The Dynamism of Growth in GUUAM Countries

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December 13, 2001

ECON 8296 Research Methods in Economics and Business
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ABSTRACT

This paper examines the dynamism of economic growth in GUUAM countries during a 10-year period from 1991 till 2000. I employ an econometric model to estimate the effects of the policies of the organization on the economic growth in its member states. Only a few policies employed had affected the economic growth significantly. I observed that an increase in FDI inflows to these countries enhances GDP per capita growth more than any other determinant including in my model does. My result suggest that the higher ratio of net foreign direct investment inflows to GDP and the lower fertility rate would increase the GDP per capita growth in above-mentioned countries.

1. INTRODUCTION AND LITERATURE REVIEW

The objective of this research is to analyze the economic growth of a particular regional group of countries after the collapse of USSR. As we know, immediately after this collapse several regional economic organizations had been established. The Organization of GUUAM (stands for the first letters of 5 member countries such as Georgia, Ukraine, Uzbekistan, Azerbaijan and Moldova) Countries is the subject of my research.

In the research I analyzed detailed data on economic growth indicators for GUUAM Countries during a 10-year period from 1991 till 2000.

As we know, there are several indicators characterizing economic growth. But according to the "Theories of Local Economic Growth" by Paul Plummer and Mike Taylor, using the real gross-domestic product (GDP) per capita is more expedient in relation to the dynamism of growth. Because the magnitude of GDP per capita doesn't give us an explicit idea about the dynamism, as countries differ from each other in population. Therefore, there are other reasons, too. As in the press release on Accounts System by World Bank we face the following definition for Real GDP:

"Real gross-domestic product is the total market value, measured in constant prices, at all goods and services produced within the political boundaries of an economy during a given period of time, usually one year". The key is that GDP is measured in constant prices, the prices for a specific base year. Real GDP adjusts GDP for inflation and other important indicators.

The aim of this research is to find the answers to the following questions: What is the scope of the dynamism of economic growth of GUUAM countries? What is the impact of monolithic economic policy, which has occurred after formation of organization, on the growth?

Which policies have significant effect on economic growth? What are the possible policy implications for the future?

The researches, which had already conducted in this issue, show that the economic growth after the formation of this regional economic integration differs in quantity and quality from that of before it. This difference is obvious while analyzing the components, which form the real GDP indicator.

GUUAM, uniting Georgia, Ukraine, Uzbekistan, Azerbaijan and Moldova, was founded in October 1997 in Strasburg, France. Earlier GUUAM accords, such as The Strasburg Communiqué (1997), The Washington Statement (1997), The Florence Statement (1997) and The New York Memorandum (1997), formed the tasks of the organization.

The formation of GUUAM was not always smooth. There were speculations as to what the objectives of the organization are. The adoption of the charter in 1997 put an end to these speculations. One of its objectives is the development of effective use of the transport-communications corridors and infrastructure among the GUUAM members. Transport and alternative communications to reach world market are important for the newly formed states. Practical measures to realize concrete joint projects are necessary. For example, the TRASECA transportation corridor, which is supported by the European Union, may be viewed as on of these projects. Establishing scientific-technical and humanitarian contacts with the rest of the world was also viewed to be important.

While GUUAM was indeed born from the efforts of member-states to oppose the excessive concentration of Russian troops on their territories and in their vicinity during the Commenwealth of Independent States (CIS) negotiations in 1996, all GUUAM countries recognize Russia's importance and key role in the region. Significantly, all of GUUAM's official

documents reflect its intention of building relationships, both within the group and with the states outside it, based on principles of international law. As a matter of fact, a connection on mutual assistances in consultative affairs was signed along with the GUUAM Charter. The charter includes the aims of GUUAM, the intention to render assistance for mutual economic-social growth by focusing on cooperation in attracting foreign direct investment (FDI) to the countries, exchange rate regulations, trade and export tariffs enhancement, inflation, and demographic issues.[1] While characterizing the GDP per capita growth in these countries I will focus on the issues shown above in order to find out how formation of GUUAM and regulations after its formation has affected the economic growth in the region.

As Shamsaddin Haciyev (2000, p.442) emphasized, "The formation of GUUAM has significantly affected the economic growth in Caucasus and Central Asia". He has used several empirical techniques to prove this statement; although he emphasized that some other researches must be done on this issue. One of the main aims of my research is to test this hypothesis, which is firstly stated by Haciyev (2000). The important matter here is to find out what determinants to use in order to have an ideal econometric model and how to relate these determinants to the main policies of Organization of GUUAM Countries.

In my model in this paper, the variables affecting real GDP per capita growth are the ratio of net foreign direct investment inflows to gross domestic product, the ratio of total export to gross domestic product, change in value of exchange rate, inflation rate, fertility rate and dummy variables for all member countries except Ukraine[2]. Robert J. Barro (1996, p.2) studied a panel of 112 countries from 1996 to 1990 and found strong support that "For a given starting level of real capita GDP, the growth rate is enhanced by higher initial schooling and life expectancy,

[1] These issues are addressed in the GUUAM Charter.
[2] Ukraine is taken as "base country" in this model.

lower fertility, lower government consumption, better maintenance of the rule of law, lower inflation, and improvements in the terms of trade"[3]

Barro (1996) focused on the link between inflation-monetary policy and economic growth. Barro (1996, p. 3) finds that "The basic finding is that higher inflation goes along with a lower rate of economic growth". As reviewed in Borro's (1996) paper, Clive Briault's (1995) analysis indicates that inflation is a bad idea, but the case is not decisive. I faced the same results in several other papers.[4] In this case Barro's (1996) additional empirical research on the relation between inflation and economic performance bears a great importance for my paper. His paper explores the above-mentioned relation by using the both cross-country and time-series data, same as in my paper.

Robert Z. Lawrence and David E. Weinstein (1999) suggest, "Exports and export policies played a crucial role in stimulating growth"[5]. Although this research was conducted on 2 Asian countries, Japan and Korea**,** which are considerably different in growth level and foreign trade policies from GUUAM countries, the theoretical background used in this paper gives us a clear explanation of the impact of export policies (indirectly the ratio of total export to gross domestic product) on economic growth. Some other studies[6] have pointed to the importance of getting an optimal level of export tariffs crucial to stray trade performance and economic growth. This issue was also discussed in Barro (1996, p.4), as it is stated "Changes in the terms of trade have often been stressed as important influence on developing countries, which typically specialize their

[3] He focused on export and import prices, as well as export tariffs while analyzing the improvements in the terms of trade.
[4] Fischer (1993), Kormendi and Meguire (1985), Grier and Tullock (1989)
[5] They included the appropriate (i.e. increase or decrease) change in the level of export tariffs as one of the most important vehicles of export policy of a particular country.
[6] Ito (1992), Dore (1986), Boltho (1985), Fallows (1994).

exports in a few primary products"[7]. He also suggests that changes in real GDP occur only if the shift in the terms of trade simulates a chance in domestic employment and output. These suggest that the ratio of total export to gross domestic product may be a crucial determinant of GUUAM countries economic growth analysis.

In this paper I will also focus on foreign direct investment (FDI) flows to these countries during a 10-year period, from 1991-2000 and the impact of these flows on the GDP per capita growth. Eduardo Borensztein, Jose De Gregario and John-Wha Lee (1995) use FDI flow data from industrial countries to 69 developing countries over the last two decades. They test the effect of FDI on economic growth in a cross-country regression framework. Broensztein et al (1995, p.1) mentioned "Our results suggest that FDI is in fact an important vehicle for the transfer of technology, contributing to growth in larger measure than domestic investment". In their research, they gave a great deal of importance to human capital. This is because; FDI becomes more productive only when the host country has substantial human capital. While analyzing the data on FDI I will focus on the minimum threshold stock of human capital in order to measure the productivity of FDI in GUUAM countries. Although the description of data on FDI would appear as the following: the ratio of net foreign direct investment inflows to GDP. This empirical result lies back to David Romer (1993) where he finds that "The higher the level of human capital in the host country, the higher the effect on FDI on the growth rate of economy"[8]. Sebastian Edwards (1990) also conducted a study on FDI in Least Developed Countries (LDCs). He focuses on endogeneity problems but not excluded the key role of human

[7] This assumption bears a great importance for GUUAM countries, which have been through the stated process. For example, Azerbaijan's specialization on oil-exports is a logical result of this process. Governments must take this issue into consideration while making crucial decisions on the change of terms of trade. See Barro's (1996) "Determinants of Economic Growth: a Cross-Country Study" NATIONAL BUREAU OF ECONOMIC RESEARCH Working paper, page 4.

[8] See (Romer, David. (1993). "The Nation in Depression". Journal of Economic Perspectives 7 (Spring): 19:39.)

capital in the productivity of FDI in those countries. The empirical background of the impact of FDI on GDP per capita growth lays back to many other researches.[9]

The final determinant of GDP per capita growth in my model is fertility rate. Barro (1996) considers low fertility rate, as one of the most important determinants of the overall economic growth. Charles Jones (1997) has also focused on fertility rate and took Greece's economic growth in recent year, as an example of important impact of low fertility rate on economic growth. This paper argues that endogenous fertility and increasing returns to scale are the fundamental ingredients in understanding endogenous growth. Jones (1997, p.1) indicates, "Endogenous fertility leads the scale of the economy to grow over time. Increasing returns translates this increase in scale into rising per capita income". These findings and the fact that I am conducting this research focusing on GDP per capita growth, made it inevitable to include fertility rate as a determinant of my dependant variable.

As a conclusion, I can say that the importance of GUUAM is becoming greater day by day. GUUAM's success has been encouraging the other countries in the region to join this organization. GUUAM's future certainly depends on its members and the progress of the concrete cooperative initiatives they undertake. However, the group's success or failure is also likely to greatly depend on the extent of U.S. support and encouragement. Its member states have shown that, in spite of many challenges, they are willing and able to work together in order to promote positive changes in their region. Hopefully, GUUAM's western partners are able to recognize the group's promising potential and help to realize it.

[9] Aitken and Harrison (1993), Blomstrom, Magnus et al (1992), Cohen (1993), Segerstrom (1991).

2. EMPIRICAL MODEL

Before discussing the specification of model it is expedient to introduce the data description used in this research. All variable definitions, data sources and predicted signs for every singe independent variable are reported in Table 1. (See p.14). In my model I have used panel data, including data sets for 5 countries in 10-year period between 1991-2000. All descriptive statistics are reported in Table 2. (See p.15). You can also see correlation coefficients in Table 3. (See p.16).

What determinants to include in order having an ideal model for explaining the economic growth of a country or a region? Economists have been infinitely discussing this question but there are still assumptions that the determinants of such a model depend on the specific characteristics of a particular country or set of countries. As the aim of my research is to analyze the dynamism of economic growth in GUUAM countries, and find out the impact of the policies of the Organization on GDP per capita growth I included only the determinants as independent variables which are affected by the policies of the above-mentioned organization. As I implied earlier in this paper I chose GDP per capita growth as the dependant variable of my econometric mode. My first independent variable is (FDI), which is the ratio of net foreign direct investment inflows (current US $). The rationale for including this variable as in “ratio format” is to have the most explicit and clear explanation for the net foreign direct investment inflows. Therefore, it was not logical if I solely included the magnitude of FDI inflows as the member countries differ from each other by population and other factors. The second variable is (Export), which is the ratio of total export to gross domestic product (%). One of the reasons of including this variable in my model is as following: as I indicated earlier in this paper, Lawrence and Weinstein (1999) had assumption on the crucial role of the exports for stimulating the economic growth. As we

know, one of the main policies of The Organization of GUUAM Countries is the enhancing of export conditions of these countries. This is definitely is another reason of considering Export as one of the determinants of economic growth. One of the other independent variables is (Exchange), which is the change in the value of exchange rate (%). The sign of this variable remains ambiguous. This is because these countries have denominated their local currencies in the early 90's. Empirical researches by Haciyev (1998)[10] show that the fact of denomination of local currencies causes technical problems while analyzing the economic growth for a long period. The next independent variable used in my model is (Inflation), which is the inflation rate (consumer prices, %). Barro's (1996) and Briault's (1995) empirical on the impact of inflation on economic growth pointed out that high inflation causes a considerable decrease in economic growth. Thus, the expected sign of (Inflation) in my model is believed to be negative. Besides these variables I included (Fertility), which is the fertility rate (children born/woman). The rationale of including this variable is as following: Since my paper analyzes the dynamism of GDP per capita growth, the population factor must be included. Instead of using the magnitude of population I used the fertility rate, which is also considered to be expedient by Barro (1996). Economic intuition tells us that the lower the fertility rate, the higher the economic growth. From this point of view, the expected sign for (Fertility) is promised to be negative. I also included 4 dummy variables; DUM1, DUM2, DUM3, DUM4 for Moldova, Georgia, Uzbekistan and Azerbaijan respectively holding Ukraine as the "base country". In this case left-out dummy category is Ukraine.

[10] He analyzed exchange rate regimes of four post-socialist countries such as Russia, Yugoslavia, Ukraine and Belarus.

Thus, the model is specified by equation (1.)

GDP per capita growth = f (*FDI, Export, Exchange, Inflation, Fertility, DUM1, DUM2, DUM3, DUM4*) **(1)**

3. ANALYSIS OF RESULTS

Table 4 (see p.17) presents the regression results using ordinary-least squares (OLS). As we see from the table my model provides a good fit to the data, explaining more than 66% of the variation in the GDP per capita growth. (See Table 4, p.17). We can also come to a conclusion that the model has a significant explanatory power by conducting F-test. As seen in Table 4, F-value equals to 8.74, which reveals the significant explanatory power of my model.

The empirical results speak for themselves. As expected (FDI) and (Export) positively affect dependant variable while (Inflation) and (Fertility) affect it negatively. Counter to my expectations, denomination of local currencies in member countries did not cause a technical problems and the sign of (Exchange) was revealed to be negative. The priori expected signs came true when there was a sign expected. But counter to my expectations, there are just 3 variables significantly affecting the left-hand side variable. These are (FDI), (Fertility) and (DUM3). It is useful to take into consideration that the interpretation of DUM3 differs from the first two variables, as I will note later. But if we look at Table 4 **(**see p.17**)** we can see that (Export) is almost statistically significant at 10 percent level of significance (i.e. $\propto$=0.1). But there is an important reason for (Export) not being as statistically significant as expected. As I mentioned in this paper earlier, as a result of several factors these countries have been typically specializing their exports in a few primary products. For example, Azerbaijan specialize its exports in raw oil, natural gas and oil products, Georgia in beverages, Ukraine in coal, Moldova

in agricultural products, and Uzbekistan in cotton. This accompanies with the lower exports than the capacities of these countries. It may be viewed as the main reason of insignificance of (Export) at 5 percent level of significance.

A few points also need to be made regarding the magnitudes of several coefficients. First, note that the largest positive coefficient is on (FDI), which makes sense, the higher FDI inflows to the country the higher the economic growth. The results reveal that every 1 percent of the increase in ratio of net FDI inflows to GDP increases GDP per capita growth by approximately 3.52%, ceteris paribus. Second, the coefficient is on (Export) is also positive and it means that every one percent increase in ratio of total exports to GDP increases GDP per capita growth by roughly 0.79 percent. But I should point out that, Export significantly affect GDP per capita growth only if ($\propto$=0.1) We also should note that the largest negative coefficient is on (Fertility), which reveals that every additional children per woman decreases GDP per capita growth by 16.9%. Recall that we stressed the importance of population factor earlier in this paper. For economies with lower annual GDP this factor plays a crucial role.

(FDI), (Fertility) and conditionally (Export) are the statistically significant independent variables in my model. But if we look at Table 4 (see p.17) we will find out that there is a significant variable among dummy variables. This is DUM3, which coincides with Azerbaijan. As I stated earlier, our "base country" is Ukraine. By looking at the coefficient estimate for DUM3, we can come to a conclusion that, GDP per capita in Azerbaijan grows 37,7% more than Ukraine, which is considered to be the "base country" in this model. This result may seem somehow unexpected for some readers, although huge oil, natural gas, agricultural and other mineral resources helped Azerbaijan to show an incredible growth during the last decade. When the U.S. State Department released its report on the Caspian region more than a year ago, it

estimated that there may be up to 178 billion barrels of combined proven and potential oil reserves in the Caspian Sea, along with trillions of cubic meters of gas. Such statistics were significantly higher than previous estimates, as new data had been collected using advanced 3D seismic survey technology. However, most reporters seem to have decided to adjust the figure to one that was easier to remember-200 billion barrels, or even more. This led to the conclusion by some that Azerbaijan must have more oil than Saudi Arabia. According to these facts FDI inflows in Azerbaijan grows year by year. Thus, the regression results on dummy variables coincide with the reality.

4. CONCLUSIONS

Despite certain skepticism as regards prospects of GUUAM, the latter is developing. Today's agenda already has the question of GUUAM's transformation into a full-fledged international organization with all relevant functions proceeding from such status. However, the institutionalization of GUUAM should be based on a serious theoretical, conceptual background that would ensure its development into a prospective international organization.

As steady conceptual judgments have not been developed yet, while various interpretations are still under discussion, certain conceptual principles could evidently be deducted from such interpretations. Worthy of attention is, first of all, the assertion that GUUAM may materialize only as a sub regional economic organization. Any appeal to security problems would destroy the GUUAM idea in principle, as it would affect Russia's interests in the Caucasian and Black Sea regions.

In no way diminishing the significance of the economic component of cooperation in the GUUAM framework, I would like to draw attention to certain weak points and logical groundlessness of the above assertion.

Its advocates apparently do not take into consideration the two extremely important factors, specific for that region. First of all, it is its internal instability. Secondly, it is its critical geostrategic importance for external geopolitical actors, primarily the United States, Russia, Western countries, Turkey, and Iran. It is a fact that economic relations cannot develop intensively in an internally unstable and externally contradictory region, such as the conventional region of the GUUAM states. Therefore, unless GUUAM addresses national and regional security problems, other sub regional associations and initiatives would sooner or later come into being to perform that function.

Although the data I analyzed shows that the economic growth in these countries become greater after the formation of organization, it is necessary not to jump into conclusion at the first sight. History shows that even a feeble political setback would cause an enormous decrease in economic growth. That's why, while analyzing the future policy implications for the mentioned countries, it is expedient to focus on political factors more than economic ones.

Although all above-stated ideas are political in nature, we have to take into consideration that without political stability attaining economic growth is merely impossible. Talking about economic matters, the future success of the organization depends on the policies on the enhancement of export specialization in member countries. Wider export specialization would most likely cause a faster economic growth. The other main target would be attracting other former Soviet republics to join the organization. As we know, a lot of profitable projects were canceled just because of political obstacles. The countries under the Russia's political pressure are not willing to participate in such projects, although they would increase their economic power. And without these countries GUUAM countries usually are far away from success.

GUUAM must expand its efforts to promote the economic security of its members in new ways. Each of GUUAM's states has been badly affected by the economic downturn that followed their independence and, somewhat later, Russia's and Turkey's economic collapse. It is clear that economic security is the only foundation on which successful national security can be built. To the extent that this foundation can be built better and more comprehensively through cooperating with one another—for example, through special GUUAM import/export regimes and treaties—and through leveraging the collective weight in the marketplace. With foreign governments, and with international financial institutions, GUUAM could prove to be a powerful locomotive of economic development.

How can this become reality? It is necessary, in my opinion, to create effective mechanisms of economic cooperation, which, first of all, means the creation of a free trade zone within GUUAM in the near future. This will facilitate internal economic development in each of member countries; implementation of international investment programs there and will make it easier for GUUAM countries to be integrated into the world economy. As we saw from the regression results, FDI has an incredible impact on economic growth in these countries. Implementation of international investment projects and programs would pave the way faster economic growth in the region.

As a conclusion, let's wish good luck to GUUAM countries!!!

Table 1

Description of Variables

Variable	Description and Source	Mean	Standard Deviation	Expected Sign
PC	Gross domestic product per capita growth (current prices, %) www.cia.gov/cia/publications/factbook	-7.12400	12.67215	Dependant Variable
FDI	The ratio of net foreign direct investment inflows (current US $) to gross domestic product (%) www.guuam.org www.ukrstat.gov.ua www.unctad.org.	1.016440	1.789583	+
Export	The ratio of total export to gross domestic product (%) www.worldbank.org www.imf.org www.caucasus.net	5.770508	3.189076	+
Exchange	Change in the value of exchange rate (%) www.ukrainet.lviv.ua www.umsl.edu/services/govdocs www.statcom.baku-az.com	16.53300	30.76118	?
Inflation	Inflation rate (consumer prices, %) www.cia.gov/cia/publications/factbook	24.73200	18.27642	-
Fertility	Fertility rate (children born/woman) www.cia.gov/cia/publications/factbook	2.257600	0.719137	-
DUM1	Dummy variable for Moldova	0.200000	0.404061	+
DUM2	Dummy variable for Georgia	0.200000	0.404061	+
DUM3	Dummy variable for Azerbaijan	0.200000	0.404061	+
DUM4	Dummy variable for Uzbekistan	0.200000	0.404061	+

Table 2

Descriptive Statistics

	PC	FDI	EXPORT	EXCHANGE	INFLATION	FERTILITY
Mean	-7.124000	1.016440	5.770580	16.53300	24.73200	2.257600
Median	-3.450000	0.260000	5.495500	11.24000	20.00000	2.165000
Maximum	11.40000	8.226000	15.54600	122.2200	85.00000	3.780000
Minimum	-38.30000	0.021000	0.754000	-60.46000	-7.600000	1.290000
Std.Dev.	12.67215	1.789583	3.189076	30.76118	18.27642	0.719137
Skewness	-0.791017	2.514319	0.583826	1.007560	0.980806	0.701824
Kurtosis	2.924593	8.850139	3.516594	5.724477	4.028218	2.604551
Jarque-Bera	5.226080	123.9819	3.396422	23.92391	10.21908	4.430431
Probability	0.073311	0.000000	0.183011	0.000006	0.006039	0.109130
Sum	-356.2000	50.82200	288.5290	826.6500	1236.600	112.8800
Sum Sq. Dev	7868.591	156.9278	498.3402	46366.27	16367.35	25.34071
Observations	50	50	50	50	50	50

	DUM1	DUM 2	DUM 3	DUM 4	DUM 5
Mean	0.200000	0.200000	0.200000	0.200000	0.200000
Median	0.000000	0.000000	0.000000	0.000000	0.000000
Maximum	1.000000	1.000000	1.000000	1.000000	1.000000
Minimum	0.000000	0.000000	0.000000	0.000000	0.000000
Std.Dev.	0.404061	0.404061	0.404061	0.404061	0.404061
Skewness	1.500000	1.500000	1.500000	1.500000	1.500000
Kurtosis	3.250000	3.250000	3.250000	3.250000	3.250000
Jarque-Bera	18.88021	18.88021	18.88021	18.88021	18.88021
Probability	0.000079	0.000079	0.000079	0.000079	0.000079
Sum	10.00000	10.00000	10.00000	10.00000	10.00000
Sum Sq. Dev	8.000000	8.000000	8.000000	8.000000	8.000000
Observations	50	50	50	50	50

Table 3

Correlation Coefficients

	PC	FDI	EXPORT	EXCHANGE	INFLATION	FERTILITY
PC	**1.000000**					
FDI	**0.428680**	**1.000000**				
EXPORT	**0.500516**	**0.152372**	**1.000000**			
EXCHANGE	**0.061336**	**-0.215725**	**0.130593**	**1.000000**		
INFLATION	**-0.302800**	**-0.210669**	**-0.243370**	**0.040578**	**1.000000**	
FERTILITY	**-0.117222**	**-0.041502**	**-0.411837**	**0.234048**	**0.029618**	**1.000000**

Table 4

Regression Results

Dependent Variable: *GDP Per Capita Growth (%)*

Independent Variables	Coefficient	t-Statistic	Probability
Intercept	15.26053	1.50	0.1416
	(10.17637)		
FDI	3.52458 [a/ b/]	3.75	0.0006
	(0.94026)		
EXPORT	0.78848	1.66	0.1052
	(0.47565)		
EXCHANGE	-0.01964	-0.45	0.6574
	(0.04395)		
INLATION	-0.07934	-1.16	0.2535
	(0.06848)		
FERTILITY	-16.90819 [a/ b/]	-3.67	0.0007
	(4.60523)		
DUM1	5.30125	1.27	0.2111
	(4.17143)		
DUM2	0.17442	0.04	0.9662
	(4.08693)		
DUM3	37.72249 [a/ b/]	4.35	0.0001
	(8.67760)		
DUM4	6.51065	0.97	0.3382
	(6.71608)		
R-Squared	0.6629		
Adjusted R-Squared	0.5870		
F-statistic	8.74		
Prob(F-statistic)	0.0001		
N	50		

The numbers in parentheses are standard errors.
[a/ b/] and [c/] denote statistically significant at the one, five and ten percent levels respectively.
**Almost statistically significant at the ten percent level.

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