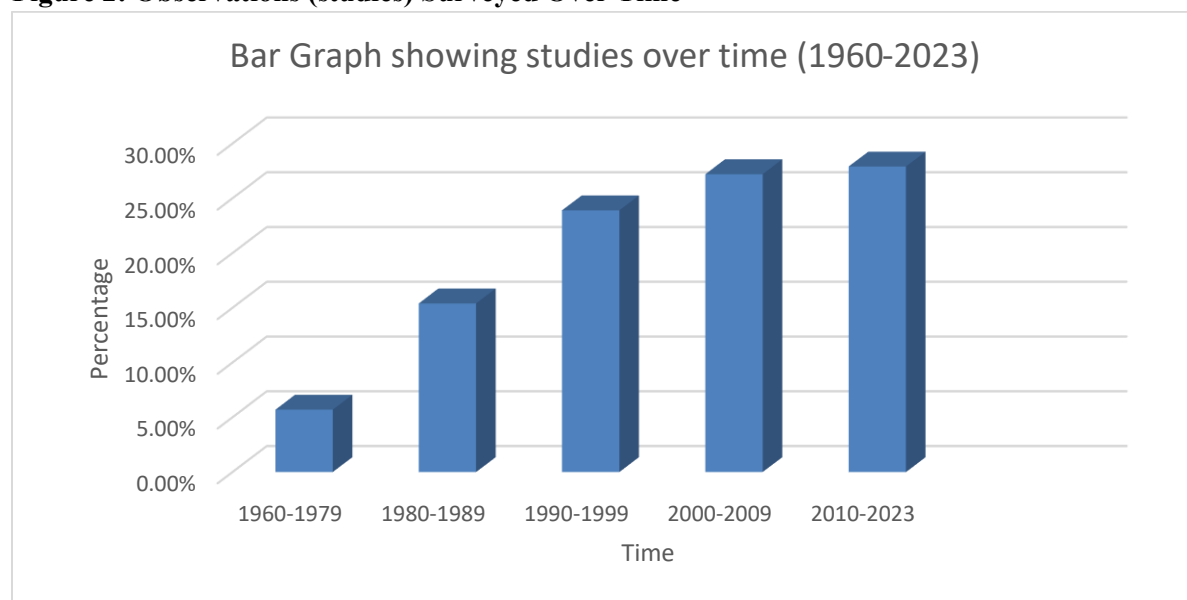
From the country-based studies, the growth hypothesis was supported by 72.2 percent, the neutral hypothesis by 13.1 percent, the feedback hypothesis by 9.8 percent and the conservation hypothesis by 4.9 percent, as shown in Figure 3.

From table 2, the leading sources of observations include the defence and peace economics with 12.7 percent, the Journal of Peace Research with 5.1 percent, the Journal of Conflict Resolution with 4.2 percent and Economic Development and Cultural Change with 3 percent. It is noticeable that the publications are mainly in the field journal associated with defence economics.

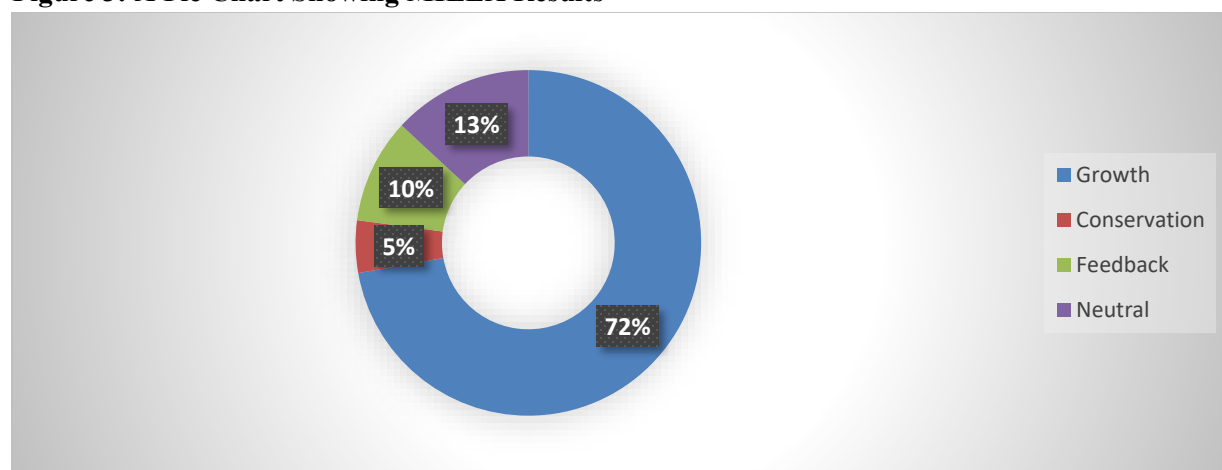
The most common econometric method used is Granger since it is robust in establishing a causal relationship, as shown in Table 3. Although some studies used more than one of these methods. The purpose was to increase the robustness by confirming the short and long-run relationships.

Panel studies mainly used GMM, but where the heteroskedasticity problem and cross-sectional dependence problems were prevalent, other studies used the fixed and random effects models.

The use of theoretical methods in many studies was made explicit. The details are shown in Table 4. The most dominant theory is the demand and supply theories, the neoclassical aggregate production function, while the least in the newer institutional theory. What is evident is that no agreement among economists has been reached on a standard theory for analysing the military spending growth nexus.

Figure 2: Observations (studies) Surveyed Over Time

Source: Mutumba, G.S., Odongo, T., Okurut, N.F., Bagire, V. (2021a). A survey of literature on energy consumption and economic growth *Energy Reports* 7 9150-9239

Figure 3: A Pie Chart Showing MILEX Results

Source: Adapted from Omri (2014). An international literature survey on energy-economic growth nexus: Evidence from country-specific studies. *Renewable and Sustainable Energy Review*. Pg.953.

Table 2: Showing Sources of Observations

S/No	Name of Journal / Source	Frequency
1	Actual Problems of Economics	01
2	American Journal of Political Science (AJPS)	02
3	American Journal of Sociology	02
4	American Economic Association (AEA)	01
5	American Economic Review (AER)	03
6	Applied Economics	06
7	Applied Economic and Finance (APEF)	01
8	Athens Journal of Mediterranean Sea(AJMS)	01

S/No	Name of Journal / Source	Frequency
9	American Political Science Review (APSR)	07
10	Armed Forces and Society	01
11	Cambridge	06
12	Chinese Business Review	01
13	Chicago	01
14	Comparative Economic Studies	01
15	Conflict Management & Peace Science	01
16	Cyprus Journal of Economics	01
17	Defence and Peace Economics (D&PE)	55
18	Defence Economics	07
19	Defence spending, Natural Resources and conflict	01
20	Economic inquiry	01
21	Economic Research	01
22	<i>Economic Change and Restructuring</i>	09
23	Future Business Journal	01
24	J. of Economic Development and Cultural Change (ED&CC)	13
25	Economic modelling	03
26	Economics, Peace and Security studies	01
27	Economia Politica	01
28	Econometrica	01
29	Economics Research	01
30	Economics Resources	01
31	European Journal of Peace Economics (EJPE)	02
32	European Revolution	01
33	Empirical Economics	02
34	Environmental Science and Pollution	01
35	European Review	01
36	Frontiers in Finance and Economics	01
37	Harvard	01
38	Heliyon	01
39	Heritage Foundation	01
40	International interactions	01
41	International organisation	01
42	International studies	01
43	In the economics of military Expenditures	01
44	<i>The International Journal of Economic Policy Studies</i> (IJEPS)	02
45	<i>Journal of Applied Economics</i> (JAE)	01
46	International Journal of Economics and Financial Issues (IJEFI)	01
47	International Review of Applied Economics (IRAE)	01
48	Journal of Comparative Economics (JCE)	02
49	J. of Comparative Policy Analysis	01
50	Journal of Conflict Resolution (JCR)	18
51	Journal of Development Economics (JDE)	04
52	Journal of Economic Structures (JECS)	03
53	Journal of Economic Surveys (JES)	02
54	Journal of Economics	01
55	Journal of Economic Development (JED)	01
56	Journal of Economic Issues (JEI)	01

S/No	Name of Journal / Source	Frequency
57	<i>Journal of International Trade & Economic Development (JITED)</i>	01
59	<i>Journal of Knowledge Economy</i>	01
59	Journal of Macroeconomics	01
60	Journal of Monetary Economics	01
61	Journal of Public Economics (JPE)	01
62	Journal of Policy Modelling (JPM)	05
63	Journal of Public Policy	01
64	J. of Political, Social & Economic Studies (JPSES)	02
65	Journal of Peace Research (JPR)	22
66	<i>Journal of Sustainable Development (JSD)</i>	02
67	<i>Kybernetes</i>	01
68	Kyklos	01
69	London	05
70	New York	05
72	Orbis (Summer)	03
73	Oxford	03
74	Public Choice	02
75	Political Research Quarterly	01
76	Procedia Economics and Finance	01
77	<i>Review of Middle East Economics and Finance</i>	01
78	<i>Southern Economic Journal</i>	02
79	<i>Survival</i>	01
80	<i>Sustainability</i>	01
81	<i>The Quarterly Review of Economics and Finance (QREF)</i>	01
82	<i>The business and management review</i>	01
83	Transaction studies review	02
84	War, Peace and Security	01
85	Westview Press Boulder, CO	01
86	Working papers and Universities	21
87	World Development	02
88	Yale	04

Table 3: The Commonly Used Econometric Methods

Method	Frequency
Granger	80
Regression	43
GMM	25
SEM	19
OLS/DOLS/FMOLS/ GLS/ POLS	16
VAR/PVAR	14
ARDL	13
VECM	12
Correlation/PPC	5

Table 4: The Commonly Used Theoretical Methods

Theory	Frequency
Demand and supply (Deger and Feder)	22
Exogenous (Solow, Harrod-Domar)	20
Neoclassical, Cobb-Douglas and Endogenous growth	18
Keynesian theory	11
Barro	05
Marxist/ Baran & Sweezy's theory	04
Institutional theory	01

Discussion

From the findings USA has the highest number of observations, possibly because military spending is an investment into technology, research and development to manage threats. It is also a venture into expanding the military industrial complex (Payne, 2020).

Studies for Turkey have been followed since it has useful implications for this country. Turkey is located in a fragile geographical setting, with perceived military threats studies in this area are relevant to inform stakeholders. The decision to increase military spending can be for geo-strategic reasons.

The leading hypothesis is the growth hypothesis that military spending leads to economic growth. Though some studies show a positive correlation, others point to a negative correlation between the two variables of study. Those studies with a positive correlation indicate that military spending has an effect on investment, human capital and physical capital, which leads to economic growth.

The studies with a negative correlation allude to deadweight financing that is associated with military spending. And the eventual loss that actually occurs in the event of war. There would be destruction of infrastructure and human life, all that has a negative effect on GDP.

This does not mean that results converge. This hypothesis is threefold, with some showing positive and others negative outcomes, yet others do not

follow this nomenclature. There is no complete agreement even with this hypothesis.

CONCLUSIONS AND FUTURE RESEARCH

Conclusions and Policy Implications

This study has investigated the causal relationship between military spending and economic growth. This review, with a substantially large sample, has been carried out to elevate the main propositions of the debate.

This is a benchmark for scholars who wish to conduct reviews. It informs researchers about earlier work on the military spending-growth nexus. The key variables, methods and the trajectory of the current debate. This debate has evolved over time, which is clearly brought out in this paper.

The growth hypothesis is the most dominant, showing that military spending has a unidirectional causal relation to GDP. Through increased public spending on defence and the multiplier effect it has on employment thus promotes economic growth.

First of all, a clear grip on the breakdown of observations with diversity of data and methods, with logical flow. It has included a larger sample, which has asymptotic benefits as well as minimisation of bias (Havraneck 2020). Bigger samples are more representative of the whole population.

The decision to increase military spending by decision makers should not be for its own sake. It should be backed by evidence of real threats within the geostrategic and geopolitical setting

(Santamaria, 2023). On the other hand, the military enterprise through the military investment company should be a profitable venture to warrant an increase in military spending, as has been the case for some superpowers.

Future Research

Areas of future research are useful for the given set of data spanning a given period of over 65 years during which the survey was conducted. Altering the time span and changing the sample study provides no guarantee of maintaining the results. But the value in the results remains enormous and workable.

Other studies could disaggregate the growth hypothesis further. From the results growth hypothesis has both positive and negative results. The challenge is that other studies never categorically differentiated a positive or negative correlation between the two variables.

The set of theories selected has no scientific basis. Neoclassical aggregate production function, Cobb-Douglas production function production and the Solow production function, Harrod and Domar, Keynesian, demand/Deger, and supply/Feder models have been used as economic theories. There's still dissent as to why differing theoretical approaches are used, thus, an area for further research.

The choice of econometric models to many researchers, especially those undertaking bivariate analysis brings in the omitted variables bias and therefore, future studies should attempt to overcome this problem. There is still an underlying misspecification problem, that the variables used as controls may actually not be properly identified.

Furthermore, the articles used in the study were those in the English language. This means that studies in other languages available online were not taken care of. This means a comprehensive study can be undertaken to reduce the language bias.

Although scholars have carried out a huge number of studies, results still remain contentious and analytical techniques that are good at drawing comparisons among studies for the same data with a view to confirming and being able to guide policy should be undertaken (Mutumba 2021).

Declaration of competing interest

The author declares that there is no conflict of interest in this research. We do not have any associative or commercial interest that represents a conflict of interest in connection with the work submitted.

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Ethical Approval

This paper is a review in which no human subjects are involved. In this country's research protocol, no ethical clearance is required.

Author's Contribution

The entire paper is a sole contribution of the author from idea conception, Literature search, data collection, methods, findings and discussion of results to conclusion.

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