DO SMALL MEMBER COUNTRIES OF THE EUROPEAN UNION BENEFIT ECONOMICALLY MORE THAN THE LARGE COUNTRIES? A SWISS PERSPECTIVE

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Abstract

The purpose of this paper is to assess the economic performance of the Swiss economy with respect to the smaller and larger countries of the EU. The key question to answer is whether Switzerland would have fared better and would perform better in the future within the EU rather than staying outside, albeit linked by numerous bilateral trade agreements. Empirical results suggest that the present efforts of Switzerland to liberalize trade with the EU on a sectoral base may be well the optimal strategy.

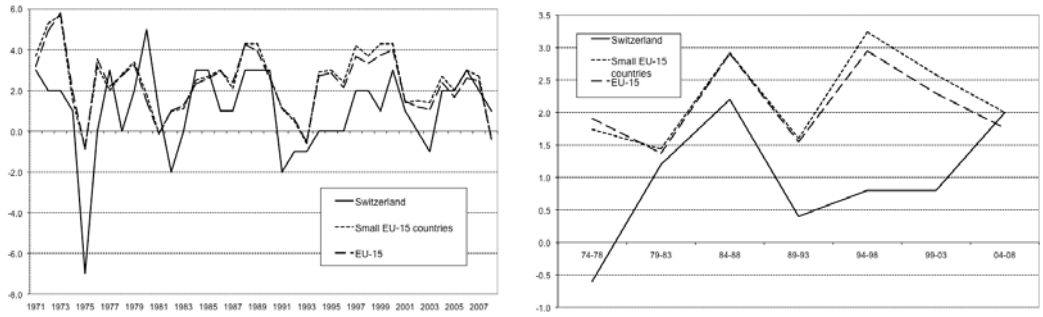
Key Words: Switzerland, EU integration, trade, growth, panel data

JEL Classification: C33, F15, F43, O52

1. INTRODUCTION

The question of the long-term effect on economic performance, especially on economic growth, of joining the European Union (EU) is of utmost importance for public policy in light of the poor growth rates (of GDP per capita) experienced by Switzerland in the past 20 years, in particular during the nineties (Brunetti, 2008) (figure 1a). In 1992, the Swiss population rejected to join the European Economic Area (EEA) in a referendum. Significantly, the average growth rate in Switzerland of the last 5-years period (2004 – 2008) is close to the corresponding performance of the small EU countries and of the EU-15 (figure 1b). It is the period during which the first seven bilateral agreements (which entered into force on 1st June 2002) were progressively implemented.

Figure 1a (left) and 1b (right): A comparison of economic growth rate (real GDP per capita growth, annual % / 5-year average) of Switzerland, small EU-15 countries, and the EU-15



Source: World Development Indicators 2010.

For the proponents of an EU membership, growth lags behind in Switzerland because the country stays outside the EU. In consequence, accession to the EU would at least reduce the gap to the performance of comparable small countries. Switzerland has decided to stay outside the EU, for political and economic reasons, and has chosen the bilateral way to reap some (net) benefits from European integration. Switzerland has negotiated and signed a number of important sectoral agreements with the EU, among which the free trade agreement for industrial products of 1972 (in addition of being a founding country of the EFTA). An agreement with the EU implemented in 1989 guaranties Swiss insurance companies (damage insurance) a European wide market access and equal operating conditions. The first seven bilateral agreements (I), which came into effect in June 2002, include notably the free movement of persons, the reduction of technical barriers to trade, the liberalization of public procurement markets and the liberalization of agricultural milk products. The bilateral

agreements II include more technical issues and potentially less important aspects with respect to economic performance. Since July 2010, Switzerland also applies unilaterally the Cassis de Dijon principle, hence reducing technical barriers to trade on imports of EU products due to different regulations. Other potential benefits (and costs!) may have forgone yet, i.e., greater financial integration due to the introduction of the euro, equal access to banking and financial services, or increasing trade and competition in the sheltered or domestic sectors such as agriculture or retail trade.

Spirig (2005) reviewed the costs and benefits of an EU accession for Switzerland, as well as its direct and indirect effects on growth, compared to the continuation of bilateralism. In addition to the above-mentioned bilateral sectoral agreements, full EU membership would imply the full participation of Switzerland in the internal market (including services but also agriculture) and the customs union, and eventually the introduction of the euro. It was expected that in the short term the costs of joining the EU would exceed its benefits, and that on a longer term, after an eight to fifteen years transitional period, benefits would prevail (UBS, 2000). Besides political adjustment costs in direct democracy and fiscal federalism (not considered), the main costs of joining the EU include a net financial transfer to the EU budget, an increase of the interest rates (notably depending on the introduction of the euro), and changes in the trade structures. Benefits would be derived from the increase of trade and the full participation in the European internal market, and a reduction of the non-tariff barriers of trade. In general, positive effects of the bilateral agreements are acknowledged, but even if there is a measurable impact on the level of GDP or productivity, it is not clear if and how the growth rate will be affected in the long run.

2. THE IMPACT OF EUROPEAN INTEGRATION ON GROWTH

One has to distinguish the short-term from the long-term effect of joining the EU. Accession will eventually increase temporarily the growth rate of the economy (i.e., impact on the level of per capita GDP) compared to a permanent increase of the growth rate. The static welfare (GDP) effects of joining the European customs union depend on the relative size of trade creation vs. trade diversion. Trade diversion reduces welfare if the formation of the customs union leads to significant import substitution, i.e., to higher import from the member countries of the customs union (from relative inefficient suppliers). Long term dynamic effects on the level and growth rates of real GDP may be derived from a number of effects: increasing competition and production efficiency, exploitation of increasing returns (cost savings), and faster pace of technological innovations.

Although it is expected that the long-term dynamic benefits will outweigh the potential negative static effects, the impact of the discrimination of third countries may be for a small and open economy such as Switzerland particularly harmful.

A number of empirical and theoretical contributions, surveyed for instance by Deardorff and Stern (2002), and Alesina *et al*. (2005), doubt that regional integration produces over time large dynamic benefits. Moreover, the larger countries, including the countries of original membership, may have initially grown faster than other countries (EU or OECD), whereas the smaller countries gained only after some delay as the EU expanded. Alesina *et al*. (2005) concede that the literature on the effects of trade on economic performance is not conclusive on the nature and size of this effect; this is particularly the case for the effect of the country size. However, in combination, openness and small size might exert a strong impact on growth.

The empirical paper by Badinger (2005) tests the two hypotheses of integration-induced technology-led growth and of integration-induced investment-led growth of GDP per worker for the EU-15. The author also looks at the comparative performance of living standards between EU members and non-EU members that also experienced economic integration (e.g., GATT liberalization, EFTA). Badinger concludes that "investment-led growth seems to have been slightly more important", that "European integration has significantly contributed to post-war growth performance of the EU member states ... [and that] ... the results imply that growth effects have only been of temporary nature." With respect to Switzerland, the data show that European integration did only slightly reduce the gap between EU and Swiss levels of productivity. Looking at the growth effects of integration by member state, the author also notes that "there have been no obvious asymmetries in the gains from integration", for instance between large and small member countries.

The purpose of this paper is to try to assess the economic performance of the Swiss economy with respect to the smaller and larger member countries of the EU. The key question to answer is whether Switzerland would have fared better and would perform better in the future within the EU rather than staying outside, albeit closely linked by numerous bilateral agreements. In the following section, we present an indirect test of the likely effect of full economic integration within the EU on Swiss economic growth.

3. THEORETICAL AND EMPIRICAL FRAMEWORKS

In this study, the Cobb-Douglas production function specification, inspired by endogenous growth models, is used, to which we add variables to account for the role of government and the openness of the economy. In addition, we consider the effect of inflation on growth. More precisely, the following model specification has been used to investigate the long-run relationship between economic growth and labor, capital, government expenditure, openness, and inflation:

$$Y_{it} = \alpha_1 + \alpha_2 L_{it} + \alpha_3 K_{it} + \alpha_4 G_{it} + \alpha_5 O_{it} + \alpha_6 I_{it} + u_{it}\ , \qquad (1)$$

where Y_{it} is the annual GDP per capita growth (annual %), L_{it} is the labor force participation rate (% of total population ages 15-64), K_{it} is approximated by gross domestic savings (% of GDP), G_{it} is government final consumption expenditure (% of GDP), O_{it} is an openness variable (trade (GDP %), merchandise trade, openness in current or constant prices), I_{it} is inflation (consumer prices, annual %), and u_{it} is the error term.

The variables tested in this study are selected on the basis of economic growth theories and previous empirical literature. The labor force participation rate is one of the main components in long-term economic growth, nearly as crucial as productivity. It corresponds to the ratio of labor force to population. Barro (e.g., 1997) shows that, in general, fertility, population growth and mortality turn out to be negatively, and population size and density, to be positively related to per capita output growth. In the late 1990s, several authors confirmed that the growth rate of the total population has a negative effect on the growth of GDP per capita, but that the increase of the working-age population shows a positive effect (Radelet *et al*., 2001). We therefore expect the coefficient of the labor force participation rate to have a positive sign.

The gross domestic savings rate usually indicates a country's high potential to invest (Jappelli and Pagano, 1994). Thus, all savings is supposedly automatically invested and translated into output growth. As a consequence, we expect the coefficient of gross domestic savings to be positive. By using gross domestic savings as a proxy for investments made by domestic firms, we assume that these firms are most likely to borrow from domestic financial institutions to finance their investments. However, we are conscious that this is rather the case for relatively poor countries where domestic saving matters more for innovation, and therefore growth, than in countries sufficiently close to the technological frontier (Aghion *et al.*, 2009).

The relationship between economic growth and government spending is controversial. A key question is whether or not public sector spending has a positive effect on economic performance and growth. Public expenditure in investment and productive activities should contribute positively to growth whereas government consumption spending is anticipated to be growth retarding. Even though a large number of empirical studies have been conducted, no consistent evidence exists for a significant relationship between public spending and growth, in a positive or negative direction. For instance, Dar and Amirkhalkhali (2002) find a negative relationship between government size and economic growth for 19 OECD countries. The authors believe that expanding government size, i.e., government expenditure, has an effect of diminishing returns, and over-expanding government size will crowd out private investment. As a consequence, and in the case of developed countries, one expects the coefficient of government final consumption expenditure, which measures the involvement of governments in providing goods and services for the direct needs of the population, to have a negative sign.

Openness is generally seen as an important factor in long-term growth. The most basic measure of openness is the simple trade shares, which is exports plus imports divided by GDP. A large number of studies use trade shares in GDP and find, as reviewed in Harrison (1996), a positive and strong relationship with growth. Yanıkkaya (2003), in a cross-country study of over 100 developed and developing countries for the period 1970-1997, shows that trade shares, export shares, and import shares in GDP are significantly and positively related with growth. Hence, we expect a positive effect of openness on economic growth.

Finally, there is a large consensus that macroeconomic stability, here specifically defined as low inflation, is positively related to economic growth. More precisely, it is generally accepted that inflation has a negative effect on medium and long-term growth (e.g., Barro, 1995). Inflation impedes an efficient resource allocation by obscuring the signaling role of relative price changes, the main guide to efficient economic decision-making. We thus expect the coefficient of inflation to have a negative sign.

The variables tested in this panel study are the economic growth determinants for which data has been found for the EU-15 countries for at least thirteen years. As the EU reached 15 member countries on the 1st of January 1995, the data set starts in 1995 and goes until 2007. Data comes from the World Development Indicators, 2010 database, except “openness” (in current or constant prices) as defined by Penn World Table.

Before proceeding to the estimation using the cointegration technique, the first step is to investigate the stationarity properties of the variables. For this purpose, the Levin, Lin and Chu (2002) test, which is the most widely used method among panel data unit root tests in the literature, is performed. Unit root test for stationarity is performed on both levels and first differences for all seven variables of the model as indicated in Table 1. Two alternative measures are used for openness, i.e., tradegdp (trade (GDP %)) and openc (openness in current prices).

Table 1: Pool unit root test: Levin, Lin & Chu

VARIABLES	**Exogenous variables: None**			
	Level		**1st Differences**	
	Stat	Prob	Stat	Prob
Gdppcgrowthannual	-2.15102	0.0157	-9.18440	0.0000
Labforcepart	-1.66551	0.0479	-2.36645	0.0090
Gdsgdp	-1.24875	0.1059	-7.06111	0.0000
Govfinalconsexp	-0.18981	0.4247	-4.17612	0.0000
Tradegdp	4.40302	1.0000	-8.75001	0.0000
Openc	2.73746	0.9969	-4.74633	0.0000
Inflation	-1.13070	0.1291	-7.60047	0.0000
Test assumes asymptotic normality. Automatic selection of lags based on SIC: 0 to 2. Newey-West bandwidth selection using Bartlett kernel.				

The second step is to test for the existence of a long-run relationship between government expenditure, openness, inflation and economic growth. To examine the long-run relationship, the Pedroni panel cointegration test, which takes into consideration heterogeneity by using specific parameters, is performed. At last, after finding cointegration in the second step, the coefficients of economic growth are estimated by applying fully modified ordinary least squares (FMOLS) method. A first model is set up for the five large countries (Germany, France, Italy, Spain, UK) of the EU-15. A second model is set up for the ten small countries (Austria, Belgium, Denmark, Finland, Greece, Ireland, Luxemburg, Netherland, Portugal, Sweden) of the EU-15, and a third model is set up for the same ten small countries, plus Switzerland, and Norway. The results of the panel cointegration and FMOLS estimations in its most general form are presented in Table 2.

The panel cointegration tests point to the existence of a long-run relationship between annual GDP per capita growth and labor force participation rate, gross domestic savings, government final consumption expenditure, openness, and inflation. Indeed, the results point out that the null hypothesis of no cointegration is strongly rejected in all cases for panel v, panel ρ, panel PP, group ρ, and group PP statistics. As a result, labor force participation rate, gross domestic savings and openness have a positive effect on annual GDP per capita growth. On the other

hand, government final consumption expenditure and inflation exert a negative effect on GDP per capita growth. The signs of the coefficients correspond to the expected signs.

Table 2: Estimation results

Dep. Var.	GDPPCGROWTH		GDPPCGROWTH		GDPPCGROWTH	
Method	FMOLS		FMOLS		FMOLS	
Variables	**MODEL I** *N*=5, *T*=13		**MODEL II** *N*=10, *T*=13		**MODEL III** *N*=12, *T*=13	
	Model I-a	Model I-b	Model II-a	Model II-b	Model III-a	Model III-b
Labforcepart	0.06 **(113.04)**	0.05 **(119.04)**	0.07 **(63.58)**	0.08 **(65.35)**	0.06 **(66.47)**	0.07 **(68.07)**
Gdsgdp	0.05 **(48.17)**	0.03 **(52.22)**	0.49 **(12.16)**	0.49 **(12.55)**	0.45 **(14.84)**	0.44 **(15.31)**
Govfinalconsexp	- 1.17 **(-18.74)**	- 1.10 **(-19.25)**	- 0.33 **(-14.71)**	- 0.37 **(-14.55)**	-0.55 **(- 15.45)**	- 0.63 **(- 15.57)**
Tradegdp	0.10 **(96.78)**		0.05 **(112.30)**		0.05 **(113.63)**	
Openc		0.09 **(103.90)**		0.05 **(103.59)**		0.04 **(106.34)**
Inflation	- 0.61 **(-39.75)**	-0.60 **(-42.08)**	-0.72 **(-20.97)**	- 0.69 **(-21.77)**	- 0.68 **(-21.77)**	- 0.65 **(- 22.35)**
Panel Statistics						
Panel *v*-stat	-0.60424	-0.56550	-1.24594	-1.28126	-1.37089	-1.39185
Panel ρ-stat	1.37509	1.38261	1.86150	1.91865	2.27945	2.32836
Panel PP-stat	-4.88764	-5.07339	-6.20074	-6.01898	-5.54221	-5.41778
Panel ADF-st.	-3.02077	-3.12527	-3.86601	-3.48896	-3.62011	-3.54819
Group ρ-stat	2.32034	2.30381	3.16125	3.21857	3.74332	3.79767
Group PP-stat	-5.77514	-6.17494	-9.75342	-10.00490	-8.71006	-8.94805

Gr. ADF-stat	-3.84755	-4.09246	-4.96908	-4.67437	-4.70630	-4.60813

(*t*-stats in parentheses and bold)

In the first model, the coefficients of the openness variables are respectively 0.10 (tradegdp) and 0.09 (openc). Thus, there is a significant and comparatively strong positive effect on GDP per capita growth in the large countries of the EU-15. The second model estimates the values of the coefficients for tradegdp and openc at 0.05. Hence, there is a positive, significant but smaller effect on GDP per capita growth in the small countries of the EU-15. In consequence, during the period 1995 to 2007, large countries of the EU-15 experienced higher benefits from openness compared to the small countries. Possible reasons could be that larger countries are better able to exploit the existence of economies of scale or may export a larger set of goods and services. When adding Switzerland and Norway to the ten small EU-15 countries, the coefficients on openness in the third model do not change significantly compared to the second model: 0.05 and 0.04. Theoretically, we expect that being a member of the EU gives a trade advantage to the EU members. However, the inclusion of the two non-members Switzerland and Norway does not lead to a different impact of openness on economic growth for the twelve small countries (ten small countries in the EU-15, plus Switzerland, and Norway), unlike government expenditure, for example. In other words, Switzerland and Norway already behave like the ten smaller EU member states. Switzerland and Norway have been associated to the EU due to the free trade agreement since 1972, the participation of Norway in the European Economic Area since 1995, and the largely equivalent bilateral agreements since 2002 in the case of Switzerland. The results suggest that Switzerland (and Norway) obtained thereby a large part of the potential benefits of economic integration in Europe.

4. CONCLUSION

The present efforts of Switzerland to liberalize trade with the EU on a sectoral base (without a customs union), to seek additional trade agreements with other countries in the framework of EFTA and on a bilateral basis, and more generally, to participate in the trade liberalization of WTO, may be well the optimal strategy. In theory, smaller countries should experience larger gains from trade. It remains to be examined, in the case of Switzerland, if and how trade liberalization or the accession to the EU (with its other requirements than the customs union) would translate into a better economic performance.

SELECTED BIBLIOGRAPHY

Aghion, P., D. Comin, P. Howitt, I. Tecu (2009), "When Does Domestic Saving Matter for Economic Growth?", *Harvard Business School Working Paper 09-080*, Boston, MA: Harvard Business School.

Alesina, A., E. Spolaore and R. Wacziarg (2005), "Trade, Growth and the Size of Countries", chapter 23, (in: P. Aghion and S. Durlauf, *Handbook of Economic Growth*, vol. 1B), Amsterdam: North-Holland (Elsevier).

Badinger, H. (2005), "Growth Effects of Economic Integration: evidence from the EU Member States", *Review of World Economics,* Vol. 141, No. 1, pp. 50-78.

Barro, R. J (1997), Determinants of Economic Growth: A Cross-Country Empirical Study, Cambridge, MA: MIT Press.

Barro, R. J. (1995), "Inflation and Economic Growth," *Bank of England Quarterly Bulletin*, Vol. 35 (May), pp. 166-76.

Brunetti, A. (2008), "Die Wachstumspolitik des Bundes: Rückblick und Ausblick", *Die Volkswirtschaft*, 4-2008.

Dar, A. and S. Amirkhalkhali (2002), "Government Size, Factor Accumulation, and Economic Growth: Evidence from OECD Countries", *Journal of Policy Modeling*, Vol. 24, No. 7, pp. 679-692.

Deardorff, A. V. and R. M. Stern (2002), "EU expansion and EU Growth", *Working papers 487*, University of Michigan.

Harrison, A. (1996), "Openness and Growth: A Time Series, Cross-Country Analysis for Developing Countries, *Journal of Development Economics*, Vol. 48, No. 2, pp. 419-447.

Japelli, T., and M. Pagano (1994), "Savings, Growth and Liquidity Constraints", *Quarterly Journal of Economics*, Vol. 109, No.1, pp. 83-109.

Levin, A., C. F. Lin, and C. Chu (2002), "Unit Root Tests in Panel Data: Asymptotic and Finite-Sample Properties", *Journal of Econometrics*, Vol. 108, No. 1, pp. 1-24.

Radelet, S., J. Sachs, and J.-W. Lee (2001), "The Determinants and Prospects of Economic Growth in Asia", *International Economic Journal*, Vol. 15, No. 3, pp. 1-29.

Spirig, B. (2005), "Kosten und Nutzen eines EU-Beitritts der Schweiz, Darstellung und Erweiterung unter Berücksichtigung der Unsicherheit", *WWZ*

Forschungsbericht 05, Universität Basel.

UBS (2000), "Alleingang – Bilaterale Verträge – EU-Beitritt. Implikationen für die Schweizer Wirtschaft und den Finanzplatz Schweiz", *UBS Group Economic Research Studies*, April, Zurich: UBS Group Economic Research.

Yanıkkaya, H. (2003), "Trade Openness and Economic Growth: A Cross-Country Empirical Investigation", *Journal of Development Economics,* Vol. 72, pp. 57-89.