

ANNEX E: PRELIMINARY ANALYSIS OF DFA BUDGET DATA VS. INDICATORS OF THREE POLICY PILLARS

DESCRIPTION OF DATA

The data used for this study are data from 2000-2010. All data are indexed on the year 2000 for uniformity. The statistics that were used as variables for this study are as follows.

Total Population- the total number of people in the Philippines. (Source: World Bank, World Development Indicator).

OFWs- the total number of OFWs (in thousands) all over the world (Source: Banko Sentral ng Pilipinas)

Exports- total goods and services exported (Source: National Statistics Office)

Imports- total goods and services imported (Source: National Statistics Office)

Total Trade- sum of imports and exports. (source: National Statistics Office)

Foreign Direct Investment- defined as an international investment by a resident entity in one economy in an enterprise resident in another economy made with the objective of obtaining a lasting interest (WB, WDI)

Tourist- number of tourist arrivals in the country (Source: National Statistics Coordinating Board)

International Commitment Fund- (source: DFA)

Total Remittances- total remittances of OFW measured in thousand of USD (Source: BSP)

Budget of DFA- yearly budget allotted to DFA by the national government.

Political Stability and Absence of Violence/Terrorism- Reflects perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism. (source: World Bank, Worldwide Governance Indicators).

Regulatory Quality- Reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. (Source: World Bank, Worldwide Governance Indicators).

Delta Budget- the change in the amount of budget allotted to DFA. $(Y_t - Y_{t-1}) / Y_t$

Ratio- the ratio of DFAs budget compared to the national budget. Source: DBM

Time (@trend)- This is added to take into account the changes in the budget over time.

Inflation- takes into account the changes in prices. (Source: BSP)

SUMMARY OF FINDINGS

Three scenarios for the use of DFA budget as a dependent variable were considered in the study. First is the DFA budget per se, second is the percentage change in DFA budget, and last is the ratio of DFA budget as compared to the national budget.

There were different models used in this 'scenario'. The first is regressing DFA budget as a function of all the variables that we considered. The next is regressing DFA budget as a function of variables per sector (e.g. trade variables; total trade, import, export). The last is gauging the effect of DFA budget to the variables that we considered by regressing each variable as a function of the DFA budget.

DFA Budget

- In the pairwise correlation, total OFWs, total remittances and tourist arrivals exhibit a high positive correlation with the DFA budget. The trade variables showed moderate positive correlation. Political stability has moderately positive low correlation while regulatory quality has moderate negative correlation. Net FDI has very low correlation at 2%
- The first model showed a high r-squared (.999537) and adjusted r-squared (0.995373) which means that a high percentage of the variations in the DFA budget could be explained collectively by the variables. However, it could be observed that their individual significance is low. Hence, this model could not be used to test the marginal effect each variable. However, it could be used for forecasting purposes; .in forecasting, the change in each variable must be equal which means that the agency could forecast the budget using the results of the regression provided that the changes that they will attach on the independent variables are the same.
- The next model regresses DFA budget as a function of variables per sector, where the sectors are trade (total trade, import, export), OFWs(Number of OFWs and total remittances), tourist arrivals, ICF, FDI, and political variables (political stability and regulatory quality).
 - The sectors that showed high r-squared and adjusted r-squared are trade,OFWs, tourist arrivals, and political variables. Despite the high r-

squared results, these sectors showed a low individual significance except for tourist arrivals.

- Other sectors showed low individual significance and low r-squared
- The last model is a reverse regression wherein the budget is now the independent variable. This is done to see the effect of a budget to different economic and political variables. Two scenarios were done in this model. The first is all variables are regressed solely to budget. The second is, time was added in the independent variable.
 - Total number of OFWs, total remittances, and tourist arrivals, exhibited high r-squared and high individual significance. This could mean that DFA budget has great impacts in these sectors.
 - However, when time was added, budget became individually insignificant but time is highly significant.

Changes in DFA budget

- In the pair wise correlation all variables showed a low correlation with changes in DFA budget
- In the first model it showed a high r-squared (.96) and acceptable adjusted r-squared (0.64) which means that a high percentage of the variations changes in DFA budget could be explained collectively by the variables. But it could be observed that their individual significance is low. This could only be used for forecasting purposes.
- In the second model, the changes in DFA budget, base on the individual significance and r-squared, showed weak response to all variables.
- The third model was all variables were regressed as a function of changes in DFA budget, time, and inflation.
 - For ICF: Time has a high individual significance but the ratio of DFAs budget and inflation is individually insignificant. R-squared and Adjusted R-squared showed moderately acceptable results at 60% and 43% respectively. Which means 60% of the variation in the ICF could be explained by changes in inflation, ratio and time.
 - For total remittances: Time has a high individual significance but the ratio of DFAs budget and inflation is individually insignificant. R-squared and

Adjusted R-squared showed high results at 97% and 95% respectively. Which means 97%% of the variation in the total remittances could be explained by changes in ratio, inflation, and time.

- For OFWs: Time has a high individual significance but the ratio of DFAs budget and inflation is individually insignificant. R-squared and Adjusted R-squared showed high results at 92% and 89% respectively. Which reflects that 93%% of the variation in the number of OFWs could be explained by changes in ratio, inflation and time.
- For total trade: Time has a high individual significance but the ratio of DFAs budget and inflation is individually insignificant. R-squared and Adjusted R-squared showed moderately acceptable results at 72% and 59% respectively. Which means 72% of the variation in the total trade could be explained by changes in inflation, ratio and time.
- For tourist arrivals: by changes in ratio, inflation, and time. Time has a high individual significance but the ratio of DFAs budget and inflation is individually insignificant. R-squared and Adjusted R-squared showed high results at 91% and 87% respectively. This reflects that 91% of the variation in total tourist arrival could be explained by changes in ratio, inflation and time.
- The political variables exhibited low r-squared and low individual significance which signals a weak relationship between this variables and time, inflation, and ratio

DFA budget as a ratio of National budget

- In the pair wise correlation the variable that has the high correlation with DFA budget was the correlation between OFWs, total tourist arrival, and total remittances at 0.672, 0.576, and 0.67 respectively
- The result of regressing the ratio as a function of the economic and political variables showed low individual significance and low adjusted r-squared which implies that it is not recommendable to use it either for gauging the marginal effect or even for forecasting purposes.
- In the second model, almost all variables showed low individual significance and r-squared aside from tourist arrivals which exhibited acceptable individual significance but low R-squared. Only 33% of the variations in the ratio between

DFA's budget and the national budget could be explained by the changes in the number of tourist arrivals in the country.

- The third model showed varied results. Which are as follows:
 - Total number of OFWs as a function of ratio and time. Time has a high individual significance but the ratio of DFAs budget is insignificant. R-squared and Adjusted R-squared showed high results which means that a high portion (92%) of the variation in the number of OFWs could be explained by changes in ratio and time. The model could be used for forecasting.
 - Regulatory quality as a function of time and ratio. ratio of DFAs budget has low individual significance but time is significant at 10% level of significance. But the R-squared of the model is quite low. Only 45% of the variation in regulatory power could be explained by the independent variables.
 - For tourist arrivals: Time has a high individual significance but the ratio of DFAs budget is individually insignificant. R-squared and Adjusted R-squared showed high results which means that a high portion (91%) of the variation in the number of tourist arrivals could be explained by changes in ratio and time. The model could be used for forecasting.
 - For total remittances: Time has a high individual significance but the ratio of DFAs budget is individually insignificant. R-squared and Adjusted R-squared showed high results which means that a high portion (96%) of the variation in total remittances could be explained by changes in ratio and time. The model could be used for forecasting
 - For total trade: Time has a high individual significance but the ratio of DFAs budget is individually insignificant. R-squared and Adjusted R-squared showed moderate results which means that an acceptable portion (75%) of the variation in trade could be explained by changes in ratio and time. The model could be used for forecasting
 - Other variables exhibited low r-squared and individual significance.

RECOMMENDATIONS

More regression models

- 1.) Adding more variables to make the model more realistic.

2.) Variables to be added includes economic diplomacy variables.

Explore other regression method

The regression method that was used in this study was Ordinary Least Squares. There are other advanced regression methods that could be used for this study. Using a different regression method could change the results and findings which could open a new perspective on how to look at the DFA budget. On how it is affected by different variables and how it affects different sectors.

For determining the value added of DFA consulates

- 1.) For the analysis of regional data, and determining the value added of DFA consulates, determine the budget per region or if possible per country and the number of consulates and FSPs in that region/country. Also if possible, determine which FSPs have attachés and the list of honorary consulates. Group the attachés depending on what government agency they came from (e.g. attaché from DTI, for tourism, etc.)
- 2.) Create a dummy variable that would differentiate a consulate from an attaché (e.g. let $X=1$ if the post has an attaché and $= 0$, otherwise). This way, it could be possible to measure the difference between the value added of a consulate to the value added of the attaché.