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**REFLECTIONS OF GLOBALISATION
– THE INFLUENCE OF ECONOMIC FACTORS ON
THE INTERNATIONAL DEVELOPMENT
ASSISTANCE ALLOCATIONS****

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ABSTRACT: The paper examines the results of a cross section regression analysis against four hypotheses. The primary hypothesis concerned the effect of economic prosperity and growth on “willingness to assist”. The positive prosperity effect was unsurprisingly confirmed. In connection to the second hypothesis, the regression results supported the view that the more integrated the DAC countries were into the global economy, the more inclined they were to participate in sharing the global responsibility through their commitment to foreign assistance. The results concerning the third hypothesis, however, showed that rather than increase the DAC countries willingness to assist their commercial dealings with the developing world actually had a negative effect on their ODA. The final hypothesis concerned the changed impact of economic factors on ODA since the late 1980s intensified globalisation. This hypothesis was confirmed by the findings of the analysis of the results of the six, split year time-batch regressions.

Keywords: Official Development Assistance (ODA), Globalisation, Level of Integration, Trade, Willingness-to-Assist.

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1. Introduction

The following paper is based on a regression analysis of time series data. In the paper, I will analyse panel data from OECD Development Assistance Committee (later referred to as DAC) Countries, with the objective of testing the validity of four hypotheses relating to the changing impact of globalisation, increase in international trade, economic prosperity and international donor generosity.

Although I acknowledge that there are many other factors (often political and/or psychological) influencing ODA figures that can be difficult or impossible to quantify, I think it will nevertheless be interesting to see whether dependencies between factors such as the countries participation in the global economy (trade/GDP) and their foreign aid allocations can be traced.

The structure of the paper is as follows: section two presents the research problem and the hypotheses under examination. In section three, the research methodology, including data sources and the construction of the model, will be explained. Section four consists of a presentation of the findings for the full time period and model variable analysis of six separated time-periods within the total sample. In section five, I will present my conclusions.

2. Research Problem

This analysis is meant to address some of the issues involved in the current debate over declining international commitment to official development assistance (ODA) to third world countries. I will attempt to analyse the impact of different economic factors on donor generosity during different time-periods (“batches”).

Each hypothesis will be analysed against the results of the regression analysis, which are split into six separate time batches. These batches cover five years with the exception of 1972-75 and 1996-1998 at the beginning and at the end of the full time period in question. The split year analysis was chosen in order to eliminate of the lag in the occurrence of the impact of change per variable and in order to make it easier to plot out trend development.

1st hypothesis: Opposite to the popular belief, an increase in economic prosperity of the donor country does not translate into greater willingness to assist.

2nd hypothesis: Those donor countries with the greatest level of integration – measured as trade’s proportional share of GDP - are more willing to assist due to their own dependency on the global economy.

3rd hypothesis: The proportional share of donor countries’ trade with non-OECD countries translates into greater willingness to assist the trading partners in the developing countries.

4th hypothesis: There has been a clear change in direction in which the different variables have affected donors’ willingness to assist since the late 1980 – in the era of intensified Globalisation.

The countries included in the analysis are 20 of OECD Development Assistance Committee member countries with the exception of Luxembourg for which the data availability was insufficient (see appendix 1. for data averages per country and selected model variable).

The statistical results and summary tables can be found in appendixes 1-6 at the end of this paper.

3. Methodology

Microsoft's SAS system was utilised for conducting the OLS regression analysis of this paper. The cross section estimation method was used to estimate a) the panel data covering the whole time-period from 1972-1998 as well as for b) the analysis of the separated time-batches covering (four; 1972-75 and three; 1996-98) five years at a time. The latter analysis focuses specifically on the observed regime changes of the impact of each individual explanatory variable during the different time-batches.

3.1 Data sources

The variables initially included in the qualifying cross correlation analysis were: 1.) ODA as percentage of GNP (dependent variable), 2.) GDP growth, 3.) Real GDP per capita (*in constant dollars; international prices, base year 1985*), 4.) GDP growth per capita, 5.) Trade share of GDP, 6.) Proportion of non-OECD trade of GDP, 7.) Export share of GDP, 8.) Current account deficit, 9.) Government revenue, 10.) Government expenditure and 11.) Unemployment rate. The summary statistics for these variables can be viewed in appendix 2 of this paper.

The World Bank and the IMF have a number of publicly accessible databases that cover a number of economic variables over time for most countries in the world. Out of these databases, the World Bank's Macro Time Series data was used as a source for the growth and trade indicators and the IMF Government Financial Statistics for the status of donor public finances.

The Unemployment figures were drawn from the data available at the ILO's LABORSTA database. Although the information inconsistency between different countries was noticeable, these figures were considered comparable enough to provide a measurement of prevailing economic situation in the donor economies over time. Notes on the unemployment data quality per country can be found in appendix 5 of this paper.

For the ODA indicator the OECD DAC Reports of various years were used.

3.2 Construction of the OLS Model

Selection of variables

In order to identify the explanatory variables best suited for the model and to decrease the likelihood of statistical biases such as multicollinearity and heteroskedasticity in the final model a Pearson cross correlation of all variables was conducted (Appendix 6). For the qualification procedure a correlation of all variables for all observed years was used.

Out of the three GDP growth indicators GDP real per capita (Gdprpc) was chosen based on its strong correlation with ODA ($r=0.47324$). The data coverage was also most comprehensive for GDP per capita. Both GDP percentage growth figures had lower relation to ODA ($r=-0.13123$ and $r=-0.11116$) in addition they were very highly correlated with each other and therefore would not be useful to be included in the same model. Also in favour of choosing the real GDP per capita was the fact that the indicator captures both the growth over time independent of population changes and the actual changes in income level.

To measure the donors' level of integration into the global economy the initial three trade indicators – trade share of GDP, non-OECD trade share of GDP and export share of GDP - were

decreased to two based on the outcome of the correlation. Since export share (Xshare) and trade share (Tradeshare) had an extremely high relation ($r=0.98966$) with each other it was decided that only one of them would be required to measure the impact of donors' participation in international trade on ODA. Because the latter of the two includes both import and export it was selected for the model. Although non-OECD trade was not highly related to ODA per se ($r=-0.06488$), it was the only indicator that actually measured the donors' commercial relations with the developing countries and was retained in the model. It also did relate to trade share and could hence be brought into the same model.

Although the government deficit, revenue and expenditure were all related to aid share the last two again had a very strong relation with each other. It was decided that government deficit would be used as a single indicator of government finance as it also represents the accumulated state of affairs rather than year on year activity. In the final model, even the deficit variable did not qualify at the 0.15 significance level of the stepwise selection when included in the same model with the other selected variables.

Unemployment indicator (Unemp), a revealing indicator of internal economic affairs, was retained as a variable to measure change in the donors' domestic economy over time, despite the fact that it had only a slightly high relation ($r=-0.14867$) with ODA and hence a relatively low fit for the model.

Identification of the Model

The variables remaining for the test models were 1.) ODA as percentage of GNP (as the dependent variable; Aidshare), 2.) real GDP per capita (Gdprpc), 3.) percentage trade share of GDP (Tradeshare), 4.) proportion of non-OECD trade of GDP, 5.) government deficit (current_deficit) and 6.) unemployment level (Unemp).

After several test models that supported the fitting of the number of variables in the final model it was decided that as many as possible should be included in the final model. The saturated model:

$$(1.) \quad \text{Aidshare} = a + b\text{Gdprpc} + c\text{Tradeshare} + d\text{NonOECDts} + e\text{Current_deficit} + d\text{Unemp}$$

however, appeared non-significant (see appendix 3 for the full model).

In order to find a more befitting model a stepwise selection procedure was performed using Mallows' C(p) criteria, thus adding a variable at a time and constructing a model with more significance. The stepwise proceedings are included in appendix 3. Finally, a reduced model excluding current account deficit, which failed the 0.1500 significance criteria set for the model, was obtained.

$$(2.) \quad \text{Aidshare} = a + b\text{Gdprpc} + c\text{Tradeshare} + d\text{NonOECDts} + d\text{Unemp}$$

Current account deficit was excluded only after it failed significance criteria based on the outcomes of both the non-stepwise and the stepwise procedure. Since both current account deficit and unemployment level measure the state of donors' domestic economic affairs it was decided that having one of the two still included in the model would give adequate support to the real GDP per capita variable as a measurement of change in donors' domestic economic affairs.

4. Findings

As non-scaled data was used in the regression model, the scale of the coefficients for the different variables varies. Hence a change in the coefficients of those variables measured in single digit percentages (NonOECDts and Unempl) means a relatively less significant change in its influence on the ODA (Aidshare) level during the observation period, than a similar proportional change of the higher percentage value variable (Tradeshare).

TABLE 1. Differences in the scales of the selected model variables

Variable	Measurement	Decimal format (Average values values for OECD DAC 1972-98)
Aidshare (ODA)	<u>Percentage</u> of GNP	0.413
Gdprpc	GDP real per capita (in constant dollars, international prices, base year 1985)	11973
Tradeshare	<u>Percentage</u> Import + Export / GDP	60.8
NonOECDts	Non OECD trade share <u>percentage</u> of total trade	8.37
Unemployment	<u>Percentage</u> of unemployed	6.72

Due to the high absolute value of the Gdprpc-variable in relation to the other explanatory variables, which are all percentage values, its multiplier is of a high decimal. For this reason its multiplier is here and in the following analysis presented with an E-n value (i.e. $0.0000368 = 368E-7$). Even the small changes in its coefficient are respectively more significant in relation to the ODA level.

The regression model's coefficient results obtained for the different explanatory variables for the full time-period of 1972-98 are as follows:

$$\text{ODA} = -0.173775 + 368E-7\text{Gdprpc} + 0.00531\text{Tradeshare} - 0.01\text{NonOECDts} - 0.00965\text{Unemp}$$

The results show that the income effect on the ODA (Aidshare) appears very positive, as does the impact of the countries' level of integration (measured as trade/GDP). Furthermore, the model shows a negative effect of the level of proportional trade with countries outside the OECD on ODA as well as the slightly negative effect of the unemployment rate.

The most robust variables in the model are real GDP per capita and trade share (respective t-values of 8.90 and 10.30 for data of all years observed), but the other two had good average t-values in the 2-4 range as well. Although the t-statistics observed for the split year batches in the case of Non-OECD trade and unemployment rate are sometimes very low and have only moderate explanatory power, the same set of variables is retained in all batches so that it is not necessary to wonder about the effect of including or excluding different variables.

For the purpose of plotting out possible trends the data were split into six different batches – 1972-75, 1976-1980, 1981-85, 1986-90, 1991-95, and 1996-98. In the following, these batches are analysed individually before summarising the results of the regression analysis in section 5 of this paper. The time-batch specific regression models can be viewed in appendix 4 of this paper.

4.1 Batch 1972-75: The 1st Oil Shock

The UN official recommendation level of 0.7% of GNP to Foreign Assistance was first introduced in 1970. The DAC average ODA commitment between 1972-75 was 0.3316% of their GNP (appendix 1). The global economy was badly hit by the oil price shock of 1973 to 1974. The emergence of several kinds of pro-aid movements' in Europe and North America attributed to the Aid conduciveness of the political environment although domestic problems in donor countries generated by the global downturn reduced the ability to commit official funds for foreign assistance.

During the first time-batch, increase in the real GDP level per capita had a slightly positive impact on the donor countries' willingness to commit funds to development assistance (coefficient 452E-7, t-value: 4.11). The same positive impact can be observed for the trade share of GDP (coefficient 0.00467, t-value: 2.95). The proportion of trade with the non-OECD countries had a negative value suggesting that the more DAC countries traded with the developing world the less willing they were to contribute to ODA, however, the low t-value of -0.15 means that the fit of the Non-OECD variable in the model was not good during this period. Curiously, the Unemployment level shows a positive impact on ODA which could be interpreted to mean that the more unemployed the DAC countries had on average the more sympathetic they were towards developing country problems. With a t-value of 1.15, it would however be presumptuous to claim the validity of that conclusion.

4.2 Batch 1976-1980: Recovery

Between 1976-80, the world economies were focused on regaining their competitiveness. Although the developing world agenda was still fresh in the minds of the policymakers, it was not on their immediate priority agendas. Despite this, the DAC average ODA rose an impressive 0.05 percentage points from the earlier period observed. The share of foreign trade of DAC GDP grew by almost 5 percentage points and the proportional trade with developing countries by 2 points (appendix 1). The MNCs' interest in the primary produce and minerals of the developing world was also continuously increasing. In the end of this time batch the world economy was hit by the 2nd oil price shock.

The impact of increasing income level (real GDP) per capita had a very similar although slightly stronger impact on the DAC ODA than during the previous period. The significance of participation in the global economy (measured as trade proportion of GDP) on ODA allocations more than doubled to 0.00896 from that of the earlier time-batch with a much higher t-value (6.24). As for the Non-OECD trade proportion the negative impact increased markedly to -0.02495 (t-value: -2.81) supporting an assumption that the more the DAC traded with developing world the less willing they were to contribute to the ODA. In other words, it appears that during this time the commercial interaction with developing countries was in fact crowding out development assistance. The unemployment level for this time bears no significance in the model (t-value 0.00), which suggests that the final invalidity conclusion for the first time-batch was indeed correct and that the sympathy-effect insignificant.

4.3 Batch 1980-85: Building New Economy Foundations

After relatively rapidly recovering from the 2nd Oil Shock the dominant feature of the early 1980's economy was the intensity of the technological development. There were huge improvements in the Information technology applications and worldwide communications. The new economy also required huge capital investments and internalisation of businesses, which in turn pushed policymakers towards more neo-liberal decisions. Structural changes in the

economy also meant an increase of unemployment level in DAC countries (from an average of 4.5% between 1976-80 to 7.4% average between 1981-85). DAC ODA allocations again rose by almost 0.05 percentage points to an average of 0.43% of their GNP. The average level of integration (measured as trade/GDP) of DAC countries to the Global economy was 64.5% when measured in trade terms and the Non-OECD trade proportion reached its peak during this period (10.27% of GDP see appendix 1).

The significant increases in the DAC income levels had a strong positive effect (667E-7) on ODA during this batch. The significance of DAC countries' involvement in global trade on their ODA decreased slightly and the non-OECD trade variable again had a slight negative effect on ODA growth although the rather low t-value of -0.46 would suggest it was not a very accurate variable in the model during the this third time-batch. Unemployment level variable was more accurate in the model (t-value: -0.27) and now affected the ODA slightly negatively.

4.4 Batch 1986-90: Entering Era of Globalisation

The accelerating phase of globalisation and the increasing prosperity in the DAC countries did not translate into a corresponding increase in the ODA allocations, which grew only by a modest 0.02 percentage points during this time batch. GATT Uruguay round negotiations aimed at extensive liberalisation of world trade commenced in 1986 and they were concluded in 1990. During the negotiations, the trade/GDP levels decreased to 60% due to the reserved and tense environment prevailing in the global policy context. DAC countries trade with non-OECD countries also sunk to the lowest level of the observed time-batches (6.75%, see appendix 1 for detailed averages).

Towards the end of the period, there were two major political developments, which affected the global scene and marked the end of the "Cold-War" between the west and the east: the dissolving of the Soviet Union and the Reunification of Germany. These two events also contributed to the creation of the more liberal trade and finances in the global marketplace.

As mentioned above the increasing prosperity effect (Gdprpc) was again less significant than during the preceding time-batch although still positive. The DAC countries' participation to the global trade had decreased and had a weaker positive impact on ODA then before. The non-OECD trade's effect was positive (0.00740) for the only time out of all the 6 time-batches examined, implying that the DAC countries' commercial interest in the developing world were actually accompanied by a stronger willingness to contribute to development assistance as well. Again, however, the low t-value (0.41) makes this conclusion dangerous in itself. Unemployment on the other hand was again increasingly accurate in the model (t-value -0.71) showing a more significant negative impact on the DAC ODA contribution.

The domestic concerns created by the new economy and underlying protectionism during the GATT negotiations seemed to distance the developing countries priorities from the context of international decision-making.

4.5 Batch 1991-95: Post Uruguay

In the Early 1990s, the private investment into developing countries grew exponentially due to the growing need to diversify portfolio investments and the general liberalisation of the financial markets. Commercial globalisation was reflected also in the affirming of the statuses of the economic power blocs. Appliance to the strict Maastricht criteria for member governments' finances made it more difficult for participating DAC economies to allocate non-compulsory funding to ODA.

The EC's Single European Act (SEA) ensuring free movement of labour, capital and goods came to force in 1992, and parallel developments in Northern America Strengthened the U.S. presence further. On the other hand, the positive developments in the ASEAN countries lifted many of the developing countries to the category of NICs (Newly Industrialised countries). The DAC trade/GDP started to increase again (62.1%) and the growth continued shadowed only by the further increase in the unemployment figures.

This time-batch was also the first time the concepts of western economies' "Predatory behaviour" and "Neo-liberal Creed" were introduced in the global development dialogue. The obvious prosperity benefits of globalisation were accompanied by a significantly smaller increase in the ODA contribution (a mere 0.0032 percentage point increase). The real GDP per capita level's positive impact on ODA dropped by almost a half and the significance of trade share of GDP diminished in the model as well. The most interesting observation during this time-batch is the strong negative effect (coefficient -0.03271 , t-value: -2.34) the non-OECD country trade had on the ODA contributions. The DAC's western economies, investing vast amounts of capital in prospective profits in the developing world, were less likely to commit funds to non-productive activity such as ODA.

Unemployment impact was also increasingly negative and further ate away from the DAC countries' willingness to contribute to ODA.

4.6 Batch 1996-98: New Challenges

The data evidence for the final time batch is revealing. DAC countries level of integration measured as trade's share of the GDP was at an all time high (70.5%) and the ODA allocation measured as percentage of DAC GNP actually decreased by 0.069 percentage points. The compulsory meeting of EMU criteria forced DAC's EC member countries to allocate more government funds to their debt management. The dollar appreciation attributed to a further decrease in the dollar-measured ODA. Although economic prosperity continued to increase in the DAC countries domestic and regional interests as well as the growing need to address competitiveness requirements in the global markets dominated in the political arena.

During the final time-batch included in this examination the impact of real GDP per capita was at it's lowest. Trade share of GDP effect shows a slight increase in comparison to the preceding period. The non-OECD trade share of GDP variable's negative impact is decreased but still significant although less accurate (t-value: -1.22). The negative effect of DAC countries' prevailing unemployment level is slightly higher than before supporting the assumption of increasing concern over the internal problems, but again has a low t-value (-0.40).

5. Summary of the Results

Several questions regarding the interactions among donors' willingness to assist developing countries, level of participation in the global economy and developments in domestic economy were examined in this paper.

The primary hypothesis concerned the effect of economic prosperity and growth on the donors' willingness to assist. The positive prosperity effect could be plotted throughout the panel data as the more the real GDP per capita increased in the DAC donor countries, the more willing they appeared to be to allocate budget funds to ODA. The other variable chosen to measure the impact of DAC countries' domestic economy was the level of unemployment. Although the accuracy of this variable in the model worsened as the data was split into the separate time-batches it still supported the assumption that the willingness to assist is influenced by the state of domestic affairs and that domestic economic challenges eat away from the DAC donors' ODA allocations.

The second hypothesis concerned the effect of the increasing level of economic integration on the DAC donors' ODA allocations. To examine this effect the trade share of GDP variable was used. The regression results supported the view that the more integrated the DAC countries were into the global economy, the more inclined they were to participate in sharing the global responsibility through their commitment to foreign assistance.

The effect of proportional trade with developing world countries was the concern of the third hypothesis which tested whether or not commercial interaction was accompanied by a higher interest in assisting developing economies. These variable results appeared robust in the model for the full time period but as the data was split into the time batches the accuracy weakened significantly. It could, however, be observed that rather than increase the DAC countries willingness to assist their commercial dealings with the developing world actually had a negative effect on their ODA. The only exception to this trend was the time-batch of 1986-90.

The final hypothesis concerned the factors behind the negative change in ODA since late 1980s intensified globalisation. This hypothesis was confirmed by the findings. The time-batches previously to 1986-90, show a continuous strengthening of the positive prosperity effect, but from 1986-90 onwards, this increase is reversed as the positive effect starts to weaken. The same change can be examined for the impact of level of integration: after nearly doubling from 1972-1975 to 1976-80 and remaining high for 1980-86 the positive impact of trade declines almost to the initial level of 1972-75 before starting to slowly strengthen again from 1996 onwards. The "globalised" DAC donors', after initial excitement, pledges and hype of sharing responsibility, appear to be losing interest in the developing world. The decline in ODA allocations is accompanied by a weakening prosperity impact on the allocations, despite the DAC countries GDP level's continuous increase.

Appendix 1. Average values of the economic indicators chosen for the analysis.

Average values of model variables of OECD Development Assistance Committee. All years observed and per the six selected time batches.

Country	yearF	type	FREQ	Gdprpc	Tradeshare	NonOECD	Unemp	aidsha
All DAC	1972-98	0	560	11972.672	60.79756557	8.377294833	6.7155	0.41317
All DAC	1972-75	1	80	9671.625	53.71221354	7.914744528	3.3768	0.33163
	1976-80	1	100	10521.95	58.23221707	9.727273889	5.2053	0.3818
	1981-85	1	100	11320.22	64.46935635	10.26924756	8.0785	0.4315
	1986-90	1	100	12814.55	60.78904415	6.747169878	7.5296	0.4573
	1991-95	1	100	13577.996	62.06029277	6.980531758	9.226	0.4605
	1996-	1	80	14731.544	70.52589966	8.732099915	8.24	0.39117

Economic indicator averages for individual OECD DAC countries 1972-98.

			Gdp Real/Capita	Tradeshare	NonOECD	Unemp	Aidshare
Overall Average values of variables per Country 1972-98							
AUS	2	40	12110.219	32.98263158	7.039215564	7.1536	0.46441
AUT	2	51	9772	65.50671859	7.954526436	4.3429	0.21941
BEL	2	44	10274.103	112.9838566	17.469245	10.271	0.47471
CAN	2	45	13197.821	49.74676283	4.175573564	8.7	0.41971
CHE	2	44	13721.847	64.21666878	8.032266744	1.716	0.24441
DEU	2	47	10604.939	46.41172921	7.155119	6.0464	0.38353
DNK	2	45	11452.359	64.41051513	6.659696154	8.1885	0.69265
ESP	2	48	7257.8693	32.46926715	6.352374282	15.348	0.09259
FIN	2	45	10084.59	53.33824971	11.55956982	7.0893	0.29235
FRA	2	44	10971.077	37.55006723	7.657006821	8.1577	0.59324
GBR	2	46	10400.016	49.85250112	9.469125513	7.4929	0.36441
IRL	2	49	7016.2821	97.19917937	7.129834436	11.489	0.12889
ITA	2	46	9449.7179	38.90632298	8.612728615	9.5107	0.21118
JPN	2	43	9846.5897	21.35437006	8.62209	2.4929	0.27088
NLD	2	45	10641.615	95.50247574	12.98612959	6.5708	0.78529
NOR	2	46	11577.564	74.05713031	5.551706538	3.2143	0.78324
NZL	2	48	10504.795	54.5032894	7.776278846	7.15	0.26765
PRT	2	52	4965.2264	58.28807761	8.964933769	6.4792	0.10741
SWE	2	46	12030.255	56.55696337	6.716742051	3.6786	0.72735
USA	2	45	15108.987	16.49951104	4.129543359	6.4357	0.24853

Appendix 2. Simple Statistics OECD DAC (The SAS System)

All Years						
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
Year	800	1980	11.55062	1583600	1960*	1999*
Aidshare	659	0.40346	0.25968	265.88	0	1.17
Gdpcha	728	3.31573	2.75954	2414	-17.62832	12.88257
Gdprpc	773	10309	3346	7969137	1869	18804
Gdpchapc	727	2.65558	2.72096	1931	-19.09288	12.50789
Tradeshare	754	57.89358	24.54841	43652	16.24982	146.64285
NonOECDts	712	8.05703	3.01904	5737	2.08375	19.96341
Xshare	754	28.94439	12.65315	21824	8.21068	76.40252
Current_deficit	443	-4.07592	3.82607	-1806	-16.00111	5.10738
Gov_revenue	443	32.54312	9.01878	14417	9.8485	51.65871
Gov_expend	443	35.87246	10.07752	15891	12.57177	57.74622
Unemp	516	6.77287	4.68305	3495	0	24.2

*The initial data set included some variables 1960-1999. These observations were, however, excluded from the final model.

Appendix 3. Construction of the Regression Model: Stepwise Mallows Criteria C (p)

The REG Procedure
 Model: FINAL
 Dependent Variable: Aidshare

Stepwise Selection: Step 1

Variable Gdprpc Entered: R-Square = 0.1438 and C(p) = 115.1733

Analysis of Variance:

Source	DF	Sum Of Squares	Mean Square	F Value	Pr>
Model	1	5.33548	5.33548	73.75	<.00
Error	439	31.76174	0.07235		
Corrected Total	440	37.09722			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr>F
Intercept	-0.01930	0.05297	0.00961	0.13	0.7157
Gdprpc	0.0000369	0.0000043	5.33548	73.75	<.0001

Bounds of condition number: 1,1

Stepwise Selection: Step 2

Variable Tradeshare Entered: R-Square = 0.2964 and C(p) = 18.8041

Analysis of Variance:

Source	DF	Sum Of Squares	Mean Square	F Value	Pr>
Model	2	10.99381	5.4969	92.23	<.0001
Error	438	26.10342	0.0596		
Corrected Total	440	37.09722			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr>F
Intercept	-0.34632	0.05863	2.07944	34.89	<.0001
Gdprpc	0.00004097	0.00000392	6.50445	109.14	<.0001
Trade Share	0.00486	0.00049924	5.65832	94.94	<.0001

Bounds on condition number: 1.0115, 4.046

Stepwise Selection: Step 3

Variable Unemp Entered: R-Square = 0.3148 and C(p) = 8.9099

Analysis of Variance:

Source	DF	Sum Of Squares	Mean Square	F Value	Pr>
Model	3	11.67798	3.89266	66.92	<.00
Error	437	25.41925	0.05817		
Corrected Total	440	37.09722			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr>F
Intercept	-0.28742	0.06042	1.31646	22.63	<.0001
Gdprpc	0.00004035	0.00000388	6.29562	108.23	<.0001
Trade Share	0.00492	0.00049352	5.79103	99.56	<.0001
Unemployment	-0.00851	0.00248	0.68417	11.76	0.0007

Bounds on condition number: 1.0137, 9.0909

Stepwise Selection: Step 4

Variable NonOECDts Entered: R-Square = 0.3240 and C(p) = 5.0000

Analysis of Variance:

Source	DF	Sum Of Squares	Mean Square	F Value	Pr>
Model	4	12.01792	3.00448	52.23	<.0001
Error	436	25.0793	0.05752		
Corrected Total	440	37.09722			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr>F
Intercept	-0.17375	0.07613	0.2996	5.21	0.023
Gdprpc	0.00003676	0.00000413	4.5585	79.25	<.0001
Trade Share	0.00531	0.0005154	6.09867	106.02	<.0001
NonOECDts	-0.01005	0.00413	0.33995	5.91	0.0155
Unemp	-0.00965	-0.00251	0.85003	14.78	0.0001

Bounds on condition number: 1.3034, 18.492

All variables left in the model are significant at the 0.1500 level.
All variables have been entered into the model.

Summary of Stepwise Selection

Step	Variable entered	Variable Removed	Number of Vars in	Partial R-Square	Model R-Square	C(p)	F Value	Pr > F
1	Gdprpc		1	0.1438	0.1438	115.173	73.75	<.0001
2	Tradeshare		2	0.1525	0.2964	18.8041	94.94	<.0001
3	Unemp		3	0.0184	0.3148	8.9099	11.76	0.0007
4	NonOECDts		4	0.0092	0.324	5	5.91	0.0155

The Regression Procedure (non stepwise)

Model: Final

DependentVariable: Aid Share

Aidshare = - 0.173775 + 368E-7Gdprpc + 0.00531Tradeshare - 0.01NonOECDts - 0.00965Unemp

Root MSE	0.23984	R-Square	0.324
Dependent Mean	0.42206	Adj. R-Square	0.3178
Coefficient Variance	56.82464		

SATURATED MODEL RESULTS

Analysis of Variance:

Source	DF	Sum Of Squares	Mean Square	F Value	Pr>
Model	5	12.82741	3.5647	45.35	<.0001
Error	385	21.77753	0.05657		
Corrected Total	390	34.60494			

Root MSE	0.23783	R-Square	0.3703
Dependent Mean	0.43529	Adj. R-Square	0.3625
Coefficient Variance	54.65754		

Variable	Parameter Estimate	Standard Error	t - value	Pr> t
Intercept	-0.23692	0.08482	-2.79	0.023
Gdprpc	0.00004074	0.00000458	8.90	<.0001
Trade Share	0.00589	0.0005349	11.01	<.0001
NonOECDts	-0.00779	0.00413	-1.80	0.0155
Current_deficit	0.0000811	0.00376	0.00	
Unemp	-0.00965	0.00294	-4.05	0.0001

Appendix 4. Regressions for selected Time-Batches

Model: Final => Dependent Variable: Aidshare (ODA)

Years 1972-75

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr >F
Model	4	1.68032	0.42008	14.59	<.0001
Error	56	1.61217	0.02879		
Corrected Total	60	3.29249			

Root MSE	0.16967	R-Square	0.5103
Dependent Mean	0.33951	Adj R-Sq	0.4754
Coeff Var	49.97590		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	-0.52983	0.15711	-3.37	0.0014
Gdprpc	1	0.00007591	0.00001059	7.17	<.0001
Tradeshare	1	0.00354	0.00112	3.17	0.0025
NonOECDts	1	0.00298	0.00804	0.37	0.7121
Unemp	1	-0.01860	0.01138	-1.63	0.1079

Years 1976-1980

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr >F
Model	4	2.99048	0.74762	13.43	<.0001
Error	80	4.45441	0.05568		
Corrected Total	84	7.44489			

Root MSE	0.23597	R-Square	0.4017
Dependent Mean	0.37435	Adj R-Sq	0.3718
Coeff Var	63.03309		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	-0.40699	0.20323	-2.00	0.0486
Gdprpc	1	0.00006226	0.00001118	5.57	<.0001
Tradeshare	1	0.00456	0.00119	3.83	0.0003
NonOECDts	1	-0.00516	0.00891	-0.58	0.5641
Unemp	1	-0.01453	0.01082	-1.34	0.1831

Years 1981-1985

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	3.42240	0.85560	16.53	<.0001
Error	78	4.03844	0.05177		
Corrected Total	82	7.46084			

Root MSE	0.22754	R-Square	0.4587
Dependent Mean	0.41566	Adj R-Sq	0.4310
Coeff Var	54.74174		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	-0.63607	0.24749	-2.57	0.0121
Gdprpc	1	0.00006675	0.00001239	5.39	<.0001
Tradeshare	1	0.00582	0.00112	5.20	<.0001
NonOECDts	1	-0.00098505	0.00798	-0.12	0.9021
Unemp	1	-0.00496	0.00649	-0.77	0.4466

Years 1986-1990

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	2.50012	0.62503	9.47	<.0001
Error	83	5.48012	0.06603		
Corrected Total	87	7.98024			

Root MSE	0.25695	R-Square	0.3133
Dependent Mean	0.45920	Adj R-Sq	0.2802
Coeff Var	55.95642		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	-0.43543	0.29521	-1.47	0.1440
Gdprpc	1	0.00004846	0.00001340	3.62	0.0005
Tradeshare	1	0.00555	0.00129	4.30	<.0001
NonOECDts	1	0.00065268	0.01834	0.04	0.9717
Unemp	1	-0.00654	0.00753	-0.87	0.3880

Years: 1991-1995

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	1.59477	0.39869	6.05	0.0002
Error	87	5.73232	0.06589		
Corrected Total	91	7.32709			

Root MSE	0.25669	R-Square	0.2177
Dependent Mean	0.46891	Adj R-Sq	0.1817
Coeff Var	54.74109		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	0.02996	0.25257	0.12	0.9059
Gdprpc	1	0.00003129	0.00001255	2.49	0.0145
Tradeshare	1	0.00494	0.00122	4.05	0.0001
NonOECDts	1	-0.03271	0.01396	-2.34	0.0214
Unemp	1	-0.00550	0.00658	-0.84	0.4055

Years: 1996-1998

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	0.57617	0.14404	2.07	0.1140
Error	26	1.81022	0.06962		
Corrected Total	30	2.38639			

Root MSE	0.26386	R-Square	0.2414
Dependent Mean	0.42065	Adj R-Sq	0.1247
Coeff Var	62.72823		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	-0.12117	0.41824	-0.29	0.7743
Gdprpc	1	0.00002817	0.00002032	1.39	0.1775
Tradeshare	1	0.00532	0.00220	2.41	0.0231
NonOECDts	1	-0.02246	0.01838	-1.22	0.2328
Unemp	1	-0.00578	0.01457	-0.40	0.6947

Appendix 5. Note on the quality considerations of Data

Note 1. ILO LABORSTA Unemployment Data: Although data included number of different unemployment statistics for some countries the registered unemployment figures were chosen when available to ensure best possible data comparability. In those country cases where registered unemployment was not available or was only available for the most recent years labour force survey results, official estimates or insurance records were used depending on the data availability for specific country over time.

DAC Country	Data Source	Years Covered	Note
Australia	Labour force survey	1972-99	
Austria	Registered unemployment	1972-99	
Belgium	Labour force survey	1972-99	
Canada	Registered unemployment	1984-99	
Denmark	Labour force survey	1973-98	
Finland	Registered unemployment	1972-99	
France	Official Estimates	1972-97	
Germany	Registered Unemployment	1991-99	Records since German Unification
Ireland	Registered unemployment	1983-99	
Italy	Registered unemployment	1972-99	
Japan	Registered unemployment	1972-99	
Netherlands	Registered unemployment	1975-98	Until 1987 recorded biannually
New Zealand	Registered unemployment	1986-99	
Norway	Registered unemployment	1972-99	
Portugal	Registered unemployment	1974-99	
Spain	Registered unemployment	1973-98	1988 value missing
Sweden	Registered unemployment	1972-99	
Switzerland	Registered unemployment	1975-99	
United Kingdom	Insurance Records	1972-99	
United States	Labour Force Survey	1972-99	

Note 2. Due to West Germany being the original OECD Development Assistance Committee member and for which the ODA were tracked, the data records of all economic indicators (WB, IMF, OECD and ILO) used in the analysis previous to German Unification (1989) are those of West Germany.

Appendix 6. Pearson Cross Correlations of Coefficients

All Countries 1972-98		Year	Aidshare	Gdpcha	Gdprpc	Gdpchpc	Tradshare	Non OECDts	Xshare	Current_deficit	Gov_revenue	Gov_expend	Unemp
Year		1	0.1674 <.0001	-0.34414 <.0001	0.73174 <.0001	-0.27957 <.0001	0.27717 <.0001	0.16226 <.0001	0.30825 <.0001	-0.02178 0.6484	0.25929 <.0001	0.32851 <.0001	0.38667 <.0001
	800	659	728	773	727	754	712	754	754	446	446	445	530
Aidshare		0.1674 <.0001	1	-0.12692 0.014	0.38611 <.0001	-0.10178 0.0106	0.24305 <.0001	-0.3751 0.3586	0.28974 <.0001	0.21533 <.0001	0.54629 <.0001	0.3923 <.0001	-0.16071 0.0003
	659	659	631	652	630	633	601	633	633	446	446	445	514
Gdpcha		-0.34414 <.0001	-0.12693 0.014	1	-0.33297 <.0001	0.97401 <.0001	-0.10674 0.0049	-0.10674 0.0049	-0.11377 0.025	0.10159 0.0323	-0.13452 0.0045	-0.16221 0.0006	-0.02101 0.6416
	728	631	728	722	727	703	692	703	703	444	444	443	493
Gdprpc		0.73144 <.0001	0.38611 <.0001	1	-0.33163 <.0001	0.05282 0.1487	-0.06563 0.0816	-0.06563 0.0816	0.10896 0.0028	0.35481 <.0001	-0.06698 0.1613	-0.14274 0.0028	-0.09704 0.0289
	773	652	722	773	722	749	705	705	749	439	439	438	507
Gdpchpc		-0.27957 <.0001	-0.10178 0.0106	0.97401 <.0001	1	-0.04452 0.2384	-0.04615 0.2256	-0.04615 0.2256	0.08646 0.2137	0.08646 0.0694	-0.03554 0.4856	-0.639 0.1799	-0.00445 0.9216
	727	630	727	722	727	703	691	703	703	443	443	442	492
Tradshare		0.27717 <.0001	0.24305 <.0001	0.05282 0.1487	1	-0.04452 0.2384	0.0816 0.2256	0.0816 0.2256	0.990881 <.0001	-0.19762 <.0001	0.66111 <.0001	0.6702 <.0001	0.18381 <.0001
	754	633	703	749	703	754	686	754	754	442	442	443	487
NonOECDts		0.16226 <.0001	-0.3751 0.3586	-0.06563 0.0816	0.371 <.0001	-0.04615 0.2256	0.27626 <.0001	0.27626 <.0001	0.36159 <.0001	-0.16292 0.0008	0.17123 0.004	0.20319 <.0001	-0.07747 0.0934
	712	601	692	705	691	686	712	686	686	422	421	419	470
Xshare		0.30825 <.0001	0.28974 <.0001	0.10896 0.0028	0.10896 0.0028	-0.04696 0.2137	0.36159 <.0001	0.36159 <.0001	1 0.0008	-0.15885 0.0008	0.6728 <.0001	0.67099 <.0001	0.19525 <.0001
	754	633	703	749	703	754	686	754	754	442	442	442	489
Current_deficit		-0.02178 0.6464	0.21533 <.0001	0.10159 0.0323	0.35481 <.0001	0.08646 0.0694	-0.19762 <.0001	-0.16292 0.0008	-0.15885 0.0008	1 0.0112	-0.1179 0.0112	-0.42024 <.0001	-0.38336 <.0001
	446	446	444	439	444	443	422	442	442	446	446	445	437
Gov_revenue		0.25929 <.0001	0.54629 <.0001	-0.06698 0.1613	-0.06698 0.1613	-0.03554 0.4856	0.17123 0.004	0.17123 0.004	0.6728 0.0008	1 0.0112	0.9375 <.0001	0.25571 <.0001	0.25571 <.0001
	446	446	444	439	444	443	421	442	442	446	443	445	437
Gov_expend		0.32851 <.0001	0.3923 <.0001	-0.14274 0.0006	-0.14274 0.0006	-0.02101 0.6416	0.20319 <.0001	0.20319 <.0001	0.67099 <.0001	-0.42024 <.0001	0.9375 <.0001	0.40132 <.0001	0.40132 <.0001
	445	445	443	438	443	442	419	442	442	445	445	443	436
Unemp		0.38667 <.0001	-0.16071 0.0003	-0.09704 0.0289	-0.09704 0.0289	-0.00445 0.9216	-0.07747 0.0934	-0.07747 0.0934	0.19525 <.0001	-0.38336 <.0001	0.25571 <.0001	0.40132 <.0001	0.40132 <.0001
	530	514	493	507	492	487	470	487	489	437	437	436	530

Probability

> |r| H0: Rho=0

No. of observations

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