MACROECONOMICS, GROWTH AND GLOBALISATION IN MERCOSUR

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I. INTRODUCTION

Since the third wave of globalization, the process of regional economic integration has been marching forward unprecedentedly under welfare maximizing approach, custom union and tariff reduction methods, trade cooperation agreements and preferential trade agreements etc. Monetary and financial globalisation proceeded more speedier to this process. Hemispheric initiatives, sub-regional pacts and bilateral agreements were added to new regionalism to strengthen globalisation and integration. The process of Latin American Integration was going on the ebbs and flows through Andean Community, Central American Common Market and Southern Common Market or MERCOSUR. The Latin American Free Trade Association was formed in 1960 with a view to increasing south - south trade. MERCOSUR was established in 1991.It is the largest and most successful regional integration in Latin America.In the third wave of globalization, the relationships among macro economic fundamentals, growth, trade openness and financial openness have been being scrutinished by time series econometric models high lighting some policy variables.

In this paper, we will focus on such relationships in the process of economic integration in MERCOSUR during 1980-2004.

II. GLOBALISATION AND ECONOMIC INTEGRATION

The outcome of liberalization from the Latin American countries is remarkable in the globalization episodes where trade co-operation predominated followed by the monetary co-operation. The multiple regression analysis on trade development index with the explanatory variables such as human capital, physical infrastructure, financial environment, environmental sustainability,economic structure,openness of trade,market access ,economic development,social development, and gender development etc showed positive relation. In Latin America,the region MERCOSUR achieved the second highest trade development index where the East Asia and Pacific scored the highest index. (TDR-2006). In Latin America,MERCOSUR had dramatic increase in the number of regional trade agreements in the post Uruguay Round.In the open regionalism,the regional agreements of integration were seen as complements of commercial liberalisation processes. Due to existence of LAFTA, the south–south trade increased 8% during 1990-2002 and the share rose from 9.4% to 12.5%

which was 2.2 times greater than North –North trade.The trade share of Latin America to North trade as per cent of total exports was 56.8% in 1980 which rose to 63.8% in 1990 that declined to 51.5% in 2003 whereas trade share of Latin America and South was 43.2% in 1980 which increased to 48.3% in 2003 respectively. On the contrary, trade share between MERCOSUR and North was 59.5% in 1990 which fell to 46.1% in 2003 but the share of trade between MERCOSUR and South was 40.5% in 1990 which rose to 53.9% in 2003 respectively.Hence open regionalism improved south–south trade. The fact was that the intra regional trade of MERCOSUR increased from 11.6% in 1980 to 24.9% in 1997 and then fell to 11.9% in 2003 but its export share of the world trade was more or less same in the range of 1.3%–1.8 % during 1980-2003. In 1990, the export share of the MERCOSUR was 29522 million dollar ie 1.452% of the world which increased to 135574 million dollar i.e 1.5104% in 2004 where the import share was 37801 million dollar i.e 1.82% of the world which fell to 1.016% (93955 million dollar) in 2004. The value of the intra regional trade of MERCOSUR was 41273 million dollar in 1990 which stepped up to 17720.5 million dollar in 2000 and then declined to 12617.7 million dollar in 2003. (UNCTAD,2005). Again, the share of intra regional export of total regional export was 10.0% in 1990-91 which increased to 15.3% in 2000-03 and the share of intra regional import as percent of regional GDP was 0.7% in 1990-91 which rose to 1.9% in 2000-03 respectively. In the Table 1, the intra regional export as percent of total exports and intra regional import as percent of imports of MERCOSUR including its member countries were given explicitly from 1990 to 2003, where we found that the region and its member countries improved intra regional export from 1990 to 2000 and the shares declined but the shares of intra regional import remained nearly the same in 2000 and 2003 which were too higher than 1990. Thus we saw that globalisation improved the MERCOSUR's trade integration up to 2000 and then reacted inversely.

Table 1
Intra Regional Exports and Imports of MERCOSUR

	Intra Regional exports % of total exports					*Intra Regional imports % of total imports*				
	Argentina	*Brazil*	*Paraguay*	*Uruguay*	*Mercosur*	*Argentina*	*Brazil*	*Paraguay*	*Uruguay*	*Mercosur*
1990	26.0	11.3	52.4	39.5	32.3	26.6	16.4	39.3	48.3	32.65
1995	46.8	22.6	65.1	53.4	46.97	31.7	20.7	49.8	47.5	37.43
2000	47.9	24.5	74.5	54.0	50.23	35.3	19.6	57.9	47.4	40.1
2001	46.1	22.1	65.3	51.0	46.13	34.9	17.4	57.4	55.6	41.33
2002	42.2	18.1	69.1	42.2	42.9	36.7	16.4	51.2	56.5	37.6
2003	38.7	20.0	64.7	40.8	41.05	47.5	15.4	52.2	46.1	40.3

Source: Rodrik 2003,NBER,WP 10050.

III. CONVERGENCE CRITERIA AND THE O.C.A. CRITERIA

MERCOSUR is a dollar convertible area where member states followed full convertibility in which Argentina accepted the Article VIII of IMF on May 14,1968,Brazil accepted it on November 30,1999, Paraguay followed from August 22, 1994 and Uruguay accepted it on May 2, 1980.They have been following more or less uniform exchange rate system with a marginal difference, such as, Argentina and Paraguay have been following managed floating exchange rate mechanism with no predetermined path for exchange rate having IMF supported programme but Paraguay has started non-explicitly nominal anchor rather monitored various indicators in conducting monetary policy. On the other hand, Brazil

and Uruguay have been following independent floating exchange rate mechanism.Brazil practiced inflation targeting whereas Uruguay practiced Monetary aggregate targeting.Irrespective of those, the bloc could not maturate for monetary union because it faced strong exchange rate and interest rate volatility which have distorted the money market of MERCOSUR.It faced high interest rate divergence since 1980. The convergence criteria showed that MERCOSUR had achieved significant convergence criteria in the inflation rate during 1980-2004.On the contrary, it encountered with insignificant convergence criteria on the fiscal front and on the external debt respectively during 1980-2004. Hence convergence criteria went against the formation of common currency in MERCOSUR having favourable dollarisation syndrome. In the Table 2, we have calculated the growth rates of inflation rate, fiscal deficit as percent of GDP and external debt as percent of GDP during 1980-2004 which were called β and we calculated five year averages of the said variables as initial values.Then,the regression coefficients between them expressed the β convergence hypothesis where the coefficients were negative otherwise divergence. In the Table 2, we arranged the values of β and the 5 year average initial values and then regressed the initial values on β and found out that β convergences of GDP growth rate, fiscal deficit % of GDP, debt % GDP followed insignificant β convergence hypothesis but inflation rate followed significant β convergence. On the other hand, insignificant β divergence was found in trade openness and REER.

Table 2
Observations of OCA criteria of MERCOSUR

	1980-2004 GDP growth rate		*1980-2004 trade openness*		*1980-2004 Inflation rate*		*1980-2004 Fiscal deficit % of GDP*		*1987-2003 Debt % of GDP*		*1995-2004 REER*	
	β	*5 yr aver*	β	*5 yr aver*	β	*5 yr aver*	β	*5 yr aver*	β	*5 yr aver*	β	*5 yr aver*
Argentina	5.95	-0.24	1.21	0.0687	-26.39	268.72	-6.98	-4.8148	1.56	65.52	7.98	110.68
Brazil	-5.76	1.86	0.03	0.0991	-18.07	158.26	-6.74	-3.3612	4.10	27.66	8.46	80.24
Paraguay	-4.3	3.84	3.05	0.2647	-3.47	15.38	4.26	-0.7226	7.67	28.4	1.81	99.08
Uruguay	2.63	-1.7	-2.24	0.2307	-9.73	44.2	0.83	-4.063	6.37	23.36	3.91	107.36
	Insignificant β convergence		Insignificant β divergence		Significant β convergence		Insignificant β convergence		Insignificant β convergence		Insignificant β divergence	

Source: Calculated by author

The tests of OCA criteria asserted that the asymmetric shocks were observed in the growth rates of GDP, trade openness, Terms of trade, foreign direct investment by GDP etc. In the correlation matrix of GDP growth rates during 1980-2004 among the members of MERCOSUR, there are 14 plus sign and two minus sign correlation coefficients. In the correlation matrix of degree of openness during 1980-2004, there are 8 plus and 8 minus sign correlation coefficients. In the correlation matrix of FDI/GDP, we found four minus sign and five plus sign correlation coefficients and in the correlation matrix of terms of trade, we found two minus sign and 14 plus sign correlation coefficients. All these tests confirmed that there was no Granger Causality among the variables. Only, the growth rate of REER showed symmetric shock during 1995-2004 because all 16 correlation coefficients in the correlation matrix were positive (not shown in the matrix format). Therefore, the possibility of forming common currency in the MERCOSUR is ruled out presently. Hence,

MERCOSUR's target of free trade zone, common external tariff and foundation for common currency within 2006 will surely be delayed for a long time. Hence, the agenda for increasing south–south trade needs reorientation of reform policy measures immediately.

IV. GROWTH AND GLOBALISATION

During the pre-war period, trade liberalisation was not a stimulus to growth where rapid export growth occurred against rising protection. Basically, flow of trade was dominated by primary products and industry was not participating to the same extend of globalisation process. So it was difficult to make causal link between growth and trade. 19th century globalisation suggests that growth leads to international trade but not vice versa.In pre-world war I, technological change enhanced industrial growth with huge capital flows which were the reasons for strong economic growth. No evidence supported that pre-war I was the golden age of economic growth and rapid convergence. Finance capital dominated the earlier process of globalization which was related to uneven development. Combination of rising tariffs, support for technological upgrading and extensive state borrowing from international capital market were ingredients of economic development in 19th century era of globalisation.

From the review of literature, we found some interesting results. Rodrignez and Rodrik(2001) claimed that there were no simple specifications that showed an inverse association between growth and protection. They also asserted that a high black market premium indicated macro economic chaos rather than trade barriers. The regression results of Sachs-Warner(1995) continued to argue that open economies had higher mean growth and converged faster than closed economies using data of 1970-1990. They showed that no poor country that was open suffered declining growth. Panagariya (2002) reviewed a number of ways in which trade liberalization could raise the level of income through static efficiency gains.Bhagwati and Srinivasan (2002) also argued that trade liberalization could also raise growth through two channels (i) greater variety in intermediate inputs and (ii) greater returns to investment through access to large global market place.Rodrik (1997) further argued that growth collapsed with post 1975 globalisation period due to social conflicts measured by inequality, ethnic and linguistic fragmentation and social trust and also by social institutions of conflict management measured by democracy, quality of government ,public spending in social insurance etc. His regression equations during 1960-1994 suggested significant results between social conflicts and growth collapse in several regions in the world including Latin America.Michaely-Choksi (1991) ran a number of regressions relating to liberalisation and growth. Strong liberalisation episodes were associated with higher increase in GDP growth rate than weaker episodes and that countries with sustained liberalization episodes experienced larger increases in the rates of GDP growth than countries with failed liberalization episodes. Rodrignez and Rodrik (2001) express that there is a strong negative relationship in the data between trade barriers and economic growth. Dollar and Kraay (2001) found a strong and significant positive relationship between effect of changes in trade and changes in growth of 100 countries. Edward (1993) regressed nine measures of openness on estimates from 1960-90 for 93 countries and observed six measures which were statistically significant. Ha Yan Lee, Luca Antonio Ricci, Roberto Rigobon (2004) showed that openness had a positive effect on growth although small applying estimation,indentification and heteroskedasticity taking a panel of 8 periods of 5 years each spanning from 1961-65 to 1996-2000 on about 100 countries where openness were measured by size of trade, tariff indicator, import duties and black market premium.

During the post-war period towards the trade liberalization, a tendency led to a significant convergence in income levels within the EEC, between USA and Canada and between EEC and EFTA. During 1960-1990 among 110 countries, β convergences including absolute and conditional were found and convergence in per capita income occured at around 2% a year.Pritchett(1995) showed that the ratio of GDP per capita of the richest to the poorest country rose from 8.7 in 1870 to 38.1 in 1960 and 51.6 in 1985. Standard Deviation of log per capita income was between 0.513 and 0.636 in 1870 , rose from 0.867 in 1960 to 1.025 in 1985.

In Latin American countries the scenario is not so much different to the developed regions stated above. During 1870-1950, those who had the highest tariff rates in Latin America grew the slowest and those who had the lowest rates grew fastest.

In 1885 Brazil, Columbia, Mexico, Peru had tariffs 4.6 times higher than those in the poor and dependent parts of Asia.In 1905,tariffs in Uruguay were 2.5 times those in Canada and tariffs in Brazil and Columbia were almost 10 times those in China and India.In the 19th century,the poor Latin America,Brazil,Argentina and Uruguay had the highest tariffs in the world even in 1920s irrespective of famous export led growth. But, by 1950, Latin American tariffs were actually lower than in Asia and Europe. Before World War I, protection in Latin America was associated significantly and powerfully with slow growth. The average custom duty in Latin America was 57.8% between 1820-1890. In Brazil,import duty/import rose from 15% in 1810 to 30% in 1860. That rise was fueled by costly wars with Uruguay(1825-80), Argentina (1851-52) and Paraguay (1865-70) as well as by frequent regional and separatist revolts,slave insurrection and a massive social and racial upheaval in the Amazon regions. Hence, Latin American tariffs in 19th century never fell back to pre-independence level even after the export led boom filled treasuries new revenues that reduced debt service to manageable dimensions. Ronald Rogowski (1989) suggested that we looked to Latin American capitalists for the political economy explanation for those extraordinary high tariffs during the belle époque growth, peace and political stability in late 19th century which tended to produce oligarchic governments in which urban capitalists linked to external trade where finance played a dominant role. (J.H.Coatsworth and J.G. Williamson, 2002)

V. EMPIRICAL VERIFICATION IN MERCOSUR

Now, we will verify the effects of trade and financial openness on the growth of GDP of the member countries of MERCOSUR through the regression analysis.In Argentina, one percent increase in the degree of openness leads to increase 1.7384% of GDP per year during 1980-2003.The double log regression equation is given below.

Log(GDP) = 9.407 +1.7384 log(degree of openness)
      (3.66)* (1.717)*

R^2=0.118   *=significant

One percent rise in the index of terms of trade leads to decrease in growth of GDP by 0.7198% per year during 1995-2003 that is,

Log(GDP)   = 8.705-0.7198Log(T.O.T.)
(0.658)   (-0.247)

R^2=0.0086

The multiple regression showed better result of trade openness and TOT on the GDP growth of Argentina during 1995-2003.

Log(GDP)= 11.428+0.08816log(TOT) + 2.624log(degree of openness)

$\qquad$ (0.966)   (0.0339)   (1.704)

$R^2 = 0.332$

It states that the trade openness and TOT have positive association with the GDP growth in Argentina although t statistics are insignificant.

If we take the indicators of financial openness as foreign direct investment, real effective exchange rate and international bond issues, then the single equation regression shows insignificant results on growth in Argentina in case of three variables. For example,

Log(GDP)= 4.237-0.1456log(FDI)

$\qquad$ (3.69)*   (-1.68)

R^2= 0.1049   n=12 (1992-2003), * = significant at least 10% level

ie,one percent rise in FDI leads to 0.145% fall in GDP per year during 1992-2003 but it is insignificant.

Log(GDP)=6.33 – 0.1867log(REER)

$\qquad$ (2.89)*   (-0.413)

R^2=0.023,   n=9 (1995-2003),   * = significant at least 10% level

ie,one percent fall in REER per year induces 0.1867% rise in GDP per year in Argentina during 1995-2003 which shows insignificant.

Log(GDP)   = 4.763 +0.0797log (value of int.bond issues)

$\qquad$ (7.02)*   (1.004)

R^2=.125,   n=10 (1995-2004)

ie, one percent rise in the value of international bond issued leads to 0.0797% increase in GDP per year during 1995-2004 which is insignificant.

The multiple regression assured more reliable impact of financial openness in Argentina on the GDP growth rate which is given below,

Log(GDP)= 0.00388+0.3241log(FDI)+0.5099log(REER)+0.0191log(int.bond issues)

$\qquad$ (0.00073)   (0.9129)   (0.6927)   (0.1079)

R^2= 0.2788 , DW=1.593 , F= 0.644

ie,one percent rise in international bond issue,REER and FDI per year induced to rise in GDP by 0.0191%,0.5099% and 0.3241% per year respectively during 1995-2003 but the t values showed statistically insignificant.

In Brazil,trade openness gives insignificant impact on GDP growth rate ,for example,

Log(GDP)   = 4.8629 + 0.336log(TOT)

$\qquad$ (1.38)   (0.335)

$R^2 = 0.0158$, n = 9 (1995-2003)

ie,one percent rise in the TOT index per year led to 0.336% increase in GDP per year during 1995-2003. This is statistically insignificant.

Log(GDP)   = 4.254 – 0.7291log(degree of openness)

$\qquad$ (2.858)* (-1.187)

R^2= 0.057 , n=25 (1980-2003) , * = significant at least 10% level

ie, one percent increase in the degree of openness led to 0.7291% decrease in the GDP per year during 1980-2003 which showed insignificant.

The similar insignificant result was observed in the multiple regression analysis during 1995-2003 for the above variables of trade openness and TOT , ie,

Log(GDP)= 4.176+0.0656log(TOT)-0.7918log(degree of openness)

$\quad\quad\quad\quad$ (0.974) (0.0706)$\quad\quad\quad$ (-1.5629)

R^2=0.3003,

If we look at the financial openness in Brazil, we find that the impact is prospective and favourable during 1995-2004.The single equation technique of regression analysis shows significant result, ie,

log (GDP) = 5.1878+0.1277log(FDI)

$\quad\quad\quad\quad$ (12.55)* (2.868)*

R^2= 0.427 , n=13 , * = significant at least 10% level

It states that one percent increase in the FDI per year led to 0.1277% increase in the GDP per year during 1992-2004 which showed statistically significant.

Log(GDP) = 8.385-0.423 log(REER)

$\quad\quad\quad\quad$ (11.206)* (-2.604)*

R^2= 0.458, n=10, * = significant at least 10% level

The equation expresses that one percent decrease in the REER per year led to increase in GDP per year by 0.423% during 1995-2004 which was significant.

Log(GDP)$\quad$ = 5.9031+0.0588log(int.bond issue)

$\quad\quad\quad\quad\quad$ (3.588)   (0.326)

R^2 = 0.0131, n = 10

It asserted that one percent increase in the international bond issues per year induced to increase 0.0588% in the GDP per year of Brazil during 1995-2004 which was insignificant.

On the contrary, the multiple regression analysis during 1995-2004 showed that financial openness gave significant result only in case of REER, ie,

Log(GDP)=8.6070+0.115log(FDI) – 0.5053log(REER)-0.1060log(int.bond issue)

$\quad\quad\quad\quad$ (5.009)* (1.462)$\quad\quad\quad$ (-2.9208)*$\quad\quad\quad$ (-0.748)

R^2=0.16112 , DW=1.683 , F=3.144, * = significant at least 10% level

Therefore, globalisation in Brazil experienced partial effect on growth for trade and financial liberalisation.

In Paraguay, the single equation regression technique showed that the TOT had positive impact on growth insignificantly but degree of openness had positive and significant association with growth .

Log(GDP)=1.159+0.1876log(TOT)

$\quad\quad\quad\quad$ (0.218) (0.1656)

R^2=0.0039

It means that one percent increase in TOT per year leads to increase in GDP per year by 0.1876% during 1995-2004 which is insignificant.

Log(GDP)   =2.1479+0.2742log(degree of openness)

$\qquad$ (11.415)* (1.885)*

R^2=0.1338 , n=25 , * = significant at least 10% level

It states that one percent increase in the degree of openness per year leads to increase in GDP per year by 0.2742% during 1980-2004 which shows significant.

Hence, globalization of trade affects growth in Paraguay positively.This result can be done by multiple regression analysis which is calculated below,

Log(GDP)= 8.799 – 1.3088log(TOT) + 0.5620log(degree of openness)

$\qquad$ (1.414) (-1.024)   (1.826)

R^2= 0.359

It expresses that TOT has inverse impact on growth which is insignificant and the degree of openness shows positive impact on growth in Paraguay insignificantly during 1995-2004.

Now, we see that financial globalisation has significant positive impact on growth during 1992-2004, which is given below.

Log(GDP)= 1.4505+0.1229log(FDI)

$\qquad$ (8.6046)* (3.376)*

R^2=0.509, n=13 , * = significant at least 10% level

It asserts that one percent rise in FDI per year steps up growth rate in GDP by 0.1229% per year during 1992-2004 which is statistically significant.

Log(GDP)= 12.553-2.264log(REER)

$\qquad$ (4.71)* (-3.945)*

R^2=0.660 , n=10 , * = significant at least 10% level

It states that one percent decrease in the REER per year leads to 2.264% increase in the GDP per year of Paraguay during 1995-2004 which is significant.

The multiple regression gives the more or less same result where t value of coefficient of REER are found marginally significant i.e,

Log(GDP) = 5.769+0.1045log(FDI) -0.90178log(REER)

$\qquad$ (1.998)* (3.0705)*   (-1.508)*

R^2=0.855,   DW=1.51,   F=20.696* , * = significant at least 10% level

Thus,we can conclude that globalisation has significant positive impact on the growth rate of GDP in Paraguay during 90s onwards.

In Uruguay, the significant positive impact of TOT on the growth rate and the negative impact of degree of openness on growth are the two opposite poles of globalisation since the volatilities of growth rates and the degree of openness are sharply visible during 1980-2004.

Log(GDP)= -7.3787+2.1716log(TOT)

$\qquad$ (-1.66) (2.2765)*

R^2=0.3016, n=14 , * = significant at least 10% level

It means that one percent rise in the TOT per year leads to 2.1716% increase in the growth rate of GDP per year in Uruguay during 1990-2004 which shows significant.

Log(GDP)= 1.438-0.6155log(degree of openness)

(2.671)* (-1.854)*

R^2= 0.130, n=25 , * = significant at least 10% level

It expressed that one percent decrease in degree of openness secured 0.6455% increase in GDP per year or vice versa during 1980-2004 which was insignificant.

The multiple regression also showed significant impact of TOT and insignificant impact of degree of openness on growth in Uruguay in the 90s onwards. ie,

Log(GDP)= -7.393+2.173log(TOT) – 0.00489log(degree of openness)

(-1.567) (2.172)* (-0.0166)

R^2=0.3016 , F= 2.37 , DW=0.722, * = significant at least 10% level

On the other hand,FDI and REER have strong positive impact on the growth in Uruguay but international bond issue has inverse impact on the growth rate during the 90s.

Log(GDP)= 2.247+0.1065log(FDI)

(3.132)* (0.788)

R^2 = 0.053, n=13, * = significant at least 10% level

It states that one percent rise in FDI leads to 0.1065% rise in growth rate per year during 1992-2004 which is insignificant.

Log(GDP)   =5.9587 – 0.65007log(REER)

(3.496)* (-1.816)*

R^2=0.292 , n=10

It expressed that one percent decrease in REER led to 0.65007% increase in growth rate per year during 1995-2004 which was significant.

Log(GDP)= 2.882 – 0.002889log(int. bond issue)

(4.43)* (-0.0259)

R^2= 0.000084

It states that one percent increase in the international bond issue steps down growth rate by 0.002889% per year in Uruguay during 1995-2004 which is insignificant.

Hence,financial globalisation has not proved any significant progress in Uruguay since 90s.On the other hand, the multiple regression analysis showed similar result where REER had the significant impact on growth rate and others showed insignificant.The equation is given below.

Log(GDP)= 8.683+0.08098 log(FDI) – 1.10328log(REER) -0.1738log(int.bond issued)

(3.248)* (0.3151)   (-1.908)*   (-1.288)

R^2=0.4566, DW=1.83, F=1.68 , * = significant at least 10% level

Hence, the process of globalisation in the MERCOSUR is partially satisfactory since the indicators of trade liberalisation had the asymmetric impact on growth in the member states

and the financial liberalization also showed little progress and called for further reform because the indicators of financial liberalisation could not rescue MERCOSUR from its trap of negative growth rate in the 80s and 90s especially due to contagion effect.

VI. GROWTH AND MACRO ECONOMICS IN MERCOSUR

During the course of globalization in MERCOSUR, the important macro economic fundamentals have strong influence on the growth of the economy as well from 1980 to 2003.It means that the macro economic indicators in the long run have supported the growth structure of the bloc. For example, in Argentina, the double log regression equations suggest that one percent decrease in the inflation rate, debt/GDP ratio and fiscal deficit GDP ratio per year leads to increase in the GDP per year by 0.1459%, 0.442% and 0.3111% respectively during 1980-2003, all of which were statistically significant. Again, one percent increase in exports and imports per year led to increase in the growth rate of GDP per year in Argentina by 0.824% and 0.6612% respectively during the same year and were found significant. (Table 3) It is noted that the GDP series from 1980 to 2003 has been increasing at the rate of 6.27% per year but it is diverging and suffers from autocorrelation and partial auto correlation problems too. It has no ARCH error which is confirmed by LM test that is significant since $nR^2 = 24 \times 10.328 = 247.872$ (greater than the tabulated value). From the ML-ARCH method it was known that the GDP series of Argentina had ARCH(1) and GARCH(1) errors whose log likelihood value was-157.54.

Table 3
Macro Indicators and Growth of Argentina

Log(GDP) = 5.5346 -0.1459log (inflation)
            (24.7)* (-3.13)* , R^2 = 0.34 , n = 24

Log(GDP) = 5.0728 -0.311log(-FD/GDP)
            (40.52)* (-3.143)* , R^2 = 0.32 , n = 23

Log(GDP) = 7.0218 -0.442 log(debt/GDP)
            (7.73)* (-1.91)* , R^2 = 0.195 , n = 17

Log(GDP) = 2.8288+0.8240 log(exports)
            (5.43)* (4.257)* , R^2 = 0.451,

Log(GDP) = 3.413+0.6612log (imports)
            (10.509)* (5.12)* , R^2 = 0.543

Log(GDP) = 4.2158+0.0627 t
            (18.66)* (3.97)* , R^2= 0.417 , n=24 , * = significant at least 10% level

In Brazil, fiscal policy and debt control could have any significant relationship with the GDP growth rate since regression analysis between growth rate , inflation rate and external debt as percent of GDP showed insignificant result during 1980-2003.But, growth and inflation rate have shown negative association significantly. Again, in external sector, one percent increase in exports and imports led to increase in GDP per year by 0.8519% and 0.6427% respectively during 1980-2003, all of them were significant.Hence, macro fundamentals in Brazil could not support growth prospect in all respects, although GDP has increased at the rate of 5.169% per year from 1980 to 2003. The GDP series contains auto-correlation and partial auto-correlation problems and has no ARCH error since $nR^2 = 24 \times 6.3739 = 152.97$which is significant where ML-ARCH test confirmed that it contains

ARCH(1) and GARCH(1) errors and the series remains divergent. (Table 4). Hence, globalisation produced mixed results on growth through macro indicators.

Table 4
Macro Economics and Growth in Brazil

Log(GDP) = 6.4605 – 0.0951log(inflation)
(33.58)* (-2.504*) , R^2 = 0.23
Log(GDP) = 1.892 + 0.085 log(FD/GDP)
(25.68)* (1.342) R^2 = 0.130
Log(GDP) = 5.5043 + 0.2057log(debt/GDP)
(5.87)* (0.766) , R^2 = 0.0377
Log(GDP) = 2.9246 + 0.8519log(exports)
(6.33)* (6.704)* R^2 = 0.671
Log(GDP) = 3.796 + 0.6427log(imports)
(13.202)* (7.769)* , R^2 = 0.732 , * = significant at least 10% level

In Paraguay, inflation and growth showed inverse association significantly during 1980-2003 but the insignificant positive association was found between growth and fiscal deficit and the debt/GDP and growth rate showed insignificant negative association during the same period.On the other hand, exports and imports have positive impact on growth significantly during 1980-2003 in Paraguay. (Table No-5).The GDP of Paraguay grew at the rate of 2.38% per year during 1980-2004 where the series is divergent and contains auto correlation and partial auto-correlation problems. But LM test confirmed that it had no ARCH error. On the contrary, ML-ARCH test assured that the series had ARCH(1) and GARCH(1) errors. Hence, globalization on growth through macro indicators have no sign of consistency in the 80s and 90s.

Table 5
Macro Indicators and Growth in Paraguay

Log(GDP) = 2.899 – 0.4049 log(inflation)
(12.49)* (-4.825)* , R^2=0.514
Log(GDP) = 1.892+0.085log(FD/GDP)
(25.68)* (1.342) , R^2= 0.13
Log(GDP) = 2.0428 – 0.2913log(debt/GDP)
(2.98)* (-1.283)
Log(GDP) = 1.8577+0.2043log(exports)
(37.266)* (3.697)* , R^2= 0.383
Log(GDP) = 1.7042+0.2808log(imports)
(41.297)* (5.758)* , R^2= 0.6011, * = significant at least 10% level

In Uruguay, the price policy, the fiscal policy and debt management policy assured the negative association among growth, inflation and debt where the former two relations were significant but the later was insignificant. Again, the exports and imports have positive impact on the GDP growth during 1980-2003 which were significant. Thus, globalization on growth through macro economic policies have consistent impact on growth in Uruguay during the specified period. (Table 6). The GDP of Uruguay grew at the rate of 4.91% per year during 1980-2003. The GDP series of Uruguay shows convergence and has no ARCH error since LM test confirms that nR^2 = 25 × 4.1147 = 102.86 which is significant. Yet it has auto correlation and partial auto correlation problems too. ML-ARCH test shows that it contains ARCH(1) and GARCH(1) errors.

Table 6
Macro Indicators and Growth in Uruguay

Log(GDP) = 3.499 – 0.3159log(inflation)
            (13.25)* (-4.254)* , R^2= 0.44
Log(GDP) = 1.5156 – 0.550036log(FD/GDP)
            (6.956)* (-1.925)* , R^2=0.2916
Log(GDP) = 1.636 – 0.1229log(debt/GDP)
            (1.751)* (-0.4037) , R^2=0.0123
Log(GDP) = 1.833+1.1658log(exports)
            (23.156)* (9.167)* , R^2=0.785
Log(GDP) = 1.888 + 0.9075log(imports)
            (80.105)* (30.244)* , R^2= 0.975 , * = significant at least 10% level

In addition to that, global competitiveness report asserted that Paraguay was placed bottom rank in the MERCOSUR in most of the competitiveness ranking like growth, current account, technology, public institution, macro economic environment, macro economic stabilility, credit rating etc. Argentina, Brazil, and Uruguay were ranked within the range of fifty among all the countries of the world. The MERCOSUR is lagged behind the EU and NAFTA.(Table 7).

Table 7
Competitiveness Ranikg of Mercosur

	Argentina	*Brazil*	*Paraguay*	*Uruguay*
Growth competitiveness ranking	49	44	72	46
Current account	53	30	70	46
Technology	48	49	73	45
Public institution	55	47	74	31
Macro economic environment	40	33	65	63
Macro economic stability	51	31	68	69
Credit rating rank	53	49	62	39
Govt.expenditure score.	13	25	26	42

Source: Global competitiveness report, Center for International Development ,Harvard University.

Therefore, globalisation induced MERCOSUR a kind of set back from EU and NAFTA and even from East Asia in most of the indicators of competitiveness stated above.

Moreover,under the macro economic policy in the MERCOSUR, the freely floating exchange rate mechanism showed excessive volatility in convertible dollar system which hindered economic growth and restricted the capacity of monetary policy to stimulate growth and produced shock to the financial stability.Exchange rate policy with capital control management did match with the stabilization policy.Again long term debt management in a sustainable manner with stable exchange rate policy could guarantee the stability in the growth process under globalisation.

VII. CONCLUSION

The stabilisation cum dollarisation programme was successfully launched in the MERCOSUR including Latin America .How much export led growth will be helpful in this programme in the arena of globalization is doubtful in the sense that financial crisis can not be rectified by controlled monetary policy. Even unsound macro economic indicators

including negative growth rates were clouded over the economic horizon of the Mercosur. Therefore, the agenda for free trade zone with a common currency convertible to dollar may be causes of forthcoming crisis. In this case early signaling approach should be applied to counter for contagion effect. Capital control measures should be adopted to the association between growth and globalisation through simulation technique.
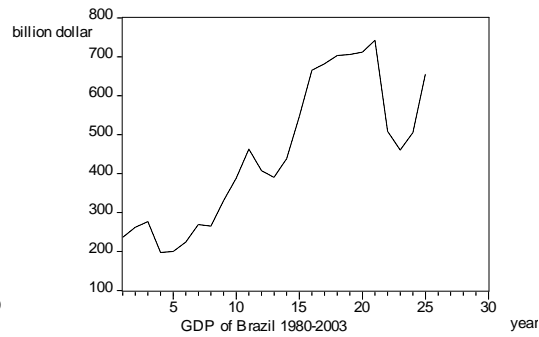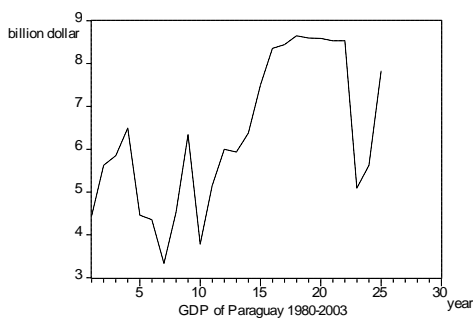
APPENDIX

Figure 1: GDP of Argentina

Figure 2: GDP of Brazil
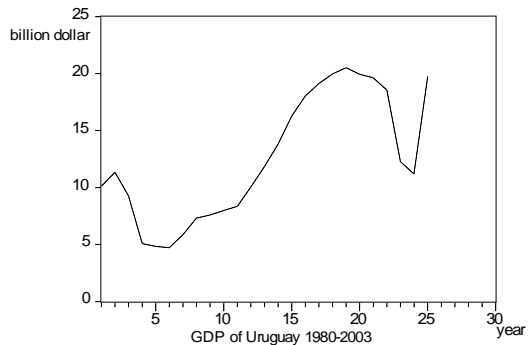
Figure 3: GDP of Paraguay

Figure 4: GDP of Uruguay

References

Baldwin, Robert (2003), Openness and Growth: What's the Empirical Relationship? NBER, WP 9578, March.

Bers, Andrew and Edwarde Borensztein (2003), Monetary Regimes Options for Latin America Finance and Development. September.

Bhagwati, J. and T. N. Srinivasan (2002), Trade and Poverty in the Poor Countries. AER 1992: 2, pp. 180-183.

Bhowmik, Debesh (2002), Essays on International Money (Deep and Deep, New Delhi).

Bhowmik, Debesh (2007), Globalisation, International Trade and Financial Integration. Published in P. K. Pal(ed) Economic Growth and Development: Emerging Issues, Deep and Deep, New Delhi, pp. 113-137.

——(2005), Globalisation and Poverty. *Political Economy Journal of India*, Vol. 14, No. **1-2**, January-June, pp. 1-8, Also Printed in VARTA, Vol-XXIV, April & October, 2003 pp. 1-14.

——(1999), Aspects of Economic Growth in the Socialist Market Economy: A Case Study of China. in S. Murty(Ed)-Market Economy and Economic Growth (RBSA Publishers, Jaipur). pp. 79-93.

——(2007), A Study on Growth and Globalisation in India. (90th Conference Volume, IEA, Srinagar, pp. 783-796).

Broadford, Jr., Colin I. (2005), Prioritizing Economic Growth: Enhancing Macro Economic Policy Choice-UNCTAD, G-24, DP-37, April, 2005.

Bairoch, Paul and Richard Kozul Wright (1996), Globalisation Myths: Some Historical Rflections on Integration, Industrialisation and Growth in the world economy. UNCTAD, DP-113, March.

BIS (2006), Financial Globalisation, Fifth BIS Annual Research Conference, 19-20 June.

CEPAL (2004), Indicators of Economic and Social Development in Latin America and the Carribbeans.

——(2003-2004): Economic Survey of Latin America and the Caribbean-2003-04.

Coatsworth, J. H. and J. G. Williamson (2002), Roots of Latin American Protectionism Loking before the Great Dipression, NBER, WP-8999, June.

David, Dan Ben and Michael B. Loewy (1997), Free Trade, Growth and Convergence. NBER, WP-6095, July.

Dollar, D. and A. Kraay (2001), Growth is Good for the Poor. World Bank Policy Research Paper No-2587, World Bank.

Edwards, S. (1993), Openness, Trade Liberalisation, and Growth in Developing Countries", *Journal of Economic Literature*, 31, (September), pp. 1358-94

IMF-IMF Report-2000, 2004, 2005, 2006.

IMF (2006)-Regional Economic Outlook, Western Hemisphere, November.

IMF (2006), Global Development Finance-2006, Statistical Appendix.

Harvard University (2006), Global Competitiveness Report (2001): Center for International Development.

Kose, M. Ayhan, Eswar. S. Prasad, and Macro E. Terroues (2003), Financial Integration and Macro Economic Volatility. IMF Staff Papers-50.

Kuwayama, Mikio (2005), Latin American South South Integration and Co-operation: From a Regional Public Good Perspective. US Cepal, Chile, Ferbruary.

Lee, Ha Yan, Luca Antonio Ricci, Roberto Rigobon (2004), Once Again, is Openness Good for Growth? NBER, WP-10749, September.

Mashinea, Jose Luis and Guillermo Rozenwurcel (2005), Macro Economic Co-ordination in Latin America: Does it have a Future?, CEPAL, Chile, December.

Michael Michaely, Demetris Papangeorgiou, and Armeane M. Choksi (1991), Lessons of Experience in Developing World. Oxford, Basil Blackwell.

Panagariya, Arvind (2002), Cost of Protection: Where Do we Stand", AER, Papers and Proceedings 92, 2: 175-79.

Pizarro, Ramiro (1999), Comparative Analysis of Regionalism in Latin America and Asia Pacific. International Trade and Development Finance Division, UNO-Chile.

Pritchett, L. (1995), "Divergence, Big Time. " Policy Research Working Paper No-1522. (Washington DC., World Bank).

Rodrik, Dani (1997), Globalisation, Social Conflict and Economic Growth. 8th Raul Prebicsh Lecture UNCTAD, 24th October.

——(1992), The Rush to Free Trade in the Developing World : Why so Late? Why now? Will it last? NBER, WP-3947, January.

Rodrik, Dani, Arvind Subramanian and Francesco Trebbi (2002), Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development-mimeo September.

Rodrik, D. and Francisco Rodriguez (2001), Trade Policy of Economic Growth: A Skeptic's Guide to the Gross National Evidence-newly Revised, May 2000, Macro Economic Annual 2000, eds.

Bernarke and Kenneth S. Rogoff. MIT Press for NBER, Cambridge M. A., 2001, pp. 261-325.

Rogowski, R. (1989), Commerce and Coalitions: How Trade Affects Domestic Political Alignments. (Princeton, N. J., Princeton University Press).

Rowthorn, Robert and Richard Kozul Wright (1998), Globalisation and Economic Convergence: An Assessment. UNCTAD, DP-131, March.

Sachs, J. D. and Andrew M. Warner (1995), Economic Reform and the Process of Global Integration. Brokings Papers on Economic Activity. 1995: 1, pp. 1-118.

Singh, Anoop (2005), Global Context and Regional Outlook for Latin American and the Caribbean, IMF, October.

Taylor, Alan M. (1999), Latin America and Foreign Capital in the Twentieth Century: Economics, Politics, and Institutional Change. NBER, WP-7394, October.

Turner, Philip (1995), Capital Flows in Latin America: A New Phase. BIS, Economic Papers No-**44** May.

UNCTAD (1998-2006)-World Investment Report-2006, 2002, 1998.

——(2005), Unctad, Handbook Statistics, 2005.

UNTAD (2005), Developing Countries in International Trade, 2005, Trade and Development Index.

——(2005), International Trade Negotiations, Regional Integration, South–South Trade, Especially in Commodities. 18 March, 2005.

Warner, Andrew M. (2003), Once More into the Breach: Economic Growth and Global Integration. Center for Global Development, WP-034, May.