POLICY BRIEF
AKI RESEARCH GRANTS ON ECONOMIC ISSUES
Volume IX, No. 6, 2018
ISSN # 2094-3342

De La Salle University
AKI
Angelo King Institute
for Economic and Business Studies

Legal Setbacks, Disbursement Sudden Stops, and Fiscal Stimulus: Some Lessons

Introduction

Recognizing the importance of expanding fiscal spending programs and improving disbursement rates, the Aquino administration implemented the Disbursement Acceleration Program (DAP) in 2011. Acting as a fiscal stimulus and packing a fiscal surprise, the program has reportedly succeeded in improving fiscal expenditure performance until it was stopped by the Supreme Court based on constitutional prohibitions imposed on budgetary malpractices. The controversy has obviously tarnished the purportedly key role of the policy which, at that time, was to pump-prime the economy by simply improving the efficiency of fund disbursements. While there were official claims that it was effective in spurring growth, no empirical paper has been offered investigating plausible mechanisms leading to expansions in output.

To contribute to the empirical macroeconomic literature, this note uses a nonlinear Dynamic Stochastic General Equilibrium (DSGE) model to simulate and compute simple fiscal multipliers in order to assess the effectiveness of DAP. The principal aim is to be able to capture some of the key features of the policy. We provide simulation-based evidence to track the impact of changes in model structure on multiplier estimates. Such simulation-based evidence may provide information as to how actual data-based estimates can be interpreted.

Written by
Lawrence B. Dacuycuy
Mariel Monica R. Sauler
School of Economics
De La Salle University

I. Background

Several years ago, the Philippines' executive department recognized the urgency of developing a strategy to speed up the rate of disbursements. Low disbursement rates and implementation delays encountered in existing projects have been correctly tagged as the primary causes of dismal fiscal spending growth. Just like other economies, there is a firm belief during that time that a brand of activist fiscal policy can enhance growth.

To counteract the slump, the government introduced the DAP, the intention of which is to speed up public spending. As reported, it was observed that during the first three quarters of 2011, national government disbursements contracted by 7.3% year-on-year (Abad, Purisima, & Balisacan, 2013). Spending for infrastructure and maintenance, operating, and other expenditures (MOOE) was shown to be inadequate as well.

As claimed by supporters of the initiative, infrastructure spending rebounded from a 29% contraction in 2011 to a 34% growth at the end of September 2013 (Abad et al., 2013). The growth of MOOE has improved from 11% to 21%. Under the DAP, social services have significantly expanded in terms of budgetary allocation from 28.8% in 2003 to 34.9% in 2013.[1]

In principle, when a project is approved and subsequently authorized, the rate at which funds are disbursed becomes critical. Disbursement bottlenecks delay the early realization of fiscal policy benefits. However, most studies done in the United States and European Union assume that there are no irregularities in the conduct of disbursements, implying that if there are delays, they may pertain only to the operational aspects of the project or unforeseen factors. Political realities in developing countries, however, may provide opportunities to bypass legally mandated mechanisms for budgetary allocation. This may give rise to legal challenges and may result in full or partial disbursement sudden stops.

Compared with the European Economic Recovery Program (EERP) and the American Recovery Act (ARRA), the DAP, as a form of stimulus package, appeared to be largely financed through savings and the mechanism allowed for the reallocation of savings to other programs. This has an added benefit of relaxing a bit the stabilization requirements since savings are already available (but not yet realized per official definitions) and does not arise from the imposition of new taxes, which can lead to output contractions. As a matter of fact, with the DAP, limited tax increases have been implemented. Moreover, it was an initiative, the implementation of which was not divulged early, thereby mimicking the nature of unexpected government spending hikes.[2]

Unfortunately, the DAP, which mandated the speedy release of funds, was declared unconstitutional. There are three problematic mechanisms, namely: (a) the creation of savings prior to the end of the fiscal year; (b) cross-border transfers of the savings from one department to another; and (c) the allotment of funds not outlined in the General Appropriations Act (GAA, 2011). The lifespan of operating expenses and capital outlay is two years. Savings are defined by the GAA as excess funds from completed projects, discontinued projects, and abandoned projects.

Subscribing to a positive approach and using dynamics from a DSGE model, this policy note's main objective is to capture some critical features of the initiative involving public investments to

[1] The actual figures for disbursement performance, infrastructure investments, and MOOE were reported in a memo penned by then DBM Secretary Florencio Abad, DOF Secretary Purisima, and NEDA Director General Arsenio Balisacan. The said memo revisited the legal precedents and rationale for the DAP's mechanism, highlighted growth effects, and enumerated budgetary reforms associated with DAP.

[2] The secrecy surrounding such an executive undertaking was broken when a member of the Senate divulged its existence during his privilege speech. Even most members of Congress expressed dismay and surprise as they felt left out of the process.

[3] Due to the diversity of programs funded through the DAP, it is deemed impossible to capture all features using a DSGE model. We opted to focus on government investments because clearly, there are some projects which were not implemented completely due to legal setbacks that arose from the Supreme Court decision.

estimate fiscal multipliers.[3] No attempt to tackle normative aspects of the program will be made. As part of the usual results, dynamics will also be examined using estimated impulse response functions based on stochastic simulations.

II. Model Description

The complete model platform is provided in Dacuycuy and Sauler (2017). It combines the models of Leeper, Walker, and Yang (2010) and Dacuycuy (2016), which are both neoclassical in the sense that markets do not exhibit hints of monopolistic competition that lead to nominal rigidities. This economy consists of a continuum of households and firms. Households are not differentiated in terms of skill type and compared with their New Keynesian counterparts; they do not have market power that they can wield to bargain for higher wages when they offer labor services to firms.

We introduce household heterogeneity by considering two types of households, namely: Ricardian and non-Ricardian households. Only Ricardian households are assumed to be able to optimally determine consumption and investments. Non-Ricardian households, who are also known as rule-of-thumb consumers, do not smooth consumption and do not participate in financial markets. The proportion of non-Ricardian households represents a key parameter given that they usually represent households with limited means to carry out consumption smoothing. Households have fiscal foresight, indicating that fiscal policy tools have announcement effects.

Firms hire labor and capital services at market rates and are assumed to produce final goods. A clear distinction from the usual firm is present, though. The representative firm's production function now includes public capital.

Finally, the government is represented by fiscal policymakers. Fiscal policymakers use endogenous fiscal tools that have built-in automatic stabilizers.

The model consists of shock processes, some of which are of importance in the study. For this note, we focus on government consumption and authorized budget shocks. Shocks are represented by the usual autoregressive (AR) processes, the persistence of which is governed by the persistence parameter.

III. Simulating Multiplier Sensitivities

We use simulated data to determine the relationships among shock structures, proportion of non-Ricardian households, government investment shock persistence, period of implementation, and fiscal multipliers. To analyze the role of fiscal policy, the unit of analysis is the impulse response function realized given a 1 standard deviation shock.

To capture the impact of government spending shocks as well as other fiscal tools, we compute multipliers. Following, Mountford and Uhlig (2009), the present value multiplier at time t, M_t^PV is given by

$$\mathcal{M}_t^{PV} = \left(\sum_{s=0}^{t}(1+rr)^{-s}\,(\Delta y_s)\right) \Big/ \left(\sum_{s=0}^{t}(1+rr)^{-s}\,(\Delta g_s)\right)$$

where rr is the steady state interest rate.

While the study shows the simulation aspects of DSGE models, we anticipate positive outcomes given the current initiatives of the government. This way, we can advance some ideas as to what to expect when the time comes for the fiscal performance to be evaluated in the future.

IV. Key Simulation Results

Given the recent fiscal experience, our task is to simply map salient features of the fiscal initiatives with respect to government investments and consumption to the set of plausible simulation design components. Through simulations, we attempt to understand the role of shock structures, pre-announcement effects, persistence of authorized budget shocks, correlation between government consumption and authorized budget shock structures, and the proportion of non–Ricardian households.

A. Persistence Matters

Simulation results support the need for projects that have persistent effects. Here are our observations. As shown in Tables 1 and 2, persistence in both government spending process and the degree of correlation between spending and authorized budget shocks are jointly important in accounting for higher multiplier effects. Highly persistent shocks robustly yield non–negative multipliers within the 12–quarter period. In terms of policy implications, this highlights the role and nature of government consumption shocks, which are expected to generate more persistent levels of spending.

B. Households have Foresight

There is room for pre-announcement effects to influence government consumption multipliers. This is evident in Table 2, even after controlling for the proportion of Ricardian households and persistence parameters. The inclusion of announcement effects does have a significant impact on the magnitude of multiplier estimates. Even with ½ assigned as weights, the change results in a doubling of the multiplier. This may simply point to the effects of fiscal foresight, with agents generally counteracting or internalizing the impact of known fiscal policies. The impact of a change in the proportion of non-Ricardian households appears to be negligible, though.

C. Budget Allocation Matters

We computed for the output multiplier associated with authorized budgets. Based on Tables 3 and 4, it is apparent that shorter implementation delays give rise to relatively higher multipliers. Initially, the multipliers are negative or small, which shows the impact of implementation delays in the short–run. Announcement effects appear to be negative, as far as authorized budgets are concerned. With disbursement sudden stops, multipliers react negatively.

D. Understanding Shock Correlations is Key

We also examined what happens to multipliers when authorized budget and government consumption shocks are correlated. There are two regimes, namely: high and low shock correlations. The idea is that positive shocks to authorized budgets may also lead to higher government spending. Results shown in Table 5 indicate that multipliers are positively affected by a correlated shock structure

Concluding Remarks

This note was set up to imperfectly map some aspects of the DAP, particularly government investments, to simulation designs. The DAP was a fiscal initiative to facilitate the movement of funds that have been declared as savings to proposed projects that can be easily implemented and completed. Because it relied on existing funds, the stimulus package was not debt-financed.

The program components of DAP are quite diverse, but its major components pertain to government investments in the form of priority projects, consumption expenditures on social and development programs of local government units, and corporate transfers. Its principal aim was to fund projects quickly, thereby improving the rate of disbursements. Because it aims to make disbursements more efficient, government investments have grown quickly. This may have translated into higher GDP growth based on our model. However, it may also be asserted that due to the composition of the DAP, growth has increased due to government consumption shocks, as the DAP included many approved projects pertaining to the purchase of consumption goods.

Based on results, there are several policy takeaways.

First, persistence matters. This implies that projects that are of limited scale may not deliver high multiplier effects, as they are not usually persistent. This complicates the analysis as many project components are considered limited like the PDAF projects of members of the legislature. Incidentally, the DAP includes many expenditure programs that have less persistent effects. It may be plausible to expect growth effects but how long will it last, and the efficiency gains that it entails, depends on the scale of the project.

Second, pre-announcement effects do enhance fiscal multipliers, implying that the government's announcements may be essential in influencing macroeconomic dynamics.

Third, delays do matter as they did in other studies. As a budget reform initiative, DAP was able to increase efficiency in terms of time needed to complete several projects. This may explain why some economists believed that the DAP was expansionary.

Finally, there is a need to pay attention to the correlation structure. Thus, deliberate and careful consideration and coordination of budget-related activities should be prioritized.

Figure 1
Fiscal Multipliers: No Announcement Effects

	YEAR 1				YEAR 2				YEAR 3			
Main persistence parameter: $\rho_{G^c} = 0.5$	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
$\rho_{G,\xi} = 0.0$	0.040	0.030	0.010	-0.010	-0.030	-0.050	-0.060	-0.080	-0.110	-0.140	-0.160	-0.180
$\rho_{G,\xi} = 0.50$	0.080	0.060	0.040	0.030	0.010	-0.010	-0.020	-0.040	-0.060	-0.090	-0.110	-0.130
$\rho_{G,\xi} = 0.95$	0.440	0.360	0.310	0.290	0.270	0.250	0.240	0.230	0.220	0.210	0.200	0.190
Main persistence parameter: $\rho_{G^c} = 0.95$												
$\rho_{G,\xi} = 0.0$	0.230	0.220	0.220	0.210	0.200	0.200	0.190	0.180	0.170	0.170	0.160	0.150
$\rho_{G,\xi} = 0.50$	0.450	0.360	0.320	0.290	0.270	0.260	0.250	0.240	0.230	0.220	0.210	0.200
$\rho_{G,\xi} = 0.95$	2.840	2.020	1.620	1.380	1.220	1.100	1.010	0.940	0.890	0.840	0.800	0.760
Main persistence parameter: $\rho_{G^c} = 0.5 \quad \omega = 0.80$												
$\rho_{G,\xi} = 0.0$	0.040	0.030	0.010	-0.010	-0.030	-0.040	-0.060	-0.080	-0.110	-0.130	-0.150	-0.17
$\rho_{G,\xi} = 0.50$	0.080	0.060	0.040	0.030	0.010	-0.010	-0.020	-0.040	-0.060	-0.080	-0.110	-0.12
$\rho_{G,\xi} = 0.95$	0.440	0.360	0.310	0.290	0.270	0.250	0.240	0.230	0.220	0.210	0.200	0.19
Main persistence parameter: $\rho_{G^c} = 0.5 \quad \omega = 0.80$												
$\rho_{G,\xi} = 0.0$	0.230	0.220	0.220	0.210	0.200	0.200	0.190	0.190	0.180	0.170	0.160	0.15
$\rho_{G,\xi} = 0.50$	0.450	0.360	0.320	0.290	0.270	0.260	0.250	0.240	0.230	0.220	0.210	0.2
$\rho_{G,\xi} = 0.95$	2.860	2.040	1.630	1.390	1.230	1.110	1.020	0.950	0.890	0.840	0.800	0.77

Note: the government consumption process is specified as $G_t^c = \rho_{G^c} G_{t-1}^c - \gamma_G s_{t-s}^B + (1-\varrho_G)\xi_t^G + \varrho_G \xi_t^G$, where $\xi_t^G = \rho_{\xi,G}\xi_{t-1}^G + \epsilon_t^{\xi,G}$ and $\epsilon_t^{\xi,G} \sim N(0,1)$.

Table 2
Fiscal Multipliers: With Announcement Effects

	YEAR 1				YEAR 2				YEAR 3			
Main persistence parameter: $\rho_{G^c} = 0.5$	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
$\rho_{G,\xi} = 0.0$	0.080	0.050	0.030	0.010	-0.010	-0.020	-0.040	-0.060	-0.090	-0.110	-0.130	-0.150
$\rho_{G,\xi} = 0.50$	0.150	0.090	0.070	0.050	0.030	0.010	0.000	-0.020	-0.040	-0.060	-0.080	-0.100
$\rho_{G,\xi} = 0.95$	0.860	0.510	0.400	0.350	0.310	0.290	0.270	0.260	0.250	0.240	0.230	0.220
Main persistence parameter: $\rho_{G^c} = 0.95$												
$\rho_{G,\xi} = 0.0$	0.460	0.300	0.270	0.250	0.240	0.230	0.220	0.210	0.200	0.190	0.180	0.170
$\rho_{G,\xi} = 0.50$	0.880	0.520	0.410	0.350	0.320	0.300	0.280	0.270	0.250	0.240	0.230	0.220
$\rho_{G,\xi} = 0.95$	5.560	2.950	2.110	1.680	1.430	1.260	1.140	1.040	0.970	0.910	0.860	0.820
Main persistence parameter: $\rho_{G^c} = 0.5 \quad \omega = 0.80$												
$\rho_{G,\xi} = 0.0$	0.080	0.050	0.030	0.010	-0.010	-0.020	-0.040	-0.060	-0.080	-0.110	-0.130	-0.15
$\rho_{G,\xi} = 0.50$	0.150	0.090	0.070	0.050	0.030	0.010	0.000	-0.020	-0.040	-0.060	-0.080	-0.1
$\rho_{G,\xi} = 0.95$	0.860	0.510	0.400	0.350	0.310	0.290	0.280	0.260	0.250	0.240	0.230	0.22
Main persistence parameter: $\rho_{G^c} = 0.5 \quad \omega = 0.80$												
$\rho_{G,\xi} = 0.0$	0.460	0.310	0.270	0.250	0.240	0.230	0.220	0.210	0.200	0.190	0.180	0.18
$\rho_{G,\xi} = 0.50$	0.880	0.520	0.410	0.350	0.320	0.300	0.280	0.270	0.260	0.240	0.230	0.22
$\rho_{G,\xi} = 0.95$	5.590	2.970	2.120	1.690	1.440	1.270	1.140	1.050	0.980	0.920	0.870	0.82

Note: the government consumption process is specified as $G_t^c = \rho_{G^c} G_{t-1}^c - \gamma_G s_{t-s}^B + (1-\varrho_G)\xi_t^G + \varrho_G \xi_t^G$, where $\xi_t^G = \rho_{\xi,G}\xi_{t-1}^G + \epsilon_t^{\xi,G}$ and $\epsilon_t^{\xi,G} \sim N(0,1)$.

Table 3

Authorized Budget Multipliers: No Announcement Effects

	YEAR 1				YEAR 2				YEAR 3			
N=1	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
$\rho_A = 0.0$	-0.120	0.610	1.290	1.970	2.640	3.300	3.960	4.610	5.260	5.890	6.530	7.160
$\rho_A = 0.50$	-0.230	0.260	0.780	1.350	1.960	2.580	3.210	3.850	4.490	5.120	5.760	6.400
$\rho_A = 0.95$	-1.280	-0.910	-0.560	-0.210	0.140	0.490	0.840	1.190	1.550	1.920	2.280	2.660
N=4												
$\rho_A = 0.0$	-0.100	-0.210	-0.340	-0.500	0.160	0.830	1.490	2.140	2.790	3.420	4.050	4.670
$\rho_A = 0.50$	-0.190	-0.270	-0.370	-0.500	-0.210	0.260	0.820	1.430	2.050	2.680	3.300	3.930
$\rho_A = 0.95$	-1.080	-1.150	-1.230	-1.330	-1.250	-1.080	-0.860	-0.600	-0.310	-0.010	0.310	0.640
N=8												
$\rho_A = 0.0$	-0.08	-0.17	-0.27	-0.39	-0.53	-0.68	-0.85	-1.04	-0.39	0.26	0.89	1.53
$\rho_A = 0.50$	-0.16	-0.22	-0.3	-0.39	-0.51	-0.64	-0.79	-0.97	-0.73	-0.29	0.25	0.83
$\rho_A = 0.95$	-0.87	-0.93	-0.99	-1.07	-1.15	-1.24	-1.35	-1.46	-1.46	-1.39	-1.25	-1.08
with sudden stop N=8												
$\rho_A = 0.0$	-0.1	-0.2	-0.32	-0.45	-0.59	-0.75	-0.91	-1.09	-0.43	0.23	0.88	1.53
$\rho_A = 0.50$	-0.19	-0.26	-0.35	-0.46	-0.58	-0.72	-0.88	-1.04	-0.8	-0.35	0.2	0.8
$\rho_A = 0.95$	-1.02	-1.09	-1.16	-1.25	-1.34	-1.44	-1.55	-1.67	-1.67	-1.6	-1.47	-1.29

Note: the authorized budget process is specified as $A_t = \rho_A A_{t-1} + \mu_t^A, \mu_t^A \sim N(0,1)$.

Table 4

Authorized Budget Multipliers: With Announcement Effects

	YEAR 1				YEAR 2				YEAR 3			
N=1	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
$\rho_A = 0.0$	-0.230	0.190	0.890	1.570	2.240	2.900	3.560	4.210	4.860	5.490	6.120	6.760
$\rho_A = 0.50$	-0.450	-0.030	0.470	1.010	1.590	2.200	2.830	3.460	4.100	4.730	5.360	6.000
$\rho_A = 0.95$	-2.490	-1.460	-0.970	-0.570	-0.190	0.170	0.540	0.900	1.260	1.630	2.000	2.370
N=4												
$\rho_A = 0.0$	-0.200	-0.210	-0.330	-0.480	-0.230	0.440	1.090	1.750	2.400	3.030	3.660	4.290
$\rho_A = 0.50$	-0.380	-0.320	-0.380	-0.490	-0.410	-0.030	0.480	1.060	1.670	2.300	2.920	3.550
$\rho_A = 0.95$	-2.110	-1.490	-1.430	-1.470	-1.440	-1.290	-1.080	-0.830	-0.550	-0.250	0.070	0.390
N=8												
$\rho_A = 0.0$	-0.16	-0.17	-0.26	-0.38	-0.51	-0.65	-0.81	-0.99	-0.77	-0.12	0.52	1.15
$\rho_A = 0.50$	-0.31	-0.26	-0.31	-0.39	-0.5	-0.62	-0.77	-0.93	-0.9	-0.56	-0.08	0.48
$\rho_A = 0.95$	-1.7	-1.19	-1.15	-1.17	-1.23	-1.3	-1.39	-1.49	-1.54	-1.5	-1.39	-1.23
with sudden stop N=8												
$\rho_A = 0.0$	-0.19	-0.2	-0.31	-0.44	-0.58	-0.73	-0.89	-1.06	-0.82	-0.17	0.49	1.14
$\rho_A = 0.50$	-0.36	-0.3	-0.36	-0.46	-0.57	-0.71	-0.86	-1.02	-0.98	-0.64	-0.14	0.44
$\rho_A = 0.95$	-1.99	-1.4	-1.35	-1.38	-1.44	-1.52	-1.61	-1.71	-1.77	-1.73	-1.62	-1.46

Note: the authorized budget process is specified as $A_t = \rho_A A_{t-1} + \mu_t^A, \mu_t^A \sim N(0,1)$.

Table 5

Correlated Authorized Budget and Government Consumption Shocks

	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Main persistence parameter:0.5; shock correlation= 0.10; N=8												
$\rho_{G,\xi} = 0.0$	0.060	0.030	0.010	-0.010	-0.030	-0.060	-0.080	-0.110	-0.120	-0.120	-0.110	-0.090
$\rho_{G,\xi} = 0.50$	0.140	0.080	0.050	0.030	0.010	0.000	-0.020	-0.050	-0.060	-0.070	-0.070	-0.080
$\rho_{G,\xi} = 0.95$	0.840	0.490	0.390	0.330	0.300	0.280	0.260	0.250	0.240	0.230	0.230	0.220
Main persistence parameter:0.95												
$\rho_{G,\xi} = 0.0$	0.440	0.290	0.260	0.240	0.220	0.210	0.200	0.190	0.190	0.190	0.190	0.190
$\rho_{G,\xi} = 0.50$	0.860	0.500	0.390	0.340	0.310	0.280	0.270	0.250	0.240	0.240	0.230	0.220
$\rho_{G,\xi} = 0.95$	5.45	2.87	2.01	1.59	1.35	1.18	1.06	0.98	0.91	0.86	0.81	0.77
Main persistence parameter:0.5; shock correlation= 0.50; N=8												
$\rho_{G,\xi} = 0.0$	0.000	-0.020	-0.050	-0.090	-0.140	-0.190	-0.250	-0.310	-0.280	-0.140	-0.010	0.130
$\rho_{G,\xi} = 0.50$	0.07	0.04	0.01	-0.02	-0.04	-0.08	-0.11	-0.15	-0.14	-0.08	-0.02	0.04
$\rho_{G,\xi} = 0.95$	0.780	0.460	0.350	0.300	0.270	0.250	0.230	0.210	0.210	0.230	0.240	0.250
Main persistence parameter:0.95												
$\rho_{G,\xi} = 0.0$	0.38	0.25	0.21	0.19	0.17	0.16	0.14	0.13	0.14	0.18	0.21	0.24
$\rho_{G,\xi} = 0.50$	0.800	0.470	0.360	0.310	0.280	0.250	0.230	0.220	0.220	0.230	0.240	0.250
$\rho_{G,\xi} = 0.95$	5.380	2.830	1.990	1.570	1.330	1.170	1.050	0.960	0.900	0.860	0.820	0.780

Note: the government consumption process is specified as $G_t^c = \rho_{G^c} G_{t-1}^c - \gamma_G s_{t-s}^B + (1-\varrho_G)\xi_t^G + \varrho_G \xi_t^G$, where $\xi_t^G = \rho_{\xi,G}\xi_{t-1}^G + \epsilon_t^{\xi,G}$ and $\epsilon_t^{\xi,G} \sim N(0,1)$. The authorized budget process is specified as $A_t = \rho_A A_{t-1} + \mu_t^A$, $\mu_t^A \sim N(0,1)$. The correlation between μ_t^A and $\epsilon_t^{\xi,G}$ is either 0.10 or 0.50.

References

Abad, F., Purisima, C., & Balisacan, A. (2013, December 28). *Memorandum for the President: Recommendation to terminate the Disbursement Acceleration Program (DAP) and to deepen budgetary reforms.* Retrieved from http://www.dbm.gov.ph/?page_id=9570

Dacuycuy, L. (2016). Preferences, government investment, and disbursement sudden stops. *Philippine Review of Economics, LIII*(1), 1-18.

Dacuycuy, L., & Sauler, M. M. (2017.). Legal setbacks, disbursement sudden stops, and fiscal stimulus: An empirical characterization of a recent Philippine fiscal experience. Unpublished manuscript.

Leeper, E., Walker, T., & Yang, S. (2010). Government investment and fiscal stimulus. *Journal of Monetary Economics,* 57, 1000–1012.

Mountford, A., & Uhlig, H. (2009). What are the effects of fiscal policy? *Journal of Applied Econometrics,* 2, 960-992.

Republic Act No. 10147. (2010) General Appropriations Act of 2011. Official Gazette of the Republic of the Philippines, December 30, 2010, Vol. 106, No. 52. Retrieved 2018/03/05 from

CONTACT INFORMATION

DLSU - Angelo King Institute for Economic and Business Studies (DLSU-AKI)
Room 223, St. La Salle Hall
2401 Taft Avenue
1004 Manila

Angelo King International Center
Corner of Arellano Avenue and Estrada Street
1004 Manila

+63-2-524-4611 loc. 287,
+63-2-524-5333, +63-2-5245347 (Fax)
http://aki.dlsu.edu.ph

This publication is based on a study under the AKI Research Grants on Economic Issues.