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Budget Support and Quality of Public Governance in West Africa

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2020

Abstract

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by

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Donors have been increasingly using budget support since 2000 to associate development aid delivery with improved development institutions and good policies that will ensure aid effectiveness, in particular in West Africa Economic and Monetary Union (WAEMU) countries. There is however little evidence that budget support promotes good policies and institutions in WAEMU countries. The purpose of this quantitative research was to explore relationships between budget support as an official development assistance modality and public expenditures efficiency as an indicator of public governance quality. The aid effectiveness theoretical framework developed by Cordello and Dell 'Ariccia informed research questions to determine whether budget support generates efficiency gains or losses in public governance quality measured by government spending efficiency in recipient countries. The study used a time series cross-sectional design with 8 WAEMU countries which benefited from budget support between 1995 and 2015. Panel regressions were used to test relationships between public expenditure efficiency and budget support variables. Findings indicate that the use of budget support by donors and proportion of budget support amount in government revenues and in total aid predict public expenditures efficiency. This prediction is mediated by initial level of efficiency and moderated by political context. The findings provide evidence for aid providers to use budget support to stimulate public governance quality in the neediest and most poorly governed countries and improve aid effectiveness in terms of aid amount that reaches the poorest.

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Dedication

To Ursula, Jeffrey and Emilie. You are prouder than I am.

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Chapter 1: Introduction to the Study

Introduction

Official development assistance (ODA or development aid) is an important revenue source that could compensate the shortage of government revenues in developing countries and thus support the production of public goods (Molenaers, 2012). ODA may take various forms including funds (grants or borrowings), technical support, policy advice, and cooperation partnerships. Donors could provide aid directly to governments or through intermediaries such as non-governmental organizations (NGOs). The Organization for Economic Cooperation and Development (OECD) considered that ODA integrates a grant element, meaning that donor support should be rewarded mainly regarding generated economic development and welfare improvements in developing countries. According to the OECD (2005), loans from developed to developing countries can constitute ODA when recipient countries only partially reimburse them, the non-reimbursed component being the grant element. This led policymakers and academics from developed and developing countries to scrutinize the term aid effectiveness, that is how and the extent to which foreign aid contributes to advance development in aid recipient countries.

Insufficient savings in developing nations was the primary purpose of development assistance in line with the Harrod-Domar economic growth model which considers savings as the main economic growth driver (Hansen, 2000). The “Marshall Plan” initiated in the aftermath of the Second World War responded to this purpose of supplementing the impressive destruction of capital during the war in European countries.

Since the initiation of this Marshall Plan followed by ODA delivered to Non-European countries, academics and policymakers from developed and developing countries have debated the effectiveness of ODA in producing development outcomes such as economic growth and social improvement. Aid effectiveness has shaped international development and the positioning of the international community in terms of development challenges. The United Nations summit on Millennium Development Goals (MDGs) organized in 2010 put a focus on development aid effectiveness. It called upon international development stakeholders to exert efforts to improve the outcomes of ODA, mainly regarding accelerated poverty reduction and reduced inequality both within and between states. The Busan declaration on development effectiveness, adopted by stakeholders in 2011, further emphasizes this political agenda by strengthening the Paris declaration framework and Accra Agenda for Action on aid effectiveness enacted in 2005 and 2008 respectively. This Busan policy framework is a commitment to a comprehensive approach to aid development with a shift from aid to development effectiveness. The latter involves shared accountability, ownership of development strategies by aid recipients, results-based management, and harmonization between aid providers. This indicates stronger constraints on political leaders and decision-makers to increase the effectiveness of public policies. Development aid as an essential component of international cooperation should be justified to be legitimate.

An impressive academic literature was developed from the beginning of 90s on aid effectiveness as little development progress was seen in aid recipient countries, in particular in Sub-Saharan Africa. According to Hansen (2000), a seeming consensus

amongst donors emerged from this debate on aid effectiveness that ODA is useful only in the presence of quality institutions and when recipient governments implement the right development policies. The OECD development assistance committee donors (OECD-DAC) and other multilateral donors like the European Commission and World Bank have oriented ODA to confer a greater importance to aid delivery modalities that should incite for governance improvements. Budget support is one of these development aid modalities that aid providers have used increasingly. Donors perceived this aid modality as relevant in the context of Paris Declaration on aid effectiveness adopted in 2005, which defines conditions of aid effectiveness by emphasizing various principles including ownership of an unique development agenda by recipient countries, alignment of donors to this unique development framework, and coordination and mutual accountability for results based management.

In this context, scholars like Tavakoly and Gregory (2013) have argued that budget support can contribute to the Paris declaration principles such as better alignment of development assistance to recipient country's development agenda; strengthening national ownership; better harmonization between donors; and improved fiscal management. The idea that budget support explicitly targets the improvement of institutions and public policymaking in recipient countries has been little investigated and discussed by academics and policymakers. There is still a controversy surrounding what constitutes a right institution that favors development, but also with regards to the role politics and policies should play in association with systems in the development process.

This research contributes to the literature on aid and governance by focusing on budget support and its relationship with quality of public governance, measured by efficiency of public expenditure according to the West Africa Economic and Monetary Union (WAEMU). Budget support is a specific aid delivery in which donors and aid recipients agree to associate aid amount disbursement with policy reform agendas (European Commission, 2012). It is in line with the policy conditionality view that donors can use aid to generate enough incentives for institutional quality and sound policies. While there are various conceptual frameworks for operationalizing good governance in literature, this research adopts the pragmatic view of developmental management. It therefore approaches quality governance through public expenditure efficiency to reflect improvements in policymaking and institutional quality among aid recipient countries that budget support may generate. Donors' view that aid delivered through budget support could be more efficient than other aid modalities indicate that there are institutional changes budget support can generate for improved management of public expenditures and dynamic allocation of government revenues including aid. Therefore, the focus of this research is to provide insights regarding the extent to which budget support result in improved public governance through efficiency gains or losses in government spending in WAEMU countries. Potentially, the study could generate new knowledge to inform aid providers and recipients regarding ways to improve aid practice and development effectiveness. The study could also explain the debate whether to afford aid allocation to the most corrupt recipient countries, which are also for many the neediest.

The next section will explain the background of the study. It will be followed by the problem statement, theoretical framework, and purpose of the study. Research questions and hypotheses will be discussed, followed by the nature of the study. This chapter also covers theoretical constructs and assumptions and limitations as well as the study's thematic, geographical, and chronological scope and delimitations of the research. The last section is a summary.

Background

Aid effectiveness is subject to intense controversies. In 2000, Burnside and Dollar advanced that aid is effective when the recipient implements right policies and has appropriate institutions in place. While, Burnside and Dollar (2000) said that aid did not affect governance although governance conditioned aid effectiveness, researchers like Asongu (2013), Easterly and Williamson (2011), Faye and Niehaus (2011), Nunn and Qian (2014); Kalyvitis and Vlachaki (2012) pointed out the institutional perils of aid by insisting on its failure to build quality institutions and incite right policies.). Other researchers like Molenaers, Dellepiane, and Fraust, (2015), Kalyvitis, Stengos and Vlachaki (2012) and Mounir (2015) considered that institutional quality and proper systems could positively mediate aid effectiveness.

Notwithstanding this dispute between optimistic and pessimist scholars on aid effectiveness, the OECD-DAC donors and multilateral donors such as the European Development Fund and the World Bank have developed policy-based aid modalities such as budget support with the purpose to influence public governance quality in recipient countries. Budget support is an aid modality that consists of providing financial resources

directly into recipients' public budgets, within an agreed policy framework, which is known as policy conditionality (Hayman, 2011). According to the European Commission (2012), the policy conditionality framework is designed by the donor to motivate recipient governments to promote appropriate governance settings and policymaking that ensure aid effectiveness. Scholars' attempts to assess the effectiveness of budget support have considered various Paris declaration principles. Swedlund (2013) advanced that budget support was used to influence policy choices in recipient countries. Hayman (2011) said that (donors use budget support to impose their political views in recipient countries mainly regarding the promotion of democratic institutions (Hayman, 2011). Tavakoly and Smith (2013) argued that budget support can improve public financial management while generating transaction costs. Selaya and Thiele (2012) found that budget support deteriorates bureaucratic efficacy.

Bourguignon and Platteau (2015) argued that aid is subject to decreasing productivity margins. Therefore, a donors' policy concern is the possibility that budget support as an aid modality generates constant or increasing productivity margins to ensure continued aid effectiveness during the advent of increasing aid. One way of perceiving this nondecreasing marginal return is the enhanced efficient use of development assistance and public revenues in such a way that increasing aid availability is associated with aid effectiveness. Bourguignon and Plateau developed a theoretical framework in which governance was endogenous in the sense that the aid provider relies on disciplining measures to influence governance setting in recipient countries. However,

they did not empirically assess their assumption that disciplinary measures imposed by donors can improve public governance in recipient countries.

As illustrated by the studies reviewed above, the existing literature on aid effectiveness overlooked the possibility that policy-based development assistance such as budget support could generate an overall government spending efficiency (improved public governance) that may result in improved aid effectiveness. This mediation role of public governance through public expenditure efficiency could provide insights on the appropriateness of budget support as a means to respond to donors' concern that is to associate need and governance in aid delivery (Collier, 2007).

Government spending efficiency as a measure of public governance is an indicator of the quality of policy and institutions. Public expenditures efficiency can indicate institutional quality changes that aid generates. As Hyman (2014) noted, governments intervene with domestic markets to mobilize resources and use them to produce public goods and services. Unlike with market-based allocations, political rules such as parliament votes, or executive orders determine the production of public goods through public policymaking and budgeting processes. According to Hyman (2014), a primary concern regarding social welfare improvement is therefore to make government interventions for resource allocation efficient.

If donors should use aid to advance sound policies and democratic governance, assistance should result in promoting values underlining democracy and good policymaking, one of these being the efficient allocation of resources for improved collective wellbeing. According to Edwards (2015), a normative view of aid policy and

practices some academics and policymakers have defended is that aid is relevant to help advance both public governance and development. It implies that, donors can allocate aid to countries with weak governance which also appear to be the poorest. Aid is an entry point donor can use to establish policy dialogue with aid recipients in order to influence public governance in the most poorly governed countries. Acemoglu et al. (2014) have demonstrated that there is a correlation (if not causality) between quality institutions and sound policies and economic development. By using aid to promote good governance in aid recipient countries, donors can sustain development which is the main aid outcome. Whether budget support as an aid modality improves public institutions and policies in the least developed countries is the central concern of this dissertation.

The subregion of the West Africa Economic and Monetary Union (WAEMU)), composed of eight countries (Benin, Burkina Faso, Cote d'Ivoire, Guinea Bissau, Mali, Niger, Senegal and Togo) sharing a common currency is used in this case study. According to the West Africa Central Bank (2016), , WAEMU has benefited from a sustained influx of budget support since 1995. Between 2000 and 2015, the eight countries together attracted a total of XOF 6493 billion of ODA in the form of budget support. This amount represents 6% of total government revenues, 26% of the public deficit, and 42% of total grant aid received by countries during the period. This study is an empirical analysis of the conditions of this budgetary support WAEMU benefited from to indicate the extent to which this budget support was an incentive to strengthen public governance in WAEMU countries.

Problem Statement

In the context of the Paris Declaration on aid effectiveness, promoting useful aid is a concern for donors. At the same time, the role of incentives in recipient countries has become central to the donors' quest for aid effectiveness, and many donors consider ODA as a means to promote right policies and institutional qualities. This is illustrated by the formulation of budget support by the OECD-DAC members as a new policy-based aid modality and its increasing use by many OECD-DAC members since 2000.

Donors' expectation that increasing use of budget support makes aid more effective implies that the practice of budget support should relate to good public governance, measured by the efficiency of public expenditures. Donors expect that aid delivered through budget support generates better payoffs than if they offered this assistance through project aid or other aid modalities. A government that benefits from budget support should spend public revenues including development aid more efficiently than a state that does not or mainly relies on project aid. Intuitively, one could expect that the higher the share of budget support of total ODA from which a government benefits, the more efficient this government should be in delivering public services, since budget support should reward sound public policies and appropriate governance settings. Bourguignon and Platteau (2013) said that increased aid availability can result in aid ineffectiveness, due to decreasing productivity margin of aid amount. However, according to the World Bank (2006), budget support could increase the volatility of aid flows, raise fiduciary risks, increase transaction costs in the short term, and reduce incentives for public administration departments to advance reforms in sectoral policy

areas. Quibria (2014) noted that aid recipient countries could abnegate the implementation of the budget support policy reform agenda once they benefited from disbursements. The actual efficiency gain or loss that budget support may generate is therefore unclear.

There is little scholarly empirical analysis of the relationship between budget support and public governance in recipient countries, in particular WAEMU countries. Existing studies do not address specific causal relationships between budget support and the Paris Declaration principles they had in focus. These studies did not address the efficiency of public service delivery that budget support effectiveness implicitly suggests.

The exploration of the extent to which budget support is successful or not in improving the efficiency of delivering public services in aid recipient countries may result in new insights into conditions involving aid effectiveness. Therefore, the focus of this research will be to explore relationships between budget support and public expenditure efficiency in the WAEMU as a new step in understanding the extent to which budget support can help promote good governance for enhanced aid effectiveness.

Theoretical Framework

The aid effectiveness theoretical framework developed by Cordello and Dell ’Ariccia inspired this research. Cordello and Dell ’Ariccia (2007) assume that aid effectiveness depends on developmental preferences and priorities of the aid recipient. They developed an analytical framework to determine the optimal choice between two aid modalities, which are budget support and project aid, based on the developmental preferences aid recipients displayed. They demonstrated that budget support is the

optimal choice for donors when total ODA is relatively low compared to the recipient's resources and in situations where the recipient has a strong developmental preference. Project assistance is preferable to budget support for large-scale programs and when the preferences of donors and recipients are misaligned.

Cordello and Dell 'Ariccia's aid effectiveness theory indicates that aid fungibility depends on the capacity of the aid recipient to substitute its domestic resources for aid. When project aid is relatively low compared to the recipient's domestic resources, or the recipient's developmental preference is high, the aid recipient can reallocate its resources away from the aid-funded project. If, conversely, the project aid is large enough, the aid recipient should have enough domestic resources or high development preference to be able to carry out a reallocation equivalent to the aid amount. Regarding budget support, the aid recipient can operate aid fungibility whatever the aid amount it benefits from and depending on its developmental preferences.

The second issue Cordello and Dell 'Ariccia's aid effectiveness theory indicates is the role of good governance in aid effectiveness. Aid recipient's developmental preferences can refer to the policy environment, hence the underlying institutional quality necessary for budget support to be effective. Since the donor's choice of aid modality depends on the recipient's developmental preference, the optimal choice of aid modality by a donor to ensure aid effectiveness is, therefore, highly dependent on the quality of governance in the aid recipient country.

Cordello and Dell 'Ariccia's aid effectiveness theory makes it possible to empirically investigate practices involving budget support, notably its association with

quality of governance in WAEMU countries. With the budget support aid modality, the aid recipient government spend the aid amount using its own policies and rules. Policy conditions are meant to improve institutions, policies and rules in aid recipient countries to ensure that the aid amount provided by the donor is used efficiently by the recipient for enhanced development outcomes. Koeberle, Stavreski and Walliser (2006) indicated that budget support "is typically based on an agreed set of performance indicators in the form of institutional or policy reform measures or outcome indicators" (p. 6). Since WAEMU countries benefited from budget support between 1995 and 2015, these countries can serve to assess the conditions under which donors delivered this support by analyzing associations between the practice of budget support and quality of public spending in these countries.

Purpose of the Study

The purpose of this research is to quantitatively examine relationships between budget support and public governance, measured in terms of public expenditure efficiency for aid recipient countries in the WAEMU. The study will describe the importance of ODA and budget support in particular in the WAEMU region and elucidate the magnitude of changes in public expenditures that budget support generated. It will further explain causal relationships between budget support and government spending efficiency, by using control variables to ensure other potential factors contributing to public expenditure efficiency are incorporated in the analysis.

The research also includes methodological contributions to the analysis of budget support effectiveness with a specific application to WAEMU countries. The research

used public expenditure efficiency that measures by relating human development composite index to public expenditures in WAEMU countries. The human development composite index combines three outcome measures which are economic development, education, and health.

Research Questions and Hypotheses

This study will provide answers to the following research questions along with related hypotheses.

RQ1: Is there a relationship between the use of budget support by donors in WAEMU countries over time and quality of their public governance?

$H_0$1: There is no relationship between the use of budget support in WAEMU countries over time and quality of public governance.

H_a1: There is a relationship between the use of budget support in WAEMU countries over time and quality of public governance.

RQ2: Is there a relationship between the absolute amount of budget support WAEMU governments receive and the quality of service delivery?

$H_0$2: There is no relationship between the absolute amount of budget support WAEMU governments receive and the quality of their public service delivery.

H_a2: There is a relationship between the absolute amount of budget support WAEMU governments receive and the quality of their public service delivery.

RQ3: Is there a relationship over time between the proportion of budget support in terms of total aid in WAEMU countries and quality of public governance?

$H_0$3: There is no relationship over time between the proportion of budget support in terms of total aid in WAEMU countries and quality of public governance.

H_a3: There is a relationship over time between the proportion of budget support in terms of total aid in WAEMU countries and quality of governance.

RQ4: Is there a relationship over time between the share of budget support amount in terms of total government revenue in WAEMU countries and quality of public governance?

$H_0$4: There is no relationship over time between the share of budget support amount in terms of total government revenue in WAEMU countries and quality of their public governance.

*H_a*4: There is a relationship over time between the share of budget support amount in terms of total government revenue in WAEMU countries and quality of their public governance.

RQ5: Does initial level of institutional quality affect the prediction of the quality of public governance by budget support?

$H_0$5: Initial level of institutional quality does not affect prediction of quality of public governance by budget support.

H_a5: Initial level of institutional quality affect the prediction of the quality of public governance by budget support.

RQ6: Does political context measured in terms of level of democratization affect the prediction of the quality of public governance, measured by the efficiency of public expenditures, by budget support in WAEMU countries over time?

$H_0$6: Political context measured in terms of level of democratization does not affect the prediction of the quality of public governance by budget support in WAEMU countries.

H_a6: Political context measured in terms of level of democratization affects the prediction of the quality of public governance by budget support in WAEMU countries.

Nature of the Study

The study is quantitative and will use a quasi-experimental design to respond to the central research question: to understand the extent to which changes in budget support results in changes in institutional quality, measured by public expenditure efficiency in WAEMU countries. According to Campbell and Stanley (1963), there is both a correlational and causal dimension in quasi-experimental. design, I used to examine the extent to which variations in budget support policy predict changes in public expenditure efficiency in WAEMU countries.

Government spending efficiency (GSE) is the measure of public governance quality used as the dependent variable in this study. GSE will be estimated using stochastic frontier analysis (SFA). A measure of human development will be related to measures of gross domestic product, public expenditures, macroeconomic stability, and measures of population and density. The results of the SFA will be GSE scores for each of the WAEMU countries over 1995-2015.

Budget support variables used in this study are budget support dummy, budget support absolute amount, the proportions of budget support in terms of total a country receives and total government revenues in each of the WAEMU countries. Effects of

budget support on public governance quality will be studied in terms of relationships between budget support variables and GSE scores. The test of the hypotheses regarding relationships between budget support variables and GSE scores will consist of regressing GSE scores against budget support variables using panel data regression involving both fixed and random-effects models. Panel regressions will also be used to test for mediation and moderation of selected variables like initial level of public governance quality, and political context in terms of democratization and political stability in relation to efficiency. The introduction in the panel regressions of covariates (macroeconomic stability, corruption, development level) that may influence institutional quality measured by public expenditure efficiency, along with the primary explanatory variables of budget support policy, will control for potential confounding factors in explaining public expenditures efficiency. This procedure of using covariates in panel regressions will result in an explanatory design for an examination of the likelihood of a causal relationship between budget support and public expenditure efficiency in WAEMU countries.

Definitions

Aid: Foreign support that developing countries receive from other institutions to sustain the implementation of their development agendas (OECD, 2005). There are various ways of delivering aid including project and program aid, policy-based financing, and budget support.

Aid modality: The policy or strategy that a donor uses to deliver aid to recipients. There are two main aid modalities which are project aid and budget support.

Budget support: is an aid modality that consists of transferring financial resources directly into recipients' public budgets to support a medium-term program (Hayman, 2011).

Conditionality: incentive measures (positive and negative) the aid provider donor, and the aid recipient agree upon within the framework of an aid contract (Koch, 2015).

Public governance: Institutional arrangements that frame public decision making and actions (United Nations, 2007). According to the OECD (2011), the principal elements of public governance are accountability, transparency, efficiency, effectiveness, responsiveness, and rule of law.

Public expenditure efficiency: The capacity of a government to allocate or spend available resources in such a way that there is no possibility to improve an individual's wellbeing without deteriorating another's situation in the given constituency (Hyman, 2014).

Assumptions

The overall assumption behind this study was that any amount of aid delivered through budget support indicates the donor's intention to influence governance set in the recipient countries. As underlined earlier, donors use budget support to improve aid effectiveness by inciting aid recipients to improve their institutions and policies. It is also assumed that any disbursement made by a donor within budget support framework is an indication of an agreement between the donor and the recipient to implement various policy reforms in the recipient country in terms of public governance quality. This

assumption means that ceteris paribus, an additional unit of aid amount delivered through budget support is also a proxy of other policy inputs the aid recipient government commits to implement in performing public service. There is no distinction between sectoral and general budget support in this study.

The assumption behind the choice of government spending efficiency as the dependent variable was that the primary objective of improving governance setting in recipient countries is to ensure that they spend public revenues in a well-organized manner. The role of a responsible and accountable government in a modern democratic society is to ensure that resources are allocated efficiently for collective wellbeing. The idea that donors can influence the emergence of responsible governments through budget support in recipient countries translates the use of disciplining measures by donors to incite aid recipient governments to allocate and spend public resources including development assistance efficiently. As an implication, it was also assumed that aid recipients spend budget support amount in the same manner they spend total government revenues, in line with the principle of fungibility.

Scope and Delimitations

This study focuses on the role of public governance quality on aid effectiveness. The focus of the study was about budget support as a specific aid modality. Donors design budget support to influence quality of institutions in aid recipient countries. The hypotheses of the study will be tested on the West Africa Economy and Monetary Union. This currency area has regional rules and policies to harmonize public finance data. Finally, the study covered budgets in these countries between 1995 and 2015. Since 2015,

methodological changes were introduced in the preparation of public budgets in WAEMU. Available budget data from 2015 might not be comparable to 1995-2015 data.

Limitations

The study used public expenditure efficiency coefficient of which estimate was based on a policy outcome index that synthesizes human development indicators such as economic development level, health and education conditions. By participating in the adoption of the Millennium Declaration in 2000 by the United Nations and the MDGs in 2002, which aimed to orient aid delivery, WAEMU countries committed to advance human wellbeing as their primary development objectives over the period of study. However, in practice, aid recipients like WAEMU countries may have developmental and non-developmental preferences. WAEMU countries might allocate their resources to unproductive programs. They could also implement policies which cause harm instead of advancing human development.

Additionally, a limitation of the study is its geographical restriction that may affect the generalizability of the findings. Since the WAEMU is a currency zone, this may have some influences on the results. Therefore, the results of the study might not be generalizable to countries which do not have the common or harmonized fiscal, monetary and foreign exchange policies as those required in a monetary union.

Significance

This research will contribute to literature regarding aid effectiveness and the efficacy of budget support as a form of aid modality. This research involves time series cross sectional design and will provide new cross-country insights regarding the use of

budget support by donors as an efficient aid form. The study could improve donors' knowledge of whether countries with more performant governance systems measured by their GSE coefficients are those that benefit from budget support and whether countries that receive budget support strengthen their systems in terms of efficient public service delivery. Therefore, donors may get new insights to better orient practices involving budget support and decide whether and when they could be confident in the governance setting in aid recipient countries to adequately substitute project aid for budget support. Therefore, the study may contribute to social change by explaining possibilities for donors to allocate more ODA through budget support in respect to one of the implications of the Paris Declaration on aid effectiveness, which requires donors to deliver ODA through recipient countries' systems.

This research may lead to a better understanding of the actual outcome in terms of institutional quality of donors' immersion into aid recipient's policy environments. This research may provide indications regarding whether motives of all stakeholders involved in public policymaking in recipient countries result in expected efficiency gains in terms of public service delivery in recipient countries.

By using human development index to measure the public expenditure efficiency coefficient that serves as the dependent variable, the study implicitly informs policymakers in aid recipient countries and external donors regarding the relevance of using budget support to achieve social outcomes such as recently adopted sustainable development goals (SDGs). A useful implication of the study would be to explain whether donors can rely on budget support as a tool for need-governance tradeoff in

delivering aid. Donors can be confident in providing more resources through budget support to the neediest countries which are also the worst governed.

Summary

There are controversies on aid effectiveness amongst public policymakers and academics. An important topic in recent literature on aid effectiveness has been the possible influential role of aid in improving public governance n recipient countries. There is an opposition between scholars who claim the institutional perils and policy-neutrality of ODA and optimists who perceive aid as a means to promote right policies and institutions in aid recipient countries. The optimistic view seems to have influenced many donors in designing and implementing new policy-based instruments such as budget support to deliver aid.Yet existing limited academic literature on budget support offers an incomplete view of the effectiveness of budget support in promoting institutional quality and better aid effectiveness. This study will contribute to assessments of the relationship between aid and governance, with an emphasis on budget support and governance in WAEMU countries. It is a scholarly attempt to search for improved aid outcomes through assessments of aid-driven institutional quality. The research may therefore provide insights regarding possibilities for donors and aid recipients to use budget support as an aid delivery modality to promote positive social change through improved public governance in aid recipient countries.

In Chapter 2, there will be a review of existing literature on aid effectiveness, beginning with a brief description of the origin of aid and its evolution. The chapter will cover recent studies that emphasized relationships between foreign support and

governance to allow the identification of theoretical grounds in terms of how and to what extent aid can affect institutions and policies in recipient countries. The aid effectiveness theoretical framework developed by Cordello and Dell 'Ariccia, will frame this study. There will be a discussion of the state of recent research on budget support effectiveness and implications for this study. Finally, the literature review will link aid effectiveness with selected public administration theories namely institutional analysis and development framework, innovation and diffusion model and transaction cost approach for hypotheses that are tested in this study.

Chapter 2: Literature Review

Introduction

In the existing literature, scholars have investigated the role of governance and institutional quality regarding aid effectiveness in two main directions. In the first approach, institutional settings in potential aid recipient countries were considered exogenous, and donors chose aid recipient based on their apparent merit of public governance quality or politics. In the second approach, institutions in recipient countries were endogenous. Donors can impose disciplinary measures or conditionalities to improve institutional quality in recipient countries resulting in reinforced aid outcomes.

The theoretical framework for this research is the aid effectiveness theory developed by Cordello and Dell' Ariccia. This framework involves assessing how aid allocation generates incentives for aid effectiveness. With this theoretical foundation, the study considers the potential of budget support to stimulate positive institutional change and appropriate policy reforms. Guided by the theoretical foundation, the literature review will illustrate two dimensions of institutional quality before explaining specificities of budget support. In the last section of the literature review, the relationship between the aid effectiveness theory and practice and selected public administration theories is reviewed to discuss research questions and hypotheses.

Literature Assessment Approach

The first step in the literature review involved a database search on aid effectiveness. Political Science Complete, Academic Search Complete, Policy Studies Journal, SAGE, and JSTOR were used to get an overview of scholarly studies from 2011

through to 2016. Search phrases were aid theory, official development assistance theory, *development aid effectiveness, development assistance effectiveness, foreign aid effectiveness, budget support effectiveness, program aid effectiveness, public expenditures efficiency, government spending efficiency, aid effectiveness politics, aid economics, political economics of aid effectiveness, aid and institutions, aid and governance, aid and Africa, aid and West Africa, Aid and WAEMU, budget support and Africa, budget support and West Africa, budget support and WAEMU, program aid and Africa, program aid and West Africa, program aid and WAEMU*. Scholarly studies on politics of aid effectiveness were obtained from SAGE, Academic Search Complete, Policy Studies Journal and Political Science. Results of search in JSTOR were scholarly studies on economics and political economics of aid effectiveness, institutions and governance, methodological aspects of institutional quality and efficiency.

Furthermore, studies identified through various searches were used to deepen the literature review as they made it possible to locate complementary academic works which were relevant to the investigation. There were also books involving ODA, public policy and finance, public administration, and quantitative research. Reports from various international organizations such as the OECD, World Bank, and United Nations, which play a significant role in shaping ODA, were consulted. The literature review also included reports and studies on the WAEMU. A literature review matrix was used to summarize the content of studies.

The following subsection of the literature review is a review of the theoretical foundation of the study. The next section is an analysis of the role of institutional quality

in promoting aid effectiveness. Since budget support is an aid modality, this section is used to analyze the possibility that other policy inputs such as quality public service delivery and politics increase aid outcomes at a given level of aid amount. The mechanisms by which budget support as a specific aid modality can result in improved aid outcomes constitutes the main content of discussions in the budget support and institutions subsection. In this subsection, main characteristics of budget support are investigated with regard to interrelations with institutional quality both theoretically and empirically. Theories involving public administration are further reviewed in the subsection on budget support effectiveness and public administration to analyze the complexity of institutional mechanisms that the practice of budget support can lead to. To my knowledge, there are few empirical studies which related public administration theories to budget support effectiveness.

Aid Effectiveness Theoretical Foundation

In the existing literature on aid effectiveness, scholars investigated aid effectiveness from the perspective of the recipient's policy environment. In this regard, Burnside and Dollar (2000) 's seminal work gave new impetus to the debate on the role of the beneficiary's governance setting on aid efficiency. Researchers were also concerned with how aid allocation, in conjunction with the policy environments of both the donor and the recipient, can affect aid effectiveness. This discussion was mostly empirical until the release of Cordello and Dell' Ariccia 's influential paper. In this article, Cordello and Dell' Ariccia (2007) analyzed budget support and project modalities separately. The aid recipient can allocate its resources on development and nondevelopment priorities. The

donor prefers the beneficiary prioritizes production of developmental goods but can only partially observe the recipient's developmental preferences through capital expenditure. Cordello and Dell'Ariccia (2007) said that budget support can result in increased developmental goods if the donor imposes conditionality on the observable recipient's developmental preferences which is measured by the proportion of capital expenditures in total government revenues. However, this conditionality will generate inefficiencies in terms of the way the aid recipient allocates resources between developmental and nondevelopment priorities. Conditional budget support is preferable to project aid in terms of development production when the granted assistance is relatively low compared to the beneficiary's resources. Budget support also dominates project aid in terms of development effectiveness when the aid recipient's developmental preference is high.

In Cordello and Dell'Ariccia's model, developmental preference was a proxy of policy and institutional environment in the aid recipient country. Cordello and Dell'Ariccia explain how policy and institutional environment affect the choice of donors willing to improve aid outcomes with the choice of aid modality. By imposing conditionality on capital expenditures, a donor can influence budget allocations in the budget support recipient country with the view to improve aid outcomes. Cordello and Dell' Ariccia did not, however, analyze the combination of the two aid modalities which are budget support and project aid. The two aid modalities were discussed separately in their theoretical framework. Conditions for the effectiveness of the imposed conditionality on capital expenditure was not explained.

Jelovac and Vandeninden (2008) extended Cordello and Dell'Ariccia's model to integrate budget support and project aid in a unique theoretical model and assess the conditions under which budget support conditionality of is optimal. Jelovac and Vandeninden argue that unconditional budget support is the optimal choice a donor can make to ensure aid effectiveness. The use of conditionality by a donor is optimal when there is an alignment between the preferences of the donor and the beneficiary, and the productivity of the other policy inputs as well as the proportion of aid compared to the beneficiary's resources are high. Cordello and Dell'Ariccia's theoretical model extended by Jelovac and Vandeninden indicate when and how a donor can prefer budget support to project aid. But both Cordello and Dell'Ariccia and Jelovac and Vandeninden did not explain why in practice, as in WAEMU countries, the two aid modalities are used simultaneously by donors for the same country. Furthermore, If donors are concerned with aligning their preferences with those of aid recipients, several countries among the neediest, including those in the WAEMU, would be ex-ante excluded from aid allocation because of their weak public governance.

Mounir (2015) has developed a theoretical model in which the donor can allocate aid by interplaying on the two aid modalities, considering the information asymmetry concerning the recipient's preferences. The proportion of aid that benefits poor indicates the recipient's developmental behavior. The donor does not know in advance how much assistance the recipient will allocate to the poor due to asymmetric information. Mounir explains that donors should use budget support to allocate aid to governments who demonstrate a weak propensity to redistribute national income to poor. Donors can also

use pooling aid that combines budget support and project aid as an optimal choice to create positive incentives when the recipient has a weak propensity to redistribute income to poor. With the pooled fund, a donor can use both exogenous selection of aid recipient and endogenous influence on the aid recipient's developmental preferences for aid allocation to avoid excluding systematically the neediest countries. In this line, Bourguignon and Platteau (2015) revisited aid effectiveness and examine how aid availability affects aid effectiveness. Bourguignon and Platteau consider various possibilities and implications for an aid agency that is willing to optimize its utility function in allocating aid between two countries considering need and governance. Aid effectiveness decreases with aid project size as leaders tend to reduce efforts or embezzle a higher share of aid money. Whether the donor imposes disciplining measures or not on poorly governed country, the availability of increased aid amount leads the donor to include both wealthy and poorly governed countries in the development aid program. However, the donor is likely to focus on better governed and wealthy nations when the available aid amount is smaller, and public governance quality is very weak in other countries compared to wealthy countries. These results imply that donors consider a need-governance trade-off to promote inclusive aid programs where worst governed and most impoverished nations would benefit from aid allocation in addition to better-governed countries. Bourguignon and Platteau also suggest that when the available aid amount to the donor is small, poorest countries should reach a minimum level of public governance quality to benefit from aid allocation. This indicates that aid can be useful in the neediest countries if it results in improved public governance quality in these

countries. An alternative for the donor could be to accept in the short term a level of aid ineffectiveness while using disciplining measures to raise public governance quality to the minimum required level in the poorest countries. While Bourguignon and Platteau did not empirically test their analytical solutions, Dutta, Leeson, and Wiliamson (2013)'s quantitative empirical analysis suggested that the need-governance trade-off the donor decides depends on the existing political setting in the aid recipient country. Development aid makes dictatorships more dictatorial and democracies more democratic. It means that foreign assistance does not change political institutions but amplify them. There is thus an exaggeration of the effect of aid on political institutions although these findings imply that development aid for democratizing dictatorships may cause harm as it can strengthen dictatorships. At the same time, an attractive political implication is that aid can strengthen democracies in weakly democratic countries, and thus an inclusive aid allocation is possible, as Bourguignon and Platteau suggested with their need-governance analytical framework.

Optimistic scholars who claim aid usefulness and pessimistic academics who defend aid ineffectiveness are reconciled with the role of institutional quality regarding aid effectiveness in aid recipient countries. The optimistic view is adopted for this dissertation. It is inspired by Cordello and Dell'Ariccia's theoretical suggestion that there may be a possibility to appropriately design and deliver aid in such a way that it positively influences public governance quality through knowledge sharing and improve legislative, executive and judiciary branches of democratic governments. Donors can use aid to strengthen civil society and free press, the rule of law and limit corruption in such a

way that aid fungibility is not associated with aid ineffectiveness. This is supported by Morrissey (2015) who argue that there is an over-estimation of aid fungibility whereas this latter did not reduce aid effectiveness. Donors like the OECD-DAC members have been using budget support to promote institutional setting that ensures right policies and institutions for increased aid effectiveness.

Aid Effectiveness, Institutions, and Policies

Originally, aid had an economic meaning as aid providers used it to sustain economic development in the aid recipient countries. Aid effectiveness had little to do with politics and institutions as it was made available for financing public investments, which determine economic growth. According to Edwards (2015), development aid emerged as an implication of the Harrod-Domar's economic growth model. In this model, investment and thus savings is the key ingredient development planners have to sustain economic growth over long term. Development planners used Harrod-Domar's economic growth model to estimate the investment gap that a central government should mobilize to attain an economic performance objective. Hence, in a context of insufficient domestic savings, a government can look for external funds such as foreign aid to achieve the planned investment level. This was illustrated by the Marshall Plan, where the United States of America earmarked funds to help rebuild Western Europe in the aftermath of the second world war. The American support, which included both loans and grants, compensated to some extent the destruction of capital that had occurred during the war. The protagonist blocs that were fighting and the neutral countries benefited from the American aid. Population and industrial powers were part of the criteria used to allocate

the American support to the various beneficiary countries, although the Allies members benefited from a more significant share than the Axis countries.

The main aid outcome is thus economic growth, which also measures development. Since saving generates economic growth, aid is therefore effective if it compensates the shortage of savings in the recipient countries. A rich literature has investigated both the correlation and causality between development aid and economic growth. For instance, Limodio (2012) examined the relationship between aid and economic growth through capital accumulation process and found that aid had a limited contribution to economic growth. In fact, the transmission mechanism through which aid can predict economic growth seems to be a puzzle of direct and indirect effects. Tezanos, Quinones and Guijarro (2013) investigated this puzzle by adjusting economic growth with economic inequality and found that aid was effective in terms of promoting inequality-adjusted economic growth. Kalyvitis, Stengos and Vlachaki (2012) re-examined the relationship between aid and economic growth with the introduction of a threshold effect. Their econometric analysis on 42 countries (40% were African countries including WAEMU countries) over 1970-2000 suggests the existence of a threshold from which aid has a significant positive effect on economic growth. The authors argued that a minimum aid of around 3.4% of GDP is necessary to break up the vicious circle of low savings-low growth-high poverty in developing countries. Kalyvitis, Stengos and Vlachaki confirm Rostow (1960)’s development theory which suggests that low-income countries needed a big push like the Marshall Plan to stimulate a sustained economic development dynamic. These results are illustrative of controversial findings on the

relationship between aid and aid outcome defined by economic growth. They also exemplify the idea that economic growth and investment-saving gap mechanisms are not enough to assess and understand aid effectiveness.

As economic theory evolved, the use of aid encompassed larger items than saving, to cover *inter alia* human capital, technology and research and development. Using a historical perspective, Edwards (2015) argued that economic developments have influenced aid policy and practices. Donors progressively moved from the need to close the investment gap to the funding of skills and technology in the advent of Solow's economic development theory in the 1980s that considers technological progress as the engine of long-term economic growth. Tezanos, Quinones & Guijarro (2013) investigated the contribution of development aid to human capital and total factor productivity as means to sustain economic growth. Most recent scholar papers on aid effectiveness used the endogenous economic growth theoretical framework, which emphasizes total factor productivity as critical in promoting sustained economic growth in addition to physical capital. Other factors Tezanos, Quinones & Guijarro stressed include innovation, human capital, social capital and institutions. The emergence of conditionalities donors imposed to aid beneficiaries introduced the role of institutions to improve aid effectiveness by building economic institutions and conducting appropriate reforms to sustain aid outcomes. The financial allocations criteria and the inclusive aid allocation in the Marshall Plan, despite the American non-neutral positioning during the war, are illustrative of this politics-free aid reasoning, while considering the role of institutions. Conditionalities were in line with dominant economic theory which involves open

markets, private ownership rights, and the limited role of the State in the economy. These elements were included in the structural adjustment programs and the Washington Consensus programs the World Bank and the International Monetary Fund supported by OECD countries obliged many developing countries to implement. Since economic institution building mainly relies on government's commitment and ownership in beneficiary countries, a participatory approach to conditioned-aid further nurtured aid policies and debates. Beneficiary countries should therefore be in the driver's seat to lead and coordinate reforms and policies jointly defined with donors for aid effectiveness. According to Edwards (2011), Through these programs, recipient countries should undertake necessary economic reforms to strengthen market economy. Aid effectiveness is thus implicitly conditioned by the functioning of the market institution. Development aid should thus obey the logic of the efficient allocation of resources.

The politics-free aid line gives only a partial view of aid practice since the political economy plays a crucial role in the way aid generates expected development outcomes. It overlooks the imbrication between economic and political institutions in aid delivery and outcomes. Booth (2011) undertook a review of the recent literature on development aid and explained that institutions rule played a critical role in economic development in terms of increases of per capita growth and was a driver of the volume of aid received. While there is no clear-cut understanding of what the right institution is, it is known to be a function of politics and therefore politics influences aid effectiveness. One implication from this development is that aid is unlikely to generate positive effects without appropriate institutions and policies Williams & Copestake (2014) argued that

development assistance should therefore be context-specific and target countries that have the proper governance setting for its effectiveness.

Donors were encouraged in the aid allocation selectivity requirement that countries that demonstrate good governance and quality institutions deserve foreign assistance. Donors have then used the existence and level of democratic governance and systems to select aid recipients. Winters and Martinez (2015) performed linear regressions and statistical compositional analysis covering 121 countries including most African countries and argue that poorly governed countries receive fewer aid flows. Donors' preferences regarding aid modalities and sector allocations are a function of the beneficiary's governance performance. Donors used programmatic aids in better-governed countries while they preferred project aid in social sectors in poorly governed countries. Nordveit (2014) also emphasized donors' tendency to adapt aid modality to governance quality level in recipient countries by computing the probability that 23 bilateral aid providers use budget support in 115 countries including 47 African countries and 8 WAEMU countries. Donors were likely to use budget support in better-governed countries. The latter were also likely to benefit from higher shares of budget support. Clist, Isopi and Morissey (2012) applied a contract-based theoretical framework to 88 recipients including 32 African countries (7 WAEMU countries were covered) and found that there was no significant relationship between the amount of budget support and government effectiveness, even though government effectiveness predicts the use of budget support by donors.

There are limitations to the robustness of these findings that purported that aid providers mostly target less-corrupted or better-governed countries in aid allocation. An illustration is the significant variations in findings about explanatory variables, coverage and period the authors input in their models. Akramov (2012) noted that the discrimination between aid recipients was more perceptible when governance gaps were significant. By using the Freedom House scores as the predictor for 112 countries including 47 African countries and 7 WAEMU countries, Akramov found that only changes between categories significantly correlated with aid allocation, while slight changes within categories were less associated to aid allocation. Another issue was the heterogeneity between donors in the way they expressed governance-based selectivity since their behaviors were also a function of other variables. Masaki (2016) illustrated this issue using panel data of 478 coups (including in Africa and WAEMU countries) and noted that donors sanctioned democratic regressions by reducing aid disbursements in the advent of coup d'état mainly after the cold war. However, this result did not hold during the cold war. Reactions to coups were also not uniform across bilateral donors as countries such as the United States of America favored geostrategic determinants in their cooperation with developing countries. Masaki concluded that this heterogeneity was likely to weaken the effect of political conditionality on aid effectiveness. This is worrying given the heterogeneity between donors regarding rewarding democratic governance progress with foreign aid. Reinsberg (2015) conducted an econometric analysis based on 174 aid recipients including most African countries and WAEMU countries and found that bilateral donors rewarded political liberalization with increased

aid allocation liberalization while multilateral donors such as the World Bank did not. Donors' selectivity and their ability to encourage good governance is thus a function of their own institutional constraints.

Therefore, the issue of aid effectiveness becomes more complex as it depends on institutional settings in both donors and recipients' countries. Easterly (2014) elucidated the aid effectiveness complexity by arguing that aid was suffering double principal-agent problems as taxpayers in donors' countries and ultimate beneficiaries in recipient countries were not involved in the aid decision making process. This complexity adds to the unclear accountability chains between governmental donors and recipients that also affect aid selectivity and its effectiveness. Easterly relies on this argument to justify that aid is ineffective as a significant share of aid flows go to the most corrupted governments. Brown and Swiss (2013) also raised this selectivity inconsistency by highlighting the difficulty of using public governance quality to discriminate between aid orphans and aid darlings. Many aid orphans were the neediest while public management in many aid darlings was far from rosy. Dreher, Nunnemkamp, and Thiele (2011) used Probit and Tobit models to confirm the selfishness and commercial self-interest of donors in allocating aid. Dreher, Nunnemkamp, and Thiele compared emerging donors and the OECD-DAC aid providers and argued that merit regarding better governed or less corrupted countries was not the primary motive of aid selectivity in either of the two groups. Also, the emerging donors displayed less concern with beneficiary needs than did the OECD-DAC donors, since explanatory variables such as income per capita, malnutrition or child mortality did not have a significant impact on aid allocation by

emerging donors. Easterly and Wiliamson (2011) and de la Croix and Delavallade (2013) also reached the same conclusions regarding inappropriate aid allocation. According to Easterly and Williamson (2011), aid is ineffective as donors have not adjusted to the evolution of corruption in the beneficiary countries. Donors have maintained the same level of support to countries that have become more corrupt over time. de la Croix and Delavallade (2013) argued that development aid inefficiency was a result of the low productivity in nations which benefited from more aid, these countries also being the most corrupt.

The above analyses suffered various shortcomings. The studies were based on aid commitments and not disbursements. Amounts donors committed are sometimes not disbursed when countries fail to meet ex-ante defined conditions. Also, the focus of these studies on merit-based aid allocation raises a normative concern: Since governance predicts aids, nations in acute needs should benefit from less support as they are usually also the most poorly governed. Finally, these studies overlook the possibility that aid improves governance setting, and thus offers opportunities to advance governance in neediest countries.

Donors have tried to address the challenge of assisting the neediest in poorly governed environments by bypassing state organizations. Detrich (2013) noted that donors were likely to rely on non-state actors and bypass states in poorly governed countries. The involvement of independent nonprofits in aid delivery is politically attractive to donors as it is meant to show the donors' goodwill. Niskanen (1968) has formulated a theoretical framework of bureaucracy, which specifies that a rational

bureaucrat would support inefficiency by looking for increasing budget allocations to achieve a given objective. This suggests that the promotion of competition between bureaus for budget allocation will provide an incentive for efficiency. According to Ulbaek & Nohr, (2014), a viable approach government developed with the view to improve public service delivery is public nonprofit partnerships. Donors could expect improving aid effectiveness by creating competition between governmental bureaus and nonprofit organizations for aid allocation.

However, this approach can result in fragmented and uncoordinated aid, which is also a source of inefficiency. According to Molenaers, Jacobs & Dellepiane (2013), fragmented aid through the intermediation of multiple Non-Governmental Organizations may be ineffective as Non-Governmental Organizations have their own motives, which may affect the way they deliver assistance to beneficiary countries. Further, uncoordinated assistance may generate significant transaction cost that affects aid effectiveness. Bigsten and Tengstam (2013) supported this idea by quantifying the potential benefit of aid coordination and noted that aid coordination through a focus on fewer countries and shift from project aid to program aid could generate significant gains in aid effectiveness. This benefit can outweigh transaction costs as well as the high political cost of aid coordination. Bigsten and Tengstam went further to suggest that an appropriate coordination can result in reallocating 50% of available aid from aid darlings to orphans with significant potential efficiency gains. However, the efficiency gain depends on the governance situation and donors can therefore not assure such a gain for certain reallocations, such as from aid darlings to lousy aid orphans. Bigsten and

Tengstam's findings did not cover the possibility that donors influence governance in either of the aid orphan or darling countries. Also, it is not clear whether the size of the donor's club matters for the efficiency gains aid coordination can generate. There is also heterogeneity in donors' behaviors which may suggest that the type of aid providers would influence the potential efficiency gains. If donors must assist the neediest while aid effectiveness is subject to institutional quality, donors need to influence governance quality in beneficiary countries. The endogeneity of aid allocation to improve governance setting in recipient countries was also the concerns of some scholars. Molenaers, Dellepiane, and Faust (2015) explained that political conditionality emerged in response to worries about the mediating effects of recipient politics and institutions on aid effectiveness. Aid has entered a new age of ex-post conditionality. In this sense, donors and policy makers perceived assistance as a tool to influence political changes and generate governance improvements. However, how governance and which aspects of public management mediate aid effectiveness is still unclear. The successful implementation of the right institutions through aid conditionality has been a subject of intense debates.

Some scholars such as Asongu (2013) have used various analytical framework to argue against the institutional building propensity of aid. A critical theoretical argument built on the established resource curse theory to depict the institutional peril of aid in developing countries. Aid is perceived as a rent that follows the same logic of the natural resources curse. According to this political aid curse theory, foreign aid is detrimental to institutions, deteriorates accountability, encourages rent-seeking behaviors, generates

conflict for internal aid allocation, disincentives recipient governments regarding appropriate reforms, increases corruption, and undermines the rule of law. Using a panel design of 53 African countries Asongu (2013) suggested that foreign aid negatively and significantly affects various indicators of institutional quality for quintiles of institutional quality. With their foreign assistance, donors thus contribute to deteriorate the institutional quality irrespective of institutional development in recipient countries. Along the same lines, Kalyvitis and Vlachaki (2012) said that aid did not encourage democratic accountability. Aid tends to release budgetary pressures on governments and weaken governmental accountability and citizens control.

Other scholars like Jones and Tarp (2015) have defended the opposite view to the institutional perils of foreign aid. The theoretical foundation of these studies builds on the idea that aid is more conditional, less fungible and less reliable than oil revenues and should not result in political resource curse as natural resources. By using long-run cross-sectional and panel designs, Jones and Tarp suggested a small but definite effect of aid on political institutions, arguing that aid may compensate the political cost to the leader of improving governance systems. Different aid modalities affect political systems in different ways. In this sense Jones and Tarp negated the theory of the institutional perils of aid and concluded there is no systemic adverse assistance effect on institutions. However, Jones and Tarp (2015) used a confusing concept of governance aid which included human rights, civil society, and institutional development. Their analyses considered commitments rather than disbursements. The study also lacks solid theoretical ground as the Jones and Tarp used agnostic stance and argued that there is no clear-cut

method of estimation in the literature. Altincekic and Bearce (2014) also reached the same conclusion of negating the institutional peril theory by quantitatively examining the relationship between aid to various repression and appeasement indicators and running causality tests. Altincekic and Bearce based their analyses on the rentier state theory formalized through repression and appeasement strategies and found no evidence of political foreign aid curse measured through repression and appeasement. Altincekic and Bearce suggested that there was no significant correlation between aid and tax burden, no statistically significant correlation between aid and education and health spending and no statistically significant association between military spending and aid in non-democracy sub-samples, but only in democracy sub-sample. In contrary to the political aid curse, Altincekic and Bearce illustrated aid blessing: assistance increases human rights in democracies but no effect in non-democracies, aid rises anti-government pressures, and development aid tends to increase the political change in democracies. These results confirm the idea that the democracy level may influence the effect of development aid on political institutions. However, the use of aggregate data that combines grants and highly concessional loans could have affected the results. I could suspect that a more constant and fungible aid may generate political resource curse unless the associated conditionalities force or incite governments for better management of public expenditures. Faye and Niehaus (2012) showed that the political alignment between the aid provider's administration and recipient's administration can play an incentive role. By comparing the volume of aid donors allocated during electoral years according to the political alignment of recipient's administrations, Faye and Niehaus found a reallocation

of aid from less politically aligned administrations to more aligned administrations during competitive elections. This result suggested the existence of political aid cycle that may have adverse or positive effects on institutional quality in aid recipient countries.

The institutional peril that aid engenders is unclear. Askarov and Doucouliagos (2013) nuanced the negation of the institutional peril of aid that seems to have emerged as dominant in the recent literature on development aid and governance. Askarov and Doucouliagos conducted a meta-analysis and suggested that development aid had no or zero effect on democracy but affects some parts of the word mainly some East European transitional economies moderately. The impact of development aid on governance was somewhat positive but depended on the time-period in terms of before and after post-Cold War. These findings have various implications. They suggest that other factors can influence the effect of aid on governance and that there were no precise mechanisms on how development aid affects democracy and governance. The measure of development aid as well as democracy and governance matter for the research results. Askarov and Doucouliagos also confirmed that it is possible that development aid positively influences governance and promotes democracy if appropriately designed. Ravallion (2014) adopted the same posture from its literature review by arguing that the aid curse seems theoretically plausible but does not prove empirically. The aid curse appears to be contingent on various parameters including the social preferences of leaders, which are not well known, and the qualities of existing institutions. Even in the case of elite capture and fungibility, government consumption rather than investment can be beneficial to poor. There was no clear evidence that aid stalls beneficiary efforts to mobilize domestic

revenues. Neither was there any robust finding that aid harms institutions. Conversely, with development aid, donors can push for politically costly reforms with long-term benefits and help to avoid a poor institution trap by forcing countries to a minimum threshold level. Therefore, it could be counterproductive to withdraw aid in the presence of corrupt governments. Ravallion also questioned the use of economic growth to enquire aid effectiveness as most aid targets social objectives. It emerged from these arguments that there is still room to investigate further many missing links including how the social preferences and constraints that leaders face affect aid management and its effectiveness. Ravallion shared this view and called for in-depth investigations of the dynamics of institutional development to how aid affects institutions and whether it is optimal and advisable to cut assistance for evil governments.

Budget Support Effectiveness, Policies, and Governance

Budget support is an aid modality donors use to combine financial amount, policy dialogue between aid donors and recipients, technical assistance and a policy reforms agenda. In its conception, budget support synthetizes various means that donors have used sparingly to ensure aid effectiveness. Theoretically, by using budget support, donors can thus influence governance settings in recipient countries through various mechanisms to ensure enhanced aid outcomes.

According to the World Bank (2010), which is a pioneer of this aid policy, budget support should promote country ownership, facilitate alignment of donors to recipients' development agendas, favor harmonization between donors, and reduce transaction costs. Researchers studied the extent to which budget support has been successful in meeting

these general objectives and reached mixed conclusions. Based on a descriptive narrative, Tavakoly and Smith (2013) highlighted that budget support was effective in improving allocative efficiency and public finance management, but it did not reduce transaction costs and did not improve public service delivery. While Tavakoly and Smith did not define their meaning of allocative efficiency and transaction costs, their findings raised concerns about the possible efficiency gains that donors could expect from improved public service delivery. Selaya and Thiele (2012) studied the impact of budget support on bureaucracy which is one of the means to deliver and improve public service and explained that the impact of development assistance on bureaucratic quality depends on the degree of bureaucrat's discretion in recipient countries. Selaya and Thiele argued that budget support hurts bureaucracy, as it offers a high degree of discretion to beneficiaries. While Selaya and Thiele did not clarify the mechanisms behind their suggestion finding, their result is in contradiction with the principle of country ownership that underlies budget support policy. As Ohemeng and Grant (2014) noted, If improved bureaucracy can boost the efficiency of public service delivery, Selaya and Thiele's finding would indicate that budget support policy can weaken the efficiency of public service delivery as it can impair the functioning of bureaucracy.

The source of improved allocative efficiency was also subject of concern, as the main objective of budget support and therefore the expected policy outcome seems varying from a donor to another. Swedlund (2013) investigated the country ownership objective and argued that budget support constituted a channel for donors' influence on policymaking in recipient countries. Using a multiple-case study involving Rwanda and

Tanzania, Swedlund explained that donors used budget support to influence decision making in the two studied countries through voice amplification, a seat at the table, and a license to ask questions. While Swedlund did not prove the generalization of his results, his findings suggest that through these three channels of influence, donors may enforce directly sound policies such as those that enhance allocative efficiency, instead of impelling changes in institutional policy making setting. In this line, Anthunes et al. (2012) found no evidence of the effect of budget support on health spending. While this result based on econometric estimation focused on allocation spending to the health sector, it was useful in highlighting a possible effect of budget support on budget allocation. An evaluation carried out by the World Bank in 2010 also confirmed the ambiguousness of the relationship between budget support and policy outcomes, suggesting an insufficient understanding of the mechanisms that may relate budget support to policy outcomes.

Donors use budget support as a political instrument, rather than a purely technical tool for promoting sound policies in recipient countries. Molenaers (2012) contended that there was a significant divide between donors regarding visions and practical orientations of budget support. The guidelines developed by the OECD (2012) and the World Bank (2010) emphasize the technocratic ground and dimension of budget support both regarding development and governance reforms. However, the budget support practice revealed that many donors diverted from these standards and tied their budget support to political conditionalities. These donors therefore still maintained their traditional views that aid should respond to political objectives such as the promotion of democracies in

recipient countries. In this context, since political conditionalities were reported to have ambiguous success in the literature, the actual impact of budget support on governance reforms such as public service delivery, quality and transparent public budget processes and cycles, and improved public financial management, is uncertain. Dijkstra (2012) used a case study based on document reviews and secondary data to analyze the implementation of budget support regarding pre-conditions, intermediary results, and policy outcomes. Dijkstra suggested budget support in Nicaragua was characterized a trade-off donors made between governance and poverty reduction objectives. As a result, budget support was not successful in generating policy outcomes such as reduced poverty; nor did it have a significant impact on public governance quality. If this finding were generalized, it would mean that budget support does not provide enough incentives for good policymaking that would be necessary to make development assistance useful. This implication would contradict the rationale that underlies budget support. Hayman (2011) also explored the democratic governance lens on budget support by investigating the relationship between budget support and democracy conditionality. Hayman argued that, while budget support was meant to be technically oriented, it has also been politically conditioned by donors, although there was little evidence that budget support was successful in fostering the expected democratic changes in recipient countries.

The idea of investigating the inclusion of political conditionality such as democracy promotion within budget support framework builds on the relationship between democratic governance and development. As Biondo and Orbie (2014) discussed, there is conflicting evidence that democracy promotes development.

Therefore, it would be illusory to expect that budget support favors development outcomes through the promotion of democratic governance. This imprecision may explain the shift of donors, such as the European Commission, from the extreme democracy promoter to the development promoter while maintaining public governance incentive tranches. Molenaers, Gagiano, Smets, and Dellepiane (2015) conducted and econometric analysis and found that donors relied on budget support to sanction democracy regress. Suspensions of disbursement by donors within the budget support framework were associated to downward trend in democracy functioning. However, the study falls short in explaining how democratic governance can influence the relationship between budget support and development outcomes.

Budget Support Effectiveness and Public Administration

It results from the review of the literature on aid effectiveness and budget support effectiveness that the first theoretical framework that can inform the assessment of the relationship between budget support and efficiency of public service delivery is the institutional analysis and development framework explained by Ostrom, Cox, and Schlarger (2014). This theory implies that policy process requires a trade-off between efficiency and other public or democratic values such as accountability and equity. Within the framework of budget support there are technical and implicit political conditionalities that require recipients' countries to meet objectives such as equity or enhanced accountability through strengthened democratic governance (Molenaers, 2012). This requirement may force beneficiaries to trade public spending efficiency to meet imposed objectives. Therefore, this theoretical framework would suggest that budget

support could result in efficiency losses in public service delivery. This assumption will confirm to some extent the institutional peril of aid.

However, an examination of the budget support practice through the innovation and diffusion model theory as it resulted from Okada and Samreth (2012) would result in objecting the institutional perils of aid and instead suggest the confirmation of the argument of good governance promotion of development aid. According to Berry and Berry (2014)., the innovation and diffusion model explains how governments adopt new programs resulting in non-incremental policy changes. The policy framework that underlies budget support usually requires states to take new policies or programs or suspend ongoing programs such as procurement policy or public financial management policies in line with the disbursement triggers (The European Union, 2012). Such innovation diffusion may result in efficiency gains at least in the long run even though the beneficiary government may partially divert the existing resources to formulate and implement these new policies, to the satisfaction of the donor. If the possible gains in the medium to long-term compensate the short-run costs resulting from diverting current policy inputs, the non-incremental policy change budgetary support impelled would reveal efficient government spending. This corresponds to the disciplinary behavior that the donor imposes on the aid recipient in Bourguignon and Platteau (2015)'s analytical framework. In this sense, the benefit from the non-incremental changes that budget support may imply could depend on both the aid amount and the impact of the policy change. The policy diffusion theoretical framework is thus useful to examine the extent to which the conditionality framework of budget support designed to promote sound

policies result in favorable or unfavorable outcomes regarding efficiency gains or losses in public service delivery.

The current assessment of budget support also reveals that it is still difficult for governments in recipient countries to foresee donors' decisions despite the principle of improving aid visibility that underlies budget support (Tavakoli & Gregory, 2013). A donor may decide to withdraw from using budget support modality. A new donor may choose to engage in budget support. The transaction cost approach as it was described by Williamson (2014) could elucidate the implications of this dynamics and the uncoordinated action that the practice of budget support may generate. This organizational theory depicts the way organizational settings result in transaction costs. It considers transaction as the unit of analysis to explain how individuals with bounded rationality working in the organization can only generate incomplete contracts and seek for transaction cost economizing. As Swedlund (2013) said, budget support leads to an organizational setting that integrates donors into the policymaking process through voice amplification, a seat at the table, and a right to ask questions. The interactions that characterize this blended regulatory environment incorporating both donors and recipients can result in efficiency losses or gains, mainly due to myopic governance structures and incomplete contracts induced by bounded rationality and opportunistic behaviors of donors and recipients. Indeed, recipient governments may demonstrate unethical conducts and scratch the efficiency of policy inputs that are non-observable to donors. However, Bourguignon and Platteau (2015) explain that donors have the possibility through disciplinary measures and the integration of executive cost

compensation in their aid package to mitigate the recipient's opportunistic behavior. The effectiveness of policy making would thus depend on the degree of alignment between the recipient government's priorities and the policy requirements by donors within the blended organizational setting that the practice of budget support generates.

Summary

The review of the literature provides how and the extent to which scholars have investigated the long-standing issue of aid effectiveness. Various studies have tried to understand factors that may explain the mixed results of aid in promoting development. A recent yet insufficient literature has focused on the idea that development aid is useful when associated with the right policies and institutions. In this sense, some researchers have examined the specificities of budget support effectiveness. However, most of these studies fall short to investigate one of the essential mechanisms that can reflect the promotion of good governance, which is the efficiency of public service delivery or the public expenditures efficiency.

As Molenaers (2012), and Faust, Leidrer, and Schmitt (2012) noted, donors seem to emphasize distinctive objectives while designing and implementing budget support. This makes it difficult to assess the effectiveness of budget support. However, one factor that may reconcile these diverging interpretations of budget support policy could be the efficiency of public service delivery. Indeed, regardless of its definitions, budget support results in transferring financial resources into the recipient's budget. Therefore, understanding the way aid recipient countries use these resources and how donors are successful in influencing government spending will inform the effectiveness of budget

support policy. The existing literature has not considered explicitly the extent to which budget support affects the efficiency of public service delivery.

This research will contribute to the research on the effectiveness of budget support, by assessing the relationship between budget support and public service delivery. It will build on Cordello and Dell 'Ariccia's theoretical framework that illustrates the possibility that foreign aid improves governance setting in recipient countries. It associates this theory with selected public administration theories to investigate the extent to which budget support will favor institutional quality through efficient public expenditures.

Chapter 3 will describe the research methodology. It will include the rationale for the use of time series cross-sectional design and the specification of the methods for the analysis of the relationships between budget support and public expenditure efficiency for WAEMU countries. There will also be a description of the sample population, procedures, ethical considerations, measures, and an explanation of analysis methods.

Chapter 3: Research Method

Introduction

The purpose of the study was to examine the relationship between aid and institutional quality in recipient countries by focusing on budget support and government spending efficiency. Governance and institutions in aid recipients' nations determine aid effectiveness (Burnside & Dollar, 2000). Good governments consider efficient public service delivery that indicates improved allocations of general revenues for increased public policy outcomes (Hyman, 2013). According to Bourguignon and Platteau (2015), donors could combine need and public governance quality in aid recipient countries in their aid allocation objective function with the endogenization of disciplinary measures imposed on aid recipients to improve aid outcomes. In practice, this may require identifying and using the appropriate aid modality to influence governance settings in poor recipient countries. Donors have increasingly been using budget support to affect governance setting in aid recipient countries. The study will explore the extent to which budget support is an aid modality improves public service delivery efficiency in WAEMU countries which have benefited from increasing aid through budget support since 1990.

This chapter discusses the nature of the study and contains a description of the research design and methodology. It includes an overview of the rationale for the selection of the research design, population, type of data, and data procedure. Chapter 3 also includes a description of variables and measurement procedures, an explanation of analysis methods, and ethical considerations.

Research Design and Approach

The proposed quasiexperimental design for the study is a Time Series Cross-Sectional (TSCS) design. This design was used to examine the relationship between budget support and public governance quality across WAEMU countries and over 1995-2015 in two steps. The first step was estimation of the dependent variable which is public governance quality for selected WAEMU countries over 1995-2015. According to Agenor and Yilmaz (2013), government spending efficiency (GSE) can serve as a measure of public governance quality. By using SFA procedure I estimated GSE coefficients for each country over 1995-2015 by means of a panel model in which the outcome indicator (HDI) was regressed against total public expenditures. During the second step, panel regressions involving fixed-effects and random-effects models were used to test the research hypotheses. In these regressions, the estimated GSE coefficients were related to budget support variables and covariates including macroeconomic stability, corruption index and development level to examine the relationship between public governance quality and budget support.

Frankfort-Nachmias and Nachmias (2007) explained that TSCS designs could constitute a good alternative to experimental designs, especially when it is difficult to define control groups. The cross-sectional dimension of TSCS designs was used to assess differences in terms of performances of countries with regards to budget support policy, irrespective of time. The chronological dimension allowed to describe the specificities or idiosyncrasies of countries in terms of GSE and budget support over time. The two dimensions of TSCS allows accounting simultaneously for both within-countries

dynamics over time and inter-countries heterogeneity, which is not possible with only time series or cross-section data. TSCS also make it possible to consider the influence of unobservable individual country's characteristics on governments' behaviors.

It was not possible to use experimental designs, for two main reasons. First, the study will cover countries that have already benefited from budget support, and, therefore, it is not possible to randomly assign nations between experimental and control groups randomly. Second, a donor's decision to deliver ODA through budget support is induced by deliberate policy motives and political agreements between the donor and the budget support recipient. Therefore, it is not appropriate to assume that donors discriminate between beneficiaries and nonbeneficiaries of budget support randomly or that they randomly select years where they use budget support to deliver aid.

Population and Procedure

Population

WAEMU governments that benefit from budget support between 1995 and 2015 will constitute the population of the study. The WAEMU is a currency area of eight West African countries: Benin, Burkina Faso, Cote d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo. There is a joint central bank known as Banque Centrale des Etats de l'Afrique de l'Ouest (BCEAO), which sets standard monetary policy. There is a WAEMU commission that ensures the implementation of the pact of convergence, stability, growth, and solidarity which is a political and economic agreement between member states. This agreement has implications for governments' expenditure policies within the union as it constitutes a commitment by member states to abide by specific

macrofiscal criteria, especially in terms of public finance, inflation, public debt, and balance of payment. These requirements mean that governments within the union should avoid t primary public deficit and should maintain inflation below 3%, and public debt should not surpass 70% of the GDP. Another fiscal criterion was requiring governments to maintain public payroll below 35% of tax revenues, which should not be less than 17% of GDP. Another rule requires WAEMU governments to spend not less than 20% of domestic revenues on public investments.

According to the World Bank (2016), WAEMU countries are low-income countries (LICs) with an average gross national income per capita of less than $1,025 (as of the end of 2015). The OECD (2014) stated that such countries are in the most need of foreign aid. WAEMU governments have therefore been benefiting from ODA consisting of grants and concessional loans between 1995 and 2015. However, differences in terms of the amount of aid they receive are supposed to be correlated with institutional quality. The World Bank, for instance, allocates its concessional resources based on its country policy and institutional assessment (CPIA) that results in institutional quality rating in LICs. The CPIA is a composite index of four clusters which are economic management, social inclusion, public sector management and structural policies. Each cluster is composed of various sub-components. Each component, as the resulting CPIA average score, is rated between 1 indicating the lowest performance and 6 indicating the highest performance. According to Carter (2016), the CPIA is meant to reward country's performance regarding the effective use of ODA. The best-performing WAEMU

countries are expected to benefit from more resources compared the lowest-performing countries.

Each WAEMU country was observed 21 times between 1995-2015 regarding each variable. The eight countries were thus observed 21 times meaning the maximum total number of observations is 168 (8 countries X 21 years). I expect a maximum of five predictors per regression to maintain an acceptable degree of freedom and statistical power.

Procedures

The study will use data from the World Bank world development indicator database, the OECD databank, the United Nations human development database, and the WAEMU central bank. The World Bank world development indicator database provides long series of comparable data between countries regarding total public expenditures and allocations to various economic and social sectors. The Human Development database is the repository for the HDI and associated indicators, especially selected health and education outcomes including life expectancy, maternal mortality rates, and primary school attendance. The OECD computes statistical data regarding ODA, including total ODA flows per recipient and donors, ODA modality used by donors, ODA per sector. The WAEMU Central Bank databank includes information on governmental financial operations including the structure of revenues and expenditures. It also includes data regarding budget support and total aid amounts WAEMU countries have benefited from.

All these databases are free to access online. The World Bank and United Nations databases do not require subscriptions to download their data, which is available in

various formats, including Excel. The OECD database requires a private subscription to download data. These three databases incorporate appropriate metadata that provides necessary information to assess the quality and reliability of available data. Also, the OECD and World Bank have put in place online libraries where one can access various qualitative information on ODA, budget support and other variables freely.

Measurement

The Dependent Variable: GSE

Government spending efficiency (GSE) is the dependent variable and is at ratio level. Its measurement will consist of the estimation of efficiency coefficients for the eight countries for each year. The GSE coefficient indicates the extent to which governments maximize the available resources to achieve its policy targets. Its estimation requires relating policy inputs to policy outcome and derives the efficiency ratio.

The policy outcome: HDI. Giving that WAEMU countries are mainly LICs, the targeted objective of WAEMU governments is to promote development. This policy outcome reflects the engagement of the international community including WAEMU countries to the Monterrey declaration on MDGs in 2000. The MDGs consisted of eight development outcomes that WAEMU governments committed to achieve between 1990 and 2015 regarding extreme poverty, education, gender, child and maternal health, and environment. An appropriate policy outcome would thus be a synthetic index that summarizes these key dimensions that represent the primary objectives of public policy over the indicated period in the WAEMU states. However, the lack of continued MDG data for all countries limits the possibility of constructing this index.

Another well-established measure of the level of development is HDI UNDP publishes each year for most countries in the world. HDI is in line with Sen's indication that development should go beyond improving the wealth of the economy in which individuals live to integrate human wealth (UNDP, 1990). The calculation of HDI integrates three dimensions: standard of living, education, and health. A sub-index is calculated for each dimension based on defined variables. The gross national income is used to calculate the sub-index for the standard of living dimension. The expected and mean years of schooling are used to calculate the sub-index for the education dimension. Life expectancy at birth measures the health dimension and is used to calculate the sub-index for health. HDI is the geometric mean of the three sub-indexes calculated for the three dimensions. To ensure comparisons between countries and classification, HDI integrates an aspect that relates to each of the three dimensions (standard of living, education, and health), the level a country achieves to the highest level in a given year. As conceptualized and firstly released in 1990 by the UNDP, the mathematical equation for the calculation of a sub-index is the following: For a dimension D which maybe standard of living or education or health, the Sub-Index (SI) is calculated for the country (i) at a year (t) as follow:

$$SI_{it} = \frac{D_{it} - d_t}{D_t - d_t} \qquad (1)$$

Dit is the value taken by the variable measuring the dimension D for the country (i) at a year (t). For instance, Dit could be the value of GNI for Benin in 2005 or the value of life expectancy at birth for Senegal in 1998. Dt and dt are respectively the highest and lowest values of the variable measuring the dimension D at the year (t).

This calculation can under or overestimate the self-dynamics in delivering policy outcomes in countries. The resulting government efficiency can thus hide the actual efficiency dynamics in countries. Following improvement on the measurement of human development, a modification of the index was performed by removing the yearly relative dimension. In the following equation, the self-dynamics at country level is captured by using the maximum (D) and minimum (d) values for all countries for the whole period reviewed:

$$SI_{it} = \frac{D_{it} - d}{D - d} \qquad (2)$$

The resulting policy outcome index provides scores for each country and each year. By relating this policy outcome composite index to government expenditure, it is possible to estimate efficiency coefficients.

The policy input variables. *Government total expenditure* (GTE) is the primary explanatory variable to estimate the efficiency coefficient. It comprises all spending a government disburses during a year except the debt service amount. The latter does not benefit directly to a development sector such as health or education but consists of payments of amortizations of loans the government contracts. Since the government would have used the debt amount for public service delivery, including their reimbursement in the total expenditure will count double for delivering public service and will introduce bias in the resulting government spending efficiency. For the estimation of the efficiency coefficient, the measurement of the total expenditure will be in the proportion of the gross domestic product (GDP).

The estimation of the efficiency coefficient will also include the following covariates: population size, population density, level of development and the overall education level in the country (Ivohasina & Razafimahefa, 2015). The population size is the number of inhabitants in each of the WAEMU countries each year. Population density is the number of inhabitants per square km in each state at a given time. A low population density regionally can affect the level of efficiency in delivering public services. For instance, the distance separating villages may require the government to establish more health care centers or classrooms to guarantee access to all individuals. The real gross domestic product per capita is a proxy of the level of development to account for technological progress that can introduce heterogeneity in countries and their efficiency performance. The level of education is the average schooling years in each state. A more educated population can hold the government accountable to their spending and thus oblige efficiency. Also, a more educated population is a proxy for the quality of human capital that public bureaucracy uses to produce development outcomes. The World Bank world development indicator database includes series of these indicators. Also, the United Nations Development Programme, on its human development index website, provides information on the average years of schooling and other social indicators for most countries in the world.

Procedure for measuring efficiency coefficients. The measurement of efficiency can be dated back to Farrell (1957). Farrell introduced the notion of technical and allocative efficiencies to distinguish two sub-optimal decisions a producer can make. Technical inefficiency corresponds to a situation whereby the producer uses an excessive

amount of input to reach a given level of production. In other words, the same quantity of output could have been obtained by spending much less in factors of production. Allocative inefficiency corresponds to a sub-optimal combination of factors given their price and marginal productivities.

This study focuses on technical efficiency. The government uses its available resources to produce public goods or deliver public services such as in the health and education sectors. By assimilating this governmental function to a private producer, the way in which the government spends its revenues to generate human development (HDI) is analyzed regarding efficiency.

There are two main methodologies in the literature one can use to calculate efficiency: non-parametric and parametric methods (Ivohasina & Razafimahefa, 2015). The data envelopment analysis (DEA) is the non-parametric method researchers use intensively in the literature to determine the optimum point at which the maximum output is obtained, given the inputs available. It is appropriate in a context of data limitation, constraining to the use of cross-sectional dataset. With the view to make the best use of the longitudinal data available for the WAEMU countries, this study will rather rely on the parametric-based Stochastic Frontier Analysis (SFA), which consists of estimating a production function by assuming that there is an ideal HDI no government can exceed. Governments who deliver at or close to this ideal level are efficient whereas the deviation in a country's HDI from the ideal HDI is the measure of the efficiency of this government. The model used in the present study is based on the assumption that the state, which is assimilated to a producer, may be mistaken in the allocation of resources

available for the production of public goods and services to improve human development. This model was inspired by the existing works of efficient stochastic frontier estimations, notably those of Aigner, Lovell, Schmidt (1977), Meeusen and Van Den Broeck (1977), Kumbhakar (1987) and Greene (2005). The government production function can be written as follows:

$$Q = f(x, \beta)e^{u} \quad u \leq 0 \qquad (3)$$

With Q, the production, f, the technology function, x, the vector of inputs, β the parameters of the production function to be estimated, and u, the coefficient of technical inefficiency. The negative values of u correspond to production levels below the maximum possible.

In log-linear, Government's production, which is the delivery of HDI, is as follows:

$$lnQ = \ln f(x, \beta) + u + v \qquad (4)$$

Where: Q is production, x are the input factors, β the parameters, v is random error/statistical noise and u is inefficiency.

The behavior of the State is assimilated to that of a rational producer who minimizes its costs according to the following program:

$$min \sum wxe^{u} \; sc \; Q = f(x, \beta)e^{u} \qquad (5)$$

w: the price of the inputs vector

The output of the state in each sector is estimated using panel data methodology, following the nonlinear and iterative Seemingly Unrelated Regression (SUR) procedure. The eight WAEMU countries will constitute the individual dimension of the panel. The

technical inefficiency coefficients or the distance separating the State HDI from the optimal HDI are obtained from the fixed or random effects resulting from the estimation on panel data. The production function to be estimated is therefore written as follows:

$$lnQ_i = \ln f(x_i, \beta) + u_i + v_i \qquad (6)$$

i represents the individual country.

Following Ivohasina and Razafimahefa (2015), and given the use of long panel data, the efficiency will be time-varying in such a way that: $u_{it} = g(t).u_i$ and $g(t) = e^{-\lambda(t-T_i)}$. It is possible with this approach to consider variables other than government expenditures. Structural factors in addition to public expenditure, such as socio-economic characteristics of the country, can also affect the efficiency of public service delivery in each State.

The measurement of efficiency coefficients will rely on two different estimations to check the robustness of the estimates. The first two estimates will follow two measurement methods Battese and Coelli (1988) and Jondrow, Lovell, Materov, and Schmidt, (1982) suggested. A third estimate may consist of considering heterogeneity and heteroscedasticity in the estimates. A high correlation between these estimates will provide me with a significant level of confidence in robust efficiency coefficient estimates.

The Independent Variable: Budget Support

Budget support policy is the key independent variable for the study. Various measures serve to specify the budget support policy regarding the hypotheses to be tested. The first indicator is the total amount of budget support (GTB). It represents the amount

of foreign aid a country receives through the budget support modality. Based on the WAEMU central bank data, this amount exists in CFA, the common currency of the union. The second measure is the proportion of budget support (GPB). It is the ratio between the amount a country receives through budget support and the total aid that goes into the state. This variable is to reflect the contribution of budget support to the aid-led relationship between the WAEMU counties as aid receivers and the aid providers. The third measure is the proportion of total government spending that budget support represents (GBS). It consists of dividing the amount of budget support in CFA by the total government revenue in CFA. A contribution of budget support to improve Government spending efficacy should reflect a positive correlation between GPB and efficiency coefficient on the one side, and between GBS and efficiency, on the other side.

Also, a category level variable (BSP) will distinguish a year a country benefits from budget support from a year it does not. This dichotomy indicator consists of a transformation of the panel dataset of countries and years into a cross-sectional database where only the benefice or not of budget support matters, irrespective of the state that benefits from this assistance and the year it benefits. Indeed, the TSCS involves multiple data sets. One is panel data set (country x time) and another is cross-sectional data set. The panel data set considers for each year, the situation of each country regarding benefiting or not budget support over 1995-2015. The cross-section data set does not differentiate country and year one by one. It rather considers binomial data points (1 or 0) that reflect the benefice or not of budget by any country over 1995-2015.

The Covariates

Based on existing studies such as Adam, Delis, and Kammas (2014) and Ivohasina and Razafimahefa (2015), control variables that may influence public service efficiency are level of democracy, level of corruption and macroeconomic stability. A measure of level of democracy is the high-level index which the Varieties of Democracy Institute has recently computed (Mechkova and Sigman, 2016). This indicator captures the multidimensional nature of democracy by considering seven high-level principles of democracy including electoral, liberal, participatory, deliberative, egalitarian, majoritarian and consensual. While it seems difficult to establish a robust relationship between democratic governance and development, one may expect enhanced social accountability requirement in a democratic setting. Therefore, governments in advanced democratic settings could be more accountable to efficient public service delivery. However, since other democratic values such as equity or equality may force states to a trade-off, it is not clear how the level of democracy can affect the relationship between budget support and efficient public service delivery.

There is a measure of corruption that International Transparency-an international non-governmental organization-computes yearly since 1995. Corruption Perception Index (CPI) is a composite index from the opinions by various stakeholders such as businesspeoples and country experts (Transparency International, 2016). The index ranges from zero, meaning the worst situation, to 100, the less corrupted state. A high level of corruption would indicate a high propensity of government officers to embezzle

public resources. This embezzlement would result in inefficient public service delivery as the actual unit cost would be high for a given outcome level.

A proxy of macroeconomic stability is the variability in the consumer price index (Skorobogatova, 2016). An unstable macroeconomic framework can negatively affect government's decisions regarding technical efficiency. This imprecision in decision making could result in an overutilization of inputs (resources) through inappropriate discretionary choices or artificial increases in unit costs which could generate efficiency losses. It is also well established in the literature that macroeconomic instability can be detrimental to economic growth (Skorobogatova, 2016). Since this later is a component of human development, one could expect that the level of stability influences the relationship between budget support and efficient public service delivery measured by the human development index efficiency coefficient.

Data Analysis

The analysis will be in line with the time series cross-sectional design using panel regressions. The secondary data collected from various sources will be organized in a single Excel file. For each variable, a table recording country (line) and year (column) will be developed. This data treatment will allow deriving descriptive statistics to show mean and standard deviation. Trends in the evolution of key variables (budget support and human development index) will help analyze stylized facts that may be considered in conducting regressions and discussions.

STATA 15 will serve for various panel regressions including the estimation of efficiency coefficients. The first research question is Research Question #1. To what

extent does the use of budget support in WAEMU countries measured by a dummy variable of 1 (the country benefits budget support) or 0 (the country does not benefit) predict the quality of their public governance, measured by their public expenditure efficiency over time? This question is to investigate the extent to which efficiency coefficients vary about the benefice of budget support or not. The related null hypothesis is the following: H_01: There is no relationship between the use of budget support in WAEMU countries over time and the quality of public governance, measured by the efficiency of public expenditures. The alternative hypothesis is H_a1: There is a positive relationship between the use of budget support in WAEMU countries over time and the quality of public governance, measured by the efficiency of public expenditures. I expect a positive correlation between the number of times a country benefits from budget support and the quality of its public service delivery measured by the efficiency of public expenditures in WAEMU countries. This hypothesis will be tested by relating the category variable of budget support (BSP) that describes the benefice or not of budget support to the efficiency coefficients. A country benefits budget support (dummy is 1) when the county's budget indicates received ODA through budget support aid modality in the considered year. When there is no ODA indicated in the country's budget for the given year, the country is considered to not be engaged in budget support with aid providers (dummy is 0). The significance (or not) of the dummy will indicate whether there is a significant difference between the mean efficiency coefficient both in times and between countries. When this factor is significant, its sign will show the nature of the relationship between budget support and the use of budget support aid modality.

The second research question is: To what extent does the amount of development aid WAEMU countries receive over time through budget support predicts the quality of public governance, measured by the efficiency of public expenditures? The second null hypothesis is $H_0 2$: There is no relationship between the absolute amount of budget support WAEMU governments receive and the quality of their public service delivery, measured by the efficiency of public expenditures over time. The second alternative hypothesis is $H_a 2$: There is a relationship between the absolute amount of budget support WAEMU governments receive and the quality of their public service delivery, measured by the efficiency of public expenditures over time. I expect there is no significant relationship between the absolute amount of budget support a government received and its spending efficiency for WAEMU countries. The hypothesis is tested by regressing GSE coefficients for the eight WAEMU countries against budget support amount for the eight countries over 1995-2015.

The third research question is: To what extent does the proportion of budget support amount in total aid in WAEMU countries predicts the quality of public governance, measured by the efficiency of public expenditures? The third null hypothesis is $H_0 3$: there is no relationship over time between the proportion of budget support amount in total aid in WAEMU countries and the quality of their public service delivery, measured by the efficiency of public expenditures. The third alternative hypothesis is $H_a 3$: There is a relationship over time between the proportion of budget support amount in total aid in WAEMU countries and the quality of their public service delivery, measured by the efficiency of public expenditures. I expect there is a positive relationship

between the proportion of budget support in total aid and public budget efficiency for WAEMU countries. This hypothesis is tested by regressing GSE coefficients for the eight WAEMU countries against the ratio budget support to total aid received.

The fourth research question is: To what extent does the share of budget support amount in total government revenue in WAEMU countries predicts the quality of public governance, measured by the efficiency of public expenditures? The fourth null hypothesis is $H_0$4: There is no relationship over time between the share of budget support amount in total government revenue in WAEMU countries and the quality of their public service delivery, measured by the efficiency of public expenditures. The fourth alternative hypothesis is H_a4: There is a relationship over time between the share of budget support amount in total government revenue in WAEMU countries and the quality of their public service delivery, measured by the efficiency of public expenditures. I expect there is a positive relationship between the share of budget support amount in total government revenue and public expenditure efficiency in WAEMU countries. This hypothesis is tested by regressing GSE coefficients for the eight WAEMU countries against the ratio of budget support to total government revenues.

The fifth research question is: To what extent does the initial level of institutional quality affect the prediction of the quality of public governance by the amount of budget support in WAEMU countries over time? The associated null is $H_0$5: The initial level of governance does not affect the relationship between the amount of budget support and the efficiency of public expenditure for WAEMU countries over time. The alternative hypothesis is H_a5: The initial level of governance affects the relationship between the

amount of budget support and the efficiency of public expenditure for WAEMU countries over time. I expect that the initial level of governance moderates the relationship between budget support variables and the efficiency of public expenditure for WAEMU countries. To test this hypothesis, the same four panel regressors of the first four research questions will be re-estimated with the introduction of the GSE coefficient lag to test the influence of the initial level of governance. Also, for validity check, the lagged GSE coefficient will be replaced by the Government Effectiveness Index computed by the World Bank.

The sixth research question is: To what extent does the political context affect the prediction of the quality of public governance, measured by the efficiency of public expenditures, by budget support in WAEMU countries over time? The related null hypothesis is $H_0$6: The political context measured by the level of democratization does not affect the relationship between budget support and public expenditure efficiency in WAEMU countries. The alternative hypothesis is H_a6: The political context measured by the level of democratization affect the relationship between budget support and public expenditure efficiency in WAEMU countries. I expect that the political context measured by the level of democratization significantly influences the relationship between budget support and public expenditure efficiency in WAEMU countries. To test this hypothesis, panel regressor is estimated by introducing democracy index in previous panel regressions of the first four research questions. An interaction variable of democracy index budget support variables was also introduced in panel regressions in addition to the democracy index. For validity check, democracy index will be replaced by political stability index using the same panel regressions.

Threats to Validity

As O'Sullivan, Rassel and Berner (2008) advised, I will conduct an assessment of secondary data regarding coding, measurement, and reliability. The consultation of the available metadata to the data collected online will inform selection and adequate data treatments. By using triangulation, the data source that minimizes bias in data will be chosen. Despite the traditional definition of development aid, organizations tend to tailor definitions and conceptualizations based on their aid practices. This adaptation may affect the comparability of data computed and made available by aid providers. The comparison of data donors made available with the aid data available at country levels will be undertaken to analyze potential bias regarding data aid data comparability. The WAEMU Central Bank calculates and treats national public budget data which also include aid and budget support data. As the unique central bank for the 8 countries, BCEAO produced comparable public budget data using a unique methodology to adjust country data.

To test the validity of results, I will use various panel regressors. As already underlined for the GSE coefficient estimates, two different measures will be used. For the analysis of the relationship between budget support and public service efficiency, the fixed effect model is appropriate. This model assumes homogeneity of the coefficients. Constants as the only sources of heterogeneity are deterministic (i.e., non-random) and differ according to countries and years. However, to test the validity of findings, the random-effects model will be considered as the alternative panel model. Fixed effects models may be biased due to failure to control individual effects. Studying individual

effects, where they exist, improves the accuracy of the estimates and ensures a correct evaluation of the variance of the estimated coefficients.

To ensure the validity of panel data regressors, I will examine the homogeneous or heterogeneous specification of the data generating process. Econometrically, this is equivalent to testing differences in country coefficients of the explanatory variables. Economically, the model specification tests allow assume that the theoretical model studied is perfectly identical for all countries, or that there are idiosyncrasies to each country. These procedures will test whether a fixed-effect versus a random-effects model has a better fit to the data.

The first test to be conducted is Fisher's test or Likelihood Ratio Test which is to test the hypotheses H_0: Absence of fixed effects versus H_a: Presence of fixed effects following the estimation of the fixed effects model. The test results in the Fischer statistic and supports the hypothesis H_0 of the presence of fixed effects when the statistic is greater than the critical value read on the Fisher table.

The second test is that of Breusch and Pagan (1979) used to test the hypotheses H_0: Absence of random effects versus H_a: Presence of random effects after estimating the random effect model. The Breusch and Pagan statistic is computed. The test supports the presence of random effects if the probability of the Breusch-Pagan statistic is below the critical threshold (5% or .05).

The analysis of the model specification is concluded by the Hausman (1978)'s test. It consists of discriminating between fixed effects and random effects and thus decide on the appropriate model to use for the analysis. This test is based on the following

hypotheses: H_o: Presence of random effects (model with random effects) versus H_a. The test supports the presence of fixed effects (model with fixed effects) if the probability of the statistic (Prob> chi2) is below the critical threshold (5%). In this case, the fixed effects model is appropriate to conduct the analysis.

Ethical Considerations

There are limited ethical issues and risks for this study, because of the following reasons. The study does not cover or interact with living persons. The population of the research will consist of states and aggregated data at country level. Since secondary data are publicly available there is minimal risk of collecting and divulging personal or country data without consent. Likewise, there will be no physical engagement with government officials that may cause unwanted intrusion, disturbance, abuse, unpleasantness, or generate risks on their careers. Furthermore, since data are freely accessible online, the issue of confidentiality in terms of whether a state wants to disseminate data or not is also mitigated, because the concerned data are already made available with states' consent. Finally, although I am working for a development agency, this agency is not engaged in budget support. Therefore, ethical issues and risks related to researchers working in their organization are minimal. My professional setting has no direct implication on analyses and discussions although I am working on development assistance.

Summary

The study will use time series cross-sectional design to assess the relationship between public service delivery efficiency and budget support in the WAEMU countries.

Panel data will be constituted with eight WAEMU countries over 1995-2015. The dependent variable will be measured by GSE coefficients that will result from an SFA with a regression of HDI over total public expenditures and other covariates such as population size, population density, and level of development. The estimated GSE coefficients will be further related to different budget support variables and covariates to test null and alternative hypotheses that underlie the six research questions. The selected software to run panel regressions is STATA. There will also be robustness tests with the use of alternative variables and models. The study will use secondary data that are openly accessible through various databases, without prior permission. There are therefore no fundamental ethical issues.

Chapter 4: Results

Introduction

The purpose of the current study was to quantitatively examine whether there is a relationship between budget support as an aid modality and public spending efficiency in WAEMU countries. The assessment consists of testing six directional and exploratory research questions using a TSCS for the eight WAEMU countries which have benefited from budget support between 1995 and 2015. This chapter provides a description of the variables in this study and summarizes the results of analyses.

Selected Descriptive Statistics of Variables

The two tables below define and describe the variables used for the analyses in this study. Table 1 includes a list of variables, their definitions, and sources of data related to each of the variables. Selected descriptive statistics including mean, P50, minimum, maximum and variance appear in Table 2.

Table 1

Labelling Variables and Sources of Data

Label	***Variables***	**Sources**
HDI	Human Development Index	UNDP-HDI website
GOV_REV	Total Government Revenues	WAEMU Central Bank
GOV_DEP	Total public expenditures	WAEMU Central Bank
GOV_INT	Debt service	WAEMU Central Bank
GOV_NET	Total expenditures except debt services	WAEMU Central Bank
ODA_TOT	Total ODA	WAEMU Central Bank
BSP	Total Budget Support	WAEMU Central Bank
BSP DUM	Dummy Budget support	Calculation by the Author
GDP	Gross Domestic Product	WAEMU Central Bank
GOV_gdp	Ratio of total expenditures to GDP	Calculation by the Author

(table continues)

GOV_net_gdp	Ratio of expenditure except debt service to GDP	Calculation by the Author
BSP_gdp	Ratio of budget support to GDP	Calculation by the Author
BSP_rev	Ratio of Budget support to Revenue	Calculation by the Author
BSP_oda	Ratio of Budget support to ODA	Calculation by the Author
POL1	Democracy index	Varieties of Democracy (V-Dem)
MACRO_S	Macroeconomic stability (CPI)	WAEMU Central Bank
POP_S	Population size	UN Population Division
POP_D	Population density	UN Population Division
EDUC2	Expected years of schooling	UNDP-HDI website
EDUC	Mean school years	UNDP-HDI website
CORR	Corruption Perception index	Transparency International
POL2	Political stability index	Global Economy.com
GOV_EFF	Government effectiveness	Comstat

Table 2

Statistical Summary of the Data of the Eight WAEMU Countries

Variable	***Mean***	***P50***	***Sd***	***Variance***	***Min***	***Max***
hdi	.3817537	.3945	.0657405	.0043218	.226	.494
gov_rev	690.1086	462.15	667.9214	446119.1	9.638	3904.847
gov_dep	771.1043	519.75	750.2147	562822.1	30.3	4457.505
gov_int	54.86322	20.92712	78.26362	6125.194	.1	348.3
gov_net	716.2411	502.8139	698.5328	487948	22	4160
oda_tot	102.9134	72.56775	130.021	16905.46	3.5	1244.5
bsp	39.68528	14.6	110.5828	12228.56	0	1169
bspdum	.6875	1	.4648348	.2160714	0	1
gdp	3517.543	2452.745	3342.179	1.12e+07	118.329	19362.59
govgdp	.1961515	.1911492	.0430931	.001857	.0992596	.3529226
bspgdp	.0163505	.0067718	.041784	.0017459	0	.4210636
gov_net_gdp	.1961515	.1911492	.0430931	.001857	.0992596	.3529226
bspgov_rev	.0743217	.0359076	.1081504	.0116965	0	.7007331
bspoda_tot	.2647833	.2470309	.2366361	.0559966	0	1
pol	.3185972	.3324382	.0859002	.0073788	.1270253	.4736821
macro_s	94.75335	92.651	21.0855	444.5985	21.084	147.554
pop_s	10618.93	10619.84	5460.881	2.98e+07	1113.541	23108.47

(table continues)

pop_d	49.30335	49.14808	29.68105	880.965	7.223175	130.612
educ	2.460131	2.4	1.072892	1.151097	.8	4.8
educ2	6.790341	6.8	2.422294	5.867506	.4	12
corr	28.9619	29	5.822575	33.90238	17	44

Estimation of GSE Coefficients

The efficiency coefficients of public expenditure were estimated using SFA. The parameters of the stochastic frontier model and those of technical inefficiency are simultaneously estimated using the maximum likelihood method. These are the parameters of the variance of the likelihood function in terms of $\sigma^2 = \sigma_\mu^2 + \sigma_v^2$ and γ= σ_μ^2 / σ^2. These parameters are analyzed according to their sign and magnitude. The parameter γ is the most important in terms of the specification and validation of the stochastic frontier model. It measures the share of the contribution to the error due to technical inefficiency in the total variability of the output and thus orients the decision on the existence of the technical inefficiency.

Battese and Coelli (1988) used a time-invariant model in which any unobserved heterogeneity is constant over time and is considered as inefficiency. Battese and Coelli's concern was how to separate the two components which are static error and error representing technical inefficiency. The static error follows its standard distribution. The technical inefficiency error is assumed independent and distributed according to a normal-truncated conditional distribution to zero with mean μ_i and variance $\sigma_\mu^2(N(\mu_i, \sigma_\mu^2))$. According to Jondrow et al. (1982), the static error can follow either an exponential or semi-normal distribution.

The implementation of Bettese and Coelli and Jondrow et al's models consisted of regressing HDI variable labeled hdi over GTE except debt services labeled gov_net and controlling for covariates including gross domestic product (gdp), population size (pop_s), population density (pop_d) and macroeconomic stability (macro_s). The variables gdp, pop-s, and pop_d were not significant and were subsequently removed from the model. Table 3 and Table 4 include results of estimates of parameters of the stochastic frontier model and those of technical inefficiency for the two models.

Table 3

Parameters of Stochastic Frontier and Technical Inefficiency Using Jondrow et al's Model

Variable/parameter	B	z	P>IzI
Frontier			
Gov-net	.0000458	11.69	0.000
Macro_s	.0009766	9.03	0.000
sigma_u σ_μ	.0270666	10.00	0.000
sigma_v σ_v	.0072273	3.83	0.000

Note. Log likelihood = 469.8317; Prob > chi2= 0.000; Wald chi2 = 713.30

sigma_u σ_μ is the parameter for inefficiency and sigma_v σ_v is the parameter for error. From Table 3, gamma (γ) = σ_μ^2 / σ^2 = 93.34460298% is the contribution of inefficiency to total output variability.

Table 4

Parameters of Stochastic Frontier and Technical Inefficiency Using Bettese and Coelli's Model

Variable/parameter	B	z	P>IzI
Frontier			
Gov-net	.0000532	16.44	0.000
Macro_s	.0008997	11.56	0.000
sigma_u σ_μ	.6510519	0.75	0.454
sigma_v σ_v	.006315	4.89	0.000

Note. gamma (γ) = σ_μ^2 / σ^2 = 99.99059249% is contribution of inefficiency to total output variability.

Estimates show that a significant share of total output variability (HDI) is due to technical inefficiency in the eight WAEMU countries over the period 1995-2015. The contribution of inefficiency to total output variability labeled gamma (γ) is 93% for Jondrow et al's smodel and and 99% for Battese and Coelli's model. However, the technical inefficiency parameter is not statistically significant in the Bettese and Coelli's model. Since the two models generate statistically comparable results, the estimates from Jondrow et al's model. will underlie the remaining analyses as well as testing hypotheses.

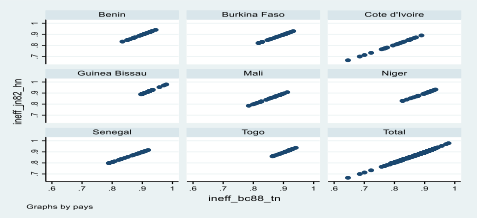

Figure 1. Graphic relationship between estimates from the two models per country.

The gamma (γ) value estimates an average efficiency of 12.5% and 87.5% of technical inefficiency based on Jondrow et al.'s model. In comparison, the average estimate efficiency was 12.3% against 87.7 inefficiencies with Battese and Coelli's model. The efficiency coefficient varies between 2.2% and 33.3% for Jondrow et al. and between 2.1% and 35.4% for the Battese and Coelli model. The composite nature of the dependent variable can partly explain the high levels of technical inefficiency. As a result, this variable tends to aggregate the inefficiencies associated with each of its three main components: gross domestic product, education, and health.

Table 5

Descriptive Statistics of Efficiency Coefficients for Each Country Using the Two Models

Country	Variable	mean	p50	variance	sd	min	max
Bénin							
	eff_jn82_hn	.1080005	.1026727	.0298953	.0008937	.0594554	.1655579
	eff_bc88_tn	.1048035	.0992227	.0306892	.0009418	.056013	.1659587
Burkina-Faso							
	eff_jn82_hn	.119567	.1106343	.0342602	.0011738	.0708788	.1790362
	eff_bc88_tn	.1182697	.1084087	.0365507	.001336	.0676454	.1828544

(table continues)

Cote d'Ivoire							
	eff_jn82_hn	.1958093	.1812254	.0603498	.0036421	.1100449	.3344572
	eff_bc88_tn	.2004652	.1836504	.0653243	.0042673	.1104342	.3541899
Guinea Bissau							
	eff_jn82_hn	.0834685	.0849391	.0243475	.0005928	.0220481	.1113187
	eff_bc88_tn	.0775948	.0788027	.0226835	.0005145	.0206643	.1039918
Mali							
	eff_jn82_hn	.1464735	.136689	.0352777	.0012445	.0920885	.21416
	eff_bc88_tn	.1431185	.1331385	.0368051	.0013546	.0875079	.2149935
Niger							
	eff_jn82_hn	.1094819	.0994483	.0314354	.0009882	.067772	.1707291
	eff_bc88_tn	.1063783	.09524	.0334808	.001121	.0640445	.1732352
Sénégal							
	eff_jn82_hn	.1393228	.1302793	.0398682	.0015895	.0835202	.2026351
	eff_bc88_tn	.1409723	.1311604	.0438289	.001921	.0807232	.2112545
Togo							
	eff_jn82_hn	.1003507	.0924467	.0234055	.0005478	.0632222	.1408346
	eff_bc88_tn	.095378	.0871374	.0233787	.0005466	.0594156	.1363958
Average	eff_jn82_hn	.1253093	.1137091	.0485614	.0023582	.0220481	.3344572
	eff_bc88_tn	.1233725	.110612	.0521568	.0027203	.0206643	.3541899

RQ1: Relationship between GSE and Budget Support

The first research question was about whether there is a positive relationship between the use of budget support in WAEMU countries over time and the quality of public governance, measured by the efficiency of public expenditures. The regression of the GSE coefficients of the eight countries over the dummy variable of benefiting or not budget support during the study period is significant for both the fixed-effect model $F(3, 94) = 251.77$, $p < .000$ and random-effects model Wald $chi2(3) = 775.315$, $p < 0.000$. Tables 6 and 7 present the results of the estimates. The likelihood ratio test (Fisher test) revealed the presence of fixed-effects, $F(7, 94) = 57.77$, $p < .0000$. The Breusch-Pagan Lagrange multiplier test purported the existence of random effects, $chibar2(01) = 444.21$, $p < .0000$. The Hausmann's specification test confirmed the presence of random effects,

chi2(3) = 0.50, p = .9193. The random-effects model is thus appropriate to test the relationship between the benefice or not of budget support by WAEMU countries and their public expenditure efficiency.

Table 6

Fixed-effects Regression Analysis Predicting Public Spending Efficiency from Budget Support with Covariates

Variable	*B*	SE	t	p
Budget support dummy	.0171	.0051	3.34	.001
Macroeconomic stability	.0023	.000	19.81	.000
Corruption	.0012	.000	3.87	.000

Note. F (3,94) = 251.77, p < .0000, R^2 = .6756

Table 7

Random Effects Regression Analysis Predicting Public Spending Efficiency from Budget Support with Covariates

Variable	*B*	SE	z	p
Budget support dummy	.0165	.00497	3.32	.001
Macroeconomic stability	.0023	.0001	20.38	.000
Corruption	.0012	.0003	4.04	.000

Note. Wald chi2 (3) = 775.15, p < .0000, R^2 = .6756

The random effects model provides the best estimates as it informs on the independence of the specific effects with the explanatory variables. It also indicates that technical efficiency incorporates significant idiosyncrasies across countries. This model

is the most suitable for explaining technical efficiency by the budget support dummy variable as well as the covariates of macroeconomic stability and level of corruption.

In the random-effects regression, budget support dummy, $\beta = .0165$, $z = 3.32$, $p < .0001$ was significant. The Beta coefficient (.0165) indicates that there is a positive relationship between the efficiency of government spending and the benefit dummy of budget support. Countries that benefited budget support in a year also experienced a positive change in public expenditure efficiency. Macroeconomic stability $\beta = -.0023$, $z = 20.38$, $p < .0000$ and the level of corruption, $\beta = -.0012$, $z = 4.04$, $p < .0000$ were also significant. They positively predict public expenditure efficiency. Countries with a high level of inflation (high instability) or corruption tend to react positively to the improvement of government efficiency with the benefice of budget support. These findings supported the hypothesis that there is a positive relationship between the use of budget support in WAEMU countries over time and the quality of public governance, measured by the efficiency of public expenditures.

RQ2: Relationship between GSE and Budget Support Amount

RQ2 was about whether there is a significant relationship between the absolute amount of budget support WAEMU governments receive and the quality of their public service delivery, measured by the efficiency of public expenditures over time. The test of the expected directional hypothesis consisted of regressing the GSE coefficients over the ratio of budget support amount the recipient country benefited.

Tables 8 and 9 show results of fixed-effect and random-effect regression tests. Budget support amount was not significant in either of the fixed effect ($\beta = 0.000$, $p <$

.000) and random effect (β = .00305, z = 1.27, p = .206) models. The likelihood ratio test (Fisher test) revealed the presence of fixed-effects, F (7, 94) = 51.11, p< .0000. The Breusch-Pagan Lagrange multiplier test indicated the existence of random effects, chibar2(01) = 445.28, p <.0000. The Hausmann's specification test confirmed the presence of random effects, chi2(3) = 0.54, p = .91. The random-effects model provided the best estimates and was the most suitable for explaining technical efficiency by the budget support amount as well as the covariates of macroeconomic stability and level of corruption. The budget support amount did not predict government spending efficiency. These results supported the hypothesis that there is no relationship between the absolute amount of budget support WAEMU governments receive and the quality of their public service delivery, measured by the efficiency of public expenditures over time.

Table 8

Fixed-Effects Regression Analysis Predicting Public Spending Efficiency from Budget Support Amount with Covariates

Variable	β	SE	t	p
Budget support amount	0.000	0.000	1.00	.000
Macroeconomic stability	31.000	24.000	291.0	200.00
Corruption	0.000	0.000	3.00	.000

Table 9

Random Effects Regression Analysis Predicting Public Spending Efficiency from Budget Support with Covariates

Variable	β	SE	z	p
Budget support amount	.0305	.0241	1.27	.206
Macroeconomic stability	.0024	.0001	22.19	.000
Corruption	.0013	.00003	4.03	.000

RQ3: Relationship between GSE and Proportion of Budget Support Amount in Total Aid

If the absolute amount of budget support did not predict public expenditure efficiency, its weight in total aid a country receives could be a possible determinant. RQ3 was about whether there was a positive relationship over time between the proportion of budget support amount in total aid in WAEMU countries and the quality of their public service delivery, measured by the efficiency of public expenditures. The test of the expected directional hypothesis associated to RQ3 consisted of regressing the efficiency coefficients over the proportion of the budget support amount in total ODA of the recipient country. Tables 10 and 11 show the results of the regressions.

The regression results are significant for both the fixed-effect model $F(3, 94) = 250.52$, $p < .000$ and random-effects model Wald $chi2(3) = 766.41$, $p < 0.000$. The likelihood ratio test (Fisher test) revealed the presence of fixed-effects, $F(7, 94) = 55.80$, $p < .0000$. The Breusch-Pagan Lagrange multiplier test indicated the existence of random

effects, chibar2(01) = 374.27, p <.0000. The Hausmann's specification test confirmed the presence of fixed effects, chi2(3) = .88, p = .8298.

The fixed-effects model provided the best estimates and was the most suitable for explaining technical efficiency by the proportion of budget support amount in total aid variable as well as the covariates of macroeconomic stability and level of corruption. Budget support as share of total aid, β = .0228, t = 3.27, p = .002 was significant. The Beta coefficient (.0228) indicates that there is a positive relationship between the efficiency of government spending and the proportion of budget support in total aid. The higher the volume of budget support a government receives in the proportion of total aid, the higher its spending efficiency. The effect is higher than in the case of budget support dummy (benefiting or not budget support irrelevance to the amount). The covariates factors macroeconomic stability β = - .0023, t = 20.42, p < .0000 and the level of corruption, β = - .0014, t = 4.37, p < .0000 were also significant. These results suggest that budget support, contingent to its share in total aid, can generate efficiency gains. The results supported the hypothesis that there is a relationship over time between the proportion of budget support amount in total aid in WAEMU countries and the quality of their public service delivery, measured by the efficiency of public expenditures.

Table 10

Fixed-Effects Regression Analysis Predicting Public Spending Efficiency from Share of Budget Support in Total Aid with Covariates

Variable	β	SE	t	p

Share of Budget support in total aid	.0228	.00698	3.27	.002
Macroeconomic stability	.0023	.0001	20.42	.000
Corruption	.0014	.00003	4.37	.000

Note. F (3,94) = 250.52, p < .0000, R^2 = .6737

Table 11

Random Effects Regression Analysis Predicting Public Spending Efficiency from Share of Budget Support in Total Aid with Covariates

Variable	β	SE	z	p
Share of Budget support in total government revenue	.02211	.00687	3.22	.001
Macroeconomic stability	.00233	.0001	20.82	.000
Corruption	.00145	.00003	4.56	.000

Note. Wald chi2 (3) = 766.41, p < .0000, R^2 = .6753

RQ4: Relationship between GSE and the Share of Budget Support Amount in Total Government Revenue

RQ4 was about whether there was positive relationship over time between the share of budget support amount in total government revenue in WAEMU countries and the quality of their public service delivery, measured by the efficiency of public expenditures. The test of the directional hypothesis associated to RQ4 consisted of regressing the efficiency coefficients over the proportion of budget support amount in

total public revenues of the recipient country. Tables 12 and 13 show the results of the regressions.

The regression results are significant for both the fixed-effect model F(3, 94) = 235.15, p <.000 and random-effects model Wald chi2(3) = 713.17, p< 0.000. The likelihood ratio test (Fisher test) revealed the presence of fixed-effects, F (7, 94) = 50.93, p< .0000. The Breusch-Pagan Lagrange multiplier test indicated the existence of random effects, chibar2(01) = 376.56, p <.0000. The Hausmann's specification test confirmed the presence of fixed effects, chi2(3) = 1.02, p = .7959.

The fixed-effects model provided the best estimates and was the most suitable for explaining technical efficiency by the proportion of budget support amount in total public revenues variable as well as the covariates of macroeconomic stability and level of corruption. Budget support as a share of total government revenue, β = .0276, t = 2.06, p = .0042 was significant, The Beta coefficient (.0276) indicates that there is a positive relationship between the efficiency of government spending and the proportion of budget support in total government revenue. The higher the volume of budget support a government receives compare to its total revenue, the higher its spending efficiency. Macroeconomic stability β = - .0024, t = 22.17, p < .0000 and the level of corruption, β = - .0013, z = 3.96, p < .0000 were also significant, suggesting the generation of efficiency gains as the proportion of budget support in total revenues increases. These results supported the hypothesis that there is a relationship over time between the share of budget support amount in total government revenue in WAEMU countries and the quality of their public service delivery, measured by the efficiency of public expenditures.

Table 12

Fixed-Effects Regression Analysis Predicting Public Spending Efficiency from Share of Budget Support in Total Revenue with Covariates

Variable	β	SE	t	p
Share of Budget support in total government revenue	.02762	.0134	2.06	.042
Macroeconomic stability	.0025	.0001	22.17	.000
Corruption level	.0013	.00003	3.96	.000

Note. F (3,94) = 233.15, p < .0000, R^2 = .6826

Table 13

Random Effects Regression Analysis Predicting Public Spending Efficiency from Share of Budget Support in Total Revenue with Covariates

Variable	β	SE	z	P
Share of Budget support in total government revenue	.02627	.0132	1.98	.048
Macroeconomic stability	.00247	.0001	22.48	.000
Corruption level	.00136	.00003	4.19	.000

Note. Wald chi2 (3) = 713.17, p < .0000, R^2 = .6848

RQ5: Influence of Initial Level of Governance on the Relationship between Budget Support and the Efficiency of Public Expenditure

RQ5 was about whether there was a relationship between the amount of budget support and the efficiency of public expenditure for WAEMU countries over time. The

test of the directional hypothesis associated to RQ5 consisted of introducing the lag of the efficiency coefficient variable in the previous regressions of public expenditure efficiency over budget support variables. The lagged efficiency coefficient is the efficiency coefficient a year before the current year. It measures the level of governance of a country before its engagement with budget support. The same regressions were run while replacing the lag of the efficiency coefficient by government effectiveness variable.

The results showed that for both fixed effect and random effect models, the lag of the efficiency coefficient was significant for all budget support variables, including the budget support amount variable, which was nonsignificant to predict changes in public expenditure efficiency. For example, $\beta = .8525$, $t = 14.22$, $p < .0000$ with the budget dummy variable and $\beta = .863$, $t = 14.91$, $p < .0000$ with the proportion of budget support in government revenue for the fixed effect model. In the regressions, the various budget support variables, including budget support dummy, the proportion of budget support in total revenue, and the proportion of budget support in total aid, were nonsignificant. These results suggested the possibility of a mediation role by the lag of the efficiency coefficient (initial level of governance quality) concerning budget support and efficiency coefficient (governance quality).

Table 14

Significance of Efficiency Coefficient Lag per Budget Support Variable Based on Fixed-Effect Regressions Results

	Efficiency Coefficient Lag

Budget Support Variable	*B*	t	p
Budget Support Dummy	.8526	14.22	.000
Budget Support Amount	.8713	15.08	.000
Share of Budget support in total government revenue	.8630	14.91	.000
Share of Budget support in total aid	.8444	14.57	.000

Table 15

Significance of Efficiency Coefficient Lag per Budget Support Variable Based on Random-Effect Regressions Results

	Efficiency Coefficient Lag		
Budget Support Variable	*B*	t	p
Budget Support Dummy	1.034	36.97	.000
Budget Support Amount	1.034	36.91	.000
Share of Budget support in total government revenue	1.033	36.90	.000
Share of Budget support in total aid	1.036	36.54	.000

Baron and Kenny (1987) suggested three steps in conducting a mediation test. The first step is to test the relationship between the dependent and independent variables. If this relationship is significant, the second test is to add the third variable that is suspected to potentially mediate the relationship between the dependent and independent variable. If this third variable is significant while the independent becomes

nonsignificant, the third step is to test the relationship between the third variable and the independent variable. If this relationship is significant, then third variable is a mediator of the relationship between the independent and dependent variable.

Following these steps, the test of the relationship between the lag of the technical efficiency coefficient and the budget support variables was significant. There were positive and significant relationships between the lagged technical efficiency coefficient and the various budget support variables. These results indicate that the previous/initial level of technical efficiency mediates the effect of budget support on public spending efficiency. In other words, budget support is likely to trigger a self-sustaining dynamic of public expenditure efficiency gains.

Table 16

Prediction of Efficiency Coefficients Lag by Budget Support Variables

	β	
Budget Support Variable	Fixed Effect	Random Effect
Budget Support Dummy	0,0160**	0,0154**
Budget Support Amount	0,0309	0,0299
Share of Budget support in total government revenue	0,0059*	0,0057*
Share of Budget support in total aid	0,0174*	0,0167*

Note. legend: * p<.05; ** p<.01; *** p<.001

The substitution of public expenditure efficiency coefficient lag with the World Bank's government effectiveness index did not yield significant results. The government

effectiveness index variable was nonsignificant. The significance of budget support variables (except for the dummy) also reduced in all regressions. The overall public governance setting in the aid recipient country did not affect efficiency gains that budget support can generate.

Table 17

Significance of Government Effectiveness Index per Budget Support Variable Based on Fixed-Effect Regressions Results

Budget Support Variable	*B*	t	p
Budget Support Dummy	-.001	-0.16	.871
Budget Support Amount	.005	0.61	.543
Share of Budget support in total government revenue	.005	0.61	.542
Share of Budget support in total aid	.004	0.43	.667

Table 18

Significance of Government Effectiveness Index per Budget Support Variable Based on Random-Effect Regressions Results

Budget Support Variable	*B*	t	p
Budget Support Dummy	.006	0.71	.476
Budget Support Amount	.007	0.87	.385
Share of Budget support in total government revenue	.007	0.88	.378
Share of Budget support in total aid	.006	0.71	.476

Overall, the initial governance setting did not predict public expenditure efficiency; neither did it predict the effect of budget support on public expenditure. The initial/previous level of public expenditure efficiency predicts and mediate the impact of the budget support on public expenditure efficiency. These results revealed some ambiguity on the role of the initial overall governance setting on the prediction of GSE efficiency by budget support.

RQ6: Influence of Political Context on the Relationship between Budget Support and Public Expenditure Efficiency

From the literature review, it was not clear whether and how institutional quality affects aid effectiveness. RQ6 was about whether level of democratization influences the relationship between budget support and public expenditure efficiency in WAEMU countries. The test of the directional hypothesis associated to RQ6 consisted of introducing the democracy index variable in the previous regressions of public expenditure efficiency over budget support variables. The same regressions were run while replacing the democracy index variable by the political stability index variable.

The results showed that, for both fixed effect and random effect models, the democracy index variable was significant for most budget support variables, including the budget support amount variable. For example, $\beta = .0713$, $t = 2.00$, $p = .048$ with the budget support dummy variable and $\beta = .0696$, $t = 1.98$, $p = .051$ with the proportion of budget support in government revenue for the fixed effect model. The various budget support variables, including budget support dummy, the proportion of budget support in total revenue, and the proportion of budget support in total aid, were nonsignificant.

These results suggested the possibility of mediation or moderator role by the political context variable.

Table 19

Significance of Democracy Index per Budget Support Variable Based on Fixed-Effect Regressions Results

Budget Support Variable	*B*	t	p
Budget Support Dummy	0.0713	2.00	.048
Budget Support Amount	0.07195	2..02	.047
Share of Budget support in total government revenue	0.0696	1.98	.051
Share of Budget support in total aid	0.6426	1.88	.064

Table 20

Significance of Democracy Index per Budget Support Variable Based on Random-Effects Regressions Results

Budget Support Variable	*B*	t	p
Budget Support Dummy	0.0701	2.05	.040
Budget Support Amount	0.0707	2.07	.039
Share of Budget support in total government revenue	0.0687	2.03	.042
Share of Budget support in total aid	0.628	1.90	.057

The substitution of a democracy index with a political stability index generated significant results. The political stability index variable was significant. While the significance level was higher than the democracy index variable, the coefficients were lower. For example, $\beta = 0.011$, $t = 4.24$, $p < .000$ with the budget support dummy variable and $\beta = 0.011$, $t = 4.01$, $p < .000$ with the proportion of budget support in government revenue for the fixed effect model. The various budget support variables, including budget support dummy, the proportion of budget support in total revenue, and the proportion of budget support in total aid, were nonsignificant.

Table 21

Significance of Political Stability Index per Budget Support Variable Based on Fixed-Effects Regressions Results

Budget Support Variable	*B*	t	p
Budget Support Dummy	0.011	4.24	.000
Budget Support Amount	0.011	4.26	.000
Share of Budget support in total government revenue	0.011	4.01	.000
Share of Budget support in total aid	0.01	3.60	.001

Table *22*

Significance of Political Stability Index per Budget Support Variable Based on Random-Effects Regressions Results

Budget Support Variable	*B*	t	p

Budget Support Dummy	0.009	2.85	.004
Budget Support Amount	0.009	2.95	.003
Share of Budget support in total government revenue	0.009	3.26	.001
Share of Budget support in total aid	0.009	3.13	.002

Following Fairchild and Mackinon (2008)'s general model for testing moderation effects, the test of the interaction variable budget support X political stability index was significant. There were positive and significant relationships between the interaction variable (budget support X political stability index) and the government spending efficiency coefficient for all budget support variables. The introduction of the interaction variable also yielded significant coefficients for the budget support variables and political stability index variables. These results indicate that the political context mediates the effect of budget support on public spending efficiency.

Overall, the political stability variable predicted public expenditure efficiency and moderated the relationship between budget support and public expenditure efficiency. These results supported the hypothesis that the political context measured by the level of democratization moderates the relationship between budget support and public expenditure efficiency in WAEMU countries.

Table 23

Effect of Political Stability Index on the Relationship between Government Spending Efficiency and Budget Support using Fixed-Effect Model

Variables	β	t	P
Budget Support Dummy	.000**	1.96	.053
Political Stability Index	.013***	4.78	.000
Budget Support X political stability	.000**	-2.95	.004
Macroeconomic Stability	.002***	20.46	.000
Corruption	.001***	3.74	.000

Note: legend: * p<.05; ** p<.01; *** p<.001

Table 24

Effect of Political Stability Index on the Relationship between Government Spending Efficiency and Budget Support using Random-Effect Model

Variables	β	t	P
Budget Support Dummy	.000**	1.87	.061
Political Stability Index	.010***	3.62	.000
Budget Support X political stability	.000***	-2.65	.008
Macroeconomic Stability	.002***	18.89	.000
Corruption	.001***	3.89	.000

Note: legend: * p<.05; ** p<.01; *** p<.001

Summary

The two SFA models yielded satisfactory public expenditure efficiency scores. Public expenditures, corruption levels, and macroeconomic stability predict government spending efficiency. Measures of political stability, population, and density were not significant to predict the quality of public governance.

The benefits of budget support (dummy variable), the proportion of budget support amount in total government revenues, and the proportion of budget support amount in total aid predict government spending efficiency. The initial level of governance quality mediates the relationship between government spending efficiency and budget support for all budget support variables. The political stability index as well as the democratization index moderates the relationship between government spending efficiency and budget support for all budget support variables.

Various tests revealed that random-effects model better fit data for some regressions, suggesting the presence of idiosyncrasies. Therefore, individual country characteristics matter for the relationships between budget support and government spending efficiency for selected variables. The effect of budget support on government spending efficiency is not uniformly homogeneous.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of the study was to explore the relationship between budget support and quality of public governance measured by efficiency of public spending in the production of human development. GSE coefficients as the dependent variable, were estimated using two SFA models. The estimated GSE coefficients were further related to budget support dummy, budget amount and the proportions of budget support amount in total aid and in total government revenues to assess the relationships between public governance quality and budget support.

This chapter consists of analyses of the results of multiple regressions to explain implications for the research hypotheses. Donors' fear of weak governance in the neediest countries seems confirmed by findings as GSE coefficients were relatively low for the WAEMU countries. Budget is an aid modality donors can use to provide the neediest countries with ODA while provoking quality institutional changes in recipient countries.

Interpretation of the Findings

Levels of Efficiency Coefficients in WAEMU Countries

Guinea-Bissau appears to be the least efficient in terms of GSE, with an average GSE of 8.3% over the study period and inefficiency of up to 97.8%. Public expenditure in Guinea Bissau is heavily dominated by operating expenses, while investment, particularly in human capital, is low. According to the World Bank (2018), the country devoted 90% of domestic resources to salaries and other operating expenses between 2010 and 2017.

Although the share of public spending on health and education averaged 23% over the period between 2010 and 2017, wages constitute more than 90% of these allocations. There is, therefore, a situation where civil servants agents benefit from salaries but cannot deliver minimum public service in the absence of materials and supplies.

Cote d'Ivoire is the most efficient country of the eight with an average GSE of 19.6%. The country represents 40% of the total GDP of the WAEMU currency area. It has seen impressive economic and social developments in the 1980s in terms of economic growth and human development before getting into a political crisis between 2002 and 2011. Since 2011, the country has been renewed with sustained economic growth, but social outcomes remain mixed with a life expectancy of 57.4 years and mean years of schooling of 5.2 years. The country still ranked 165th amongst 189 countries and territories classified by the HDI in 2018.

Senegal is the most politically stable of the eight countries. The country has not experienced any coup or violent conflict since its independence in 1960. Nonetheless, levels of public spending efficiency remain low and on par with peers in the currency area (less than 14% on average). The country devotes a significant share of its resources to education (3.5% of GDP) and health (1.4%). However, it still ranks 166th with a life expectancy of 67.7 years and mean years of schooling of 3.1 years.

Mali is the largest WAEMU country with a population density of 17 inhabitants per square kilometer. Nevertheless, the country recorded an average GSE of 14.6% which was above the averaged eight countries of 12.5%. The country does not, however, show social outcomes that are significantly different than its peers in the sample. In terms of

HDI, it was ranked 184th behind Benin (163) and Burkina Faso (182), which have an average efficiency below the regional average, but ahead of Niger (189).

Ex-Ante Selectivity in Aid Allocation

Relatively low levels of GSE with an average of 12.5% and variability between WAEMU countries from 8.3% in Guinea-Bissau to 20% in Cote d'Ivoire do not confirm the theories of ex-ante selectivity in aid allocation. All eight countries received budget support over the study period regardless of their level of efficiency. Between 1995 and 2015, there were 21 budget support disbursements in Guinea-Bissau, the least efficient country, compared to an average of 15 disbursements for all eight countries. The average budget support disbursements were 15.3 for Cote d'Ivoire, Mali, and Senegal with average GSE levels above the average of the eight countries. There was an average of 14.4 budget support disbursements for the five other countries with an average GSE levels below the community average. While I used an economic measure of public governance quality, my results diverge from merit-based aid allocation Mounir (2015) put forward. The findings instead suggest that merit-based motivations are not the primary determinant in terms of the use of budget support by donors.

Estimations revealed the presence of random effects. There are specific characteristics to each country which influence the benefits of budget support on public service delivery. These country-specific effects indicate the use of country-specific conditionalities by the donor when delivering budget support. These results are an illustration of donors' concerns regarding the aid recipient's developmental preference as Cordello and Dell' Ariccia (2007) argued. While the OECD recommended that budget

support policy measures should be technical, many budget support policy frameworks include legal and political policy measures explicitly or implicitly. These policy measures are incentives donors want to trigger for an explicit or implicit political objective. For instance, there were countries where the budget support policy framework included the adoption of a specific law. However, this adoption requires the parliament to be established, meaning the organization of legislative elections.

Public Expenditure Efficiency Gains of Budget Support

Budget support aid modality generates efficiency gains in public spending. The effect of budget support on public expenditure efficiency increases as the amount of aid allocated through budget support represents a significant proportion of total public resources or total aid received. These results confirm Swedlund (2012)'s findings that the use of budget support by a donor provide it with a seat at the table, voice amplification and the right to ask question in order to influence policy debates in the beneficiary countries. Donors can strengthen their policy influence on public spending by increasing the proportion of aid channeled through budget support. The fact that the proportion of budget support in total government revenue was determinant of public expenditure efficiency suggests that budget support can have countercyclical budgetary properties. In a context where domestic government revenues are low or diminished compared to aid received, the use of budget support can help to maintain efficient use of public resources, including foreign aid.

Budget Support and the Institutional Peril of Foreign Aid

The study results did not confirm the hypothesis of the institutional peril of foreign aid argued by scholars like Asongu (2013). The initial level of public governance quality mediates the effect of budget support on public expenditure efficiency. The more efficient a country is before benefiting budget support, the more it will be possible for aid providers to trigger a self-sustained dynamic of the efficiency of public services by using budget support. The fact that the initial level of efficiency mediates the relationship between budget support and institutional quality supports Mounir (2015)'s idea that the budget support policy framework the donor and the recipient agree to implement encourages the aid beneficiary to anticipate the reaction of the donor in an ex-post political conditionality dynamic. In an aid contract based on budget support modality, the beneficiary knows that its performance will determine the donor's willingness to disburse the pledged aid amount. The recipient is thus encouraged to reduce the asymmetry of information and demonstrate to the donor its readiness to use aid effectively. However, my study adds to the literature that the recipient's consent to cooperate depends on the weight of the expected aid in its total income.

According to Bourguignon and Platteau (2015), when the initial public governance quality is too low in an aid recipient country compared to the best performing countries, donors will exclude this recipient from aid allocation if the available aid is limited. My finding is that aid can be effective in a recipient country with low public governance quality if donors deliver a high proportion of total aid to be allocated to the country through budget support. The imposition of disciplinary measures by donors

through budget support seem to compensate the public governance quality gap between the least-performing and best-performing countries and can influence the efficient use of public resources by recipients with low public governance quality.

Limitations

The main limitation of this study was the assumption that any amount of aid delivered through budget support modality indicates the donor's intention to influence public governance quality in the recipient countries. As underlined earlier, budget support is an instrument donor use to motivate aid recipients to undertake institutional changes that will improve aid effectiveness. Therefore, the use of aid amount delivered through budget support as the key independent variable in this study was based on the assumption that any disbursement made by a donor within the framework of budget support indicates an agreement between the donor and the recipient to implement policy reforms that improves public governance quality in the recipient country. An additional unit of aid amount delivered through budget support, is also a proxy of other policy reforms the recipient government commits to implement. There is no distinction between sectoral and general budget support in this study.

By using government spending efficiency as the primary dependent variable, I assumed that the primary objective of improving governance settings in recipient countries is to ensure that they spend public revenues efficiently The role of a responsible and accountable government in a modern democratic society is to ensure that resources are allocated efficiently for collective well-being. The idea that budget support can influence the emergence of such governments in recipient countries translates the use of

disciplining measures by donors to incite recipient governments to better allocate and spend public resources, to produce development outcomes. As implication, aid recipients allocate aid amount received through budget support in the same manner they use government revenues.

The estimation of public expenditure efficiency coefficient was based on a human development index which is a composite index of national income, education and health. I thus assumed that the primary objective of a government in the considered WAEMU countries for the study period was to advance human development as summarized by the MDGs. Additionally, a limitation of the study is its geographical delimitation that may affect the generalizability of the findings. Since WAEMU is a currency zone, this may have influences on the results as these countries use harmonized public governance rules. Therefore, the absence of comparable fiscal, monetary and foreign exchange policies may reveal divergent results for other countries.

Recommendations

This study focuses on eight countries. Using a large sample of countries receiving budget support could further improve the findings. With a larger sample of countries, temporal variations and their implications could be tested while maintaining a suitable level of degree of freedom and thus robustness. Another avenue for future research would be breaking down the human development index and using each of the sub-indexes. Specific outcome indicators regarding education and health could also be considered on each dimension of the sub-index. This would make it possible to assess the contribution of each dimension or component of the human development index to government

spending efficiency and the relationship between each dimension and budget support. A comparative study with project/program aid would be useful to assess the contribution of budget support as an aid delivery modality to the efficient delivery of public services. Other variables of public service delivery may also be tested.

Implications

The findings of my study have shown that Donors can use aid as an instrument to improve governance in recipient countries. With budget support, donors have a policy window not to ex-ante exclude the neediest recipient countries-especially - based on their governance setting. Aid providers can allocate aid to countries with weak public governance by imposing disciplinary measures thought support. When they do, aid providers should incorporate in budget support policy framework policy measures to improve the efficiency of the public service as this will result in increased development expenditures in the recipient country. The disciplinary measures are likely to force those in power in WAEMU countries to reduce aid diversion and effectively use aid to promote human development in terms of education, health, and wealth creation. Aid will reach the most impoverished populations in WAEMU countries.

If a significant portion of aid is channeled through conditional budget support, it can strengthen the efficiency of public spending and improve the delivery of expected public services. Recipient countries will be more sensitive to the disciplinary requirements of donors if their resources are limited. For example, rather than suspending aid for the neediest in times of political crisis, donors can use budget support to maintain a minimum level of efficiency and public service. Thus, in a context of crisis such as

political instability, which is the case for many fragile countries, it would be possible for donors through budget support, to preserve a minimum level of aid effectiveness and protect the poorest against deterioration of their precarious situation. The budget support policy framework can incorporate measures such as pro-poor policies or expenditures and donors can encourage governments to prioritize the most disadvantaged through better allocation and use of aid.

The higher the amount of total aid a country receives, the more effective it will be through conditional budget support in countries with weak governance. The more countries receiving aid have a high level of own resources, the more it will be possible for the donor to influence the proper use of these resources through budget support. Therefore, using budget support in an aid-orphan country might not be relevant unless it constitutes a significant share of government revenues. Also, using budget support in an aid-darling country would be relevant if it represents a relative high proportion of total aid the country benefits. In this case, donors can use budget support to help strengthen social accountability and citizen control, not only on domestic resources but also on aid received.

Another implication of the study is that the involvement of donors in fragile states such as Guinea-Bissau amongst WAEMU countries where collection of domestic resources is low can be done through budget support. Even in countries with abundant domestic resources such as countries endowed with natural resources, budget support gives the donor the possibility of influencing the use of the recipient’s own resources efficiently. The absolute amount of budget support is not decisive. However, donors

would benefit from coordinating their efforts to have more influence on the use of resources.

Conclusion

The purpose of this quantitative research was to explore the relationship between budget support and public expenditures efficiency as an indicator of public governance quality in WAEMU countries. The analysis was made by assessing the possibility of improving public service delivery through disciplinary measures accompanying budget support amount donors deliver to WAEMU countries. The eight WAEMU countries which benefited from budget support between 1995 and 2015 served as a field of investigation. This currency area offered the advantage of comparable data given the level of harmonization of budgetary policies within the region.

The analysis was conducted in three stages. First, efficiency was estimated using SFA where a measure of human development was regressed against measures of GDP, public expenditures, macroeconomic stability, and measures of population and density. The results were efficiency scores for each of the WAEMU countries. Second, the effects of budget support were studied in terms of its relationship with government efficiency scores. The second stage consisted of regressing the institutional quality variable against different budget support variables using panel data regressions involving both fixed and random effects models. The third stage was to test for mediation and moderation of selected variables like initial level of government effectiveness, political context and democratization in relation to efficiency. The findings indicate that corruption level and macroeconomic stability influence government efficiency levels. The benefits of budget

support, the proportion of budget support amount in government revenues and the proportion of budget support amount in total aid predict public expenditures efficiency. This prediction is mediated by the initial level of efficiency and moderated by the political context.

My findings have suggested that budget support can improve aid effectiveness, regardless of the level of corruption and initial governance in the aid recipient country. Budget support offers the opportunity to improve the delivery of public services. Through budget support mechanism, donors and recipient associate money with policy inputs to reinforce development outcomes resulting from the use of financial resources. Budget support is, therefore, a means by which aid providers can reconcile need and governance to continue provide the neediest and poorly governed countries with ODA. In addition to technical disciplinary procedures usually considered in budget support, aid providers can reinforce aid effectiveness by also considering measures that promote democratic governance and/or political stability.

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Appendix A: Correlation Table

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
(1) hdi	1.000																						
(2) gov_rev	0.290	1.000																					
(3) gov_dep	0.343	0.975	1.000																				
(4) gov_int	0.332	0.770	0.768	1.000																			
(5) gov_net	0.335	0.971	0.998	0.726	1.000																		
(6) oda_tot	-0.260	0.374	0.217	-0.032	0.236	1.000																	
(7) bsp	-0.264	0.209	0.036	-0.110	0.049	0.935	1.000																
(8) bspdum	-0.285	-0.032	-0.011	-0.329	0.021	0.227	0.220	1.000															
(9) gdp	0.322	0.960	0.968	0.834	0.957	0.157	0.022	-0.083	1.000														
(10) govgdp	-0.027	0.114	0.174	-0.268	0.214	0.274	0.080	0.175	-0.047	1.000													
(11) bspgdp	-0.340	0.006	-0.167	-0.200	-0.160	0.811	0.907	0.189	-0.169	0.002	1.000												
(12) gov_net_gdp	-0.027	0.114	0.174	-0.268	0.214	0.274	0.080	0.175	-0.047	1.000	0.002	1.000											
(13) bspgov_rev	-0.444	-0.142	-0.282	-0.339	-0.270	0.704	0.816	0.347	-0.288	-0.006	0.912	-0.006	1.000										
(14) bspoda_tot	-0.305	0.048	-0.006	-0.251	0.019	0.480	0.570	0.677	-0.011	0.019	0.515	0.019	0.697	1.000									
(15) pol	-0.064	0.043	0.052	-0.201	0.076	0.189	0.121	0.361	-0.032	0.366	0.029	0.366	-0.084	0.132	1.000								
(16) pol2	0.064	-0.377	-0.372	-0.428	-0.357	0.080	0.137	0.293	-0.459	0.166	0.142	0.166	0.174	0.197	0.462	1.000							
(17) macro_s	0.331	0.606	0.601	0.415	0.604	0.116	0.070	-0.101	0.666	-0.076	-0.098	-0.076	-0.137	0.158	-0.200	-0.466	1.000						
(18) pop_s	-0.185	0.786	0.777	0.556	0.779	0.352	0.177	0.026	0.782	0.181	-0.025	0.181	-0.141	0.115	0.217	-0.450	0.503	1.000					
(19) pop_d	0.750	0.028	0.069	0.183	0.055	-0.297	-0.286	-0.528	0.048	0.015	-0.299	0.015	-0.422	-0.478	-0.096	0.238	-0.071	-0.302	1.000				
(20) educ	0.739	0.314	0.320	0.510	0.293	-0.300	-0.271	-0.652	0.383	-0.235	-0.284	-0.235	-0.443	-0.504	-0.356	-0.202	0.379	-0.090	0.733	1.000			
(21) educ2	0.875	-0.012	0.020	0.107	0.011	-0.309	-0.246	-0.413	0.029	-0.109	-0.257	-0.109	-0.295	-0.267	-0.268	0.110	0.304	-0.423	0.780	0.754	1.000		
(22) corr	0.166	0.234	0.291	-0.043	0.317	0.185	0.051	0.307	0.155	0.480	-0.126	0.480	-0.184	0.070	0.576	0.326	-0.036	0.289	0.106	-0.271	-0.057	1.000	
(23) corr2	-0.085	0.217	0.246	-0.001	0.265	0.245	0.137	0.396	0.143	0.324	-0.026	0.324	-0.070	0.138	0.634	0.404	-0.275	0.320	-0.071	-0.414	-0.388	0.768	1.000

Appendix B: Estimation of Efficiency Coefficients

Jondrow et al (1982)

True fixed-effects model (half-normal) Number of obs = 176
Group variable: pays1 Number of groups = 8
Time variable: year Obs per group: min = 22
avg = 22,0
max = 22
Prob > chi2 = 0,0000
Log likelihood = 469,8317 Wald chi2(2) = 713,30

hdi	Coef.	Std.Err.	Z	P>z	[95%Conf.	Interval]
Frontier						
gov_net	,0000458	3,91e-06	11,69	0,000	,0000381	,0000534
macro_s	,0009766	,0001082	9,03	0,000	,0007645	,0011886
Usigma						
_cons	-7,218909	,2000037	-36,09	0,000	-7,610909	-6,826909
Vsigma						
_cons	-9,859782	,5219419	-18,89	0,000	-10,88277	-8,836795
sigma_u	,0270666	,0027067	10,00	0,000	,0222491	,0329273
sigma_v	,0072273	,0018861	3,83	0,000	,0043335	,0120535
lambda	3,745056	,0042533	880,51	0,000	3,73672	3,753393

Battese and Coelli (1988)

True fixed-effects model (truncated-normal) Number of obs = 176
Group variable: pays1 Number of groups = 8
Time variable: year Obs per group: min = 22
avg = 22,0
max = 22
Prob > chi2 = 0,0000
Log likelihood = 483,2551 Wald chi2(2) = 757,41

hdi	Coef.	Std.Err.	z	P>z	[95%Conf.	Interval]
Frontier						
gov_net	.0000532	3.24e-06	16.44	0.000	.0000469	.0000596
macro_s	.0008997	.0000778	11.56	0.000	.0007471	.0010522
Mu						
_cons	-24.38288	65.25089	-0.37	0.709	-152.2723	103.5065
Usigma						
_cons	-.8583319	2.673401	-0.32	0.748	-6.098101	4.381437
Vsigma						
_cons	-10.12967	.4091437	-24.76	0.000	-10.93158	-9.327764
sigma_u	.6510519	.8702613	0.75	0.454	.0474039	8.941636
sigma_v	.006315	.0012919	4.89	0.000	.004229	.0094298
lambda	103.0969	.8702878	118.46	0.000	101.3912	104.8026

Appendix C: Levels of Inefficiency

Variable	Obs	Mean	Variance	Std. Dev	Min	Max
ineff_jn82~n	176	.8746907	.0023582	.0485614	.6655428	.9779519
ineff_bc88~n	176	.8766275	.0027203	.0521568	.6458101	.9793357

Pays	Variable	Mean	p50	Variance	sd	min	max
Bénin							
	ineff_jn82~n	.8919995	.8973273	.0008937	.0298953	.8344421	.9405446
	ineff_bc88~n	.8951965	.9007773	.0009418	.0306891	.8340414	.943987
Burkina-Faso							
	ineff_jn82~n	.880433	.8893657	.0011738	.0342602	.8209638	.9291212
	ineff_bc88~n	.8817303	.8915913	.001336	.0365507	.8171456	.9323546
Cote d'Ivoire							
	ineff_jn82~n	.8041907	.8187746	.0036421	.0603498	.6655428	.8899551
	ineff_bc88~n	.7995348	.8163496	.0042673	.0653243	.6458101	.8895658
Guinea Bissau							
	ineff_jn82~n	.9165315	.9150609	.0005928	.0243475	.8886813	.9779519
	ineff_bc88~n	.9224052	.9211973	.0005145	.0226835	.8960081	.9793357
Mali							
	ineff_jn82~n	.8535265	.863311	.0012445	.0352777	.78584	.9079115
	ineff_bc88~n	.8568815	.8668615	.0013546	.0368051	.7850065	.9124921
Niger							
	ineff_jn82~n	.8905181	.9005517	.0009882	.0314354	.8292708	.932228
	ineff_bc88~n	.8936217	.90476	.001121	.0334808	.8267648	.9359555
Sénégal							
	ineff_jn82~n	.8606772	.8697207	.0015895	.0398682	.797365	.9164798
	ineff_bc88~n	.8590277	.8688396	.001921	.0438289	.7887455	.9192768
Togo							
	ineff_jn82~n	.8996493	.9075533	.0005478	.0234055	.8591654	.9367778
	ineff_bc88~n	.904622	.9128626	.0005466	.0233787	.8636042	.9405844

Appendix D: Levels of Efficiency

Variable	Mean	p50	sd	variance	min	max
eff_jn82_hn	.1253093	.1137091	.0485614	.0023582	.0220481	.3344572
eff_bc88_tn	.1233725	.110612	.0521568	.0027203	.0206643	.3541899

Pays	Variable	Mean	p50	variance	sd	min	max
Bénin							
	eff_jn82_hn	.1080005	.1026727	.0298953	.0008937	.0594554	.1655579
	eff_bc88_tn	.1048035	.0992227	.0306892	.0009418	.056013	.1659587
Burkina-Faso							
	eff_jn82_hn	.119567	.1106343	.0342602	.0011738	.0708788	.1790362
	eff_bc88_tn	.1182697	.1084087	.0365507	.001336	.0676454	.1828544
Cote d'Ivoire							
	eff_jn82_hn	.1958093	.1812254	.0603498	.0036421	.1100449	.3344572
	eff_bc88_tn	.2004652	.1836504	.0653243	.0042673	.1104342	.3541899
Guinea Bissau							
	eff_jn82_hn	.0834685	.0849391	.0243475	.0005928	.0220481	.1113187
	eff_bc88_tn	.0775948	.0788027	.0226835	.0005145	.0206643	.1039918
Mali							
	eff_jn82_hn	.1464735	.136689	.0352777	.0012445	.0920885	.21416
	eff_bc88_tn	.1431185	.1331385	.0368051	.0013546	.0875079	.2149935
Niger							
	eff_jn82_hn	.1094819	.0994483	.0314354	.0009882	.067772	.1707291
	eff_bc88_tn	.1063783	.09524	.0334808	.001121	.0640445	.1732352
Sénégal							
	eff_jn82_hn	.1393228	.1302793	.0398682	.0015895	.0835202	.2026351
	eff_bc88_tn	.1409723	.1311604	.0438289	.001921	.0807232	.2112545
Togo							
	eff_jn82_hn	.1003507	.0924467	.0234055	.0005478	.0632222	.1408346
	eff_bc88_tn	.095378	.0871374	.0233787	.0005466	.0594156	.1363958