

THE QUESTION OF INSTABILITY, UNCOMPETITIVENESS AND GROWTH SLOWDOWN OF SMALL MIDDLE-INCOME COUNTRIES IN THE EURO AREA

MARJAN SENJUR¹

Received: 9 May 2013

Accepted: 8 January 2014

ABSTRACT: *The thesis of this article is that a small country with a below-average per capita income is in a disadvantaged macroeconomic position inside the euro area. Small middle-income countries expected an acceleration of growth by joining the EMU. They were hoping to catch up in the convergence process within the euro area. Yet things turned out differently. The crisis in 2009–2012 has led to excessive instability due to exogenous macroeconomic prices and the lack of a lender of last resort for sovereign debtors. Small MICs are more vulnerable to asymmetric shocks from abroad due to the ‘one-size-fits-all’ economic policy at the EMU level. This is reflected in the excessive volatility of real economic variables (such as GDP and unemployment), and excessive financial instability (such as indebtedness) and sovereign debt. The crisis also revealed weak price competitiveness of exports due to overvalued exchange rate of the euro and overall under-average productivity of the MICs. MICs had to respond with deflationary internal (surrogate) devaluations and depressed aggregate demand. Measures of internal surrogate devaluations may partially improve situation in the medium term, yet they may worsen the competitive growth situation in the long run. A macroeconomic environment of macroeconomic instability and weak competitiveness may trigger a slowdown in growth.*

Key words: *European Monetary Union, small middle-income countries, Slovenia, instability, price uncompetitiveness, internal surrogate devaluation, growth slowdown*

JEL Classifications: F5, O4, P1

1. INTRODUCTION

I have pursued the question of the macro-economic situation facing small middle-income countries in the euro area (EA) in a series of articles (Senjur, 2007, 2010, 2012). In my previous article, I was afraid that the “competitive growth of small middle-income countries in the eurozone is far from being assured”. Competitive growth is defined as above-average growth in output that helps MICs catch up with developed countries. My thesis was that such growth would be difficult to achieve but perhaps still possible to a

¹ University of Ljubljana, Faculty of Economics, Ljubljana, Slovenia, e-mail: marjan.senjur@ef.uni-lj.si

certain level. In the present article, which is a follow-up to the previous article, my thesis is that small MICs inside the euro area might face a slowdown in growth instead of accelerated growth.

A small country inside the euro area with a below-average per capita income has the disadvantage of instability. It is more vulnerable to asymmetric shocks from abroad due to the 'one-size-fits-all' economic policy at the EMU level. This is reflected in the excessive volatility of real economic variables (e.g., GDP and unemployment) due to wrong macroeconomic prices (interest rate, exchange rate, level of prices). There is excessive financial instability (e.g. indebtedness) and sovereign debt without any institutional lender of the last resort for the sovereigns.

Small middle-income countries face weak price competitiveness inside the euro area, which is reflected in the weak external and internal competitiveness of exports. The reason is overvalued exchange rate of the euro and overall lower productivity due to under-coverage level of development. Measures of internal (surrogate) devaluations, such as relative deflation, wage reductions and tax reductions, may partially improve the situation in the medium term, yet they may worsen the competitive growth situation in the long run.

Taking all together, instability and un-competitiveness, there is a real possibility that, instead of catching-up, the competitive growth may turn into growth slowdown. The crisis of the euro and the prolonged recession, which has devastated countries on the periphery, has led to a change in perspective. What was previously a hunch is now more certain. This situation calls for an explanation and for new research theses about the causes and prospects of the growth of small MICs in the euro area (Blanchard, 2007; Landmann, 2011; Estrada, Gali and Lopez-Salido, 2012).

The article elaborates the question of the macroeconomic instability und un-competitiveness of small MICs in the euro area. In order to present empirical illustrations I apply grouping of the 17 countries of the euro area into two groups. The first group in the euro area, the high-income countries, comprises countries with a per capita income higher than the average for the euro area. This article provides illustrative data for the average of euro area countries (EA-17) and for Germany as the selected high-income country.

The second group, the middle-income countries, includes countries with a per capita income below the average for the euro area.² It has become a habit to call the first group "core countries" and the second group "periphery countries". Inside the second group, the middle-income countries or periphery countries, there is a sub-group of small below-average-income countries: Greece, Portugal, Slovenia, Estonia and Slovakia. I am interested in such countries because they do not affect the average of the euro area, but are fully affected by the average categories of the euro area (such as exchange rates, interest rates, price levels,

² The countries of the euro area are grouped into just two groups. In the case of the entire EU it would be useful to define three groups: high-income countries, middle-income countries (below the average and above the 75% threshold), and low-income countries (below the 75% threshold of the EU-27 average).

and unit labour costs). The article presents illustrative data for a group of three euro-countries that could be described as small below-average-income countries on a similar level of development (EA-3). This group comprises Greece, Portugal and Slovenia. Estonia and Slovakia were not included in this group because they joined the EMU later.

It is of some interest how those countries, which still have their own currency, and have below average income per capita, were affected by the recession. Czech Republic, Hungary and Poland reacted with adjustments to their nominal exchange rates. I will show data for these three countries (EU-3), as non-euro EU member countries, to compare with EA-3 countries using the euro.

Table 1: *Index of GDP per capita in PPS (EU-27 = 100), 1999–2012*

	1999–2003	2004–08	2010–12
EU	100	100	100
EA-17	112	109	109
Germany	117	115	122
EA-3			
Greece	87	92	81
Portugal	80	78	77
Slovenia	81	88	84
EU-3			
Czech R.	73	80	81
Hungary	58	63	67
Poland	48	53	65

Source: Eurostat-Tables; period's yearly averages.

It is to be noted that the article does not give thorough empirical analysis. The sample of countries is small and time period is short. Selected empirical data in the form of tables are given as an empirical illustration to indicate the problems of concern. The tables are supposed to speak for themselves and are not commented at length in the text.

The article is structured to present introduction in the first section. The second section of this article discusses the growth question of the MICs. The third section elaborates in detail the issue of asymmetric macroeconomic instability at the national level, which is reflected in the excessive volatility of small MICs. The fourth section deals with the issue of price competitiveness and internal surrogate devaluation. Section five raises the question of a possible slowdown in growth. The last chapter concludes the discussion.

2. GROWTH QUESTION

2.1. GROWTH ACCELERATION AND CONVERGENCE

This article is interested in growth questions facing small middle-income countries that are within the euro area framework. Such countries encounter the questions of catching

up and competitive growth as well as which policy to use in order to grow in absolute terms and to improve their relative competitive position in the euro area. Competitive growth would be reflected in a durable above-average growth rate of per capita income (i.e., positive growth differentials):

$$g^{\text{MIC}} > g^{\text{ea}} \quad (2.1)$$

where g^{MIC} refers to the growth of middle-income countries, and g^{ea} is the average growth rate of the whole euro area.

A basic growth model is the neoclassical growth model of the Solow type (R. Solow). This basic growth model, which is a supply-side approach, has to be supplemented by endogenous growth (P. Romer), a demand-side Keynesian approach (R. Harrod and E. Domar), an entrepreneurial type of growth of the Schumpeterian type (J. Schumpeter), and a competitiveness approach (M. Porter). Such a comprehensive approach enables the study of the growth of MICs inside the euro area. The basic neoclassical growth model is simply insufficient to explain the growth problems of MICs in the euro area.

An interesting implication of the basic neoclassical growth model is the convergence thesis. The convergence thesis has evolved from absolute convergence (Barro and Sala-i-Martin, 1992; Lucas, 2000) through conditional convergence (Mankiw, Romer and Weil, 1992) to multiple pole convergence, e.g. twin peaks (Quah, 1996), and finally to the asymmetric world equilibrium (Acemoglu, Robinson and Verdier, 2012).

The absolute convergence thesis of neoclassical growth theory is that less-developed countries will eventually catch-up with developed countries (Lucas, 2000); the lower the initial comparative per capita income level, the higher the growth rate. According to this thesis, middle-income countries inside the euro area should eventually catch-up with the high-income countries. More recent research reveals that one may no longer assume growth convergence. Convergence is not automatic (Rodrik, 2011) and it has become quite a sophisticated issue. Even the thesis of divergence has been resurrected. Landmann (2011) points to the possibility of non-convergence or even divergence within the euro area.

Hausman, Pritchett and Rodrik (2005) found that growth accelerations tend to be related with increases in the investment rate and trade, and with an undervalued real exchange rate (Rodrik, 2008). Those authors define growth accelerations as instances of rapid acceleration in income growth that are sustained for at least 8 years. The authors also find a declining probability of a growth transition with rising income levels. This means that accelerated growth goes to a certain income distance and may get stuck in a middle-income trap (Eichengreen, Park and Shin, 2012; 2013).

Price competitiveness due to an undervalued real exchange rate should help bring about accelerated growth, which would bring the income of MICs to the new income plateau (Rodrik, 2008). This income plateau could be a new starting point for further develop-

ment or it could mean “the middle-income trap” for a slowdown in growth as talked about in the article by Eichengreen, Park and Shin (2013). They defined growth slowdowns as a reduction in the growth rate sustained over the medium term (of seven years). The probability of a slowdown peaks when per capita GDP is roughly three-quarters of that of the leading countries. MICs encounter “the middle-income trap”.

2.2. The demand-led catching-up growth of small middle-income countries is under threat

I have constructed a model of growth based on aggregate demand (Senjur 2011). The advantage of this model is that it allows the inclusion of demand, exports, the real exchange rate, and prices in the analysis. I assume there are two groups of countries divided by per capita income (Senjur 2007).³ The first group consists of high-income countries, which are growth leaders based on innovation. The potential output of high-income countries, Q^* , is determined by production factors, endogenous technological progress, and institutional settings. The second group consists of middle-income countries. They are growth followers, and their growth is efficiency-based and demand-driven. The potential output of middle-income countries, Q^{**} , is smaller than for high-income countries, $Q^{**} < Q^*$. The model (Senjur, 2012) maintains that the output is determined by the production function

$$Q = AF(K, L, H), \quad (2.2)$$

where A is a productivity parameter, K is capital, L is labour and H is human capital. The growth rate is positively related to the growth of productivity, capital, labour and human capital. On the other hand, the income is also determined by aggregate demand

$$Y = B F(D, X), \quad (2.3)$$

where B is autonomous demand, D are elements of domestic demand (consisting of private consumption C , public consumption G , and investment I) and X is exports representing foreign demand.

An important thesis is that aggregate demand is also a factor of the potential output of middle-income countries. High aggregate demand can stimulate and facilitate the transfer of resources from high-income countries and therefore helps to push the potential output of middle-income countries upwards. Aggregate demand is one of the growth factors of middle-income countries and is one of the driving forces of the catching-up growth effect. It is also assumed that some components of aggregate demand have a double effect: they affect aggregate demand (i.e., actual income) on one hand, and potential output (i.e., supply) on the other. Investment plays such a dual role. Exports also have such a double role: the spillover relies on the technological, learning, and marketing externalities of exports (Rodrik, 2008).

³ For simplicity, I disregard the existence of the third group (i.e., a low-income group).

On the demand side, we isolate exports as a driver of the total demand. Exports (X) are determined by foreign income, Q_f , and the real exchange rate (E), which determines the price competitiveness of exports. The export growth rate is positively determined by the growth rate of foreign output and negatively by growth of the real exchange rate.

From the definition of the real exchange rate ($E=eP/P^*$), it follows that

$$g_E = g_e + \pi - \pi^* \quad (2.4)$$

g_e is growth rate of nominal exchange rate e , π^* is the foreign inflation rate, and π is the domestic inflation rate.

After some simplifications and manipulation of the above expression, it is possible to describe the growth rate of output (g_Y) with the following expression:

$$g_Y = g_B - \lambda(g_e) - \lambda(\pi - \pi^*) . \quad (2.5)$$

In this expression, the growth rate depends on the growth rate of summary factors of productivity, capital and labour (g_B), the rate of change of the nominal exchange rate (g_e) and differential inflation ($\pi - \pi^*$). Appreciation (increase) of the real exchange rate lowers the price competitiveness of the economy and reduces the growth rate of output. With changes in the nominal exchange rate in accordance with differential inflation ($\pi - \pi^*$) it is possible to keep the real exchange rate stable. The price competitiveness of exports can thereby be kept stable and consequently the rate of output growth would not be exposed to negative movements in the inflation differential.

There is a dynamic interplay between output and demand (income). Demand is an outlet for output, yet it is also a driving force for output. Dynamics of growth originate on the production (output) side as well as on the demand side. The theory of growth based solely on production is crippled and insufficient. It cannot explain such an important growth experience as the East-Asian growth 'miracle', which is significantly based on export-driven growth. The thesis is also relevant to the growth of MICs inside the euro area. However, price competitiveness due to an undervalued national currency is not an option available to the MICs of the euro area. In this regard, their growth potential is handicapped and they have to look for surrogate measures such as, for example, an internal surrogate devaluation. The growth effectiveness of a surrogate devaluation lags behind an ordinary currency devaluation.

The growth characteristics of the new EU member countries prior to joining the EMU were extensive employment, high investment activity and strong export growth. Such growth was demand-driven. For MICs of the euro area the demand tends to be depressed and therefore these countries are deprived of a demand driver of growth.

3. EXCESSIVE MACROECONOMIC INSTABILITY AT THE NATIONAL LEVEL

A macroeconomic model for an individual member country in the euro area (EA) is not a closed system (Senjur, 2010). Monetary policy, the nominal interest rate, the benchmark inflation rate, and the exchange rate are determined outside a national economic system. This has important macroeconomic repercussions (Beetsma and Giuliodori, 2010; Feldstein, 2012). Movements of national monetary aggregates (like credit growth, saving, investment, public debt) are based on exogenous, and therefore ‘wrong’, prices, and therefore may be erratic and erroneous. Stability is not built into the model at the national level.

3.1. Volatility of the real economy and rigidity of macro-relevant prices

The euro architecture is such that nominal macroeconomic prices like interest rates, inflation rates and the exchange rate are determined at the euro level. The problem is that, as such, they may not be related to the different real economy situations at the national level. On the other hand, the Keynesian conditions of imperfect competition in national labour and product markets cause rigid wages and prices. All macro-relevant nominal prices are exogenous or rigid.

Equilibrium in terms of aggregate supply (AS) and aggregate demand (AD):

$$Y^{AS}[P(P^*,w)] = Y^{AD}(P,i;X). \quad (3.1)$$

P is the level of prices, P^* is the price level in the EA, w is the real wage, and i is the real interest rate. The price level on the supply side is determined by the price level at the EA (due to the law of one price in the European single market) and the national unit labour cost. Aggregate demand depends on the price level and the interest rate (i), according to given exports (X). Because the quantity of money and interest rate are determined exogenously from the point of view of a small national economy, the level of prices cannot function as an equilibrating instrument of AS and AD. Wages is the only available variable that may bring AS into equilibrium with AD, yet even wages tend to be rigid.

Due to the fact that nominal variables are stable (determined at the euro level) or rigid, adverse economic conditions will trigger greater fluctuations in employment and output because the economy cannot adapt by adjusting nominal variables. In this situation, it may happen that the fluctuation of real variables (output and unemployment) at the national level may be great. The instability of variables of the real economy may be a problem in a system of a *one-size-fits-all* monetary policy.

It would be of interest to compare the performances of countries with different macroeconomic conditions during the recession. One could compare three groups of EU member countries: euro member countries with a high income (HICs), small euro countries with a middle income, and middle-income countries with their own national currency.

Table 2: *Differential growth rates of Gross domestic output, volume (percentage change on preceding year, 2004–2012)*

	2004–08	2009	2010–12
EA-17 (g*)	2.1	-4.5	0.9
Differential growth: g-g*			
Germany	-0.1	-0.6	+1.8
EA-3			
Greece	+1.0	+1.4	-7.0
Portugal	-0.9	+1.6	-1.8
Slovenia	+2.8	-3.4	-1.1
EU-3			
Czech R.	+3.4	0.0	+0.2
Hungary	+0.6	-2.3	+0.6
Poland	+3.3	+6.1	+3.5

Source: European Commission, European Economic Forecast, Autumn 2013, European Economy, No. 7/2013. Note: g* is benchmark growth rate, e.g. growth rate of the GDP of EA-17, g is growth rate of an individual country, g-g* is differential growth rate as a difference between country growth rate and benchmark growth rate. Yearly averages are calculated over the period.

Data in Table 2 indicate that there are asymmetric effects of recession on different groups of the EU member countries. The recession of 2009–2012 hit the EA-3 economies more than the average in the euro area. This may be an indication of the excessive fluctuation of real economic variables in MICs. The data also indicate that the EU-3 member countries with their own national currencies seem to have better survived the recession. It is possible to assert that the EA-3 euro countries were more exposed to fluctuations of real economic variables during the recession as HICs of euro area and as non-euro MICs of EU. This is one of the most important thesis raised by recent economic events in the last decade.

3.2. Financial instability: Saving investment gap

In a simple macroeconomic model, the national macroeconomic equilibrium is determined by an equality of investment (I) and savings (S):

$$I(i, Y^e) = S(Y, i) \quad (3.2)$$

Y^e is the expected income. The instrument of equilibrating macroeconomic categories I and S is the interest rate, i . Because the interest rate is determined at the level of the euro area, such an interest rate does not equilibrate investment and saving at the national level of MICs. Disequilibrium at the national level of EMU member states is a consequence (see Table 3).

Table 3: *Total investment and export of goods and services, volume (percentage change on preceding year, 2004–2012)*

	Investment			Export		
	2004–08	2009	2010–12	2004–08	2009	2010–12
EA-17	2.9	-12.8	-1.0	5.9	-12.4	6.8
Germany	2.9	-11.7	3.5	8.4	-13.0	8.1
Greece	2.6	-13.7	-17.9	6.4	-19.4	1.0
Portugal	0.1	-8.6	-9.3	4.6	-10.9	6.8
Slovenia	7.7	-23.8	-9.7	10.6	-16.1	5.9
Czech R.	6.4	-11.0	-1.0	10.8	-10.9	9.7
Hungary	3.1	-11.1	-6.0	13.1	-10.2	7.1
Poland	10.9	-1.2	2.1	10.5	-6.8	7.9

Source: European Commission, European Economic Forecast, Autumn 2013, European Economy, No. 7/2013. Yearly averages over the period.

The common monetary policy is a policy of a low interest rate for a catching-up country. After adopting the euro, a catching-up country faced a low interest rate monetary policy. A lending-based expansion (2004–2008) based on overly bullish expectations about future income eventually became unsustainable during a recession (2008–2012). Investment crushed. A credit boom turned into a credit crunch.

3.3. External disequilibrium: Foreign indebtedness

The saving investment gap may lead to a foreign exchange gap ($X - M$) reflected in a current account deficit of the balance of payments. External stability is determined by the balance-of-payments equation:

$$BP = NX(Y, Y^*, E) + CF(i - i^*). \quad (3.3)$$

BP is the balance of payments, while $NX = X - M$ is net exports which depend on domestic income (Y), foreign income (Y^*), and the real exchange rate (E). The real exchange rate determines the price competitiveness of exports: $E = (eP/P^*)$, e is the nominal exchange rate, E is the real exchange rate, P is the national price level, and P^* is the foreign price level. CF is the capital flow which is determined by the difference between the domestic and foreign interest rate. Interest rate differential $i - i^*$ is determined exogenously and therefore CF is exogenously given. There is full mobility of capital inside the EMU. The flows of loans are demand-driven. They respond to needs to finance the trade deficits of individual EMU member countries.

For small MICs the prevailing exchange rate and interest rate in the euro area are improper for national conditions. The nominal exchange rate is overvalued, which tends to cause a deficit in current accounts (Table 4). The equilibrium interest rate is too low, which leads to indebtedness. The combination of an overvalued exchange rate and a low interest rate is deadly.

Table 4: *Current account balance (% of GDP, 2004–2012)*

	2004–08	2009–12
EA-17	0.3	0.5
Germany	6.0	6.5
EA-3		
Greece	-14.1	-11.1
Portugal	-10.4	-7.6
Slovenia	-3.5	0.7
EU-3		
Czech R.	-3.4	-3.6
Hungary	-7.9	0.5
Poland	-4.0	-3.8

Source: European Commission, European Economic Forecast, Autumn 2013, European Economy, No. 7/2013. Yearly averages over the period.

A deficit in the current account is financed by debt due to a low interest rate and the full mobility of capital. In a time of expansion (2004–2008) capital flows from core to periphery countries. The business economy tends to be highly leveraged, facilitated by domestic banks that could obtain cheap funds in euro financial markets. The excessive foreign indebtedness of firms and banks may be a consequence. The growth of credits reflected the demand for loans with a virtually unlimited supply of loans. This had expansionary macro-economic effects.⁴ The recession of 2009–2012 has changed the direction of capital flows; they are running out of periphery countries.

3.4. Sovereign debt crisis

There were tendencies towards great commercial indebtedness and public debt, which is intermediated by the banks. For a country inside the euro area, the problems of private business indebtedness may transform through a banking crisis into a budget deficit and public debt. A sovereign debt issue may arise (Table 5). Some governments of periphery countries tended to increase public debt, which in the initial stages is also cheap (e.g. Greece). They financed public debt through domestic banks, which again received funds through European euro markets. There is therefore a combination of high indebtedness of the business economy and high sovereign debt. Some other countries were pushed into an excessive budget deficit by a sudden and exogenously caused recession (e.g. Slovenia).

⁴ Data on Slovenia show a rapid increase in gross foreign debt since the country joined the EU and especially since joining the EMU. It should be noted that private debt has contributed the most to the total foreign debt.

Table 5: *Net lending (+) or net borrowing (-), and gross debt, general government (as % of GDP, 2004–2012)*

	Net lending		Gross debt	
	2004–08	2009–12	2004–08	2010–12
EA-17	-1.9	-5.1	69	89
Germany	-1.7	-2.0	67	81
EA-3				
Greece	-7.0	-11.2	108	158
Portugal	-4.4	-7.7	68	109
Slovenia	-1.4	-5.6	25	47
EU-3				
Czech R.	-2.3	-4.5	28	42
Hungary	-6.5	-1.7	65	81
Poland	-3.7	-6.1	47	56

Source: European Commission, European Economic Forecast, Autumn 2013, European Economy, No. 7/2013. Yearly averages over the period.

The 2009–2012 recession highlighted the problem of business and bank indebtedness on one hand and sovereign debt on the other hand in some countries in the EMU. There is one additional point to be made. The recession exposed the role of the state as an owner/lender of last resort. In the final instance, the state becomes responsible for the debts of the banks.

3.5. An aggravated and protracted recession

During the recession the banks were confronted with an enormous amount of non-performing loans. They needed restructuring or to be faced with bankruptcy. Since as financial infrastructure banks are too important to fail (too big to fail), the state has provided public resources to rescue them. The euro area periphery countries had to borrow by themselves. Because they were unable to borrow inside the EMU, they were forced to turn to capital markets (Higgins and Klitgaard, 2012). Capital markets sensed the weakness of these sovereign borrowers and charged them high country risk premiums. In this way the sovereign debt of the euro area periphery countries became an issue.

Table 6: *EMU convergence criterion – annual data*

	2002	2007	2009	2011	2012
EA-17	4.91	4.32	3.82	4.41	3.88
Germany	4.78	4.22	3.22	2.61	1.50
EA-3					
Greece	5.12	4.50	5.17	15.75	22.50
Portugal	5.01	4.42	4.21	10.24	10.55
Slovenia	8.72	4.53	4.38	4.97	5.81
EU-3					
Czech R.	4.88	4.30	4.84	3.71	2.78
Hungary	7.09	6.74	9.12	7.64	7.89
Poland	7.36	5.48	6.12	5.96	5.00

Source: Eurostat-Tables. Short description: long-term interest rates (central government bond yields in secondary markets, with around 10 years of residual).

The recession introduced something new to the uniform interest rate. Commercial risks and sovereign debt risks caused significant country-specific risk premiums on the interest rate. Despite one formal nominal benchmark interest rate that is determined by the ECB, the individual countries have had to face interest rate differentials ($i - i^{ea}$) due to the national risk premiums. As a result, a country encounters a country-specific interest rate. Inside the EMU interest rates vary by countries. Periphery countries face a high interest rate and the core countries a low one (Table 6). This situation aggravates the recession in the periphery countries.

The flow of capital changes direction. Prior to the recession, it moved from the core to the periphery, while during the recession it flowed from periphery to core countries. One may hypothesise that prior to the recession (up to 2008) and during the recession, the EMU macroeconomic conditions worked pro-cyclically or in a pro-recessionary way in the periphery countries. The recession is therefore excessive on one side and protracted on the other. Capital flows were pro-cyclical and aggravated the cyclicity of the economies in question. The macroeconomic system of the euro is not comprehensive and is unstable. It needs exogenous administrative regulation in order to complete and correct it. However, here we are not interested in what should be done on the euro level to correct the deficiencies of the euro system's architecture (De Grauw, 2011; Schambaugh, 2012).

4. PRICE COMPETITIVENESS AND INTERNAL DEVALUATION

Competitiveness has many aspects (Porter, 1990). There is location competitiveness, product competitiveness and price competitiveness, among others. I shall limit my discussion to price competitiveness. For the euro member countries, a discussion on price competitiveness may be divided into external (with non-euro countries) and internal (within euro area) price competitiveness.

4.1. External price competitiveness

The external price competitiveness is determined by the nominal exchange rate (e) and comparative price level (P/P^*). The real exchange rate expressed as $E = (e)(P/P^*)$ may be named the external real exchange rate (*RER*). An increase in RER means an external real appreciation and reduces the price competitiveness of exports. National goods are more expensive in terms of foreign currency. Depreciation increases price competitiveness. External price competitiveness could be increased by reducing the nominal exchange rate or by decreasing the level of domestic prices relative to foreign prices.

The nominal exchange rate of the euro, e , is determined for the entire euro area and should reflect the balance of payments position for the entire euro area. Due to differences in national GDP per capita and productivity, the common exchange rate puts different countries in varying external competitive positions. Such an average exchange rate of the euro would boost the export competitiveness of some countries (e.g., high-income core countries), and erode the export competitiveness of some others (e.g., below-average-income periphery countries). The exchange rate of the euro is overvalued from the point of view of small middle-income countries.

Table 7 : *Real effective exchange rate, index (2005 = 100)*

	1999–03	2004–08	2009–11
EU-27	84	104	100
Germany	101	98	96
EA-3			
Greece	92	99	101
Portugal	92	99	97
Slovenia	98	101	109
EU-3			
Czech R.	82	106	118
Hungary	81	101	94
Poland	107	103	100

Source: Eurostat - Tables. Note: The real effective exchange rate (REER) aims to assess a country's price or cost competitiveness relative to its principal competitors in international markets (a panel of 36 countries: EU-27 + 9 other industrialised countries). The specific REER is deflated by nominal unit labour costs. A rise in the index means a loss of competitiveness. The nominal exchange rate is the national exchange rate against the euro. Note: yearly averages over the periods.

The effective real exchange rate of small MICs (EA-3) grows faster than the average of the EU and of Germany as a benchmark country (Table 7). These countries are losing their initial competitiveness.⁵ Three EU countries (EU-3) used the exchange rate as a policy instrument during the recession. At the start of the recession in 2009 they devalued their national currencies against the euro by around 11 percent on average (Table 8).

⁵ Up to 2006, Slovenia kept its REER virtually unchanged with an active policy of nominal national currency devaluations. After joining the euro in 2007, the Slovenian REER appreciated by nine percentage points in just four years.

Table 8. *Exchange rate against the euro (1 EUR = ... units of national currency), selected EU countries (index 2008=100)*

	2008	2009	2010	2011
Czech koruna (CZ)	100	106	103	98
Hungarian forint (HU)	100	111	110	111
Polish zloty (PL)	100	123	114	117
US dollar (USA)	100	95	90	95

Source: Eurostat

In external international trade, small middle-income countries would need to take compensatory measures to restore their export competitiveness, which is reduced due to the overvalued exchange rate of the euro. The lower comparative price levels (P/P^*) prevent these countries from being uncompetitive despite a high nominal exchange rate. Lower comparative price levels (CPLs) reduce the real exchange rate, which increases the external competitiveness of these countries. In the time of the recession (2009–2012), the EU-3 non-euro-countries outperformed the EA-3 euro-countries in terms of export growth (Table 3).

4.2. Internal price competitiveness

For trade inside the euro area, one may refer to the internal *RER* where the nominal exchange rate (e) is fixed or equal to one. The internal real exchange rate depends on comparative price levels (CPLs), which are related to the national price level with the euro area average price level: $CPL = P/P^{ea}$. One may call a change in the internal *RER* an internal depreciation and/or appreciation, which is due to an inflation differential ($\pi - \pi^{ea}$). If domestic inflation is higher than the average in the euro area, there will be internal appreciation; that is, lower export competitiveness inside the euro area. One may refer here to internal price competitiveness.

In trade among countries inside the same currency area (e.g. the EMU) the competitiveness of products which are being exported is determined by absolute cost. The MICs tend to face an absolute disadvantage in trade among countries inside the euro area due to their lower productivity. The disadvantage of lower productivity could be compensated by a lower comparative level of prices. In internal international trade (inside the EA), lower comparative price levels are a dominant factor of the internal competitiveness of small MICs by the given lower comparative productivity of these countries in comparison to high-income countries.⁶

⁶ For illustration purposes I present the case of Slovenia. The Slovenian data (period 2010–12) show that the figures for the total current account are not bad. It could be claimed that the overall exchange rate of the euro was not so bad for Slovenian foreign trade when taking the lower comparative price level in Slovenia into account. Slovenia has a huge current account (CA) surplus in trade with non-EMU countries. However, the current account of internal trade inside the euro area was much worse. There is a CA deficit in trade with EMU countries. As far as the total current account is concerned, there may have been some kind of trade-off between external and internal competitiveness. External competitiveness has compensated for some of

4.3. Decreasing price competitiveness due to the convergence of comparative price levels

The middle-income countries joined the euro area with lower comparative price levels. They enjoyed an initial price competitive advantage in the euro-area markets due to the lower comparative price levels (Table 9). This enabled their faster growth of exports and therefore their faster rate of output growth. The initial price level and cost conditions enabled the middle-income countries to catch up as long as such competitive conditions prevailed.

Table 9: *Comparative price levels (of final consumption, EU-27=100, period 1999-2012)*

	1999–03	2004–08	2010–12
EA-17	101	102	104
Germany	107	103	101
EA-3			
Greece	84	89	91
Portugal	84	86	85
Slovenia	74	78	84
EU-3			
Czech R.	51	63	69
Hungary	53	64	56
Poland	58	62	55

Source: Eurostat-Tables. Note: yearly averages over the periods.

There are two factors of the internal price competitiveness of exports inside the eurozone: the initial comparative price level ($CPL = P/P^{ea}$), and inflation differentials ($\pi - \pi^{ea}$), which cause an internal appreciation or depreciation. A change in CPL is determined by inflation differentials: $g_{CPL} = \pi - \pi^{ea}$. If domestic inflation (π) is higher than the average inflation in the eurozone (π^{ea}) the comparative price level will grow. This reflects internal appreciation and a reduction of the price competitiveness of exports (Tables 9 and 10).

the deficiency of internal competitiveness. After adopting the euro Slovenia did not have an exchange rate shelter for its lower productivity and higher cost in the internal (euro area) market. Without an exchange rate shelter, after joining the EMU it was not competitive in trade with EMU countries, although the lower initial comparative price level gave Slovenia a certain competitive edge (see Table 9). Slovenia's problem up till this point is its internal competitiveness.

Table 10: *Differential inflation rate based on Harmonised index of consumer prices (% change on previous year, 2004–2012)*

	2004–08	2009–12
EA-17, π^*	2.4	1.8
Differential inflation, $\pi - \pi^*$		
Germany	-0.3	-0.3
EA-3		
Greece	1.0	0.7
Portugal	0.2	-0.1
Slovenia	1.2	0.2
EU-3		
Czech R.	0.7	0.1
Hungary	3.2	2.8
Poland	0.4	1.8

Source: European Commission, European Economic Forecast, Autumn 2013, European Economy, No. 7/2013. Note: yearly averages over the periods.

The single market induces higher inflation for countries with a lower CPL due to the law of one price and due to the Balassa effect.

The first effect is the impact of the law of one price that works inside the euro area. Although there are inherent and non-inherent market imperfections of the single market, one can maintain that there is a convergence of national price levels due to the operation of the law of one price (LOP) (Senjur, 2010). The second effect is the so-called Balassa effect. As small MICs catch up in income level, their price levels are also gradually catching up due to the Balassa effect (Balassa, 1964).⁷ The inflation rate therefore depends on the comparative price level gap $[\pi = a - \beta (P_i^i/P_0^{ea})]$ and income gap $[P_i^i/P^{ea} = b(y^i/y^{ea})]$. The lower the initial national price level and the lower the initial income level in comparison to the average, the higher the growth rate of prices. This means that there is a convergence of national price levels (Table 9). Empirical results (Senjur, 2010) have shown that there is a statistically strong and highly significant convergence of comparative price levels of the new EU member states with the average of the EU-27: The lower the initial CPL, the larger the increase in the CPL.⁸

The single market within the euro area melts the abovementioned price advantages of middle-income countries away. The MICs will eventually lose the advantage of their lower CPLs.

⁷ Higher relative growth of prices of non-tradables due to differential growth of productivity in the tradable and non-tradable sectors.

⁸ Strong convergence in price levels in the eurozone is also reported by Estrada, Gali and Lopez-Salido (2012).

4.4. Internal (surrogate) devaluation

The productivity of MICs inside the EMU is below average because these countries are under-average developed (Table 1). Due to this fact of under-average development their cost of production are over-average. The MICs are un-competitive, as far as productivity is concerned. They may compensate their un-competitiveness due to lower average productivity by lower comparative level of prices (Table 9). This enables them certain price competitiveness on the markets of the EMU. However, due to European single market, and Balassa effect, there is a tendency toward convergence of comparative price levels. The initial price competitiveness of the MICs is therefore melting away.

To counteract the tendency of relative price-level increases national governments may pursue policies of price deflation and competitive disinflation. Some of these policies are policies of so-called 'internal devaluation'. Two main factors keep prices low in order to sustain the price competitiveness of export growth: the lowering of unit labour costs, and fiscal devaluation. We could describe these measures as internal surrogate devaluations.⁹

4.4.1. Unit labour costs

1) Competitive wage devaluation to reduce comparative ULC. A middle-income country initially has lower wages in comparison to its productivity, meaning it has an initial labour cost advantage. However, the operation of the single market in the EMU tends to undermine this initial cost advantage. Ramskogler (2012) investigated wage and unit labour cost developments in EMU member states in recent decades (1992–2005) for two groups of countries: core and periphery. He found for most countries of the periphery the interdependence and convergence of the nominal wage. At the same time, he found a divergence of nominal unit labour costs (NULC).¹⁰ His conclusion was that competitiveness within the EMU diverged substantially. A similar conclusion can be derived from the article by Estrada, Gali and Lopez-Salido (2012) which finds that productivity has not converged appreciably across euro area countries, and that there is some evidence of convergence in nominal wages.

The economic policy of the MICs may counteract such tendencies with a deliberate policy of maintaining sustainable price competitiveness by keeping wages low in order to keep unit labour costs low. This would hopefully enable faster exports and output growth.

⁹ Such measures are actually surrogate devaluations because they try to compensate for the effects of the lacking currency devaluation.

¹⁰ Unit labour cost data show how the remuneration of employees is related to the productivity of their labour. Eurostat gives following definitions. Nominal unit labour costs (NULC): (compensation of employees at current prices / no. of employees) / (GDP in volume / no. of persons employed). Real unit labour cost (RULC): (compensation of employees at current prices / no. of employees) / (GDP at current prices / no. of persons employed).

Wage devaluation. Assume that prices are determined by mark-up ($1 + m = A$) and unit labour cost (w/q), where w is the real wage rate per worker and q is the productivity or output per worker [$P = A^a (w/g)^\beta$]. Domestic inflation is determined by the growth of other factors (g_A) and the difference between the growth of wages and productivity per worker or growth of unit labour costs (g_{UCL}):

$$\pi = \alpha g_A + \beta(g_w - g_q) \quad (4.1)$$

By assuming that the mark-up and other costs are constant ($g_A = 0$), the inflation rate π depends on growth of the unit labour cost ($g_w - g_q$).

Table 11: *Labour productivity¹⁾, real compensation per employees per head and real unit labour costs (% change on preceding year, 2004–2012)*

	Labour productivity		Real wages per worker		Unit labour cost	
	2004–08	2010–12	2004–08	2010–12	2004–08	2010–12
EA-17	1.0	1.4	0.3	0.1	-0.4	-0.4
Germany	1.2	1.7	-0.5	0.8	-1.3	-0.2
EA-3						
Greece	1.1	-0.6	0.1	-6.0	-0.8	-3.2
Portugal	1.1	1.6	0.4	-1.9	-0.4	-2.0
Slovenia	3.4	1.4	3.0	-0.1	-0.1	0.0
EU-3						
Czech R.	3.9	1.3	2.9	1.6	-0.2	1.6
Hungary	3.1	-0.1	2.1	-3.0	-0.5	-1.3
Poland	2.4	2.9	1.2	0.8	-1.6	-0.7

Source: European Commission, European Economic Forecast, Autumn 2013, European Economy, No. 7/2013. Note: 1) labour productivity: real GDP per occupied person). Yearly averages over the periods.

Since it is necessary to compare inflation rates in the euro area, one must compare unit labour costs (ULCs) in the euro area. Differential inflation ($\pi - \pi^{ea}$) may be expressed as a function of comparative unit labour costs ($CULC = ULC^i / ULC^{ea}$). If the unit labour cost of middle-income countries grows faster than the average for the euro area, inflation will surpass the average and a country will lose in the price competitiveness of its exports to the euro area (Tables 10 and 11). Blanchard (2007) reports on such problems in the case of Portugal.

2) Higher rate of unemployment. One way to keep inflation (and wages) down is through higher unemployment. One could point to the concept of the NAIRU (non-accelerating inflation rate of unemployment) or the natural rate of unemployment. However, for our analysis a relevant concept of natural unemployment may not be NAIRU but the non-differential inflation rate of unemployment (NDIRU); that is, an unemployment rate that keeps the national inflation rate at the level of the average euro area inflation rate (Senjur, 2010).

$$\pi - \pi^{ea} = B, -b, (u - u^{**}) \quad (4.2)$$

where u is the unemployment rate, u^{**} is the NDIRU, and b_2 is a parameter. Keeping the national inflation rate below the average of the euro area may require quite a high unemployment rate.

Table 12: *Unemployment rate and differential unemployment rate (%), 2004–2012*

	Unemployment rate (u)		Differential unemployment rate (u-u*)	
	2004–08	2010–12	2004–08	2010–12
EA-17 (u*)	8.4	10.5	0.0	0.0
Germany	9.7	6.2	1.3	-4.3
EA-3				
Greece	9.1	18.2	0.7	7.7
Portugal	8.4	13.6	0.0	3.1
Slovenia	5.6	8.1	-2.8	-2.4
EU-3				
Czech R.	6.6	7.0	-1.6	-3.5
Hungary	7.2	11.0	-1.2	0.5
Poland	13.5	9.8	5.1	-0.7

Source: European Commission, European Economic Forecast, Autumn 2013, European Economy, No. 7/2013. Note: yearly averages over the periods.

The other reason for higher unemployment is due to the need to reduce employment to increase productivity. A consequence of such a measure is higher unemployment and the greater inactivity of the population.

Table 12 indicates there may be some truth in the contention that small middle-income countries need a higher unemployment rate in order to maintain the competitiveness of their economies. One could point to the sacrifice ratio, that is the amount of excess unemployment to achieve disinflation in order to maintain internal competitiveness. Higher unemployment may be the cost of sustaining the price competitiveness of exports. Estrada, Gali and Lopez-Salido (2012) report that “the first nine years of EMU were associated with strong convergence in unemployment rate across euro area countries. That process was interrupted and largely reversed by the financial crisis”.

4.4.2. *Competitive fiscal devaluation*

Jay S. Shambaugh (2012) differentiates between internal devaluation (lowering relative prices and wages) and fiscal devaluation. Fiscal devaluation has two components. One concerns unit public costs, represented by the relation between public expenditures and output. The other concerns such a structure of taxes that improves/reduces the relative prices of exports in comparison to imports (effective terms of trade).

A change in relative prices can be achieved through taxes. Government can reduce taxes on labour and at the same time increase taxes on consumption (Shambaugh, 2012; Farhi, Gopinath and Itskhoki, 2011; De Mooij and Keen, 2012). Consider a balanced budget shift

from payroll taxes to VAT (Blanchard 2007). Exporting firms pay less in payroll taxes, and are subject to the foreign, unchanged VAT rate. Firms selling to the domestic market will pay less in payroll taxes, but pay more in VAT. Such a shift will therefore achieve higher competitiveness: while the exporting firm will benefit, the importing firms will lose out. Empirical evidence suggests that in the eurozone countries may improve their trade balance in the short run, although the effects eventually disappear (De Mooij and Keen, 2012). However, such measures are a form of tax competition, and other countries may respond in a similar manner.

One would assume that a lower tax burden and a lower comparative unit public cost¹¹ would enable a lower input cost for tradables and therefore enhance the price competitiveness of exports (Table 13).

Table 13: *Total expenditure, general government (% of GDP, 2004–2012)*

	2004–08	2010–12
EA-17	46.9	50.1
Germany	45.4	45.9
EA-3		
Greece	46.5	52.3
Portugal	45.2	49.3
Slovenia	44.5	49.1
EU-3		
Czech R.	42.1	43.8
Hungary	50.3	49.5
Poland	43.1	43.7

Source: European Commission, European Economic Forecast, Autumn 2013, European Economy, No. 7/2013. Note: yearly averages over the periods.

Due to the lower level of prices of non-traded goods in an international comparison, the overall price level in a low-income country is lower. The original Balassa effect (Balassa, 1964) is based on comparatively cheap non-tradable goods in low-income countries. This fact is reflected in lower wages and eventually in higher international price competitiveness. There is a similar effect in middle-income countries.¹²

5. A GROWTH SLOWDOWN: THE CRUEL REALITY?

Small MICs in the euro area face the issues of excessive and asymmetrical macroeconomic instability along with weakening export competitiveness which require measures of price deflation and internal surrogate devaluations. How does all of this affect the growth potential and growth performance of these countries?

¹¹ General government expenditures divided by GDP.

¹² This argument could be turned around. If non-tradables are more efficient, this is reflected in higher productivity and reduces the input cost of production of tradables and therefore increases international competitiveness. Another source of competitiveness may be in the efficiency of non-tradables.

5.1. Depressed demand

It is possible to state the thesis (Senjur, 2012) that the growth of output depends on the growth of exports and that therefore the output growth differentials ($g_Y - g_Y^{ea}$) of a country are negatively related to the inflation differentials ($\pi - \pi^{ea}$):

$$(g_Y - g_Y^{ea}) = B - b(\pi - \pi^{ea}). \quad (5.6)$$

A country with a below-average inflation rate would have above-average output growth, keeping other things unchanged. An above-average growth rate of output requires a below-average rate of inflation, *ceteris paribus*.

Due to the depressed demand a competitive growth of small euro-member MICs cannot be export- and demand-driven. Internal devaluation policies may have some negative effect on economic growth. Keeping inflation down requires depressed demand. Competitive growth cannot be demand-driven because policies of internal devaluations of wages and prices of non-tradable goods depress the internal demand. These are substantial growth disadvantages. The MICs inside the euro area may miss the phase of accelerated growth driven by demand, exports and an undervalued exchange rate. They are therefore in a disadvantageous position compared to other countries as far as this growth factor is concerned.

5.2. A distorted economic structure due to internal devaluation

Rodrik (2008 and 2012) shows there is a systematic association between a currency undervaluation and economic growth. This relation seems to work through the positive effect of an undervaluation on industrialisation which is driven by tradables. At the same time, it is known (Rodrik, 2008; Eichengreen, Park and Shin, 2013) that this result holds for developing countries, and that growth and undervaluation exhibit an inverse-U shape as per capita income grows. An undervalued real exchange rate provides less of an incentive to move up the technology ladder away from unskilled-labour-intensive sectors.¹³

Small MICs in the euro area do not have the option of a currency devaluation at their disposal. Instead, they may use measures of internal surrogate devaluations. On one side, in the medium term such policies may promote exports and therefore economic growth as well. On the other, such a policy may hinder the growth potential in the long run. Such policies may have negative side effects. The internal surrogate devaluation of wages and unit public cost implies pushing the economy to specialise in the economic structure of a low-wage and low-tax economy. This may mean that such an economy could become stuck in low-tech production, and that future productivity growth may be hampered.

¹³ It is interesting to note that some important determinants of growth accelerations (Huasmann, et al., 2005) eventually become determinants of growth slowdowns, e.g. a high investment rate and an undervalued real exchange rate. An investment rate that is too high may not be sustainable, and an undervalued exchange rate may hinder the transition to a higher stage of economic growth (Eichengreen et al., 2012).

5.3. Instability of real economic categories reduces the potential growth rate

Macroeconomic imbalances are short- and medium-term issues in economics. Yet they also have a long-run effect on potential output and economic growth. A credit crunch, fiscal austerity and the hysteresis effect of recession tend to slow growth down. Greater instability of real variables may damage the existence of firms and eventually undermine the production and growth capabilities of the country. Anti-recession policies on the national level of small MICs are required because recessions have a hysteresis effect through which shortfalls in output affect the economy's future potential output. Mitigating protracted output losses therefore raises potential future output (DeLong and Summers, 2012). Because the macroeconomic environment of the EMU for national economies of small MICs may not be a stable environment, national preventive institutions and measures should be foreseen in order to strengthen the resilience of a national economy against asymmetric shocks from abroad (Aiginger, 2009; Wren-Lewis, 2010).

5.4. Growth slowdown ?

The thesis of this article is that the convergence of middle-income countries may hold up to a certain distance toward the average of developed countries. After reaching this income plateau, the countries in question have to change their growth strategy to endogenous growth. If they succeed they may join the group of developed countries. It is up to the individual case (i.e., country) whether it would converge further, stay put, or diverge. On the other hand, demand- or export-driven growth is predominantly exogenous growth. All exogenous growth factors have diminishing returns and therefore face a diminishing catch-up effect. If small MICs want to make the transition from predominantly exogenous growth to predominantly endogenous growth, they may have problems with the extensive use of policies of imposed internal devaluations.

The assumption of the EU architecture is that the convergence thesis holds, even though there may be some imperfections in how it works in practice. To deal with such imperfections, the Cohesion Policy was established in order to compensate for any negative consequences of the single market on the growth of middle-income countries. At the national level, a national fiscal policy should be applied to facilitate national competitiveness and growth. Up until 2008 the wishful expectations about accelerated growth and convergence seemed to be justified. In 2007–2008 small MICs saw a peak in their growth performance (see Table 2). The economic crisis of 2009–2012 revealed the macroeconomic weaknesses of the EMU's institutional setting. Small MICs in the euro area are facing a slowdown in growth. Deflationary policies as well as policies of the internal devaluation of wages and fiscal devaluation tend to imply depressed demand. This tends to slow growth down.

The result may be a relative growth slowdown, instead of growth acceleration (Hausmann, Pritchett and Rodrik, 2005). Such countries may get caught in a middle-income

trap even before they have reached the upper middle-income plateau. This is a topic of the growth slowdown and middle-income trap that Eichengreen et al. (2013) refer to.

Feldstein (2011) claims that some of the countries which adopted the euro would have lower unemployment, a more competitive international position, and better prospects for the future if they had never been part of the European Monetary Union. Such a claim cannot be rejected outright. Some data presented in this article show that EU member countries which still have their own national currencies did better in the recession than EMU member countries on a similar level of development. There are obvious advantages and disadvantages of small MICs having a common currency. The point of this article is that the possible disadvantages should be identified and dealt with. Feldstein believes that one possible alternative for some countries, e.g. Greece, is to leave the eurozone and return to their own currency. This is an extreme solution. I do not have such a solution in my mind. I would look for a solution inside the EMU. The question is how to overcome these disadvantages with measures on the national level and with measures on the euro level. This was not the issue of this article. The aim of the article was to build awareness of the difficulties some member countries are facing inside the euro area.

6. CONCLUSIONS

Small middle-income countries inside the euro area are encountering the problem of a possible growth slowdown. Their excessive instability reduces their potential growth rate. Imposed internal surrogate devaluations to increase price competitiveness may direct the structure of such economies into specialising in low-wage, low-tax and low-tech industries, which may hamper their growth potential. Deflationary policies to keep price levels low require depressed aggregate demand which keeps actual growth below the potential growth in the medium term. While an acceleration of growth may be a wishful expectation, a slowdown in growth may be the cruel reality.

These problems could seriously reduce the opportunities and capabilities of small MICs for competitive (i.e., above-average) growth in the euro area in the medium and long run. National economic policies of stabilisation and growth should respond to these challenges. The large high-income countries should recognise the macroeconomic problems of small MICs and allow them to build tailor-made institutions and measures to deal with the problems of the asymmetric effects of the EMU on them. The 'one-size-fits-all' system should be relaxed to some degree. The institutional architecture of the single market and the euro system should be made more flexible (De Grauwe, 2011). Although, there may be a question of whether there should be less or more of a role for nation-states in money and finance (Sapir, 2011), the role of the nation-state should not be undermined.

REFERENCES:

- Acemoglu, D., Robinson, J.R. & Verdier, T. (2012). Can't we all be more like Scandinavians? Asymmetric growth and institutions in an interdependent world. *NBER Working Papers*, No. 18441 (Oct.).
- Aiginger, K. (2009). Strengthening the resilience of an economy. *Intereconomics*, 44 (5), 309–316.
- Balassa, B. (1964). The purchasing-power parity doctrine: A reappraisal. *Journal of Political Economy*, 72 (6), 584–596.
- Barro, R. & Sala-i-Martin, X. (1992). Convergence. *Journal of Political Economy*, 100 (2), 223–251.
- Blanchard, O. (2007). Adjustment within the euro: The difficult case of Portugal. *Portuguese Economic Journal*, 6 (1), 1–21.
- De Grauwe, P. (2011). The governance of a fragile Eurozone. *CESifo Forum*, 2, 40–45.
- De Long, J.B. & Summers, L.H. (2012). Fiscal policy in a depressed economy. *Brookings Papers on Economic Activity*, (Mar. 2012).
- De Mooij, R. & Keen, M. (2012). Fiscal devaluation and fiscal consolidation: the VAT in troubled times. *NBER Working Papers*, No. 17913 (Mar.).
- Eichengreen, B., Park, D. & Shin, K. (2012). When fast growing economies slow down: international evidence and implications for China. *NBER Working Papers*, No. 16919 (Mar.).
- Eichengreen, B., Park, D. & Shin, K. (2013). Growth slowdowns redux: new evidence of the middle-income trap. *NBER Working Papers series*, No. 18673 (Jan.).
- Estrada, A., Gali, J. & Lopez-Salido, D. (2012). Pattern of convergence and divergence in the Euro area. Paper presented at the 13th Jacques Polak Annual Research Conference, hosted by the IMF, Washington, DC, November 2012.
- Farhi, E., Gopinath, G. & Itskhoki, O. (2011). Fiscal devaluations. *NBER Working Papers*, No. 17662 (Dec.).
- Feldstein, M.S. (2011). The euro and European economic conditions. *NBER Working Papers*, No. 17617 (Nov.).
- Hausmann, R., Pritchett, L. & Rodrik, D. (2005). Growth accelerations. *Journal of Economic Growth*, 10, 303–329.
- Higgins, M. & Klitgaard, T. (2012). Saving imbalances and the Euro area sovereign debt crisis. *Current Issues in Economics and Finance*, 17 (5), 1–11.
- Landmann, O. (2011). On the macroeconomics of the European divergence. *CESifo Forum*, 2, 19–25.
- Lucas, R. (2000). Some macroeconomics for the 21st century. *Journal of Economic Perspectives*, 14 (1), 159–168.
- Mankiw, G., Romer, D. & Weil, D. (1992). A contribution to empirics of economic growth. *Quarterly Journal of Economics*, 107 (2), 407–437.
- Porter, M. (1990). *The competitive advantages of nations*. New York: Free Press.
- Quah, D. (1996). Twin peaks: Growth and convergence in model of distribution dynamics. *Economic Journal*, 106, 1045–1055.

Ramskogler, P. (2012). Is there a European wage leader? Wage spillovers in the European Monetary Union. *Cambridge Journal of Economics*, 36 (4), 941–962.

Rodrik, D. (2008). The real exchange rate and economic growth. *Brookings Papers on Economic Activity*, Fall 2008 (Conference Draft).

Rodrik, D. (2011). The future of economic convergence. *NBER Working Papers*, No. 17400 (Sep.).

Sapir, A. (2011). Europe after crisis: less or more role for nation states in money and finance. *Oxford Review of Economic Policy*, 27 (4), 608–619.

Senjur, M. (2007). A development club and groupings in Europe, and growth strategies. *Comparative Economic Studies*, 49 (4), 660–682.

Senjur, M. (2010). Differential inflation, Philips curve, and price competitiveness in a new euro-member country. *Economic Change and Restructuring*, 43, 253–273.

Senjur, M. (2012). A competitive growth of a small middle-income country in the eurozone is far to be assured. *International Economics and Economic Policy*, 9 (3), 213–233.

Shambaugh, J.S. (2012). The euro's three crises. *Brookings Papers on Economic Activity*, (Mar. 2012).

Wren-Lewis, S. (2010). Macroeconomic policy in light of the credit crunch: the return of counter-cyclical fiscal policy?. *Oxford Review of Economic Policy*, 26 (1), 71–86.