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UDK 336.76(497.7) MEASURING OPENNESS OF THE CAPITAL MARKET IN MACEDONIA^{1, 2}

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Abstract

Macedonia is a small and open economy and its interest rate policy is very much linked to its exchange rate policy. The more integrated it became with the international financial market the more the interest rate policy will be dependent on the exchange rate regime. In accordance with the uncovered interest rate parity, the more open the economy is the domestic interest rate should be converging to the Euro zone interest rate. If the difference, i.e. the parity spread, is high in an environment of integrated financial sector and Macedonia is still experiencing high interest rates, then the differential may be explained as a premium for the expectation of future depreciation and/or devaluation of the Macedonian Denar. Explanation might be that there exist a misalignment within the fixed exchange rate regime in Macedonia thus, creating incentives for the market to expect depreciation/devaluation. The type of expectation (whether they are rational or adaptive) is very important, as shown in this paper as well as the degree of openness of capital account.

Key words: Interest rates, capital account openness, expectations, exchange market pressure

Introduction

Macedonia is a small and open economy and its interest rate policy is very much linked to its exchange rate policy. The more integrated it became with the international financial market the more the interest rate policy will be dependent on the exchange rate regime.

One reason to analyze the behavior of the interest rate level in Macedonia is the differential between the interest rates in Macedonia and the Euro zone. In accordance with the uncovered interest rate parity, the more open the economy is the domestic interest rate should be converging to the Euro zone interest rate. If the difference, i.e. the parity spread, is high in an environment of integrated financial sector and Macedonia is still experiencing high interest rates, then the differential may be explained as a premium for the expectation of future depreciation and/or devaluation of the Macedonian Denar. Explanation might be that there exist

1) I would like to extend my highest gratitude to Prof. King Banaian on the fruitful suggestions and help. Another important contributor to this paper is Mr. Bryan Roberts. For the initial comments I would like to thank Mr. Claudio Paiva and Ms. Marjorie Rose from the IMF. However, all the mistakes are responsibility of the author of this paper solely.

2) First version of this paper was prepared for the International conference held in Prilep.

a misalignment within the fixed exchange rate regime in Macedonia thus, creating incentives for the market to expect depreciation/devaluation. The type of expectation (whether they are rational or adaptive) is very important, as shown in this paper.

Rationalizing this, we must not forget the relatively high intermediation spread that exists in the Macedonian banking sector that could be reflection of some microeconomic reasons for the relatively high interest rates (premium for the inefficient enforcement of the bankruptcy and collateral laws, lack of competition in the banking sector, high level of nonperforming loans, moral hazard issues related to bank bailout, possible existence of a pocket money banks and signaling and asymmetric information problems etc) as well.

Macedonia conducts a de facto peg system since 1995 (Stanley Fischer (2001) says that many countries with a substantial contact to international capital markets have abandoned the facto or "soft pegs" from their terminology. Those remaining like China have a capital controls in place). On the other side, Mussa and the others (2000) say that if a country have limited involvement with global financial markets some form of exchange rate peg or band or highly managed float is generally more viable and more appropriate for them.

There are many questions and debates in the literature and finding what is proper for Macedonia is a challenge. For example, consider the recent decisions adopted by the Central Bank of Macedonia that will further liberalize the capital account in Macedonia (from 2007). Also, it is evident that the interest rate on denar deposits is declining while the interest rate on the Euro is increasing thus, putting pressure for appreciation of the denar. One further empirical challenge is to estimate what would be the foreign currency risk at which the investor will be indifferent at holding denar deposits.

This paper is organized as follows. First, the need to measure capital openness is discussed, and then some measures are illustrated. Further, a model for Macedonia and the results are presented. I end the paper with the connection of the topic with the institutional set up and the conclusion. This research needs to be improved with how the area is regulated in Macedonia especially in the light of the newly amended regulations.

Why measuring of the capital account openness

The globalization, accelerated development of the financial market, the 80s debt crises and the 90s currency crises gave the BoP related analyses a new boost. The analyses of capital account being of particular interest and raise the interest of CEA for more detailed technical analyses. Questions were discussed within CEA related to the measuring capital account openness and the context and benefit of such analyses.

This part lists some aspects of the practical use of the measuring capital openness. Higher degree of openness on one side may allow increased ability to finance larger current account deficits and increase the level of foreign savings and may affect the efficiency of capital allocation thus, reduce distortion with higher return on investment and higher productivity growth. On the other side Stiglitz (2002) argues that pressuring emerging countries in the 90s to relax the barriers on capital flow was a mistake and led to currency crises.

What would be country specific to Macedonia to argue for restricting capital integration? One reason for more restriction might be the country's high vulnerability to external shocks and financial crises. The rapid expansion of bank credit, reflects a structural shift to more commercial bank intermediation (credit growth accelerated in 2002, triggered by a decline in the interest rate on central bank bills and by more aggressive lending to households due to growing competition among banks). Neither the increases in interest rate on NBRM bills since late - 2003 nor the still high lending rate, have significantly dampened the credit boom, partly because much of the new lending is in, or indexed to, foreign currency. While the boom has raised credit risk, including from unhedged foreign exchange exposures by borrowers, the quality of banks' loan portfolios has improved and stress tests suggest that balance sheet risks remain small (see more in IMF 2005).

Even if the IMF's stress tests show small balance sheet risks, the possible evergreening might easily occur in the banking sector. That is why it is important that an overall strong monetary institution with good

financial regulation and strong supervision are on place. Strong institutional set up could help reducing vulnerability and the interest rates and set a firm ground for implementing more growth oriented policies. Macedonia recently amended the regulation giving the Governor more power.

This leads us to the question how the openness of the capital account affects economic growth. Macedonia has a poor economic growth and we might want to investigate if the capital account openness is a determinant for the economic growth and also, when is the right sequencing to free the market further. Sebastian (2000) shows that there is an evidence that an open capital account positively affects growth only after a country has achieved a certain degree of economic development. Further, he concludes, that this provides support to the view that there is an optimal sequencing for capital account liberalization. For Macedonia thus, still remains the question how much is the capital account open. The more open the capital account the higher the ability to finance larger current account deficits. But, does the economic growth in Macedonia provide certain degree of economic development as Sebastian points out?

In relation to the economic growth and investment, the degree of openness of the capital account is affecting the degree to which the expansionary fiscal policy is crowding out the private investment and the ability to which the monetary policy affect the aggregate demand.

Another important reason to analyze capital account openness is the correlation between the capital account openness and the external crises in the face of the possible sudden stops of inflow of capital and current account reversals. The point is to make a judgment of the degree of vulnerability to external crises depending on the openness of the capital account and how this affects the economic growth. Sebastian (2004) finds no systematic evidence suggesting that countries with higher capital integration face a higher probability of having crises. But he also finds that once a crisis occurs, countries with higher capital mobility may face higher costs in terms of economic growth decline.

In the case of Macedonia the more it is integrated in with the global capital market the higher the risk of a situation where the future inflow of high volume of capital is reduced significantly in a short period of time, which is the sudden stop and the possible reductions in the current account deficit within a short period of time, which is the reversal.

I use here the opportunity to quote Mundell (1961) from his classical paper on a point that is very relevant for the Macedonian case: "It is patently obvious that periodic BoP crises will remain an integral feature of the international economic system as long as fixed exchange rates and rigid wage and price levels prevent the terms of trade from fulfilling a natural role in the adjustment process. It is however far easier to pose a problem and to criticize the alternatives than it is to offer constructive and feasible suggestions for the elimination of what have become an international disequilibrium system".

One of the main structural factors considered by Mundell (1961) and latter McKinnon (1963) is the factor mobility. Macedonia, as one with fixed exchange rate, if it have high capital and labor mobility, vis-a-vis the EU countries with which it fix the exchange rate, will have less need for exchange rate adjustment and will be better off with the existing regime. But how much is the capital mobile and how much is the labor mobile is a matter of empirical research.

Measures of the capital account openness

One simple measure of capital openness is the inflow of capital as percentage of GDP. A useful presentation of the behavior of capital flows as % of GDP has been presented in Sebastian (2000).

In Macedonia the direct investment and the portfolio investment are relatively low (average for the period 1998-2004 of \$ US 92 per capita or cumulative FDI and portfolio investments of 5 % of cumulative GDP for the same period).

The degree of capital market integration can be estimated with examining the convergence of the private rate of returns to capital across countries. In their famous work Feldstein and Horioka (1980) analyzed the behavior of the saving and investment. The argument there was that in an environment of perfect capital mobility there is no correlation between the saving and investment. Interesting results from the work of Montiel (1994) after implementing the Feldstein and Horioka approach is the benchmark of saving ratio coefficient of 0.6. If a country has a coefficient of regression higher than 0.6 it can be said that the country has a rather closed capital account. Another interesting work, on this rather quantitative indicator (the saving-investment), is presented by Buch (1999). A price measure of capital mobility shows that in integrated financial markets rates of return on identical financial assets must be the same.

One test of the degree of capital mobility uses the fact that the assumption of international mobility of capital implies that consumers can smoothen consumption over time by borrowing and lending on (international) capital markets. Hence, tests on the correlation of consumption and net domestic output can be used to assess the degree of capital mobility, see Bayoumi (1998).

Klein and Olivei (1999) use the IMF's exchange arrangements and exchange restrictions data to construct index of capital mobility. The index is defined as the number of years that in accordance with the IMF's binary data the country in question has had an open capital account.

Another interesting measure for effective degree of financial openness of an economy is the Stilianos and Christopher cointegration test of interactions among the current account, budget balances and real interest rates.

Measuring of the capital account openness in Macedonia

Back in 2003 the USAID's Fiscal Reform Project invited Prof. King Banaian to investigate the presence of high interest rates in Macedonia (see both King 2003). In his findings Prof. Banaian proposed to the USAID project to investigate the degree of openness of the capital market in Macedonia and suggested the Sebastian and Khan (1985) and Haque and Montiel (1991) methodology. The context of his proposal was to give answer to whether the use of the exchange rate targeting in Macedonia has alternative as well.

The idea was that if the capital market is relatively closed, than the observed differences in the interest rates between Macedonia and the rest of Europe are most likely due to domestic factors and if this is true then the more open the Macedonian economy is the more problematic the pegged exchange rate becomes.

We cannot make a clear statement of weather the capital account in Macedonia is open thus, the presence of capital controls in Macedonia is an issue subject to empirical testing.

The model

Here a measure of openness of the capital account in an empirical environment follows the Edwards and Khan (1985) and Haque and Montiel (1991). The rational of the model is:

The domestic interest rate - i is a structural feature of the economy and can be expressed as a weighted average of the uncovered interest parity rate - i^* and the domestic "Endemic" interest rate if the capital market is closed - i' .

The algebraic representation is:

$$i = \psi i^* + (1 - \psi) i' \text{ or } i - i^* = (1 - \psi) * (i' - i^*); 0 \leq \psi \leq 1 \quad (1)$$

Where the index of capital mobility - ψ is a measure of the openness thus:

$0 \leftarrow$ closed capital market $\leftarrow \psi \rightarrow$ open capital market $\rightarrow 1$

$\psi \rightarrow 1$ open thus, external financial influences outweigh the domestic monetary factors in the determination of the domestic market clearing interest rate.

$\psi \rightarrow 0$ closed thus, external financial influences play no role in the determination of the domestic market clearing interest rate.

The model is based on the money demand and supply approach rather than calculating the Fisher approach for the domestic interest rate.

The standard money supply function is:

$$M = R + D = R(-1) + D + \Delta R \quad (2)$$

R - domestic currency value of foreign exchange reserves

D - stock of the domestic credit outstanding

Δ - first difference operator

By using the BoP identity, the money supply function can be written:

$$M = R(-1) + D + CA + Kag + Kap \quad (3)$$

CA - domestic currency value of the current account

Kag - public capital account

Kap - private capital account

The money supply that would correspond to a situation with closed private capital account denoted as M' is the actual money supply less the portion of reserve flows accounted for by private capital movements:

$$M' = R(-1) + D + CA + Kag = M - Kap \quad (4)$$

The money demand function is:

$$\log(Md/P) = a_0 + a_1 * i + a_2 * \log(y) + a_3 * \log(M/P)(-1) \quad (5)$$

y - real output

P - domestic price level - CPI

The interest rate i' is that value of i that satisfies the money market equilibrium:

$$\log(M'/P) = \log(Md/P)$$

Thus, from the equation (5) we have:

$$i' = -(a_0/a_1) + (1/a_1) * \log(M'/P) - (a_2/a_1) * \log(y) - (a_3/a_1) * \log(M/P)(-1) \quad (6)$$

The dependent interest rate variable is the equilibrium interest rate. Macedonia as a developing³ country lacks developed security market and the financial intermediation goes primarily through the banking system. That is why in this paper as domestic interest rate I will use the weighted interest rate of the banks in Macedonia.

The following algebra will derive the equation that we should estimate. Firstly, we take equation (6) and substitute in (1). Secondly, we take the new expression of $-i$ and substitute it in the money demand equation (5). Thirdly, take the result of this algebraic exercise and the equation (3) to derive the final specification for estimation:

$$\log(M/P) = -a_0 * (1 - \psi) + a_1 * \psi * i' + (1 - \psi) * \log(M'/P) + a_2 * \psi * \log(y) + a_3 * \psi * \log(M/P)(-1) + e \quad (7)$$

3) I am using the term developing country, since the literature in this area is making the classification of developing and industrialized countries. However, the distinction between a country in transition and developing countries is very significant. In this paper I will not investigate further this important topic and its role on financial liberalization.

Data

The dependent variable in our specification is the log of the real money supply measured as M1 (because I am using the money market interest rate) divided by the consumer price index-CPI. The independent variables are the logs of the lagged real money, real GDP, real value of - M' (M1 minus the domestic currency value of private capital flows - inward direct investment and portfolio investment inflow) and the money market interest rate variable.

The frequency is monthly data. For the monthly data I produce monthly GDP data from the quarterly GDP data by using the monthly industrial index data as weights. BoP and monetary data are from the NBRM. The GDP and industrial index data are from the State Statistical Office. For the foreign interest rate I use LIBOR/EURIBOR from the Deutsche Bundesbank statistics.

Estimating rational expectations

The interest rate variable - i in (7) is the defined uncovered interest parity condition. It is derived as money market interest rate plus expected depreciation in the exchange rate (that is proxied by the actual exchange rate change that takes place between periods):

$$i = \text{EURIBOR} + E(\Delta \text{FX}\%) \quad (8)$$

E - expectation operator

FX% exchange rate change between periods

The M' was derived as M1 minus the MKD value of capital inflow.

Since the specification incorporates rationally expected variable, a lagged dependent variable and an endogenous variable-log (M'/P); a generalized nonlinear two stage procedure (see Wickens 1982) was used in the estimation of the equation (7).

To ensure that the instruments used show no contemporaneous correlation with the residuals, only the lagged values were used for EURIBOR, real GDP, money supply, CPI, imports, foreign exchange reserves, industrial index and exports.

Box 1. Rational versus adaptive expectations

Philip (1994) show that uncovered interest parity test coefficients can be expressed as functions of the parameters of expectations mechanism. His research is on the base of usually rejection of the uncovered interest parity and rational expectations in the empirical studies. That is why I will reestimate the equation (7) with adaptive expectations by utilizing the Kalman filter.

Kalman filter is a recursive algorithm for sequentially updating the one step ahead estimate of the state mean and variance given new information. It can be applied in our case to model unobserved variable with adaptive expectations. Technically, the procedure is to form a preliminary estimate of the state and then revising that estimate by adding a correction to it. The magnitude of the correction is determined by how well the preliminary estimate predicted the new observation.

The Kalman filter can help in dealing with purely temporary shocks alternated with purely temporary shocks. It is also useful to implement a learning process and apply the Bayeseian approach to update the prior probabilities of the separate filters if the characteristic of the time series evolve over time. In this way we ensure not to use one fixed model for each and every time. More on the use of Kalman filter see in Bomhof (1983). See Sun (2000) for time varying coefficient of capital mobility within adaptive expectations.

Results from a model with rational expectations

The following figure is results from the two stage least squares non-linear estimation made in E-Views. We can see that the coefficient-C(2) estimate of ψ is almost 1 and the interpretation would be significant perfect capital mobility and financial integration. The money demand coefficients: C(1), C(3), C(4) are not significant and only the lagged money demand coefficient is significant-C(5). I will not further investigate the economic rational and statistical performance of the estimation since I am focusing on the coefficient of openness.

Dependent Variable: LM1CPI				
Method: Two-Stage Least Squares				
Date: 10/13/05 Time: 20:03				
Sample(adjusted): 1997:10 2004:12				
Included observations: 87 after adjusting endpoints				
Convergence achieved after 10 iterations				
LM1CPI=C(1)*(1-C(2))+C(3)*C(2)*INTEIBOR+(1-C(2))*LOG(M1FDI)				
+C(4)*C(2)*LOG(GDP)+C(5)*C(2)*DLM1CPI				
Instrument list: INTEIBOR(-1) GDP(-1) M1(-1) CPI(-1) IMPORT(-1) IND(-1) WAG(-1) FDI(-1)				
	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	143.4910	343.7868	0.417384	0.6775
C(2)	0.995959	0.007049	141.2873	0.0000
C(3)	0.001522	0.002841	0.535765	0.5936
C(4)	0.090992	0.062978	1.444822	0.1523
C(5)	0.923898	0.036430	25.36079	0.0000
R-squared	0.938498	Mean dependent var	4.282949	
Adjusted R-squared	0.935498	S.D. dependent var	0.087895	
S.E. of regression	0.022323	Sum squared resid	0.040862	
Durbin-Watson stat	1.795003			

In January 2001 there was a significant inflow of investments in the telecommunication sector in Macedonia and that outlier can cause biased results.

The split of time series in two periods, one from January 1999 until December 2000 and the other from February 2001 until December 2004 shows the following results (E-Views prints available from the author upon request):

Period	Coefficient	t-statistic
1999:01 - 2000:12	0.874	12.785
2001:02 - 2004:12	0.780	2.908

Both estimations show significant relatively open capital account. The interesting finding is that in the second period the capital market is more closed.

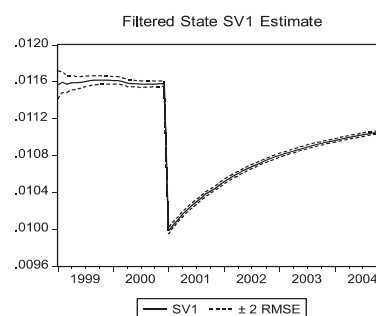
Results from a model with adaptive expectations

The discussion in Box 1 preferred more the adaptive expectations and I have tested the data with the Kalman filter estimation. This is more realistic type of assumption because allows for a time varying parameter on openness of capital account.

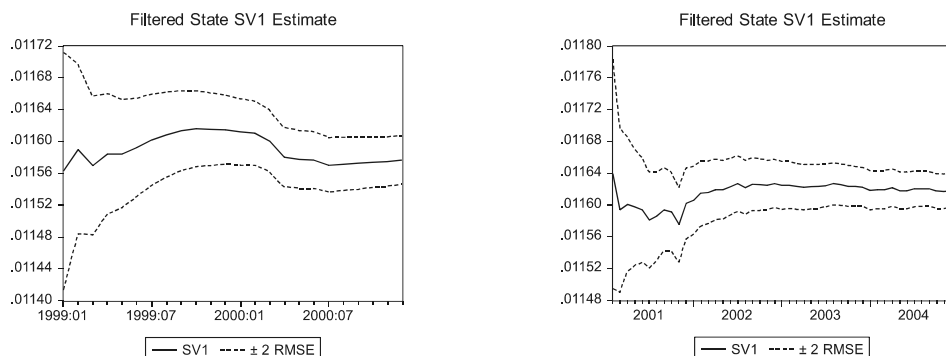
The results from the estimation on the time varying parameter are shown in the figure and were:

1. The parameter shows significant closed capital account (E-Views output available from the author upon request).

2. The differences in the results are dramatically, depending on the type of expectations.



We can see the slump of the parameter from the investment made in 2001 January. That is why again I have split the time series in the same two periods. The results from these estimations were (E-Views output available from the author upon request):



From the above two figures and we can conclude that the capital account is closed in Macedonia with small changes across time. The relatively closed capital account has implications that the fixed exchange rate can still be a beneficial regime for the case of Macedonia if the economic agents have adaptive expectations.

It also shows that the monetary policy in Macedonia still have relatively more powerful effect compared to the fiscal policy on the domestic demand and the trade balance. The NBRM should take this argument into account to further investigate the possible exchange rate misalignment (especially in the light of the SBA with the IMF and the liability to keep the regime status quo) since the monetary policy has been shown as more important compared to the fiscal policy at the moment. Another reason why the misalignment might be important is that possible future anticipated regime's adjustments might quickly be reflected in capital outflows. Maybe this is one of the reasons why Macedonia experiences a high interest rate and the economic agents actually are paying premium for the misalignment. This, of course, leads to high level of interest rates, low level of economic activity and economic growth.

The findings from the capital openness index do not reject the effectiveness of the impediments to capital flows but also are not evidence that the capital controls are effective.

Box 2. The index of speculative pressure on an exchange rate regime-EMP as proxy

It is interesting to investigate if a measure of an early warning system such as the Exchange Market Pressure - EMP can be used as a proxy for rational expectations. The EMP index is motivated by the idea that speculators do not always succeed in attacking an exchange rate regime and therefore speculative pressures cannot be captured by looking only at the nominal exchange rate data.

The pressure that the exchange market gives to interest rates can be monitored by construction of an index for periods of high demand for foreign currency. The EMP index is constructed as a tool for measuring the speculative attacks on the foreign exchange market, i.e. it serves as an indicator of (non) occurrence of a currency crisis; see Eichengreen, Rose and Wyplosz (1996):

$$EMP = [(\alpha \% \Delta e_t) + (\beta \Delta(i_{d,t} - i_{f,t})) - (\gamma (\% \Delta NIR / M1))]$$

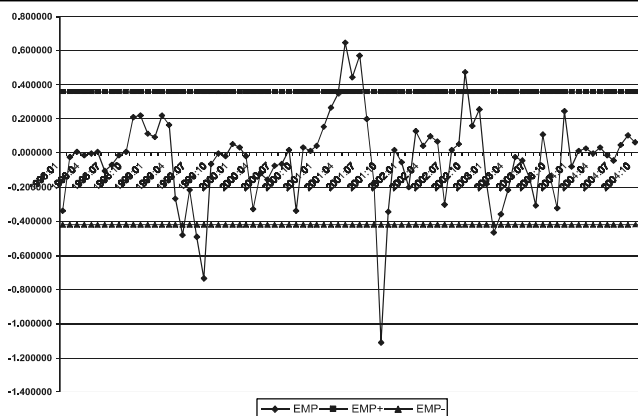
Critical (extreme) values of the index, which signal a crisis: $EMP > 1.5 \sigma + \mu$.

Thus, we might use the EMP as the proxy for rational expectations in the uncovered interest parity equation (8) and reestimate the equation (7):

$$i = EURIBOR + E(EMP) \quad (9)$$

The next figure is illustrating the quarterly EMP scores for Macedonia.

Figure.



Quarterly EMP scores for Macedonia (author's calculations).

However King and Ming (2005) have shown that the EMP index though useful, is rather ad hoc in treating the importance of different financial data. Their explanation is based on the feature that in most exchange rate regime, there are more periods of tranquility in which small, regular market disturbances dominate. In a period of tranquility, central banks ignore minor adjustments of financial markets, as they do not jeopardize the exchange rate regime. Theoretically, then, a rather nonlinear dynamics is to be expected whereas the EMP is based on a linear model. Their application to Macedonian data suggests that the skepticism for that linear model was justified and very poor to be used as an early warning system. But, this does not preclude using an early warning system as a proxy for rational expectations in some future extended work.

The capital openness and the institutional set up

The story for Macedonia is the one that increased capital mobility might induce costs and little benefits. If the capital account is more liberalized the domestic financial market might be more vulnerable if the financial institutions are not developed.

The market stabilizing role is on the NBRM with its supervision authority. On the other side we have the market regulating institutions as the Ministry of finance to correct certain market failures as to continue to impose or to reduce the capital flow with the amending in the legislation in joined cooperation with the NBRM.

Another way to explain the importance of the issue is to ask whether there is openness of the capital account sufficient to concern the NBRM in its policy of fixing the exchange rate and to concern the government for the possible influence on economic growth.

In Macedonia the interest rate differential is high compared with the EU countries thus, either there are capital mobility issues or the differential is due to lack of confidence of the exchange rate policy (that is the credibility of the NBRM's policy). There is reason to believe that Macedonia pays an interest rate premium due to fear of depreciation. Is that fear rational is another issue. If there exist a thorough analyses from the NBRM on possible pros and cons to keep the current exchange rate policy is important to know because if they do not exist the arguments that are listed in the country report from the IMF are showing nothing more but non rational fear of floating in Macedonia

The canonical Mundell-Fleming model postulates that with the fixed exchange regime and higher degree of capital mobility the monetary policy is less effective and the fiscal policy is the only tool to smooth the economic cycles. But are the Macedonian governments using the fiscal tools efficiently so far? The answer is easy, that even after a decade and more of transition Macedonia still experience low economic growth which is one credible outcome to measure the success of Macedonian governments (even though recently there are some improvements in the budget process and fiscal transparency in Macedonia). To rely only on the foreign reserves and to increase it to the four months import level is not enough. A credible macro strategy is what we need as well. That is why the new SBA and the PDPL of the WB are of crucial importance to be fulfilled within the three years horizons. In that regards the latest buy out of the IMF loan from the government is the right move.

The authorities in Macedonia still recognize the unstable economic environment thus; the fixed exchange regime and the possible further increase of the capital mobility and financial activity will most likely again increase the importance of the fiscal policy in affecting the aggregate demand. The NBRM should start to investigate the possible timing for exit strategy of the existing regime taking also in mind that with further increase of the capital mobility the possible exchange rate misalignment will have more adverse consequences. Still, the country report of the IMF (2005) for Macedonia says: "The authorities recognized that some flexibility would sharpen banks' and borrowers' incentive to hedge foreign currency exposures but they viewed the arguments in favor of the peg as more persuasive. In particular, given the still unstable economic environment, they saw merit in retaining a clearly defined monetary anchor. In examining the alternatives, they took the view that inflation targeting or monetary aggregate targeting would be unworkable given the unpredictability of the monetary transmission mechanism. In contrast, limited flexibility-a narrow band-could be manageable. But this would have too small an effect on banks' and borrowers' behavior to justify the risks associated with departing from the existing well-functioning anchor."

A strong prudential regime is needed in Macedonia especially with experiencing credit boom and the questionable sensitivity of the companies and the households to the currency risk even though the banks are not directly exposed to the foreign exchange.

In this context Chin and Ito (2005) shows that among emerging market countries, a higher level of bureaucratic quality and law and order, as well as the lower levels of corruption, increases the effect of financial opening in fostering the development of equity markets as well. They also find that the finance-related legal/institutional variables do not enhance the effect of capital account opening as strongly as the general legal/institutional variables. In examining the issue of the sequencing, they find that the liberalization in cross-border goods transactions is a precondition for capital account liberalization. Their findings also indicate that the development in the banking sector is a precondition for equity market development and that the developments in these two types of financial markets have synergistic effects.

Interesting consequence of the high interest rates is to investigate the role of the possible oligopoly in the banking sector within this context. The banking system in Macedonia has its own characteristics, as well as the general determinants that characterize the transition economies. The problem from the large share of non-performing assets in the bank's portfolio now is enhanced with the relatively low level of intermediation causing a financial market failure in Macedonia. The market failure of the market for lemons seems to apply in the supply and demand for bank's intermediation as a product of asymmetric information. The problem of rigidity in the banks interest rates in the environment when the savings rose dramatically after the EURO conversion in Macedonia, only confirms the problem. One of the causes can be a social capital deterioration and the lack of trust among the agents, both from the supply and from the demand side in this market.

Conclusion

- The complexity of the problem requires more time resources to investigate this topic in a satisfactory manner. So far I have started to set a ground for more extensive work I will conduct in near future. There are many issues with no consensus and it must be further investigated what is relevant for Macedonia.
- The topic of monitoring the capital market openness is of crucial importance for Macedonia given the confirmed dedication to the fixed exchange rate and agreed with the IMF arrangement as well.
- Just for now it seems that Macedonia can keep the current exchange rate regime as long as capital markets remain relatively closed. In that case the observed differences in the interest rates between Macedonia and the rest of Europe are most likely due to domestic factors. The more open becomes the capital market, the more problematic becomes the pegging monetary policy. The higher degree of the capital openness will require a choice of the corner solutions-either a more purely pegged exchange rate system - euroization or currency board or towards a purely floating system with either monetary aggregate nominal anchor or inflation as the nominal anchor (in accordance with the impossible trinity theorem).
- NBRM will be less able to affect interest rates as capital markets open, if it continues to pursue a pegged exchange rate. If it continues to fix the exchange rate it will have only one policy tool to pursue the one goal, in accordance with the Tinbergen (1952) rule. It cannot target interest rates and fix the exchange rate regime at the same time. If it wants to target the interest rate it must allow for the exchange rate regime to float. The risk then is that if it wants to hold down the interest rates to world level, in a floating environment, it would either print money or cause a loss of the reserves. This is why the institutional strength is of importance.
- The NBRM should conduct a thorough cost benefit analyses of removing/imposing capital controls in Macedonia. The cost of possible crises should be compared with the cost of having distortion in the capital market. This is of special interest for Macedonia which suffers from sectoral deficiencies. The speculative reversals, a decline in external competitiveness, exchange rate appreciation, loss of control over the monetary base and inflation are some of the detrimental effects that can be provoked by surges in capital flows if the economy suffers from fundamental sectoral deficiencies (see Oplotnik 2002).
- In Macedonia the concentration of export in the production sector is high thus, in terms of flexible regime every shock on the exporting sectors might result in radical disturbances in the price level.
- Even though there is not much capital inflow in Macedonia it is of importance to analyze the results from stress test of the banking system response to external crises as the sudden stops and reversals in depth. Sebastian (2004) has shown that there are no significant relations among them. However, Kaminsky and Reinhart (1999) analyze the importance of joint occurrence of external crises and banking crises.
- A separate technical issue is to conduct a thorough study on finding evidence on rational expectations versus the adaptive expectations in the case of Macedonia with a time varying parameters.
- The IMF gave signals to Macedonia back in 2002 that the authorities could start to think about possible exit strategy but they were expecting thorough analyses from the Macedonian authorities. Whether there exist or not such analyses is important to know because if they do not exist the arguments that are in the country report from the IMF are showing nothing more but existence of fear of floating in Macedonia.
- With the taken responsibility of the Macedonian government of the joint effort of the new SBA of the IMF and the PDPL of the World Bank including the BERIS project, we are expecting this arrangements to bring higher level of bureaucratic quality and law and lower levels of corruption that should increase the effect of further financial opening and fostering the development of equity markets as well. The IMF program supports increasing the flexibility of the labor market, raising the efficiency of the judicial system, and improving public sector governance and efficiency. These measures will be supported by continued prudent fiscal and monetary policies. This is more important for the potential investors to be active in a more developed Macedonian equity market.

- According to the neoclassical theory, capital account liberalization should allow for more efficient global allocation of capital, from capital-rich industrial countries to capital-poor developing economies. For Macedonia, the EU membership provides a strong incentive for policymakers to adopt and maintain sound policies, with obvious benefits in terms of long-term growth. On contrary, the expected membership will be unlikely to boost capital market integration to a significant degree and to trigger huge capital inflows in Macedonia. The membership in the EU will require that Macedonia abolish remaining entry barriers into their financial sectors and hereby import institutional stability. Seen from this angle, the benefits of further capital account liberalization may outweigh the risks of such a strategy. At the moment this is still a distant future to trigger such analyses taking into account the fragile expectation of EU membership.
- Capital account liberalization could pose major risks if implemented in unfavorable circumstances. In the case of Macedonia with the fixed exchange rate regime, and especially when domestic macroeconomic policies might not be consistent with the requirements of the regime, it can be a reason for crises. For instance, capital account liberalization can aggravate risks associated with imprudent fiscal policies by providing access to excessive external borrowing. The foreign borrowing and overall fiscal sustainability is very important issue in the light of the fixed exchange regime in Macedonia and higher degree of capital mobility. Macedonia might maintain or only gradually ease capital controls while moving toward a more flexible exchange rate regime. Premature opening of the capital account can also pose serious risks when financial regulation and supervision are inadequate.
- The only transmission mechanism in Macedonia is through the exchange rate, according to the anecdotal evidence. This could be due to inadequate NBRM framework and lack of instruments and/or lack of competition and the oligopoly of the banking sector.
- Thus, it is important that the range of instruments for implementing monetary policy will be widened in Macedonia (see IMF 2005). The NBRM will consider introducing a low-interest deposit facility, which will complete the interest rate corridor, thus providing a guide for market expectations of interest rates. This instrument might take effect on the behavior responses on the credit supply. Namely, the risk averse banking sector in Macedonia, and its most likely oligopoly position so far, was investing in the high interest instrument of the NBRM and were not increasing the lending to the private sector. NBRM also, plans to improve the guidelines on the currency composition of reserves, the management of the benchmark portfolio and its intended maturities.
- Related to the relevant institutions. Their importance is crucial since the view of free capital markets delivering efficient allocation of resources is only a theoretical fragment with no ground in reality. In reality this market is distorted with incomplete information on different levels: adverse selection, moral hazard (up to the extreme case of gambling for redemption as the case with the Export-Import Bank) and herding. Thus, the story of efficient allocation is true only if the regulator have developed policies (prudential supervision and well developed lender of last resort system) to limit the incomplete information and contain the potentially damaging consequences.

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GLOBALIZATION OF THE FINANCIAL MARKETS AND THE APPEARANCE OF CONTEMPORARY FINANCIAL CRISIS

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Abstract

This paper analyses the positive and negative aspects deriving from the process of globalization of the financial markets. The financial globalization has numerous advantages for the national economies as well as for the investors, but on the other hand, it also causes many changes in the structure of the markets creating certain risks and challenges for the market participations and politicians.

The purpose of this paper is to point to the extent of connection between the financial globalization and the appearance of the contemporary financial crises in the world.

Introduction

The terms financial globalization and financial integration are basically two different concepts. Namely, the financial globalization is a process which covers the increased global connections of the interboarder financial flows. Whereas the financial integration covers the individual connections of one country to the international capital markets. Anyhow, these two concepts are closely connected, because the increased financial globalization is purposely connected to the increased financial integration.

The results of different researches point to the fact that the process of globalization has first started in the developed countries, whereas the developing countries and the transitional economies have undergone the process more slowly because of the fact that the investors have been careful about the possible risks which can come as a result of this process.

There are many useful aspects which derive from the process of financial globalization. They refer to the development of the financial system, the possibility of the investors to realize productive investment projects, improved financial infrastructure, improved financial growth ect. When the participants in the international financial markets take the responsibility of making decisions to perform certain activities, they also should take into account the risks which can appear as a result of the financial globalisation. What is meant is that certain countries or regions can be economically unstable and in the globalize world we live in, the imperfections of a market segment or country can be easily transferred to other regions.

In the main part of the paper the stress is put on the risk of the appearance of financial crises as a result of the increasing globalization of the world financial market.

Understanding the basic concepts of financial globalization and financial integration

The process of globalization refers to the closer integration of the countries and people in the world and it is carried through by great reductions of the costs in the processes of transport and communication, as well as by removing the man-made boundaries among the flow of goods, services, finances, knowledge and moving of the people outside the borders.

It is very important to be noted that the growing development of the telecommunication and computer technologies, production of new products as well as the increased spreading of the international financial flows, have important influence over the achieved degree of development of certain countries. The changes in these areas enable the world market participants to get information on much easier way concerning the estimation, analysis, and managing the financial risks, as well as efficient managing of the transactional activities which are carried through in the financial centers in Asia, Europe and Western hemisphere.

Having in mind the above mentioned facts, we can certainly tell that the world financial markets today are more efficient compared to the past. It is due to the improvements in communication and informational technology whereas the new instruments and techniques enable the financial and non-financial firms to manage the new financial risk more efficiently.

From the 60-ties of the last century the financial markets in the world integrate more and more. As a result of this trend the financial institutions are more oriented toward the international markets. In 1960 only eight American banks have had their branches abroad, whereas today more than hundred banks have branches everywhere in the world. Two out of three leading Macedonian banks have foreign owners and 44% of total finances of the Macedonian banking system are owned by foreigners. (M.Petkoski, 2004)

Concerning the fact that the terms financial globalization and financial integration will be frequently used in this paper, it becomes inevitably to stress out that these two terms have opposite meaning. Namely, financial globalization is a process which refers to the increased global connections to the international financial flows. Whereas financial integration refers to the individual connections of one country to the international financial markets. Anyhow, these two concepts are closely interrelated because the increased financial globalization is connected to the increased financial integration.

Numerous indicators of the level of integration of the countries to the international markets show that the process of globalization has started first in the developed countries, whereas the developing countries and the transitional economies have undergone the process more slowly because of the fact that the investors have been careful about the possible risks which can come as a result of this process.

In this context we can mention that the researchers use different indicators of measuring and indicating the level of financial integration so that they can determine the level of integrating of different countries to the world financial market in a more precise way.

One of more influential approaches is defining the connection of the national savings and investments. In the case of perfectly integrated financial markets, there is no need of the national investments to depend on the national saving since the countries can take loans from abroad. In their analysis Feldstein and Horioka (1980) came to a conclusion that even though the capital controls have been removed from the developed countries in the early 70-ties the connection between the national savings and the investments has remained surprisingly high.

Other researchers analyze the financial integration through the use of the capital controls on national level. This way of presenting, points to the much higher financial openness of many countries but it still faces many problems. Even the use of such indicators is preferred in practice because of their availability through annual reports of IMF, still there is not any difference made between more and less important forms of foreign currency controls and other forms of barriers in the market integration are not taken into account (e.g. national tax regimes). Such indicators show the national policies and not the rate of the global integration

(removing capital controls from USA, Japan and EU countries were more decisive for the future than the rest of the political decisions).

Apart from the existing problems of the main indicators there is no doubt that starting from the 70-ties the global integration of the financial markets is growing as a result of the fact that much larger industrial economies and few financial centers and developing countries appear because of the global phenomenon. Almost all developed countries, sooner or later followed the example of the USA which in 1973 removed the capital controls. In the late 80-ties and 90-ties some countries from Latin America and Eastern Asia removed capital flows as well. Big changes of the controls of the capital flows happened between the industrial countries and even more between developed countries, developing countries and transitional economies. For example in the 1970-ties and 1980-ties total capital flows of these countries were 1% of their total annual income. But in 1997 the financial flows have reached the level of 4% of their total income (M. Knight, 1999).

We can surely tell that the risk for openness of the developing countries to the global financial market was accompanied by appearance and existence of financial crises. Namely, the contemporary financial crises which existed in many developing countries

(As Mexico, Eastern Asia, Russia, Brazil and Argentina) were important proofs of the fact that the consequences of the financial globalization were spread unevenly in the developing countries.

The potential benefits and risks of the process of globalization of the financial markets will be explained in the text below.

Benefits and risks of the financial globalization

The potential benefits of the financial globalization are already well known. They refer to an easy transfer of the savings between countries creating possibilities so that the investors can provide finances for productive projects, promoting development and opening new job positions. At the same time the process of financial integration¹ influences the creation of healthy competition of the domestic banking system.

One of the main benefits of the process of financial globalization is the fact that it can lead to development of financial system. As we have mentioned before, the financial system that functions right, provides finances of the investors through which they can realize productive investments.

The process of financial globalization can lead to improved functioning of the financial system in two different ways. First, it enlarges the opportunity for extra funds and second, it improves the financial infrastructure which results in reducing the problem of incomplete information. As long as there is incomplete information it is possible that moral haphazard and unfavorable selection can be made which can lead to disruptions of the market operations.

The existence of new sources of finances means that the investments do not depend only on the domestic funds because they can take loan from countries interested to invest in their own country.

The potential benefits from foreign direct investments does not only mean providing finances but it means developing new technologies know-how and training of managers and employed people who can contribute to enlarge the productivity and economic growth of the country in which these funds are invested.

Another contribution of the financial globalization is the fact that the creditors and investors can provide much better conditions for investments. Namely, the companies can finance their physical investments in a cheaper way, whereas the investors can differentiate portfolio risks of their priorities easily on international

1) The terms financial globalization and financial integration are basically two different concepts. Namely, the financial globalization is a process which covers the increased global connections of the interboarder financial flows. Where as the financial integration covers the individual connections of one country to the international capital markets. Anyhow, these two concepts are closely connected, because the increased financial globalization is purposely connected to the increased financial integration.

level. For example, the prices of the real estate in Asia were high and went lower before the crisis leaving the banks with lots of nonfunctional loans.

The financial globalization can influence the functioning of the financial system through improving the financial infrastructure. The improved financial infrastructure as one significant contribution from the financial globalization means that the creditors and the investors act in much more transparent and efficient financial system. As we have mentioned before, it is a system which reduces the appearance of the problems of unsymmetrical information, moral haphazard and adverse selection but it enlarges the benefits of potential loans also. Foreign participants of financial markets, depositors and share-holders need to be supplied with proper, real and comparable information so that they can easily estimate the bank condition. It supposes transparency which comprises of providing and keeping consistent and accurate accounting standards, satisfying standards for financial reports and useful information. In this sense, IMF develops standards for better practices of transparency in the monetary and financial policies. This standard can help each country to estimate its own practice as well as to take measures for its improvement when it is necessary.

Further more, we should also mention that obviously there is strong connection to the growing financial globalization and the level of economic development. For instance, the industrial countries are more financially integrated than the developing countries. Similarly, when we talk of developing countries, the economies which are more financially integrated develop rapidly than the less integrated economies. Anyway, we can not exclude the opportunity of appearance of counter movements on the rates of economic development and the degree of financial integration of different countries.

The next table shows the fastest developing countries and countries which have lowest (reducing) rate of development in the period 1980-2000. This information should be used to present the connection between the financial openness and the rate of development of these countries.

Table 1: Developing countries with highest and lowest rate of development from 1980 to 2000 and their condition of financial openness.

	countries with highest rate of development (1980-2000)	Total change of income in presents	More financially integrated?	countries with lowest rate of development (1980-2000)	Total change of income in percents	More financially integrated
1	China	391.6	Yes/No	Haiti	-39.5	no
2	Korea	234.0	yes	Nigeria	-37.8	no
3	Singapore	155.5	yes	Nicaragua	-30.6	no
4	Thailand	151.1	yes	Togo	-30.0	no
5	Botswana	135.4	no	Venezuela	-17.3	Yes/no
6	Hong-Kong	114.5	yes	South Africa	-13.7	yes
7	Malaysia	108.8	yes	Jordan	-10.9	yes
8	India	103.2	Yes/no	Paraguay	-9.5	no
9	Chile	100.9	yes	Ecuador	-7.9	no
10	Indonesia	97.6	yes	Peru	-7.8	yes

Sources: Prasad, Edward, K.Rogoff, S.Wei, M.A.Kose. (2004) "Financial globalization, growth and volatility in developing countries", Working Paper 10942, Cambridge.

Table 1 Shows that the financial integration is not a necessary factor for maintaining high rate of development of certain economies. That can be seen in China and India where the rate of development is high even though there is restricted and selective liberalization of their capital accounts. For example, China is open for foreign direct investments but not for other capital flows. Same, Botswana has managed to maintain high rate of development even though it is not open for foreign financial investments. On the other hand, Jordan and Peru have low rate of development even though they have been open for foreign investments.

Many researchers came to a conclusion that even though the fact that the financial integration can cause flow of foreign investments it is very little possible that it will offer much higher rate of economic development. For example, in a case of weak and inefficient domestic managing, the financial integration can cause overflow of the home finances, thus influencing the reduction of the rate of development of the home economy.

Thus, the financial integration of certain countries can be realized combined to other relevant factors which will enable the developing countries to maintain higher rate of development.

Apart from the already mentioned benefits of the process of financial globalization there still exist certain negative aspects. One of the potential risks of the process of financial globalization is the disruption of the economic stability of certain countries or regions. The dynamics of the market is changing in such a way that is enhances the possibility of appearance of important market changes because of the development of new technologies, financial instruments and techniques improved the connection between the market and market participants all over the world. As a result of that, it is very probable that in the globalize world, the disruptions of one market segment or country can be transferred into some other regions.

According to Stiglitz (2002) the global instability means great expenses. The globalization can be changed in such a way that all countries (and not just some institutions - World Bank, IMF) will participate in the conduction of the policies which influence their economies. Only in such a case, a global economy which will support the development making the changes less painful can be created.

Financial globalization and the appearance of financial crisis

As a result of the process of globalization of the financial markets, the enterprises and foreign investors of the world have enlarged the financing of international financial markets significantly.

As it was already mentioned, the process of financial globalization through directing the funds to their most productive use can help the developed and developing countries to create much higher standards of living. But the sudden turnover of the capital investments can present a threat to the national and international stability.

The most recent researches show that the chances of one country to experience financial crisis become higher because of the process of globalization most certainly because of the fact that with the newest technological inventions the funds can be imported and exported from one country.

When we talk of the connection between the process of financial globalization and financial crisis it is preferable to mention that there are more channels through which the financial globalization can cause financial crisis. If one country liberates the financial system it will become dependent on the market discipline of foreign and home investors. They contribute to improving the conditions of the financial markets of the open economies, but this market discipline of the foreign investors means creating market troubles. In this case, vulnerability of the country becomes high when the country opens its financial sector to foreign markets.

The financial globalization can cause crises in a case of imperfect international markets which can cause crisis even in countries that have solid financial system. Such markets can generate irrational behavior, speculative assaults and similar in conventions. For example, in a case when the investors perform speculative assaults on the domestic currency with a belief that the course is unstable, a balance crisis can appear.

Furthermore, a financial crisis may appear in countries with strong financial system even in a case when the international financial markets function properly. But as a result of the exterior conditions which are important determination markers of the capital flows in the developing countries, some problems may arise. For example, the level of world interest rates is a significant determination marker of the capital flows in Asia and Latin America during the 90-ties. But if the country becomes dependent on foreign finances, the sudden

stop of the income can create certain financial difficulties and appearance of financial crisis as was the case with the mentioned countries.

When we talk of the influence on the financial globalization over the escalation of the financial crisis we can mention Asian financial crisis in 1997-98. Some more examples would be: the crisis of the European monetary system in 1992-93 and Mexican crisis in 1995. Even though as a cause of this crisis the financial markets were mentioned, the real causes are to be found in the disrupted balance of the economy and weakness of the home politics.

Even the problems during the crisis were different from one country to another; there were still some common characteristics. The initial manifestation of the crisis was accompanied with great flow of finances, decreasing the foreign currency reserves and investments, collapse of exchange market and depreciation of the home currency. All of this led to inevitable reducing of the economical activities and taking back the finances which might lead to devastation of the economy.

During the crisis in Thailand, Indonesia, Malaysia and the Philippines one dominant problem was reducing of the increasing rates of export and increasing the deficit of the banking account. It was a result of the flow from the foreign funds because the investors knew that these economies did not have enough capacity to service their debts. That meant that the risk to refund the money from the loan did not make the investors give their money away. In 1997 the countries from the Eastern Asia faced massive flow of foreign private funds present in their economies during the 90-ties.

This crisis differs from the others in that way that it first appeared in the Asian countries and then it speeded throughout the region. The appearance of the crisis was first felt in Thailand, next in Philippine and Malaysia and finally Indonesia and Singapore. But the crisis speeded outside the Asian region. The financial disruption got international character and speeded in Latin America, Europe, Baltic region and Russia.

The consequences of the financial disruptions in Eastern Asia were not felt only in functioning of the financial markets. The Asian crisis influenced the diminishing of the foreign economy and economic development briefly in certain countries. It was felt in Japan, and even in Canada and USA.

Do and how the governments of certain countries influence the use of the positive effects on the process of financial globalization?

The experiences from practice demonstrate that the countries which have strong macroeconomic policy, transparency of home governing are less reluctable to the risks of the process of financial globalization. The combination of such policies means well constructed national and international institutions² which bring to increasing home economy and the process of globalization.

The capability of one country to attract and use the effects of the international investments depends on the quality of the valid management. Furthermore, the existence of high rate of corruption can influence the structure of the capital flows in the country, making it vulnerable to the risks of speculative attacks and the effects from the transmission of the shocks from one into another country.

The transparency of the managing operations is an element of good government. This element is important when reaching a decision in which country should the portfolio investments from the international funds go to. They are directed toward countries which have high level of transparency. The level of transparency can influence the rate of instability of the capital flows of the developing countries.

In this context we can say that the financial crisis proves that the countries with weak and inappropriate financial regulation and supervision have experienced banking and currency crisis. If a country liberates its

2) On national level this means social and financial security (safest nets), whereas on international level it refers to the existence of certain international institutions (IMF and Basle Committee of Banking Supervisors) IMF Staff, 2000 p.12.

home capital account before it introduces adequate financial supervision then it is more open for financial crisis. The result of this activity can be either overloading from the capital markets or increase of debts when the Government guarantees these loans. Such activities can result in appearing weakness and disruption of the balance condition of the governmental and corporation sector which can influence the health of financial institutions. That is why it is necessary for the country to introduce appropriate financial regulation and supervision before the liberalization of the capital account.

The capability of one country to use the advantages of the financial globalization and its vulnerability to the international capital flows can depend on the quality of the macroeconomic system and home institutions.

The countries should use the advantages and lower the negative effects by focusing on improving the transparency, control of corruption, the role and use of the acts and the capacity of the financial supervision.

What is the rate of globalization of Republic of Macedonia?

This paper uses certain markers from the foreign economy and FDI which point to the fact that in today's globalize world, R.of Macedonia does not represent a globalize economy. This conclusion is affirmed by certain data which confirm the real condition in R.of Macedonia. They refer to the foreign investments, the judicial conditions, the infrastructure, export deficit and the problems in the real and economical sector.

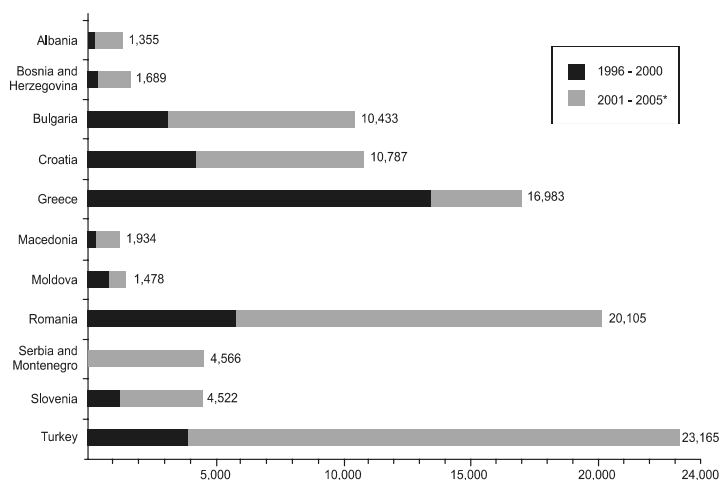
For example, the flow of FDI in Macedonia is considerably lower compared to the values of other countries in South-Eastern Europe. (Figure 1)

Figure 1

Total FDI inflows in
Southeast Europe,
EUR mil

Source: Southeast Europe
Investment Guide 2006

Note: Data for 2004 is
preliminary, while for 2005
is a forecast

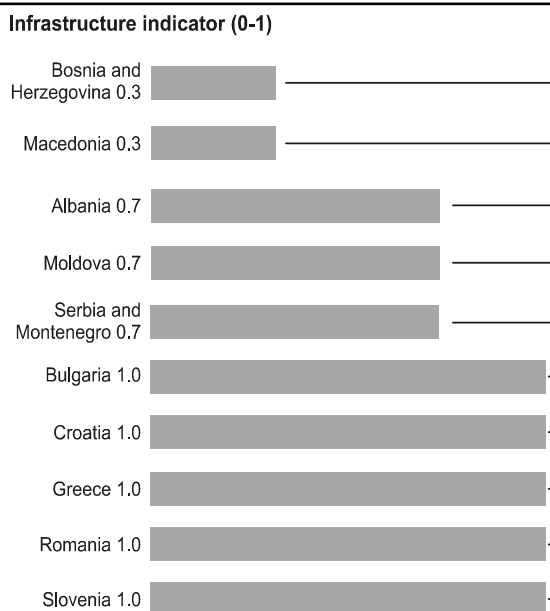


Namely, foreign investors do not invest in Macedonia because the Macedonian market is small and not attractive for foreign investments which are contributed by the political instability in the past period which enlarged the risk of investments. This is why it is necessary to work on development of carefully chosen sectors which will be the best selection for a great foreign investor who would like to invest in Macedonia. Other reason for the low rate of FDI is the existence of inefficient jurisdiction. Today, the reforms in juridical system are of great importance. For attracting foreign investors in our country it is necessary to fasten the professionalism and independence of the juridical system, expedite of the subjects by initiation of rigorous deadlines and sanctions for delay as well as greater efficiency in solution of the administrative suits. It is necessary for the juridical system to be efficient in its work, because for example, the decision which refers to realization of the rights of the investors after five years brings a message to the potential investor to stay away from a country in which the judicial system is inefficient.

One of the key factors for attracting foreign and local investments is the improving of the efficiency and availability of the infrastructural services and their lawful framework. Figure 2 shows the infrastructural indicator which measures the infrastructural efficiency and regulation. This indicator takes into account the following three infrastructural indicators:

- Availability of independent telecoms regulator
- Availability of separation or railway accounts
- Availability of independent electricity regulator

Figure 2
Infrastructure indicator



Source: Southeast Europe
Investment Guide 2006

The figure shows that Bulgaria, Croatia, Greece, Romania and Slovenia have much better performances compared to Macedonia and B and H.

For promoting the investment performances of Macedonia since 2005 here functions the Agency for Foreign Investments of the Republic of Macedonia (MacInvest) which started its activities in January 2005 under a law adopted in June 2004. It is a state institution, mainly focused on providing information services and assistance to investors. MacInvest's activities (Investment Guide for Southeast Europe 2006):

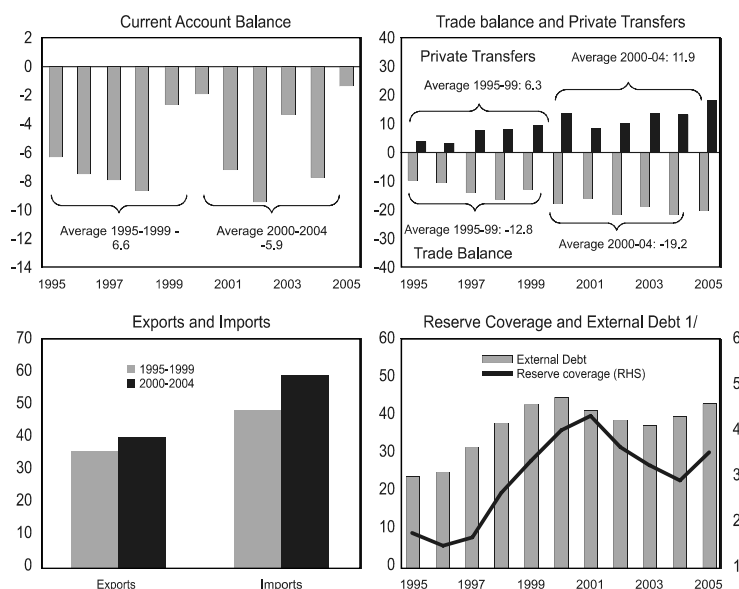
- FDI promotion and attraction according to best practices;
 - High professional services to investors in pre-investment, investment and reinvestment phases;
 - Image building of the country as an investment destination;
 - Promotion of the regions of the Republic of Macedonia and stimulation foreign investors to use products and services of Macedonian companies;
 - Identification of the sectors that offer best perspectives and their promotion;
 - Development and implementation of innovative and proactive events on targeted markets;
 - Analyses of the investment climate and proposals for legislative changes aimed at its improvement;
- Stimulation and assistance to green-field investments and technological parks.

The rate of globalization of R.Macedonia can be presented by the export that is realized in our country to the foreign markets. Even though, Republic of Macedonia is a small country, still its contribution to the world

economy is inadequate for maintaining its purposes. Besides the fact that there are certain export improvements, the large and continuously present deficit of the capital account is still a problem for the competitiveness of our country. Namely, during 1995-2004, the deficit of the capital account has approximately been 6.3% of GDP. In the first half of this period, the economy deficit has approximately been 13% of GDP, whereas during the second half of the period the deficit increased to 19% of BDI. In 2000-2004, the export has increased to 10%, whereas the import has increased only 4%.

As a result of the large current account deficits, external vulnerabilities have increased during the past ten years, although external debt levels remain manageable. During 1995-2004, the sharp increase in external debt is explained by the large current account deficits and the need to accumulate reserves. The political crisis of 2001 dried up external financing, and the large current account deficits caused a steady decline in the reserve coverage ratio. The condition of the current account and external debt are presented on Figure 3.

Figure 3
Current Account and
External Vulnerabilities
(As share of GDP)



Source: IMF, State Statistical
Office of Republic
of Macedonia

In order to get clear image of the low export performances of R.of Macedonia we will make a comparison to some transitional economies in the region (Figure 4). As we can see from the figure, Macedonia has lost its participation in the world import especially on the American market. Even though there are certain improvements in 2004 still the values are not even close to the income realized in 1995.

Figure 4
Export Market Shares
(in %)

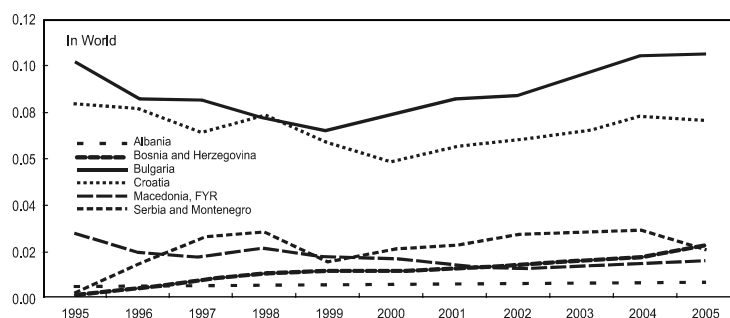
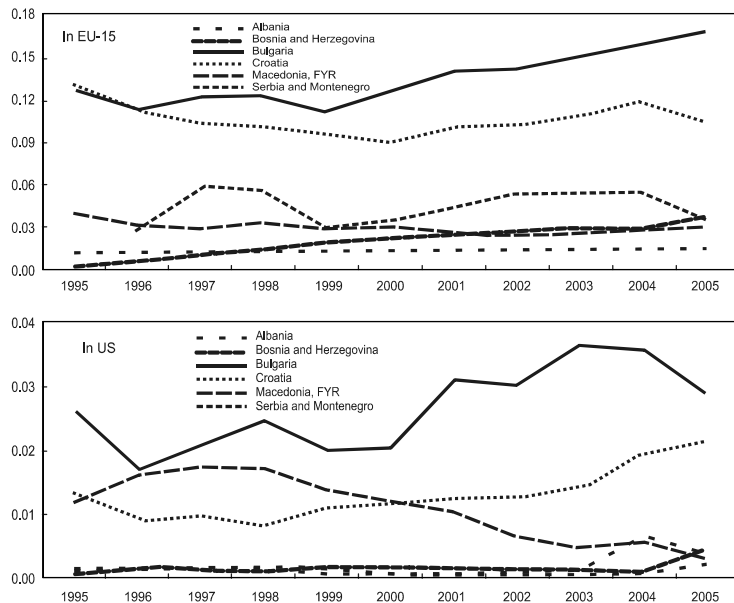


Figure 4
Export Market Shares
(in %)

Source: IMF, State Statistical
Office of
Republic of Macedonia



Currently Republic of Macedonia faces numerous problems in the real and economic sector. More precisely, there has been a reduction of the industrial manufacture and of FDI, increasing of the economic deficit, large unemployment...

At the same time, fiscal condition of Macedonia is very vulnerable which is due to many factors such as: low rate of investment, reduced consumption, fall of manufacture, low economic development.

Some of the problems Macedonia faces with can be identified as part of the causes which contributed to the appearance of Mexican and Asian crisis in the 90-ties. Those problems are: deficit of the current account, rigid regimes of the foreign currency courses, high interest rates, existence of corruption, absence of FDI etc.

Such and similar problems in the real sector can be transferred to the financial sector and can produce a financial crisis. In this sense, the high debts of the large industrial capacities in the country present binding foreign loans which is a condition for existence of debt crisis.

In order to overcome this condition, the governmental policy should be directed toward improvement of the "capacity of administration", i.e. the employees in the institutions should provide quality services for the business. At the same time, the Government should make a distance from the economy, from direct interference in reaching decisions, especially in employing and investing.

In order to provide sustainable economic development it is necessary, in any case, to improve the investment climate in the country, reduce the rate of unemployment, increase the capacity of the industry, increase the speed of the structural reforms and reforms in administration, judicial system etc. Solving such problems will contribute to opening of Macedonian economy toward the outer world which will provide conditions for its globalization and integration in the world economy.

Conclusion

Even though the globalization of the financial markets is a process from which the participants on the international financial stage can benefit, they should also take into account the risks of this process. The financial globalization improves the financial system by offering extra funds and improving the financial infrastructure which means income and economic development. This process can cause disruption of economic stability of certain countries because of market disruption which transfers from one country into the other.

An important risk from financial globalization is the appearance of financial crisis. It was the case with Eastern Asia and Latin America in the 90-ties, which affected even the economic development of the region and even of Europe, USA and Canada.

The countries should use the advantages and lower the negative effects by focusing on improving the transparency, control of corruption, the role and use of the acts and the capacity of the financial supervision.

Relatively speaking, Macedonia is closed country, so that its financial system in the past period depended on the market discipline of the foreign and domestic investments. As we can see from many emerging markets that have experience with financial crisis opening of the financial sector toward international financial markets create danger for appearance of market inconveniences which will have negative influence on the vulnerable Macedonian economy in a short period.

In any case, we shouldn't let the country to become dependent on foreign capital because if capital flow sudden stop or if foreign capital outflows of our country there can be certain financial inconveniences initiating appearance of financial crisis. But the fact that Macedonian economy should be open to foreign investments and domestic investors is still present.

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UDC 339.546:338.121].001.573(497.7)"1998/2006" EXPORT-LED GROWTH HYPOTHESIS: EMPIRICAL EVIDENCE FROM MACEDONIA

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Abstract

The aim of this study is to empirically test the export-led growth hypothesis in the Republic of Macedonia, as small and open economy. In other words, the question trailed is whether by export promotion the country could impinge on its overall economic development. For that purpose, quarterly data for the period 1998-2006 are plugged into the production function, in which the exports variable plays dominant role, utilized in cointegration testing and vector error correction model. The core findings are supportive to the ELG in Macedonia in the short- and long-run simultaneously. Also, gross capital formation is significant in explaining growth in Macedonia.

Keywords: Export-led growth, Macedonia, Cointegration analysis, Vector error correction model

JEL classification: C22, C51, F43, O40

Introduction

A field of academic interest that has spurred hotted debates among academicians and policy makers is whether there exists a relationship between the exports and the economic growth. In that sense, many studies devoted to the endeavour to empirically test the hypothesis according to which export promotion strategies accelerate the speed of the economic growth. The latter became known as the Export-led Growth Hypothesis.

*) Thoughts and opinions expressed in this text do not necessarily present the stance of the Ministry of Finance or Euro College.
Thanks to Mr. Jean Marc Phillip for his opinions.

The ELG hypothesis postulates a positive link between exports performance and economic growth and it is generally associated with developing economies, because it is believed that they can improve their growth by intensified exports orientation. Alternatively, the ELG hypothesis squabbles that a country should seize the way of export promotion instead of import substitution. In that manner of reasoning, strengthened exports will enable these economies with thin domestic markets to override the size constraints and to reap economies of scale. As well, higher exports will lead to intensified foreign exchange infusion, which, in turn, facilitates the imports of capital goods, in that way strengthening the productive capacity of the economy. Moreover, higher exports stimulate the efficiency and thus competitiveness of the economy, adds to productivity gains etc (Kemal et al, 2002).

The above articulation leads to the importance of this causal relationship. Namely, ELG possesses important implications for policy-makers' decisions in the context of the appropriate growth and development strategies and policies to adopt.

This study investigates the ELG hypothesis in the light of the developing countries, particularly the case of the Republic of Macedonia. The objective is to assess whether Macedonian experience provides support for this hypothesis. Therefore, the remainder of the paper is organized as follows. The next part portrays the theoretical background of the ELG, pointing out the causality issue. The third part encompasses a review of the literature summarising the previous studies by the criterion of the evolution of the applied methodology for investigation of the topic. The empirical part is entirely dedicated to the ELG in Macedonia, portraying the data, describing the methodology which is based on the VAR framework, the applied model, based on the production function and the core findings. Finally, the last part concludes the paper.

Theoretical background

The essence of the export-led growth

The macroeconomic theory acknowledged that there is a causal relationship between the exports growth and the economic growth in a country, which became known as the Export-led growth hypothesis. The channels through which the spurred export implicates output growth are various. Export expansion can be a catalyst for output growth both directly, as a component of aggregate output, as well as indirectly through efficient resource allocation, greater capacity utilization, exploitation of economies of scale and stimulation of technological improvement due to foreign market competition (Awokuse, 2003).

At an outset, export growth could represent an increase in the demand for domestic goods and therefore it increases the real output. Secondly, the intensified exports of a country, allows for an increased foreign exchange inflows within the economy, which, in turn, will be a solid base for enhancing the imports. In the sense of the latter, if the imports' strengthening goes on the account of capital goods, than this directly adds to the improved economic growth in the economy (Kemal et al, 2002). Moreover, this improved money inflow from abroad will facilitate the debt servicing and may eliminate ultimate controls that result in an overvaluation of the domestic currency. Then, the development of the export sector tends to concentrate investment in the most efficient sectors of the economy where it exhibits comparative advantages. In turn, the narrow specialisation in these sectors will enhance the productivity in the economy, hence leading to a higher output. This effect is called Verdoorn's Law, after P.J. Verdoorn who suggested it in 1949 (Giles and Williams, 1999).

Furthermore, export growth through an expanded market base allows for the exploitation of economies of scale for open economies and promotes the transfer and diffusion of technical knowledge in the long run (Grossman and Helpman, 1991), as well a learning-by-doing gains and better management practices (Romer, 1990), which result in additional efficiency gains. In that sense, export-oriented strategies may provide better opportunities and rewards for entrepreneurial activity which could be beneficial for the economic growth, as entrepreneurs are those that seek opportunities and undertake risks.

In summary, all these facilities that stem from the practicing of the export oriented strategies for boosting the output, tend to invigorate each other, thus encouraging further expansion of exports, investment and consumption. The overall result will be a noteworthy rise in the growth rate of output.

Although aforementioned channels for exports' influences on growth are proved and practically viable, the support of the ELG is not universal. For instance, Buffie (1992) developed a CGE model of a small open developing economy (as Macedonia is) and tried to determine whether an export boom acts as an engine of the growth. The first and foremost answer was that it depends on the structural characteristics of the economy, thus accentuating the notion that the ELG hypothesis is not supportive in every case. Another issues arise in this context: the saturation of the markets in developed economies for the exports of the less-developed economies, trade barriers etc.

Growth-led exports: Bi-directional relation?

Although the vast majority of the literature concentrates on analyzing and verifying the ELG hypothesis where the causation stems from the exports to the growth, the reverse causality stemming from output to exports is also plausible (Kemal et al, 2002). This is known as Growth-leg exports or GLE hypothesis. Namely, in a developing country, there are some sectors of the economy, if not the majority of them, that expand on a rapid pace. However, the assumption that the domestic demand in these countries will follow the pace of the growth of these industries is rather flawed. Consequently, these industries will seek foreign markets for placement of their products. In this situation, the increased output in the economy, boosted the exports. In addition, this output growth spurs investment, part of which goes for capacity increasing to the exports. Also, Krugman (1984) explains the GLE hypothesis in the light of enhanced skills and technology in a growing economy, which in turn leads to an increased efficiency creating a comparative advantage for the country, which then facilitates exports. However, he argues that as well market failure, which will request government intervention, may result in GLE.

Finally, in addition to the growing body of literature supporting ELG hypothesis and that of the reverse causation, some studies, like that of Pack (1988), found no causal relationships between exports and growth. Moreover, if real output is induced by an exogenous increase in consumer demand that is highly concentrated in exportable and non-traded goods, then a decrease in exports would occur, thus suggesting a negative link between the two variables. Also, increased exports from some types of foreign direct investment might lower domestic output due to various distortionary effects (Jung and Marshal, 1985).

Literature review

Unabridged body of literature examines the relationship between exports and output growth in the framework of the ELG hypothesis. The latter posed challenges long period before; what has been changing through the time were the ways of how this has been scrutinized.

For instance, the early studies on ELG analyzed the issue by estimating the correlation coefficient of the exports and GDP growth. Tyler (1981) does this on a sample of 55 middle income developing economies. Specifically, he uses bivariate correlation tests, revealing that a strong positive association between exports growth and economic growth exists. Kavoussi (1984) follows the same pattern as Tyler (1981) on a sample of 73 developing countries and finds that export expansion is associated with better economic performance in both groups of low- and middle-income countries. However, estimating the ELG with correlation tests was later on considered as rather flawed. Kemal et al (2002) argues, in that context, that the relationship between the exports and output growth can not be taken as an indication of causality between the exports growth and the output growth, mainly because it is a question of causality which is a dynamic one and thus can be meaningfully studied only in a dynamic framework based on time series data.

Having on mind the dynamic component of the issue, a lot of studies examine the ELG using standard OLS technique. For instance, Schenzler (1982), Ram (1987), Sengupta and Espana (1994a), Amirkhalkhali and Dar (1995) were all investigating the ELG hypothesis by plugging annual data into OLS estimation technique for various countries or groups of countries and found strong positive relationship between the exports growth and output growth in the examined cases. Yet, using the same technique, there were some studies that found a support for the GLE hypothesis (Riezman et al, 1996), as well those that did not implicate any effect between exports and GDP (for instance, Sengupta and Espana (1994b), for the case of Japan). Yet again, the causality issue was addressed as a problem.

Consequently, numerous studies employed Granger's (1969) and Sims' (1972) causality tests. A pioneering step in that regards is being made by Jung and Marshal (1985) who analyze the relationship underlying ELG for 37 developing countries, and found a support for the ELG only in 4 countries included in the assessment: Indonesia, Egypt, Costa Rica and Ecuador. What now has been posed as a problematic issue was that tests like the abovementioned ones could be inappropriate in a setting where variables are non-stationary and share a common stochastic trend. To address this issue, more contemporary studies explore the ELG in the VAR framework. VAR works with stationary series only, i.e. series that do not contain a unit root. In that sense, if two series are non-stationary after being differenced d times, the combination of two series could lead to stationarity. Then, a restricted VAR or vector error correction model is used.

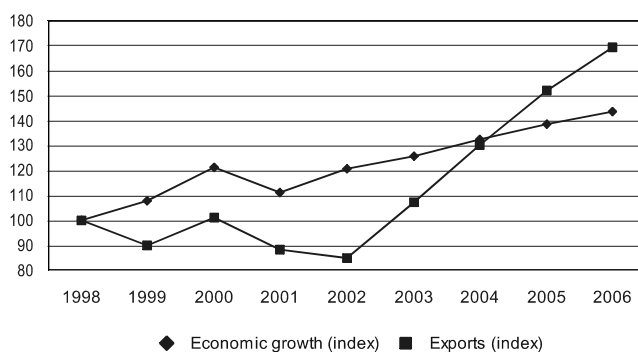
Plenty of studies examine the issue in the VAR framework, however, due to the restrained space here, I will point out only those that are most important. For example, Bahmani-Oskooee and Alse (1993), Dutt and Ghosh (1996), Xu (1996), Kemal et al (2002) are few of them that address the ELG hypothesis. Bahmani-Oskooee and Alse (1993) investigate the linkage between the exports growth and output growth for 9 developing countries within the VEC framework and find a strong support for the ELG for all of them. Similarly, in a study of 26 low-, middle- and high-income countries, Dutt and Ghosh (1996) provide evidence in favor of the ELG hypothesis in roughly half of the countries. In another study along the same lines, Xu (1996) finds evidence of ELG in 17 out of 32 developing countries included in the analysis. Kemal et al (2002) in a similar manner explore the ELG for several countries in South Asia and found that export growth had been instrumental in accelerating economic growth in all the economies. Awokuse (2003) applied VAR and VEC on the Canadian economy. The empirical evidence from the both tests indicated that changes in real exports precede changes in real GDP. VAR confirmed the ELG in a short-run, while the results from cointegration analysis and restricted VAR also provided support for ELG in the long-run. Though, applying the same advanced techniques belonging to the VAR framework, Pomponio (1996) found support for the GLE hypothesis in the cases of Algeria and Tunisia, but no causality was detected for Morocco, Sudan or Turkey. Also, ELG is examined for nine Middle East and North Africa (MENA) countries in three-variable vector autoregressive and error correction models, and ELG hypothesis is rejected in almost all examined countries when total exports is considered. However, when considering only manufactured exports, there is no causality for countries with relatively low shares of manufactured exports in total merchandise exports and a bi-directional causality for countries with relatively high shares (Abu-Qarn S. and Abu-Bader, 2004).

All in all, huge part of the macroeconomic literature studies the relationship between the export growth and output growth. While the majority of it did find a strong support of the ELG hypothesis, some studies concluded that exactly the opposite direction holds or no significant causation exists. What should be noted that all these studies encompass various countries, albeit mainly developing economies, utilize distinct techniques and models. Even in the VAR framework, some studies simply regress exports on output, whereas some other use the production function, employ the manufacturing exports etc.

Empirical facts from Macedonia

Macedonian economy and the ELG

Macedonia is a developing country that has experienced many difficulties during its period of transition towards free market economy. In that sense, Macedonia achieved and maintained significant macroeconomic stability, mainly due to the exchange rate strategy of pegging the denar to the euro. Yet, the economic growth performance in the years of transition was rather unsatisfactory. Although the growth rates were positive (except in 2001), they remained moderate and insufficient for more noteworthy economic boom. Though, one of the pillars of the growth strategy in Macedonia is the exports performance of the economy. Albeit significant advancements are made on the field of exports promotion and its intensification, the overall assessment is that it remains rather low and uncompetitive on the world market. However, the export is growing in the last few years, with significant rise in 2006 particularly. Also, positive GDP growth rates are recorded in these years which portrays the basis for conducting an analysis whether the ELG hypothesis holds for Macedonia.



Data

Since this study tests the ELG hypothesis, what I employ as inputs is quarterly data for the period 1998-2006 for the Macedonian economy. Quarterly data enable enough periods for solid model thereafter. Following variables are included: exports, gross domestic product, gross capital formation and the number of employees as an approximation of the capital and the labor, respectively. These are scrutinized in a production function formula. I will use a dummy variable to capture the negative effects of the military conflict in 2001 on output and exports performance.

Methodology

VAR Framework

For the case of the Republic of Macedonia, I will test the ELG within the framework of the vector autoregressive analysis, applying the concept of Granger causality, following Vogelvang (2004). The latter is based on the following VAR model:

$$x_t = a_0 + \sum_{i=1}^m b_{0i}x_{t-i} + \sum_{j=1}^n c_{0j}y_{t-j} + \varepsilon_t$$

$$y_t = a_1 + \sum_{i=1}^p b_{1i}y_{t-i} + \sum_{i=1}^q c_{1i}x_{t-i} + \varepsilon'_t$$

If the c_{0i} are jointly significant but c_{1i} are not, there is unidirectional causality from y_t to x_t . On the other hand, if c_{1i} are jointly significant but c_{0i} are not, there is unidirectional causality from x_t to y_t . There is bi-directional causality between the two variables if both sets of coefficients of the lagged independent variables are jointly significant in their respective equations.

However, the Granger causality test applies only if inputted series are stationary and do not share a common stochastic trend. Otherwise, the test could provide flawed results. Majority of economic variables become stationary after being differenced of order one. If a time series turns out to be non-stationary, then the recommended approach for testing for the Granger causality is the Cointegration and Error-Correction framework.

Integration and cointegration

It is said for the variable x_t to be integrated of order d if it becomes stationary after being differenced d times. Therefore, the first step is to determine the integration characteristics of the employed series. This is accomplished by the Augmented Dickey-Fuller and Phillips-Perron tests. If the calculated ADF test statistic is less than the critical value, the null hypothesis of a unit root cannot be rejected and x is said to be non-stationary. The order of integration of the variable is determined by applying the same procedure on its first difference. The series will be integrated of order one if its first difference does not possess a unit root.

Yet, if individual time series turn out to be non-stationary in their levels (contain stochastic trends after being differenced), it is possible that stochastic trends are common across series leading to stationary combinations of the levels. In that manner, in a bivariate setting, a linear combination of two variables may be stationary although each variable follows a random walk process. This is known as cointegration. For the cointegration testing, I use Johansen testing procedure, which involves the estimation of a vector error-correction model (VEC) in order to obtain the likelihood ratios, based on which the cointegrating rank of the series is being judged.

Unrestricted and restricted VAR model (error correction model)

VEC combines the short-run dynamics with the long-run properties of the data and thus provides a convenient tool for investigating short-run as well as long-run causal patterns. The error-correction models are formulated as follows:

$$(1-L)x_t = a_0 + b_0\varepsilon_{t-i} + \sum_{i=1}^m c_{0i}(1-L)x_{t-i} + \sum_{j=1}^n d_{0j}(1-L)y_{t-j} + \varepsilon_t$$

$$(1-L)y_t = a_1 + b_1\varepsilon'_{t-i} + \sum_{i=1}^p c_{1i}(1-L)y_{t-i} + \sum_{j=1}^n d_{1j}(1-L)x_{t-j} + \varepsilon'_t$$

Where L is the lag operator and the error-correction terms ε and ε' are the stationary residuals from the cointegration equations. These terms reintroduce the long-run information in the levels of the variables that is lost in the first differencing and thus provide an additional channel - the adjustment of variables towards a long-run equilibrium - through which causality can be detected. Therefore, as long as the error-correction term has a significant coefficient, the error-correction model allows for the possibility that y Granger-causes x , even if the d_{0i} 's are not jointly significant.

Empirical results

Having described the econometric technique for the investigation of the topic, on this space, I will present the results of the model specification and estimates.

Unit roots and cointegration

In order to test for unit roots of the included series, I pursue the Augmented Dickey-Fuller test, using the Akaike information criterion in order to choose the optimal lag length. I use maximum 9 lags, since using higher number of lags weakens the integration characteristics of the included time series.

The results show that the variables of exports, the gross domestic product and labor are integrated of order 1, i.e. $I(1)$. Only the investment variable, approximating the gross capital formation does not contain unit root and is integrated of order 0, i.e. $I(0)$.

With the Johansen test onwards, I determine whether the variables (the four included in the study) share a common stochastic trend, i.e. whether are cointegrated. According to the results shown below, both trace test and max-eigenvalue test indicate the existence of one cointegration relationship at both 5% and 1% significance level.

Unrestricted Cointegration Rank Test				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	5 Percent Critical Value	1 Percent Critical Value
None **	0.650691	59.78787	47.21	54.46
At most 1	0.341515	24.02673	29.68	35.65
At most 2	0.241128	9.821069	15.41	20.04
At most 3	0.012850	0.439737	3.76	6.65
*(**) denotes rejection of the hypothesis at the 5%(1%) level Trace test indicates 1 cointegrating equation(s) at both 5% and 1% levels				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	5 Percent Critical Value	1 Percent Critical Value
None **	0.650691	35.76114	27.07	32.24
At most 1	0.341515	14.20566	20.97	25.52
At most 2	0.241128	9.381332	14.07	18.63
At most 3	0.012850	0.439737	3.76	6.65
*(**) denotes rejection of the hypothesis at the 5%(1%) level Max-eigenvalue test indicates 1 cointegrating equation(s) at both 5% and 1% levels				

According to Granger representation theorem, a system of cointegrated variables has an error-correction representation, combining the short run dynamics of the variables with their long run properties. Consequently, restricted VAR or VEC model is estimated, otherwise, unrestricted VAR is used. Since in the case of the Republic of Macedonia I determined existing one cointegration equation, I specify the model in the VEC framework.

The model

Although the above discussion leads to the conclusion that a proper way for testing the ELG is to regress exports on output growth, still some studies capture this effect in the framework of the aggregate production function (Balassa, 1978; Sheehey, 1990). The aggregate production function is specified as follows:

$$Y = f[(K, L); X]$$

Where Y stands for the GDP growth, K, L, and X represent real capital, labor and real exports, respectively.

Following the above discussion, I firstly specify the regression which is the basis for the error correction estimation:

$$\log(\Delta y) = \alpha + \beta_1 \log(\Delta x) + \beta_2 \log(k) + \beta_3 \log(\Delta l) + D + \varepsilon_t$$

At an outset, I performed seasonal adjustment to the export variable and the output. Next, I determine the optimal lag length on the basis of Akaike Information criterion. According to this criterion, the optimal VEC order is 7, which in this case corresponds to a lag length of 21 months. Results from the Granger causality tests based on error correction estimation are shown in the next table.

Direction of causation	Error correction term (t-stat)	Significance of the included lags	F statistics	R-square
Export-led growth	-3.72497***	3	11.64857**	0.963248
Growth-led exports	-0.06263	none	2.778889	0.862117

*, **, *** indicates significance at 10%, 5% and 1% level respectively.

The second column stands for the t-statistics for the error-correction terms, while the third column for the F-statistics for the joint significance of the lagged explanatory variables in the causality equation. Moreover, F-statistics confirms the validity of the R-square, which points out the fitness of the model.

The first row of the table indicates that the error correction term is significant at 1%-age level, having on mind that the lagged exports exhibits significance up to the third quarter in explaining the output growth. Also, the β coefficients in front of the lagged exports variable are positive, which is the expected sign. R-square is high, 96%, which emphasizes the goodness of fit of the above specified model, while F-statistics confirms this figure. For each variable in the system (GDP and exports), at least one channel of Granger causality is active: either in the short-term through the joint tests of lagged differences or a statistically significant ECT. The last channel is facilitated by the VECM specification and implies that past equilibrium errors play a role in determining present outcomes. Whereas the short-run dynamics is captured by the individual coefficients of the differenced terms. Consequently, presence of long-term and short-term causality from exports to growth is determined in the case of the Republic of Macedonia. Namely, it is evident that the results support the hypothesis of long-run causality from exports to GDP, as presented by the t-statistics of the ECM. Also, the short-run causality in the same direction is confirmed, as presented by the F-statistics.

Returning to the initial model stemming from the production function, only the variable that approximates the gross capital formation as an ingredient of the overall output growth in the economy, exhibited significance at 5%. Also the sign is positive, which articulates that as the gross capital formation strengthens, the output of the economy expands, which is theoretically correct and expected. Neither the labour variable nor the imposed dummy showed significance. Furthermore, other variables that seem to improve the model, like the foreign output shocks that hit the economy or the domestic demand could have been added, though such miss due to lack of appropriate data for Macedonia.

All in all, the results presented above provide strong empirical facts in support of the ELG hypothesis in the case of the Republic of Macedonia for the prescribed period in this study.

Interpretation

The economic interpretation of the existence of short-term and long-term causality stemming from exports to the output growth gains on pleasant appearance. For instance, taking into consideration the short-term time preference, exports could feed the output growth by utilizing the excess capacity of the economy which does not meet sufficient domestic demand at full capacity production. "The presence of short-run causality is also consistent with the Keynesian view, which postulates that changes in the components of aggregate demand lead to changes in aggregate output in the short run." (Kemal et al, 2002, p.27).

Turning the view to the long-term perspective, the exports could facilitate the output by a variety of channels, distinctively listed in the theoretical section above. Briefly, these include benefits from the higher foreign currency inflows which will lead to an expanded imports of capital goods, which, then, postulate the productive capacity of the economy, then economies of scale due to the larger markets and improvement of the overall efficiency of the economy, enabling productivity gains and specialization in the economy for exploring its comparative advantages.

Conclusion

The question that has been put forward in this study was whether there is causality between exports and output growth in the case of the Republic of Macedonia in support of the export-led growth hypothesis.

The theoretical platform at which the paper is built on, accentuates that the influence of exports on GDP could be conducted through several ways: economies of scale, expanded foreign exchange infusion which will enable improved imports structure, diversification and specialisation of the domestic production and benefiting from the comparative advantages of the national economy. And this is, probably, the most well functioning channel of development for small and open developing economies. However, an environment with strengthening growth and economic outlook could be a fertile ground for fostering growth, therefore pointing to a reverse order of this causation known as growth-led exports.

Extended on the previous empirical studies for the same issues, this theoretical background has shown that ELG is the most common, however not the universal outcome. Studies that captured this influence are ranging from those that found strong support of the ELG to those that found exactly the opposite or even concluded no causal linkage. All of them, also, differ by the examined period and the modelling technique.

To determine whether Macedonian exports and growth data are consistent with ELG or not, I pursued vector error correction modelling technique in which the analysis was concentrated on the dynamic causal relationship between output growth, exports, capital and labour, using quarterly data for the period 1998-2006. Based on these specifications, I found that changes in exports in Macedonia precede changes in GDP. In other words, I identified a strong support for the ELG hypothesis in Macedonia. This applies in the short-run, as well in the long-run, judging by the cointegration and VEC analysis.

Possible drawback of this study could be identified in the course of the omitted variables, which, however, might only strengthen the quality of the results. Also some studies like that of Awokuse (2003) accentuate the lack of explanation for the linkage between exports and productivity growth in such studies. In that context possible further research area could be the investigation of this relationship for the Republic of Macedonia, so that this study could be considered as a solid platform in that effort.

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