

Does Financial Liberalization Trigger long-run Economic Growth?

Evidence from Turkey and Other Recent EU Members

PRELIMINARY DRAFT

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Abstract:

This paper examines the effect of financial liberalization on long-run income per capita and economic growth in a sample of 10 new EU member countries and Turkey observed quarterly longitudinal panel between 1995 and 2007. Although the presumption is that free trade and financial liberalization have a favourable effect on long-run growth, counter examples also exist where they caused financial fragility, boom-bust cycles and crises. This controversy increases the importance of empirical work in this area. We provide empirical evidence that financial liberalization has impact on economic growth. We construct different financial openness indicators using panel data for different types of financial flows such as FDI, other investments, portfolio investments, trade openness index as well as the other control variables. Our static robust and dynamic panel data estimates indicates clear evidence between the long-run growth and a number of indicators of financial liberalization which confirms the anticipations of the 'new growth theory'. Our results emphasize the importance of financial liberalization as a policy tool.

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1. Introduction

Turkey and many other developing countries have experienced the gradual but apparent liberalization of its financial sector. One of the main aims of such liberalization and integration of these economies into the world financial system was to achieve higher economic growth. Contrary to expectation, one of the major consequences of increased financial mobility due to this liberalization and integration has been the macroeconomic instability and financial crises which were mainly caused by speculative short term capital movements¹. At the end of 2006, Turkish economy has the highest current account deficit and the highest private sector foreign currency borrowings of its history². Such developments, once again, have increased scepticism over the positive effects of financial liberalization on economic growth. The other 10 EU members have achieved one of fastest financial integration period since 1990's. The main question which we seek to answer in this paper is; does financial liberalization lead to a higher economic growth? We have chosen a quarterly macro panel data analysis which includes static robust panel estimates as well as dynamic panel examinations to answer this question. Our study will provide evidence from Turkey and other recent EU member countries.

The neoclassical growth model assumes no direct link between financial openness and growth. It explains that the sole determinant of long-run growth in per capita income is the exogenously determined technology, which suggests that the long-run economic growth cannot be influenced by interacting with other countries. However, endogenous growth theories (i.e. Romer, 1990) generally imply that financial development should increase growth by decreasing the cost of capital which may trigger investment hence economic growth. There are a growing number of studies analyzing the effect of financial development on economic growth. In most cases their conclusion is that 'better financial systems stimulate faster productivity growth and growth in per capita output'. The theories in the finance and growth literature suggest that greater financial efficiency

¹ Turkey recently experienced two major financial crises: in November 2000 and February 2001.

² According to OECD, "the current account deficit, which will likely reach a historically high level above 8% of GDP in 2006, continues to be financed by growing private debt and foreign direct investment."

reduces the disincentive to entrepreneurship and encourages accumulation of human capital, thus increasing the rate of technological progress and consequently triggering higher levels of long-run economic growth.

It is clear that given the tools of endogenous growth theory almost any policy choice can be shown to have growth effects through its effect on the accumulation or allocation of physical or human capital. However, relying solely on the theory, it becomes less clear whether for a small open economy, such as Turkey, the benefits of financial liberalization would always outweigh the benefits of financial repression.

The benefits of financial repression, as opposed to financial liberalization, are debated on several points. In theory, it is believed that financial repression creates a better control over money supply and a lower interest rate (usually below market rate) which can induce a higher investment. Another argument in favour of financial repression is that government controlled usury controls on financial markets are needed, especially for capital scarce economies of developing countries. The main conviction of the advocates for financial repression is that the government knows better than the market. The repression mechanism works through the interest rate and the exchange rates. Therefore moving from financial repression to financial liberalization would require extra budgetary measures and could create budgetary problems³.

On the other hand, the most cogent argument which favours financial liberalization is the increasing growth effect by stimulating savings and investment. Linking growth with savings and investment has a number of favoured arguments. Financial liberalization may increase the level of savings and improve the allocation of savings among potential investors. This may create more available funds to finance technological developments and hence lead to higher economic growth. Financial liberalization may decrease the cost of capital, but on the other hand, the effects of international speculative capital

³ Financial liberalization may increase the fiscal deficit and the cost to finance, as the government loses seigniorage revenues and is forced to pay more market-based interest rates on its existing debt.

movements which cause the crises and macroeconomic instability may have a negative impact on economic growth.

This debate highlights the need for further sound empirical evidence on the benefits of financial liberalization on economic growth, especially for small open economies of developing countries.

The aim of this paper is to empirically investigate the impact of financial liberalization on economic growth, using panel data evidence for the 10 new EU members and Turkey. We introduce the quarterly macro panel data and the choice of our sample countries in the earlier literature, and adding both de-jure and de-facto measures of financial liberalization⁴, to re-examining the relationship between the financial liberalization and growth. We investigate if empirical evidence from the 11 countries with 530 observations panel data depicting post-1990 EU membership candidates gives us firm evidence.

The paper is organised as follows. Section 2 gives a selective survey for the empirical literature in the field and the debate on de-jure versus de-facto measures. Section 3 describes the econometric methodology employed. Section 4 provides the data and reports the results of the empirical work. The last section offers some conclusions, implications and policy recommendations.

2. A Review of Financial Openness and Economic Growth

2.1. Finance and Economic Growth – de-jure vs. de-facto

In the literature on finance and economic growth we identified two main streams of research. The first one is a more general approach, examining the affect of financial development and economic growth. A number of studies have been done in this area, King and Levine (1993), Greenwood and Smith (1997), Levine et al. (2000), Demirgüç-

⁴ Intuition tells that de-facto measures of financial liberalizations would be more sensible to use, especially for developing countries like Turkey. Our empirical comparison confirms this intuition.

Kunt and Levine (2001), Driffill (2003), Levine (2005), Aghion et al. (2005), Blackburn et al. (2005) are to name a few. Trew (2006) has a critical survey of theoretical and empirical literature on finance and growth. The general conclusion of the research in the literature on financial development and growth is that, although counter arguments exists, financial development increases economic growth.

The second line of research is a more specific one; namely the impact of financial liberalization on economic growth. The move from financial repression to financial liberalization assigns markets a greater role in development and allows empirical research to assess the effectiveness and impact of this role. There are a large number of studies examining the affect of financial openness and economic growth. Broadly, the research can be divided into two different groups which employ two separate measures of financial integration. The first category is the de-jure measure of financial integration. De-jure measures are quality based measures of financial liberalization which concentrate on events such as changing regulations and the response of the monetary authorities to financial flows. The second category refers to a de-facto (or price based) measure of financial integration. The de-facto measure of financial liberalization can be used as an endogenous variable⁵ to measure the actual observed outcome of the enforcement of existing regulations on financial markets. Prasad, Rogoff, Wei and Kose (2003), as well as Aizenman and Noy (2003) question the reliability of de-jure measures to assess financial openness. We also believe that de-jure financial openness measures are systematically impacted by economic and political economy factors which include commercial openness, political regime, corruption, and institutional developments. Especially in developing countries, mainly due to structural problems, the de-jure measure may not be effective in finding the impact of financial liberalization. Simply, very often, there is an undeniable discrepancy between written regulations and their observed implementation. Therefore the de-facto measure, which we also be choosing, is a more realistic tool to assess financial liberalization.

⁵ which can be measured as the sum of total capital inflows and outflows as a percentage of GDP (Aizenman and Noy (2004)) where capital flows are defined as FDI + portfolio flows + other investments.

2.2. Growth regressions with de-jure and de-facto financial openness measures

In our growth regression, firstly we extend Utkulu and Özdemir (2005) regression by including the de-jure financial openness variable, FINOPEN.

$$YPC_t = \alpha_0 + \alpha_1LPC_t + \alpha_2LHC_t + \alpha_3LOPEN_t + \alpha_4FINOPEN(dj)_t + \mu_t \quad (1)$$

The growth regression above has the following variables; YPC is the real GDP per capita, LPC is the measure of physical capital of Turkey, proxied by real gross domestic investment (logarithmic), LHC is the measure of human capital of Turkey (logarithmic), proxied by secondary school enrolment rates: (number of students enrolled at secondary schools/total population) and LOPEN presents trade openness (logarithmic)⁶ For financial openness we first consider de-jure financial openness variable, FINOPEN(dj). We adopt the de-jure financial openness measure from the Chinn-Ito index⁷.

The preliminary results from the growth regression described in equation (1), run by using data for Turkey between 1974 and 2004, is presented in table 1, below:

Table 1:

YPC	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
LPC	427.6921	138.9823	3.08	0.005	142.01	713.3743
LHC	1855.352	304.2371	6.10	0.000	1229.984	2480.721
LOPEN	344.9605	185.6654	1.86	0.075	-36.68024	726.6013
FINOPEN(dj)	-.0003193	.0007166	-0.45	0.660	-.0017922	.0011537
_cons	1675.147	519.6679	3.22	0.003	606.9545	2743.34

F(4, 26) = 114.98, R-squared = 0.9465, Adj R-squared = 0.9383

The next step is to replicate our results from equation (1), this time by using a de-facto financial openness variable FINOPEN(df) measured as the sum of total capital inflow and outflows measured as a percent of GDP. Capital flows are the sum of FDI, portfolio

⁶ See Utkulu and Özdemir (2005) for the detailed description and debate on the trade openness indices.

⁷ from Chinn, M and Ito, H. (2006).

investments and other investments.

$$YPC_t = \alpha_0 + \alpha_1LPCt + \alpha_2LHCt + \alpha_3LOPEN_t + \alpha_4FINOPEN(df)_t + \mu_t \quad (2)$$

All the variables in equation (2) are same as in equation (1) with the exception of FINOPEN.

The preliminary results from the growth regression described in equation (2), run by using data for Turkey between 1974 and 2004, is presented in table 2, below:

Table 2:

YPC	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
LPC	327.8362	130.2495	2.52	0.018	142.01	713.3743
LHC	1813.352	287.7581	6.30	0.000	1229.984	2480.721
LOPEN	333.0203	175.476	1.90	0.069	-36.68024	726.6013
FINOPEN(dj)	4203.176	2294.555	1.83	0.078	-.0017922	.0011537
_cons	1979.377	463.4671	4.27	0.000	606.9545	2743.34

F(4, 26) = 129.61, R-squared = 0.9522, Adj R-squared = 0.9449

From the above results, it is apparent that de-facto financial openness measure will be the more relevant one to choose for the rest of the empirical analysis of this paper.

In the next step, we will extend these results to include the empirical evidence from panel data depicting post-1990 EU membership candidates⁸.

3 Growth regressions with de-facto financial openness measures; a panel study

In our growth regression, firstly we extend the earlier regression by including the de-facto financial openness variable, FOPEN and EU in a panel form.

The model for the logarithmic per capita GDP (LYPC) for the country i at the time period t

⁸ See Appendix A3.

can be represented as follows

$$LYPC_{it} = \alpha_0 + \alpha_1 LPC_{it} + \alpha_2 LHC_{it} + \alpha_3 LFOPEN(df)_{it} + EU_{it} + \mu_{it} \quad (3)$$

where LPC is the measure of physical capital for the country i at the time period t , proxied by gross fixed capital formation/GDP (logarithmic), $LFOPEN(df)_{it}$ is the defacto financial openness (logarithmic) ((FDI + Portfolio Investments + Other Investments + International Reserves + Commercial Bank's Net Foreign Assets + (Exports – Imports)) / GDP) and the EU_{it} dummy (zero before accession talks, 1 then after). In this version of the empirical analysis, we included trade openness into the LFOPEN measure.

Table 3:

LNGDPPC	Coef.	Std. Err.	Z	P>z	[95% Conf. Interval]
LNFOPEN	-.2111926	.0126691	-16.67	0.000	-.2360235 - .1863617
LNGFCFR	.1215817	.0134165	9.06	0.000	.0952858 .1478776
EU	.0771418	.0276055	2.79	0.005	.023036 .1312476
_cons	-6.524471	.0559802	-116.55	0.000	-6.634191 -6.414752

The above results from the cross-sectional time-series generalized least squares regression corrected for heteroscedasticity and autocorrelation indicate that while physical capital formation and prospects of EU membership have a positive and significant effect on growth, openness comes out as negatively associated with the growth performance of the countries in our analysis.

4. Conclusion

This result is supported by findings of a number of recent empirical studies. According to a recent IMF staff paper, “..a survey of more than 40 empirical studies based on macroeconomic data and cross- country regressions concludes that the evidence of a link between financial integration and economic growth is not robust: while a few studies, mostly focusing on equity market liberalizations, find positive and significant

effects, the majority of studies find insignificant effects, or results that do not hold up to changes in specification and country sample⁹.”

Given the specific economic circumstances that the EU8 countries face, the results need to be further investigated to identify the channels of the negative impact of openness on growth in these transition economies. Our analysis calls for caution when advocating for openness without a thorough analysis. Rapid openness, especially in economies which are in need for a major structural change and time for human capital development, can have adverse effects on the performance of the economy.

More and more, countries such as South Korea, India and China are pointed out as poster child of success from openness. However, when compared with EU8 countries covered in our study, as well as many other developing countries in other parts of the world (such as Latin America and Asia), these countries exhibit a much less “open” economy, measured either with trade and/or financial openness indicators. Their high growth performance is more associated with a “managed openness” policy, than a rush for “more openness” per se.

⁹ “Reaping the Benefits of Financial Globalization,” July 2007, IMF Staff Paper, prepared under the direction of Jonathan D. Ostry by a team led by Paolo Mauro and comprising Giovanni Dell’Ariccia, Julian di Giovanni, André Faria, Ayhan Kose, Martin Schindler, and Marco Terrones.

APPENDIX - Sources and Description of Data

A1. Data Sources

The data used in this study are annual for the period of 1974-2006 and are taken from the following sources: openness indicator, OPEN, real GDP per capita, YPC and proxy for physical capital, PC come from Penn-World Tables. Secondary school enrolment rates, i.e. proxy for human capital, XVOL and XVOL are from the State Institute of Statistics (SIS) of Turkey. ERDI, exchange rate distortion index of Turkey is from the World Currency Yearbook. The Chinn-Ito (2005) de-jure financial openness measure is from Chinn and Ito (2006). The rest of the data is obtained from the International Financial Statistics (IFS) service of the International Monetary Fund.

A.2 EU Membership Timeline

COUNTRIES	EU Membership Application	EU Negotiations start	EU Negotiations finish	EU Membership (actual and expected)	Duration of Negs (months)
Hungary	31-Mar-94	31-Mar-98	1-Dec-02	1-May-04	54
Poland	5-Apr-94	31-Mar-98	1-Dec-02	1-May-04	54
Estonia	24-Nov-95	31-Mar-98	1-Dec-02	1-May-04	54
Czech Republic	17-Jan-96	31-Mar-98	1-Dec-02	1-May-04	54
Slovenia	10-Jun-96	31-Mar-98	1-Dec-02	1-May-04	54
Malta	16-Jul-90	15-Feb-00	1-Dec-02	1-May-04	32
Slovakia	27-Jun-95	15-Feb-00	1-Dec-02	1-May-04	32
Latvia	13-Oct-95	15-Feb-00	1-Dec-02	1-May-04	32
Lithuania	8-Dec-95	15-Feb-00	1-Dec-02	1-May-04	32
Turkey	14-Apr-87	3-Oct-05	unknown	unknown	102

REFERENCES

Aizenman, J. and Noy, I. (2003), "Endogenous Financial Openness: Efficiency and Political Economy Considerations", *NBER Working Paper No. W10144*.

Aizenman, J. and Noy, I. (2004), "On the Two Way Feedback Between Financial and Trade Openness" *NBER Working Paper No. W10496*.

Andersen, T.B. and Tarp, F. (2003). "Financial Liberalization, Financial Development and Economic Growth in LDCs," *Journal of International Development*, 15:15, pp. 1041-51.

Andriesz, E., Dimitrios A. and Pilbeam K. (2005). "The Linkage between Financial Liberalization and Economic Development: Empirical Evidence from Poland," *Journal of Economic Integration*, 20: 2, pp. 383-99.

Aghion, P., Howitt, P., and Mayer-Foulkes, D. (2005), "The Effect of Financial Development on Convergence: Theory and Evidence," *The Quarterly Journal of Economics*, 120(1). pp. 173-222.

Beck, T. (2002), "Financial Development and International Trade: Is There a Link?," *Journal of International Economics*, 57:1, pp. 107-31.

Blackburn, K., Bose, N., and Capasso, S. (2005), "Financial Development, Financing Choice and Economic Growth," *Review of Development Economics*, 9(2): 135-49.

Bekaert, G. and Harvey, C.R. (2001), "Economic Growth and Financial Liberalization," Mimeo.

Bekaert, G., Harvey, C.R. and Lundblad. C. (2005), "Does Financial Liberalization Spur Growth?," *Journal of Financial Economics*, 77:1, pp. 3-55.

Calderon, C. and Liu, L. (2003), "The Direction of Causality between Financial Development and Economic Growth.," *Journal of Development Economics*, 72:1, pp. 321-34.

Cheng, B. S. (1999), "Cointegration and Causality between Financial Development and Economic Growth in South Korea and Taiwan," *Journal of Economic Development*, 24:1, pp. 23-38.

Chinn, M and Ito, H. (2006), "What Matters for Financial Development? Capital Controls, Institutions, and Interactions," forthcoming in *Journal of Development Economics*.

Christopoulos, D. K. and Tsionas, E.G. (1999), "Financial Development and Economic Growth: Evidence from Panel Unit Root and Cointegration Tests," *Journal of Development Economics*. 73, pp. 55-74.

Claessens, S. and Laeven, L. (2003), "Financial Development, Property Rights, and Growth," *Journal of Finance*, 58:6, pp. 2401-36.

Demetriades, P. O. and Hussein, K. A. (1996), "Does Financial Development Cause Economic Growth? Time-Series Evidence from 16 Countries," *Journal of Development Economics*, 51:2, pp. 387-411.

Demirguc-Kunt, A. (2006), "Finance and Economic Development: Policy Choices for Developing Countries," *World Bank Policy Research Working Paper* No. 3955.

Demirgüç-Kunt, A. and Levine, R., editors (2001), *Financial Structure and Economic Growth: a Cross-Country Comparison of Banks, Markets and Development*. MIT Press.

Driffill, J. (2003), "Growth and Finance," *The Manchester School*, 71(4): 363-80.

Esen, O. (2000), "Financial Openness in Turkey," *International Review of Applied Economics*, 14:1, pp. 5-23.

Greenwood, J. and Smith, B.D. (1997), "Financial Markets in Development, and the Development of Financial Markets," *Journal of Economic Dynamics and Control*, 21(1): 145-81.

King, R. G. and Levine, R. (1993), "Finance, Entrepreneurship, and Growth: Theory and Evidence," *Journal of Monetary Economics*, 32(3): 513-42.

Köse, A., Prasad, E., Rogoff, K. and Wei, S. (2006), "Financial Globalization: A Reappraisal," CEPR Discussion Papers 5842, C.E.P.R. Discussion Papers.

Köse, A., Terrones, M.E. and Prasad, E. (2004), "How do trade and financial integration affect the relationship between growth and volatility?," *Journal of International Economics*, vol. 69(1), pages 176-202.

Levine, R., Loayza, N. and Beck, T. (2000), "Financial Intermediation and Growth: Causality and causes," *Journal of Monetary Economics*, 46(1):31-77.

Levine, R. (2005), "Finance and Growth: Theory, Mechanisms and evidence," in Aghion, P. and Durlauf, S.N. (eds.) *Handbook of Economic Growth*, Elsevier.

Mendoza, E., Quadrini V. and Rios-Rull, J.V. (2006), "Financial Integration, Financial Deepness and Global Imbalances," Working Paper presented at the Seventh Jacques Polak Annual Research Conference at IMF Washington, DC, on November 9th, 2006, <http://www.imf.org/external/np/res/seminars/2006/arc/pdf/mend.pdf>

Odedokun, M O. (1996), "Alternative Econometric Approaches for Analysing the Role of the Financial Sector in Economic Growth: Time-Series Evidence from LDCs," *Journal of Development Economics*, 50:1, pp. 119-46.

Prasad, E., Rogoff, K. Wei, S and Köse, A. (2003), "Effects of Financial Globalization on Developing Countries: Some empirical Evidence," *Occasional Paper*, IMF No: 220.

Rioja, F. and Valev, N. (2004), "Does One Size Fit All?: A Reexamination of the Finance and Growth," *Journal of Development Economics*, 74:2, pp. 429-47.

Shan, J. and Morris A. (2002), "Does Financial Development 'Lead' Economic Growth?," *International Review of Applied Economics*, 16:2, pp. 153-68.

Shan, J. Z, Morris A. and Sun, F., (2001), "Financial Development and Economic Growth: An Egg-and-Chicken Problem?," *Review of International Economics*, 9:3, pp. 443-54.

Trew, A. W. (2006), "Finance and Growth: A critical Survey," *Economic Record* 82, (259).