Is the European Monetary Union Sustainable? The Role of Real Convergence

Helmut Wagner

Abstract The founders of the European Union and European Monetary Union foresaw or assumed that the monetary union would only be sustainable if there was a convergence of living standards across member countries, and that the endogenous convergence in living standards was only possible if there was sufficient institutional and structural convergence. However, their view that there may be a kind of endogenous institutional-structural convergence process within a monetary union with structurally heterogeneous member countries has not proved well founded. Convergence (in living standards as well as in institutional and structural development) seems possible only if this process is accompanied by *conditional* aid from those more developed member countries and with a strict surveillance of the implementation of these conditionalities. Without these preconditions, convergence in living standards across member countries in the European Monetary Union will occur only if higher debt ratios are accepted in the member countries. Over-indebtedness in some member countries, however, can lead to a sovereign debt crisis and create contagious effects on other, even further-developed, member countries. This has become apparent in the European Monetary Union during the past few years.

Keywords Convergence • European integration • Sovereign debt

1 Introduction

Real convergence is an original goal of the European integration process. A major goal of the European treaties in 1957 was to "strengthen the unity of [the] economies [of the member states] and to ensure their harmonious development by reducing the

H. Wagner (✉)
University of Hagen, Hagen, Germany
e-mail: Helmut.Wagner@fernuni-hagen.de

S. Kaji and E. Ogawa (eds.), *Who Will Provide the Next Financial Model?: Asia's Financial Muscle and Europe's Financial Maturity*,
DOI 10.1007/978-4-431-54282-7_17,

differences existing between the various regions and the backwardness of the less favoured" (preamble of the Treaty establishing the European Community (EC Treaty), 1957).

This goal of real convergence was confirmed in the preamble of the Treaty of Maastricht in the context of establishing a monetary union in Europe. Within that treaty, the correlation of this aim of real convergence with monetary integration was formulated, in that the contracting states declared their resolve to "achieve the strengthening and the convergence of their economies and to establish an economic and monetary union, including, in accordance with the provisions of this treaty, a single and stable currency". Article 2 of the EC Treaty in particular expresses the view that the monetary union was seen as an instrument for achieving the aim of real convergence by stating that the aim of convergence, among other things, was to be pursued "by establishing a common market and an economic and monetary union".

The question arises then whether a monetary union truly does favor real convergence among its members. Economic literature on this point is rather mixed. The fact that *economic* integration fosters real convergence is undisputed. However, whether monetary integration is also favorable for the catching up goal of emerging European Monetary Union member countries is not clear. This will be analyzed in more detail in this paper.

It will be shown that a monetary union can foster real convergence, however only under very restrictive politico-economic conditions. If construction failures are incorporated in a monetary union system, the result may even be real divergence. It will be shown in this paper that in the European Monetary Union (treaties) there were definite construction failures that hindered the monetary union in reaching its goal of real convergence across member states. The two main construction failures include: (1) the politically driven selection of new members, and (2) a lack of incentives to save and/or to reform (towards institutional convergence) and to follow through with commitments due to a lack of sanction mechanisms to deal with the violation of contracts.[1] If these construction failures are not remedied, the sustainability of the European Monetary Union may be in danger.

The paper is organized as follows: in part 2 I will present the concepts of "European (Monetary) Union (E(M)U) integration" and "real convergence" as used in this paper. In part 3, I shall describe the theoretical arguments behind the hypothesis that E(M)U integration fosters "real convergence". In part 4, I ask whether the empirical results corroborate the above hypothesis. In part 5, I shall discuss the danger of "real divergence" in a monetary union with heterogeneity and construction failures, using an example of the European Monetary Union. In part 6, I shall draw some policy implications and conclude the paper.

[1] Another conclusion of this paper is that the larger the development (real convergence) gap between an accession country and the incumbents of a monetary union, the greater the danger of ending up with low or even negative net real growth effects from accession, at least for some period of time. This has proven true for some euro area countries like Greece and Portugal, and may also prove true for other less developed member countries.

2 Concepts of "E(M)U Integration" and "Real Convergence"

I understand *European integration* to represent an attempt to build unity among European countries and peoples. Within the European Union (EU) this means that countries pool their resources and make many decisions jointly; this joint decision-making takes place through interaction between EU institutions (for example, the Parliament, Council and Commission). European integration developed after World War II along the following prescribed "evolutionary" steps: (1) commercial league, (2) customs union, (3) common market, (4) economic union and (5) monetary union.

The last step (5) is sometimes considered the "crowning glory" of the European (economic) integration process.

"New Member States" is abbreviated here to NMS; this term encompasses member countries that have joined the EU but have not yet joined the monetary union. They are accession countries to the euro area (EA) with the *right, but at the same time also the obligation* to join the monetary union as soon as they fulfill the Maastricht (nominal convergence) criteria (but at the earliest 2 years after entry into the EU).[2]

Further, Greece, Italy, Ireland, Portugal and Spain is denoted by *GIIPS*, and GIPS encompasses the same country-group with the exception of Italy.

Real convergence is a term that represents catching up in terms of Gross National Income (GNI) per capita as well as convergence in institutions and socio-economic structures (as a type of precondition).[3]

Convergence in the sense of *catching up in GNI or Gross National Product (GNP)*[4] *per capita* aims at an alignment of standards of living at a high level in the participating states,[5] which was a main target of the process of European integration from the beginning (as mentioned above). This can be viewed as a long-term economic goal of the integration process in Europe.

However, even if data shows GNI per capita convergence over one or even two decades, this does not guarantee that this process of convergence is sustainable—whether this is the case depends upon institutional and structural convergence (which can be considered as a precondition not only for sustainability, but also for implementation and ensuring a high level of GNI per capita convergence).

---

[2] This requirement does not apply to Great Britain and Denmark; these two countries negotiated early on an opting out clause so that they do not have to join the euro area.

[3] See, for example, Papademos (2006).

[4] Here I treat *GNI* and *GNP* the same measure. GNI is identical to GNP as previously used in national accounts generally (Eurostat's Concepts and Definitions Database).

[5] Various convergence hypotheses have been developed and tested econometrically (see Sala-i-Martin 1996, Galor 1996, Barro and Sala-i-Martin 1995, Chap. 11). Here, catching up is understood to decrease the dispersion of real GNP per capita in the EU countries (see also Grosser 1992, p. 404; European Commission 1996, p. 175). This measure serves as a rough indicator for the alignment of standards of living, an aim of the treaties on which the EU is based. A necessary condition for this convergence is that the "backward" countries grow faster than the richer countries. In the terminology used by Sala-i-Martin (1996) this means that β-convergence is a necessary condition for σ-convergence.

Institutional convergence describes the assimilation of institutions and rules within a union, whereas *structural convergence* denotes the alignment of socio-economic structures in the union member countries (be it in labor or product markets, or with respect to judicial efficiency and administrative capacity or political governance).

This institutional and structural convergence can also be considered as a precondition for the goal of business cycle synchronization: one precondition required to produce the desired effects of a currency union (e.g., a quick catch up in GNI per capita) is that the business cycles of participant countries must be largely synchronized. Otherwise, the one-size-fits-all monetary policy in the currency union would be less effective, i.e., too loose for fast-growing, booming economies and too tight for others.

In terms of the theory of optimum currency areas (OCA), this translates into the question of whether the OCA rating of currency-area countries has improved.[6]

3 Does E(M)U-Integration Foster "Real Convergence"?—Theory[7]

Economic integration fosters "real convergence" mainly via the four developments and/or benefits a less developed country can expect to receive (free of charge) when entering the EU:

(1) *An increase in international trade with other member countries* (driven by (i) a better allocation of resources, (ii) access to better technologies, inputs and intermediary goods, (iii) increased possibilities to profit from economies of scale, (iv) growth externalities like the transfer of know-how and (v) a reorganization of the industry, which can create a Schumpeterian growth-favoring environment (e.g., see Wagner 1997, p. 113);
(2) *An increase in foreign direct investment* (triggering a technology transfer, including advice and technical help, transported together with the direct investments);
(3) *An increase in transfer payments* (from the EU budget to emerging accession countries; for more detail see Wagner 2006); and
(4) *An import of political stability* (through the obligation to adopt many *useful* regulations and rules prescribed in the EU, such as in the so-called *acquis communautaire*[8]).

[6] OCA theory was originally developed in the 1960s; however, it now requires further development against a background of the globalization process that has occurred since then. For a survey of the theory of OCA see, for example, Mongelli (2008).

[7] This section partly leans on Wagner (2001) and Wagner (1995).

[8] The term *acquis communautaire* is used in EU law to refer to the total body of EU law accumulated thus far.

This implies that EU integration forces entrants to align (some of) their institutions to that of the incumbents (or the requirements laid down in the EU treaties), as EU integration ensures some institutional convergence within the union (endogenous convergence). In particular, the size of benefit (2) above is strongly dependent upon the institutional conditions within a recipient country.

With regard to the impact of *monetary integration* on real convergence, we can only find mixed results in the theoretical literature. The *expectation for a positive effect* of (European) monetary integration on the catch up by new entrants is supported on the one hand by the expectation of the strengthening of the above effects, i.e.:

- The hope for *greater* international trade among euro area countries;
- The hope for *greater* capital inflows (particularly Foreign Direct Investments (FDI)) and their effective use;
- The hope for *greater* transfer payments (due to club solidarity); and
- The hope for *greater* political stability via the handing over of monetary policy decision-power to the European Central Bank (ECB).[9]

On the other hand, a further (direct) way in which a monetary union can contribute to GNI per capita convergence is via financial market integration and the elimination of the exchange risk premium. This tends to lead to lower real interest rates and easier access to credit feeding directly into domestic asset markets.[10]

Furthermore, there has been an expectation of healthy discipline imposed by the Maastricht criteria. These criteria demand the achievement of defined nominal convergence criteria, including fiscal criteria that are supposed to remain binding on participants even after they join the monetary union. In abiding by such criteria, member states prove a sufficient degree of economic harmonization and show the seriousness with which the aims of a stable community are being pursued. This applies above all to the less developed member states, in the face of the need for high public investment in infrastructure during the process of catching up.[11]

The disciplining factor is expected to become effective immediately, to reinforce the serious and credible intention. This is supported by appropriate controls, and in combination with visible successes, to fulfill the Maastricht criteria by means of a restrictive monetary and fiscal policy. Those criteria that refer to fiscal policy aspects demand the removal or renunciation of excessive budgetary policies because excessive deficits or debts are considered unsustainable in the long term. This type of unsound budgetary policy would tend to have unfavorable, interest-raising effects

[9] See Wagner (1997).

[10] This can be seen in the development of bond spreads after the (announcement of the) establishment of the euro area in the mid- to late-1990s. See Fig. 4.

[11] The compulsion of a restrictive fiscal policy means that in certain circumstances a high level of unemployment and the fact that important infrastructural investments cannot be financed must be accepted to fulfil the interest parity condition of a monetary union.

on the capital market, which would have a not inconsiderable negative effect on investment decisions.

Because the compulsion for a restrictive fiscal policy also facilitates the implementation of a price-stabilizing monetary policy,[12] the fiscal Maastricht criteria can contribute to diminishing the danger of a monetary bailout by the ECB. This would be expressed in low inflation expectations of market actors, which would lead to positive effects on investments, and therefore on growth.

Of course, *counter-effects* are also highlighted in theoretical studies on monetary unions that favor the view that European monetary integration may instead slow or limit real convergence. These counter-effects are triggered by

(i) The loss of seigniorage[13];
(ii) The danger of internal and external imbalances; and
(iii) Austere fiscal policies (induced by the attempt to fulfill the Maastricht convergence criteria as a precondition for EA entry).

Furthermore, it is feared that the run-up to European monetary integration will lead (for a significant period) to

(iv) Business cycle desynchronization;
(v) An anticipatory recession; and
(vi) Unintended contagion effects.

This would have a negative effect not only on NMS but also incumbent euro area countries.[14]

While the loss of seigniorage only arises after a country has entered the currency area, the other effects (ii–vi) emerge in the run-up phase of euro adoption. I shall discuss these counter-effects in detail in part 5.[15] In part 4 I shall, however, first present the empirical experiences of NMS and EA member countries, particularly GIIPS, with regard to real convergence.

---

[12] This discipline is seen as particularly important on the road towards an European Monetary Union. See Wagner (2005a).

[13] The establishment of the European Monetary Union means the separation of monetary and fiscal policies in the member states. The opportunity to autonomously procure revenues from seigniorage disappears. Within the monetary union there will still be profits from the creation of money, but these will go to the ECB, which will return the profits to the individual states. However, the profits for those countries that previously had high rates of inflation will probably become significantly lower, because an independent ECB will be likely to considerably restrict the possibility of seigniorage revenues. This could result in substantial budgetary policy problems for some of the less developed member states. This loss of revenue will have to be compensated for by tax increases or reductions in expenditure. However, as a result of the general reduction in rates of inflation in the 1990s this problem appears now to be considerably lessened for the present circle of member states. See Wagner (2006).

[14] At this stage most politicians and economists consider that the benefits would outweigh the costs of European monetary integration (the question is however, is this the case for all members, and at which time horizon).

[15] Another potential counter-argument to the long-term real effects of monetary integration is, however, misleading, and refers to the hypothesis of neutrality of monetary policy (see Wagner 2001).

4 Has E(M)U Fostered "Real Convergence"?—Empirics

In the following I shall provide some evidence on whether there has been an alignment of GNI per capita and the institutional and structural fundamentals over the past decade. Furthermore, I also test for an alignment of the Maastricht criteria (See the following graphs and figures in this part and the Appendix).

4.1 GNI Per Capita

I have focused on the alignment of GNI per capita in NMS-10 during and after 2004 and in GIIPS, compared with the EU-27 and the EA-17.[16] Furthermore, I have calculated σ-convergence in EU-27 and EA-17.

Figure 1 shows that there had been β-convergence in NMS-10 up till the financial crisis, insofar as the growth rates in NMS-10 were higher than the EU-27 average. Figure 2 indicates that this applies also to GIPS, however to a lesser degree.[17] Table 1 shows that there was also σ-convergence in the E(M)U in the decade before the financial crisis, but not among EA-11 (the first-round entrants).

Other studies in the empirical literature on the real convergence of EU members also reach similar conclusions. In a parametric framework, Christodoulakis (2009) estimated the β-convergence parameter for members of the European Monetary Union, and found that the speed of β-convergence weakened between pre- and post-Euro periods. Along the same lines, the σ-income-convergence between members of the monetary union slowed down or even substantially reversed. The only signs of progress can be observed in the synchronization of business cycles that improve the viability of common monetary policy. Thus, business cycles have become more symmetric and less intensive after the establishment of the single currency, at least until 2008.

Raileanu Szeles (2011) applied a nonparametric framework for NMS, which detects convergence clubs and distinguishes between long-term and short-term absolute convergence. Her findings indicate a lack of real convergence in the long-term in favor of short periods of convergence and divergence. Comparing these results with the standard parametric approach to detect β-convergence, the β-parameter is weakly significant.

Emphasizing the role of alternative indicators for real structural convergence, Marelli and Signorelli (2010) estimated β-convergence in productivity levels and labor market performance indicators in the EU-27. The evidence for convergence in

[16] NMS-10 represents the ten former post-communist countries that joined the EU between 2004 and 2007, and the EA-17 currently includes 17 member countries in the euro area.

[17] This may be disappointing for GIPS if compared with NMS-10. However, the *level* of GNI per capita is still higher in GIPS compared with NMS-10 (see Table 4 in the Appendix).

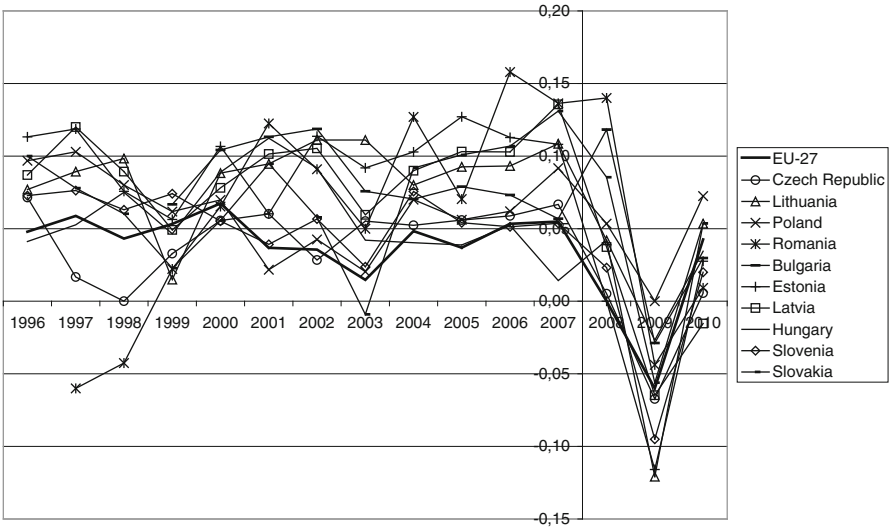

Fig. 1 GNI per capita growth in NMS. Data source: Eurostat. Notes: Gross national income at market prices in purchasing power standard per inhabitant; year-to-year growth rates

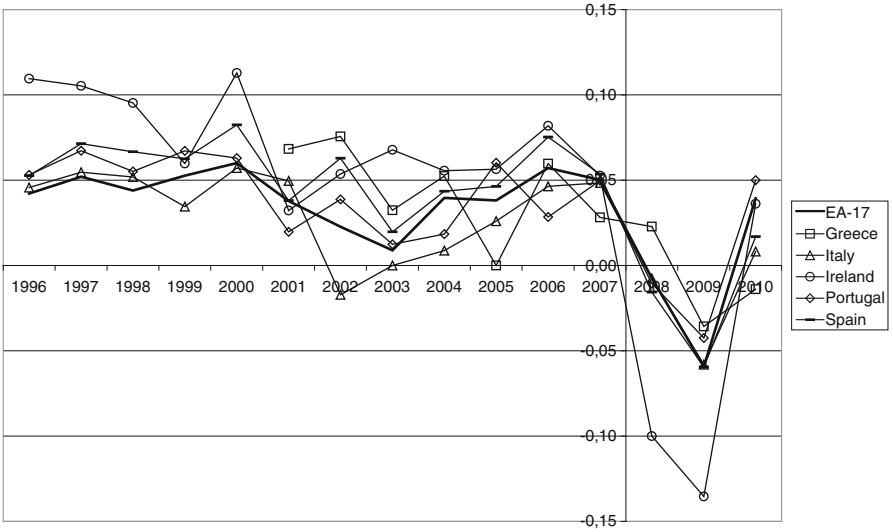

Fig. 2 GNI per capita growth in GIIPS. Data source: Eurostat. Notes: Gross national income at market prices in purchasing power standard per inhabitant; year-to-year growth rates

Table 1 σ-Convergence in the European Union and the euro area

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
$\sigma^2_{\log y,t}$ of EU27	0.24	0.25	0.25	0.29	0.30	0.28	0.25	0.23	0.21	0.21	0.19	0.17	0.16	0.14	0.12	0.13
$\sigma^2_{\log y,t}$ of EA17	0.16	0.15	0.14	0.13	0.14	0.14	0.12	0.11	0.10	0.11	0.10	0.09	0.09	0.07	0.06	0.07
$\sigma^2_{\log y,t}$ of EA11	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.06	0.06	0.05	0.06	0.05	0.04	0.05

Data source: Eurostat

Notes: $\sigma^2_{\log y,t}$ denotes the variance across i of $\log y_{i,t}$; y is the gross national income at market prices in purchasing power standard per inhabitant

industrial specialization is less clear for euro area members. Trade integration increased due to institutional integration in the monetary union and EU. Assessing the σ-convergence of these indicators and Gross Domestic Product (GDP) per capita, strong convergence can be found in labor market performance indicators, but none in productivity and GDP per capita for EA-12. In contrast, NMS experienced strong σ-convergence in GDP per capita and productivity.[18]

This may appear as if the E(M)U clearly leads to GNI per capita convergence across its member countries. However, one has to confess that first, this only applies, if at all, to the decade(s) before the financial crisis and we do not know whether the convergence process will soon be revived against the background of the large structural problems in the less developed member countries. Second, it is difficult to separate the E(M)U integration effect from other effects that also have influenced the convergence process. It might therefore be better to argue so-called "collateral effects", meaning that (expected) E(M)U entrance has encouraged institutional and structural convergence (e.g., enforced by EU regulations in *acquis communautaire* and other requirements) and via this endogenous institutional convergence, GNI per capita convergence has occurred by, for example, increasing the attractiveness of FDIs (for more on the concept of collateral effects see Kose et al. 2006). This might indicate that the level of real convergence is high before and for a short period after E(M)U entrance, and that it slows down soon afterwards.

However, as we will see in Sect. 2, there was no uniform institutional and structural convergence process within the E(M)U. Moreover, the GNI per capita convergence process before the financial crisis was heavily accompanied or fostered by massive financial aid from the richer to the poorer member countries (mainly in the context of an EU "structural aid" program). Thus, the convergence process could be assessed as "artificial".

4.2 Structural and Institutional Fundamentals

There are several relevant indicators for structural and institutional convergence that show the same direction of development. In the following figure I show three governance indicators, namely political stability, regulatory quality and rule of law. I have listed them for GIIPS and NMS, and compare them with Germany as a benchmark of the developed EA core (Fig. 3).

We see that there has been institutional *di*vergence in GIIPS after entry into the monetary union (and before the financial crisis!). In contrast, there has been institutional *con*vergence in NMS-10 (before entry into the monetary union).

[18] In sum, empirical evidence appears to advocate in favor of convergence during the initial stage of becoming a member of the European Monetary Union. Once a country has joined the common currency, the process of convergence slows down.

Fig. 3 Some governance indicators. Data source: World Bank, Worldwide Governance Indicators

In summing up, as a general tendency institutional-structural convergence can only be observed before accession to the European Monetary Union. After accession, institutional-structural convergence appears to slow down or even becomes divergence in some countries (particularly with emerging markets).

4.3 Maastricht Criteria

Finally we ask whether we can observe an alignment to the Maastricht criteria or a violation of the same. We here focus on GIIPS and three NMS (Estonia, Hungary and Poland).

Table 2 shows that before the financial crisis there had been relative convergence with regard to the Maastricht criteria in most GIPS and NMS-10 countries in the sense that the majority could avoid a significant violation of these criteria. The exceptions are Greece and Hungary, both of which committed serious violations before the crisis emerged.

On the whole, the above presentations appear to show that there has been a clear alignment of GNI per capita and the fulfilling of some Maastricht criteria in a majority of the E(M)U member countries. However, there was real divergence with respect to institutional and structural alignment in some of the GIIPS countries after accession to the monetary union. This may be seen as problematic as institutional-structural convergence is often regarded (by the ECB, the Bundesbank and others) as a precondition for sustainable avoidance of violations of the Maastricht criteria, and hence for an efficient monetary policy in the currency union.

Moreover, one can argue that the alignment of GNI per capita and the attainment of some of the Maastricht criteria have been "artificial" for some member countries. The reason for this qualification is that this convergence was only possible against a background of unconditional financial aid and non-credible commitments (due to erroneous or inefficient incentives and sanction mechanisms). This will be explained in more detail in the following part, but it can also be seen in the differences of structural and institutional fundamentals among the various member countries.

5 Tendency Towards "Real Divergence" in a Monetary Union with Heterogeneity and Construction Failures: The European Monetary Union as an Example

Looking back, it appears that monetary integration in Europe worked reasonably well in stable (normal) times, however it failed its first big test with respect to mastering a deep financial crisis and its aftermath. It could be argued that it was bad luck and the emergence of a rare shock event—a once-in-a-century event—came too early; however, the true failure was in weak risk management.

Table 2 Violation of Maastricht criteria: deviations from reference values in percentage points

		Price stability	Government budgetary position		Long-term interest rate
		HIPC inflation	General government net lending (+)/net borrowing (−)	General government consolidated gross debt	EA convergence criterion bond yields
Germany	1997	—	—	—	—
	2002	—	–0.8	0.7	—
	2008	—	—	6.7	—
Ireland	1997	—	—	3.7	—
	2002	1.6	—	—	—
	2008	—	–4.3	—	—
Greece	1997	2.7	:	36.6	2.18
	2002	0.8	–1.8	41.7	—
	2008	0.1	–6.8	53.0	—
Spain	1997	—	–1.0	6.1	—
	2002	0.5	—	—	—
	2008	0.0	–1.5	—	—
Italy	1997	—	—	57.4	—
	2002	—	–0.1	45.1	—
	2008	—	—	45.8	—
Portugal	1997	—	–0.4	—	—
	2002	0.6	—	—	—
	2008	—	–0.6	11.6	—
Estonia	1997	6.6	—	—	:
	2002	0.5	—	—	:
	2008	6.5	—	—	:
Hungary	1997	15.8	–3.0	2.9	:
	2002	2.1	–6.0	—	0.2
	2008	1.9	–0.7	12.9	2.0

(continued)

Table 2 (continued)

		Price stability	Government budgetary position		Long-term interest rate
		HIPC inflation	General government net lending (+)/net borrowing (−)	General government consolidated gross debt	EA convergence criterion bond yields
Poland	1997	12.3	−1.6	—	:
	2002	—	−2.0	—	0.5
	2008	0.1	−0.7	—	—

Data source: Eurostat

Notes: "—" indicates no violation of the Maastricht criteria; ":" indicates unavailable data; reference values and boundaries according to the Maastricht Treaty

The key reasons for this disappointing outcome were two construction failures within the E(M)U and its contract:

1. The politically driven selection of new member countries; and
2. Weak incentives and sanction mechanisms (bad risk management)

In the following I shall mainly focus on construction failure 1 and, against the background of space limitation, provide just a brief description of failure 2.

5.1 Political Selection of New Member Countries: Pitfalls of Rapid Monetary Integration

European integration has developed in several stages. There were just six founding countries (Belgium, France, Germany, Italy, Luxembourg and the Netherlands) in the European Economic Community (EEC) in 1957, and with various common institutions during the 1960s, the first round of enlargement occurred in 1973 when Denmark, Ireland and the United Kingdom decided to join. A second round of enlargement occurred during the 1980s when three former dictatorial countries, which had shaken off their dictatorships by the mid-1970s, pursued an early entry into the EEC to thereby stabilize their young democracies. These countries were Greece (it joined the EEC in 1981), Portugal and Spain (1986). In a third round in 1995 (after the collapse of the Eastern bloc), Austria, Finland and Sweden (formerly so-called "neutral" border countries to the Eastern bloc) acceded to the EEC, which in the meantime was renamed the EU. Finally, in the first decade of the 2000s, 12 more countries were allowed to enter into the EU, namely Bulgaria, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, the Slovak Republic and Slovenia. Ten of these twelve countries (NMS-10) were former communist, dictatorial states that aspired to stabilize their new democracies and grow faster by joining the EU.

Thus, the driving forces behind the enlargement of the E(M)U from 1980 onwards have been largely political, driven by an anxiety that former dictatorial states (such as Spain, Portugal and Greece in the 1970s and 1980s, and the Eastern post-communist NMS-10 in the 1990s and 2000–2009) could destabilize the political landscape in Europe (or turn again to Russia) if they were not integrated in the E(M)U club. The result of this anxiety was, from an economic perspective, that some of the emerging GIPS and NMS-10 countries with weak governance structures were let into E(M)U too early.

In addition, we have seen a cluster of accessions over the past two decades. The EU has almost doubled the number of its member countries during the last decade. Consequently, the pitfalls of enlargement have also increased, in particular when the EA was created. In the last century, countries stayed in the EU for many years before entering the EA (however, the EA was only established in 1999); in contrast, those entering the EU now (since 2000) can join the monetary union immediately,

i.e., just after 2 years membership. And most entrants have flirted with this idea. For example, in 2003, the year before the EU entrance of 10 new member countries, all designated NMS announced that they also wanted to become members of the EA as soon as possible (within 2 or 3 years), even though 8 of them had, just 15 years before, been communist-planned economies without any experience regarding western-style markets and political institutions, and were considered to be emerging economies. This then created some nervousness, particularly among the ECB and the incumbents' central banks, as well as among academic experts. Further, it led to many "marketing" and "educational" exercises to convince the post-communist-NMS politicians to pause to think twice whether this rush would really be a good idea.[19] In the end, after some persuasion and some disillusions with regard to fiscal problems[20] in particular, most NMS-10 governments caved in and postponed the planned euro adoption to year-to-year decision—even today only 3 of the 10 post-communist NMS (Slovenia, Slovakia, Estonia) have chosen the step of euro adoption. Latvia, Lithuania, Poland, Czech Republic, Hungary, Bulgaria and Romania remain in a wait-and-see position. However, after the recent financial and economic crisis, many of these NMS have again become more inclined to adopt the euro as soon as possible. Indeed, the cooling down of domestic and external imbalances associated with the recession after the financial crisis seemed to increase the chances of the rest of the NMS-10 to meet the Maastricht criteria within a time frame of 3 years. The question, however, remains whether it is a good option for these countries to try to rush their entry into the EA.

5.1.1 General Aspects

There is a series of potential dangers that newcomers face in joining the European Monetary Union. (As stated above, legally they have no choice because they cannot opt-out. Consequently, they are obliged to apply for euro adoption as soon as they think they are able to fulfill the Maastricht criteria within the minimum 2-year period under Exchange Rate Mechanism II (ERM II). In practice, however, they can easily postpone euro adoption, and even ERM II entry, for an extensive period if desired.)

The loss of the nominal exchange rate as an instrument of adjustment to country-specific shocks is often regarded as the greatest economic disadvantage for a country entering the monetary union. This loss is all the more serious within

[19] This nervousness could also be explained by the risky actions taken by the incumbents by allowing less developed EU members (such as Greece and Portugal) prematurely into the euro area. There were concerns not to overload the newly-founded European Monetary Union and particularly the ECB with uncertain or risky challenges.

[20] On fiscal issues of post-communist NMS-10, see Wagner (2006).

the integration area if wages and prices are less flexible, and where labor mobility is lower.[21]

However, I shall focus now on the "other effects" mentioned previously in part 3, which could result in a slowing down or even the (temporary) reversion of the envisaged real convergence process, before and after euro adoption.

The general political implication of this part is that the premature accession (with imperfect or weak institutions) of less developed emerging countries into an economic and/or monetary union that mainly consists of more highly developed industrial countries may be costly not only for the accession countries but also for the incumbents. If candidate countries with weak (imperfect) institutions decide to enter a monetary union, then they must accept the risk that they may not achieve (stronger) positive growth effects and may have a lower ability to adjust to shocks and cope with secular changes.[22] Thus, they will achieve lower growth effects than they would have had if they entered with stronger institutions. This cost or risk of lower growth in the case of early accession has to be balanced by (concerns regarding) the cost or risk of waiting, in the case of euro area enlargement, which mainly consists of the risk of financial instability (speculation), particularly during the ERM II qualification period,[23] and the loss or weakening of a key anchor for the domestic policy agenda in the candidate countries.[24] Nevertheless, with regard to EA accession countries, we will see that it may be better for some of them (namely the economically, technologically and institutionally less devel-

[21] The counter-argument is often based on the endogeneity hypothesis that an exchange rate instrument would in any case not be as necessary within a monetary union because the typical cases for its application would endogenously tend to disappear or be reduced. *First,* the increasing integration resulting from the founding of the European Monetary Union would lead to changes in industrial structures in the sense of greater turnover and investment relations within industries. This means that most countries will both export and import the products from many branches ("intra-industrial trade"). As a result, sector-specific shocks will hit different countries more similarly than previously. *Second,* a credible monetary union would influence the behavior of both sides of industry to the extent that they would pay more attention to remaining competitive, because the alternative of devaluation no longer exists. Thus, wage and price flexibility becomes greater, which reduces the significance or the benefit of exchange rate adjustment as a shock absorption instrument. *Third,* the European Monetary Union will eliminate an important category of country-specific shocks that have their origins in exchange rate movements themselves and in an imperfectly coordinated monetary policy. See Emerson et al. (1992), p. 24.

[22] Another critical point or cost associated with premature accession is that the accession of less developed emerging economies into an economic and/or monetary union that consists mainly of more highly developed industrial countries increases the asymmetries in the macroeconomic structures of the union. These asymmetries create challenges or strains for common central banks as the common monetary policy *(one-size-fits-all policy)* then creates different adjustment reactions in individual member countries. Different business cycles and tensions within the union are then predetermined.

[23] See Wagner (2002a).

[24] The International Monetary Fund (IMF), for example, emphasized that accession aspirations should "help these countries maintain the momentum of progress that is needed with fiscal reforms, privatization, other structural improvements, and environmental clean ups" (IMF 2002, p. 39).

oped) to wait and maintain flexible exchange rates after EU accession, and use that time to improve their institutional fundamentals.[25] Importantly, however, this choice should be left to the candidate countries to avoid significantly slowing down the momentum of reform progress in these countries (although one should not forget that the incumbents may also be hurt by the inappropriate timing of NMS entry into the euro area).

In general, the risks and the costs of E(M)U enlargement are dependent upon the starting position of the accession countries when joining the EU; these are greater the larger the gap in development among the accession countries and incumbents.

As stated earlier, countries that have joined the EU have the "right" (and even an obligation) to join the euro club after a minimum of 2 years if they fulfill the Maastricht criteria and have stayed in the ERM II for 2 years (see European Commission 2000). Using this right immediately, however, can be dangerous if the country's starting position is not "optimal" in terms of development.

5.1.2 Pitfalls That Slow Real Convergence

Newcomers have various choices on entering the EU; all these choices have potential economic pitfalls, and are especially dependent on the initial stance of development or convergence, and on the chosen exchange rate system. These pitfalls have become even more complex and costly over the recent decades (when comparing first-round, second-round and third-round newcomers) as globalization and the integration of financial markets, together with obligations associated with EA entry, have fundamentally changed the environment in which the catching up process for newcomer countries is managed. I shall briefly provide some examples of the economic pitfalls that today's newcomers may experience if they join the EA too early:

- Excessive external imbalances
- *Endogenously-enforced* austere fiscal policy
- (Fear of) contagion
- Business cycle asymmetries
- Anticipatory recession

I shall concentrate on the first two pitfalls, particularly on the danger of real divergence or a slowdown of economic (GNI per capita) convergence in the case of inappropriate timing of EA entry. Discussions regarding the remaining three effects will be brief.[26]

[25] Or as the European Commission pointed out: "the priority should remain on improving the functioning of the budgeting process, carrying out structural reforms, implementing the *acquis communautaire*, and supporting catching up" (European Commission 2002, p. 126).

[26] For further pitfalls, see Landmann (2012) and Wagner (2002a).

(1) External imbalances

There are key risks and challenges that all newcomers face on the road to euro adoption and beyond; these are associated with the exposure to large and volatile capital flows and the danger of overheating due to credit booms.

Capital inflows

All new member countries of an economic union can expect considerable net capital inflows in the form of FDI, portfolio capital and other forms of capital. The most serious risks lie in non-FDI capital flows, which are sensitive to interest rate differentials and risk premiums. Most recent newcomers experience strong non-FDI capital inflows after EU entry. Non-FDI net capital inflows have been particularly large in pegged economies, for instance, at approximately 15% in Lithuania, 20% in Estonia and 30% of GDP in Latvia in 2006–2007 (before the financial crisis). These large inflows of capital entail several risks: (i) they boost domestic demand and thus can lead to overheating and large current account deficits and high inflation (e.g., as then in the Baltic countries); (ii) they can put undue pressure on exchange rates in countries with floating rates; (iii) they expose countries to sudden reversals of capital flows when there is a shift in the markets' assessment of a country's vulnerability; and (iv) they may delay essential reform adjustments.[27]

Credit booms and overheating

Large capital inflows, before and after the 2004 EU enlargement, generated by expectations of fast convergence, have contributed to very high levels of external debt in some newcomer countries. Many of them experienced excessive credit and domestic demand growth, an appreciating real exchange rate and inflationary pressures in the years after EU entry (The fastest growing segments of the credit market were household loans, particularly mortgage loans). Excessive credit growth raised concerns about overheating, widening external imbalances and increasing balance sheet risks in some newcomer countries, particularly in those where domestic borrowers contracted loans in euros and other foreign currencies, leading to an increase in currency mismatches in the private sector balance sheets. The latter made the private sector vulnerable to exchange rate depreciation.

Excessive credit growth can also erode competitiveness if it feeds inflation and wage growth, and so derail real convergence. Another danger arises if rapid growth in mortgage credit leads to sharp rises in house prices in real terms, further boosting credit expansion by increasing the value of collateral.[28] Moreover, by fuelling consumption, rapid credit growth keeps savings low and increases the investment-saving gap. The then five less developed newcomers with the fastest credit growth showed very large current account deficits, from approximately 15% in Estonia to approximately 24% in Latvia. In the Baltic countries, most of the deficits were

[27] For further details see, e.g., Darvas and Szapary (2008).

[28] For example, see Funke et al. (2006) and Berger et al. (2007).

financed by debt, mainly foreign borrowing by banks and enterprises.[29] Such high deficits, however, increase the exposure of countries to capital flow reversal that can create a recession and eventually a banking crisis (this became apparent in the post-crisis period 2009–2010). Financial and banking crises have often been preceded by rapid credit expansion in the private sector, and thus, strong real exchange rate appreciation and large current account deficits are usually observed, as was the case in several East Asian countries preceding the 1997 crisis, in Finland and Sweden preceding the 1992 crisis, and last but not least, in GIPS preceding the 2008 financial crisis. These countries will continue to sit on powder kegs if they do not follow fiscal policies that counter balance the credit growth and retard wage inflation.

(2) Austere fiscal policy *endogenously enforced*

It remains open as to whether the economic pitfall with respect to a slowdown of real convergence is greater with exchange rate pegging or with a floating rate in an inflation-targeting regime.

However, irrespective of whether newcomers choose the pegging or floating option, emerging newcomers face a danger of falling behind in real convergence when pushing too hard to attain the Maastricht criteria as a precondition of early EA entry. This can be derived (and already has in some cases) as an indirect effect of the above-discussed channel of (1) "external imbalances". (See also Sect. 5.1.3 below for further detail.)

(3) (Fear of) contagion

As part of the Maastricht convergence criteria contained in Article 109j and defined in Protocol 6 of the Maastricht Treaty, newcomers have to participate in the ERM II of the European Monetary System within the normal fluctuation margin, and without severe tensions, for at least 2 years (Hochreiter and Wagner 2002). That is, as "euro area members with a derogation" they have to stay in a waiting position for a period within the ERM to prove that they are strong enough to withstand severe exogenous shocks. During this period, where they follow a type of "weak" currency pegging (soft peg), the danger of speculative attacks is particularly severe. In particular, if their institutions are not yet strong enough, they can easily be confronted with a capital outflow triggering the devaluation of its currency and therefore with an increase of their external (foreign currency-denominated) debts. Worse yet, even if these newcomer countries follow a solid economic policy, they can unwantedly import such crises via contagion from neighboring countries. As has been shown previously (Berger and Wagner 2005), not only actual devaluations but an increas-

[29] Latvia, for example, increased its external debt to 139% of GDP in 2008. Domestic lending relative to GDP expanded between 2000 and 2008 from 23% to 89%. In Estonia, domestic lending was also boosted from 34% of GDP in 2000 to 98% in 2008, where most of the expansion was not covered by domestic savings. Therefore, external debt also increased from 45% of GDP in 2000 to 108% of GDP in 2008. Despite these high external imbalances, Estonia (in contrast to Latvia) then managed to keep domestic overheating within tolerable limits due to a sound fiscal policy with budget surpluses between 2002 and 2007.

ing crisis probability in one country may trigger currency crises elsewhere. Here both fundamental weakness and spontaneous shifts in market sentiment may play a role in the transmission of currency crises.[30]

However, there are also dangers of real divergence *within* a monetary union.

(4) Business cycle asymmetries

As described above, excessive credit growth and domestic demand growth leads to inflationary pressures in emerging market economies. Within a monetary union this would result in strong asymmetry in the form of real interest rate differences. This, in turn, could destabilize the union as a whole as it brings inefficiency into the union as the ECB targets averages, thus missing optimal national levels the more the wider the variance is. This again may trigger transitory real convergence, however it often ends up in bubbles and an eventual counter-development towards real divergence (currently seen for example, in some of the GIIPS countries).

(5) Anticipatory recession

If financial markets develop (i) expectations of real divergence as the likely outcome over the following years, and (ii) the expectation that core countries will react and try to stop the divergence process (to stabilize and save the economic and monetary union), then an EU-wide increase in interest rates may immediately arise unless the ECB monetarily accommodates this process. See the model analysis in Wagner (1995, 2002a).[31]

A justification for the feared pitfalls derived above for newcomers seeking quick euro membership can also be derived from the recent experiences of countries like Greece, Portugal, Ireland and Spain. The euro adoption of these countries meant a rapid leveling of the interest rate (a rapid reduction of risk premiums). The latter has been used by (private and/or public sectors of) these countries to raise their indebtedness and produce an unhealthy boom, which was proved during and after the financial crisis when risk premiums rose again and accumulated debts could no longer be serviced. Thus, emerging countries like Greece, Portugal and Spain could run into trouble as the risk premiums representing their emerging market economy status were artificially reduced by their early entrance into the EA. The same could happen in the future to countries with emerging market economies seeking to join the EA.

5.1.3 A Model of Real Divergence

In earlier papers (Wagner 2002a, b) I showed that the then emerging NMS-10 could have resulted in real divergence with their early entry into the EA.

[30] The debt crisis in the euro area may also be contagious for newcomers if capital flows are drying up and countries with large current account deficits rely on these.

[31] Moreover, in some euro area countries interest rates or spreads on government bonds may increase due to country-specific risk premiums, as the current development shows.

There, I presented a model that provided one channel along which attempts to satisfy the nominal Maastricht convergence criteria could have negative impacts on real convergence between the incumbents and accession countries of a monetary union.[32] The key arguments are based on (1) the fact that less developed accession countries have relatively high optimal public investment levels in comparison to developed incumbents, and (2) that the nominal Maastricht convergence or entry criteria, which were elaborated for the original incumbents, may put pressure on today's accession countries to deviate from their relatively high optimal public investment levels (sooner or later). This pressure is higher for less developed accession countries, due to fact (1). Hence, the real convergence process could be slowed down due to negative growth effects. I argued in the above papers that in the beginning these negative effects could outweigh the positive effects (especially technology spillovers), as the latter requires time and institutional quality. Overall, my results imply that a sufficient degree of real convergence should be seen as a precondition for a promising accession to a monetary union and not as a hoped-for endogenous result of early accession.

5.1.4 Current and Future Adverse External Conditions That Impede Convergence

In Sect. 5.1.2 above, I discussed several channels through which a slowdown of real convergence, or even real divergence, can result if a country pushes (too) hard for early euro adoption (see also the Balassa–Samuelson effect in the context with the fulfillment of the Maastricht convergence criteria and other structural differences). Furthermore, there are *additional pitfalls* or *hindrances*, which may slow the real convergence process in accession countries in the coming years. These pitfalls come mainly from exogenous developments that further restrict current and future NMS in their effort for a rapid catch up to the core countries. I shall briefly discuss the three major developments:

(i) Globalization;
(ii) Aging population; and
(iii) Increasing frequency of financial crises.

I have analyzed the general growth effects of the first two developments for NMS in previous research (see in particular Wagner 2005b; 2006). I shall also briefly sketch the effects of these structural developments in the model outlined above in Sect. 5.1.3.

(i) Globalization

Globalization leads to locational competition, particularly tax competition (even within the E(M)U, which is a form of regional globalization as member countries

[32] Due to space limitations I will not replicate the model here and shall only highlight the results of the model analysis.

have to comply with the obligation to open up all markets). This implies that the disposable amount for additional public investment is limited or reduced and hence additional growth (catching up) is limited or reduced (see Wagner 2006).

Such tax competition may lead to a reduction of tax levels in both the incumbent countries and in NMS. In the abovementioned model (Wagner 2002a, b), there are two outcomes of such tax competition depending on two alternative strategies: (1) if the pressure to lower the tax rate leads to more efficient public expenditure systems (by cutting "unnecessary" public expenditure), then no growth effects occur in the model; (2) however, if the government reacts to tax competition by cutting (productive) public investments, lower growth rates occur. The latter case is the same as a (downward) deviation from the optimal tax rates in the model above (Wagner 2002a, b). Regarding the convergence process in the European Monetary Union, this situation translates as follows: if the incumbents act according to strategy (1), i.e., by cutting "unnecessary" public expenditure, and if NMS act according to strategy (2), namely cutting productive public investments, then the convergence process (between the incumbents and the NMS) is slowed. As the model above predicts that NMS have relatively high optimal public spending levels (and as the incumbents need not necessarily satisfy the Maastricht criteria; see Sect. 5.2.3 below), a deviation from the optimal public spending levels seems to be more "probable" in NMS than in incumbent countries. In the model above, this means that the tax rate of NMS will (be likely to) deviate from the optimal tax rate; however, the tax rate of the incumbents will (probably) not deviate from the optimal tax rate; hence, there is divergence.[33]

(ii) Aging population

Aging populations are larger in some NMS than in the rest of the EU, resulting in greater public expenditure and lower taxable incomes. This leads to an increase in the deficit ratio, which may exceed the 3% limit (see Wagner 2006; 2005c).

Aging leads to slower convergence between the incumbents and NMS, provided that the aging population is bigger in the NMS than in the incumbent countries and that it puts some pressure on the government budget, e.g., via increasing pension payments, which forces the government to cut spending in other areas, namely productive public investment. In the model above this means again that *only* NMS governments deviate from their optimal tax-rate, yielding divergence (see Wagner 2006).

(iii) Costly financial crises

Costly crisis management to tackle the feared negative effects of (which are more frequent due to financial globalization) financial and economic crises leads, and will lead in the aftermath, to increasing debt and deficit ratios for years to come,

[33] If, however, the incumbents also follow strategy (2), and moreover if the NMS are assumed to be "large" countries there may also be a strong(er) negative growth effect in the core countries (for more on the fiscal issues and challenges in NMS under globalization see Wagner 2006). But even then the goal of "real convergence" is violated if we regard it as a combination of different convergence sub-goals, also including convergence to an absolute level of living standard.

and possible long-term higher ratios in all EU countries. It is likely that these ratios will exceed the 60% (for public debt) and 3% (for deficit) limits in most EU countries. However, only NMS wishing to enter the EA in the next few years will have to strictly comply with these limits. That is, it will be the acceding NMS in particular who may have to follow such (more) austere fiscal policies (than in other EU countries) for some time if they want to adopt the euro. This procedure could not only slow down the catching up process but also reverse it for a substantial period.

Thus, a reduction of (productive) public investment spending seems more probable in NMS than in the incumbent countries for the following reasons: (1) costly crisis management puts pressure on government budgets, (2) NMS must strictly comply with euro area budget-discipline criteria (due to the Maastricht criteria) and (3) optimal public investment levels are higher in NMS than in incumbent countries. Again, in the model above this translates to a deviation from the optimal tax rate in NMS.

5.2 Weak Incentives and Sanction Mechanisms

The second construction failure in the European Monetary Union is the lack of incentives to save and/or reform (towards institutional convergence) the emerging economies, including weak commitment by members, because of a lack of sanction mechanisms in the EA regarding the violation of contracts. To understand the weak incentives and sanction mechanisms in the E(M)U, it is useful to take a brief look at its development stages.

5.2.1 Vision for an European Monetary Union and Its Incorporation into the Maastricht Treaty

When the EU treaty was drafted and the monetary integration process begun in the late 1980s, the installation of legal regulations and institutions was considered sufficient to guarantee and stabilize the monetary union.[34] The main objective was meant to be taken care of by a private financial market mechanism: if government debt and deficit per GDP exceed the respective *fiscal convergence criteria* or limits

[34] A set of formal entry criteria was supposed to serve as a useful test of prospective members' ability to follow disciplined policies. One of the rationales for fiscal entry criteria or constraints has been that spillovers of fiscal policy may be strengthened within a monetary union due to fiscal free riding. Such free riding tends to generate too expansive fiscal policies. This imposition of restrictions on government deficits and debt is to be seen against the background that, in contrast to monetary policy, fiscal policy has remained a national competency within the European Monetary Union.

(60% and 3%, respectively) in a member country,[35] the risk premium in the interest rate was to increase for that country so that the spreads of government bonds would also increase and have a disciplinary effect on its fiscal policy or government.

In addition, the *"no bailout" clause* in the Maastricht Treaty was supposed to (together with the fiscal convergence criteria) be effective, so that the fiscal discipline of the member countries and their governments would be enforced. This "no bailout" clause in Art. 125 of the Treaty on the Functioning of the European Union (TFEU) states that neither the ECB nor national governments can be coerced to bailout other E(M)U member countries.[36]

Last not least, by constructing ECB law along the lines of German Bundesbank law—codifying the personal and institutional independence of the ECB, focusing on the single goal of price stability, and prohibiting the direct financing of public entities' deficits by national central banks and the privileged access of public entities to financial institutions[37]—the monetary stability of the euro as the new common currency was expected to be ensured.

5.2.2 Early Doubts

From early on in the process there have been doubts (among economists and politicians) that the legal and institutional preconditions laid down in the Maastricht Treaty and the Stability and Growth Pact would be effective.[38] On the one hand, it was argued that constituting *fiscal convergence criteria* without ensuring that these criteria would be strictly observed was not an efficient method. Therefore, early on Germany called for automatic sanction mechanisms. It demanded that the sanctions be severe enough to ensure that the Maastricht criteria were adhered to. Further, Germany stated that the sanctions should be introduced automatically to avoid intergovernmental majorities of violators voting against these sanctions. There were attempts to implement the demand for stronger sanctions in the so-called "Stability and Growth Pact" of 1997 when Germany forced the other members to renegotiate the Maastricht Treaty in this respect. However, the changes to the sanctions were insufficient and, even more importantly, Germany also failed to persuade the other members to install automatic sanctions.[39]

---

[35] These criteria are contained in Article 109j of the Maastricht Treaty establishing the European Community and defined in Protocol 6 of that treaty.

[36] "The Union …[as well as] A Member State shall not be liable for or assume the commitments of central governments, regional, local or other public authorities, other bodies governed by public law, or public under-takings of another Member State, without prejudice to mutual financial guarantees for the joint execution of a specific project."

[37] This is laid down in Protocol No 4 of the Treaty of Lisbon.

[38] In particular, Germany was scared that the constraints of the European treaties would lose their bite once a country was admitted into the monetary union, as no member country can be forced out again.

[39] However, it should be noted that, ironically, it was Germany that first violated the Stability and Growth Pact in the first decade of the 2000s.

On the other hand, many economists in academia and the financial markets were not convinced that the "no bailout" clause in Article 104b of the Maastricht Treaty would be binding in the case of severe financial crises because even this clause could be levered out by intergovernmental majority decisions appealing to "exceptional occurrences" (Art. 122 TFEU).

Finally, even the ECB treaty, as strict as it seemed to be, has its loopholes. The "independent" members of the ECB council were officially to attend to European interests only, however, the members also have their own personal interests, particularly as nationals and with respect to their own potential political career in their home country after they have served on the ECB council. This makes political influence possible and likely influences the expectations of actors in the financial markets.

5.2.3 Before and After the Introduction of the Euro

Against the background of the doubts expressed above, private markets from the outset believed neither in the binding nature of the no-bailout clause nor in the bite of the Stability and Growth Pact. This was reflected in the development of leveling government bond spreads from 1995 to 2008 (see Fig. 4). This reflected the mistrust not only against the binding nature of the no-bailout clause but also against the endogeneity hypothesis. This hypothesis claimed that due to the mere fact that a country enters the EA, that it would be encouraged or coerced to further adjust its institutions to those of the incumbents.[40] That is, the process of entry and membership may influence the incentive to conduct structural reforms. This was and is definitely the case after entry into the EU, because the new EU members intend to join the EA (this is what they are expected to). To prepare for this, they have a strong incentive to reform their structures and align their institutions. However, this incentive reduces or even stops after these countries enter the EA, as new members cannot be forced out. Hence, the expectation that with the early inclusion of emerging market economies (of the 1990s) like Greece, Portugal or Spain into the monetary union these countries would institutionally and structurally converge more rapidly towards the core EA proved wrong (see Sect. 4.2 above). For instance, entry into the European Monetary Union does not appear to have sped up either labor market reforms or governance reforms in these countries.

In Fig. 4, it is apparent that the spreads of government bonds among the EA member countries began to level out from the mid-1990s. The reason for this early leveling was the announcement effect or "halo" effect, i.e., the effect of the early announcement regarding the participating countries (already several years before the actual start of monetary union in 1999–2001).

[40] Particularly the "New OCA Theory" emphasized the endogeneity of cyclical correlations with respect to the decision to join a monetary union (cf. Frankel and Rose 1997, and Frankel 2005; see also de Grauwe and Mongelli 2005). However, others have emphasized the endogeneity of structural and institutional convergence in a broader sense (see Wagner 2012a).

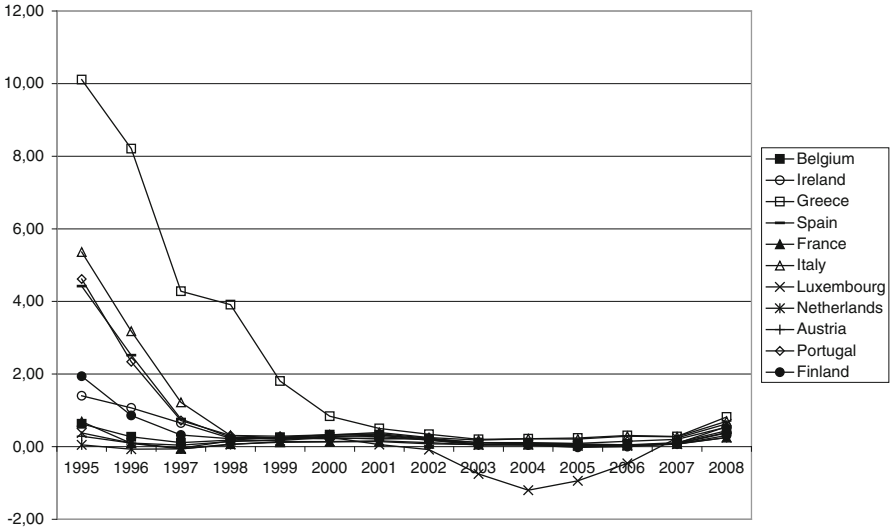

Fig. 4 EA convergence criterion bond yield spreads vis-à-vis Germany (EA12). Data source: Eurostat

5.2.4 After the Financial Crisis

After the eruption of the financial crisis in September 2008 following the default by Lehman Brothers, credit conditions tightened as the solvency of established banks was questioned and there was a significant increase in perceived counterparty risks. Banks refused to lend, inducing a disorderly deleveraging process. Liquid assets were sold at fire-sale prices and credit lines to leveraged financial intermediaries in the shadow banking system were significantly reduced. Business and consumer confidence collapsed as doubts about economic prospects increased and uncertainty regarding policy responses became widespread (for further detail see IMF 2009).

Governments had to intervene to save the financial system and the market economic system as a whole (see Wagner 2010, 2012b). This crisis management by governments was associated with increases in public deficit and debt, particularly in GIIPS (see Figs. 5 and 6). Hence, in the EA bond spreads widened sharply again (see Fig. 7) and the flow of trade finance was interrupted. Banks tightened lending standards and refused to lend to each other when equity prices plummeted. Housing price booms occurred, particularly in Ireland and Spain, created a bubble, and burst as a consequence of the financial crisis. This drew the banking system, and with it the Spanish and Irish economies, into a severe crisis. The rescue measures by the respective governments led the public household from a surplus to a huge deficit (particularly in Ireland) and consequently the bond spreads rose drastically in each country.

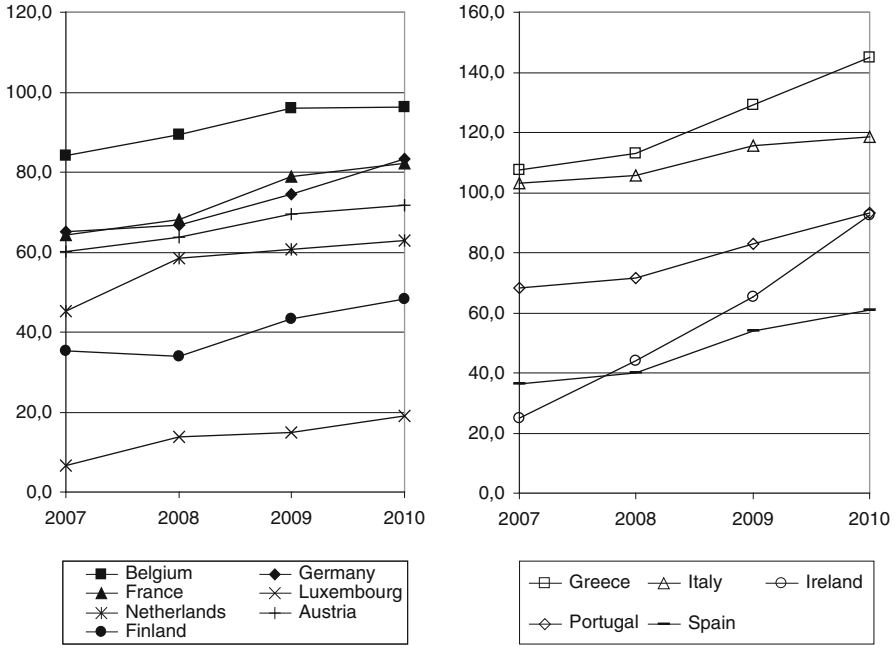

Fig. 5 Government consolidated gross debt (as percentage of GDP). Data source: Eurostat. Notes: General government consolidated gross debt

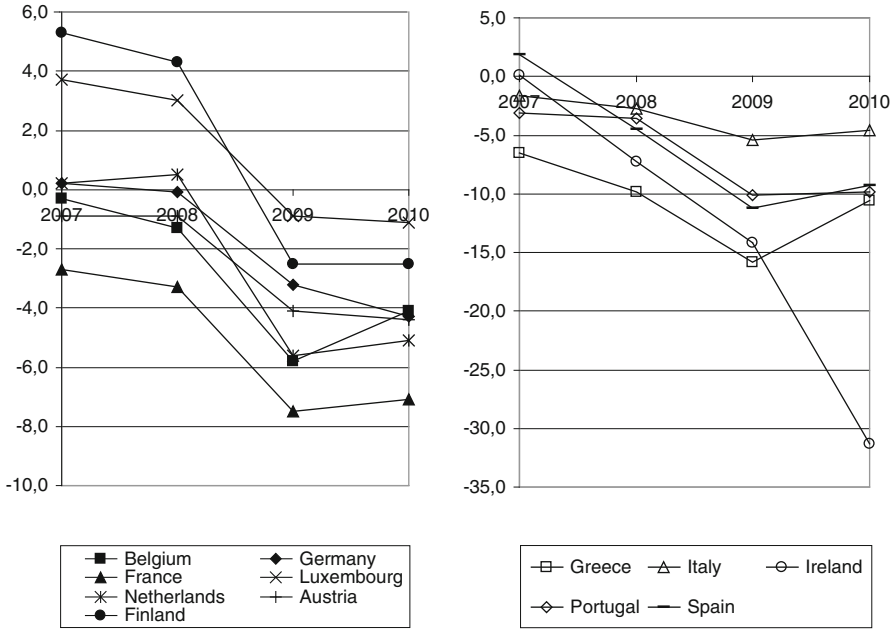

Fig. 6 Government consolidated gross deficit (as percentage of GDP). Data source: Eurostat. Notes: General government consolidated gross deficit

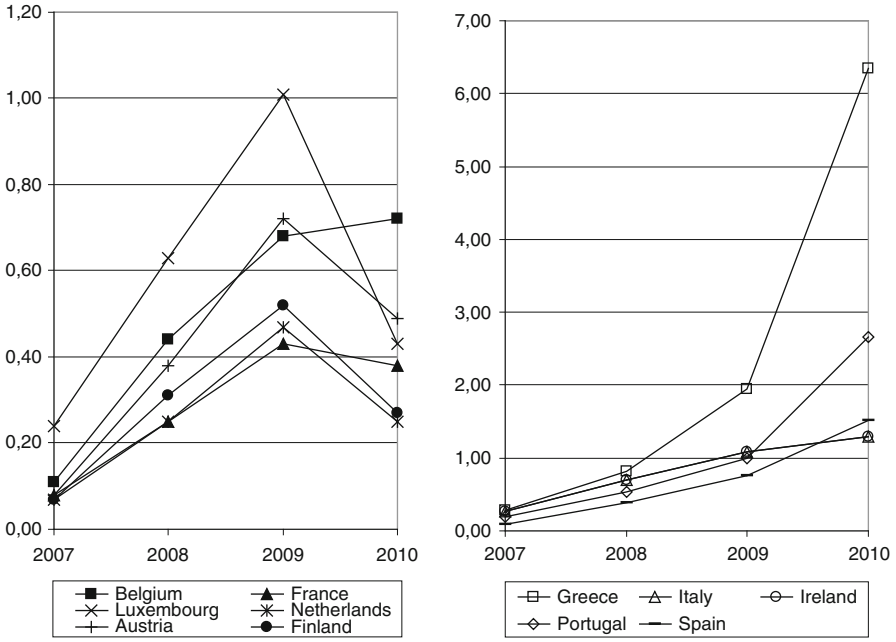

Fig. 7 EA convergence criterion bond yield spreads vis-à-vis Germany (EA12). Data source: Eurostat

The housing price boom in the above-mentioned countries developed along with strong domestic consumption growth because euro adoption meant the rapid leveling of interest rates (reflecting a rapid reduction of the risk premiums against the background of private markets' expectations of a bailout of member countries in the case of a looming insolvency). Lower interest rates were used by GIPS to raise their consumption expenditures and produce an unhealthy boom with rising unit wage costs, current account deficits and increasing public deficit and private and public debt, thus weakening their international competitiveness. After the financial and economic crisis of 2008–2009, GIPS entered into a sovereign debt crisis and again, as before in the mid-1990s, to higher risk premiums (wider bond spreads). Most of the (previously healthy) EA members that provided financial help (rescue measures) also ended up on the edge of the abyss via the production of significantly higher deficits and debt.

5.2.5 Approaches to the Sovereign Debt Problem

There have been several attempts by E(M)U leaders to manage the sovereign debt problem in GIIPS and thus to stabilize the EA. However, these attempts, from the beginning of the sovereign debt crisis until end 2011, have been small-step solutions. Consequently, they have proved to be insufficient again and again (Table 3).

Table 3 EA sovereign debt crisis policy chronology

Sept. 2008	Greece is put under surveillance after the fall of Lehman Brothers
11 Nov 2009	European Commission: Greece did not take adequate action to reduce its deficits (Greece being in an excessive deficit procedure)
11 Feb 2010	"Euro area Member states will take determined and coordinated action, if needed, to safeguard financial stability in the euro area as a whole. The Greek government has not requested any financial support". (official press statement by the heads of state or government of the EU)
25–26 Mar 2010	European Council: agreement to provide bilateral loans (supported by IMF) to Greece; requires unanimity subject to strong conditionality, based on assessment by European Commission and ECB; financing at non-concessional interest rates;
	JM Barroso: "We have solved this in the European family"
23 Apr 2010	Greece requests for activation of the new financial support mechanism
02 May 2010	Agreement for granting financial assistance to Greece
	€110bn = €80bn by EU + €30bn by IMF in the form of bilateral loans
03 May 2010	ECB suspends application of minimum credit rating threshold for Greek government debt instruments
07 May 2010	Implementation of the €110bn Greek rescue package
09 May 2010	Agreement on a temporary European safety net - the European Financial Stability Mechanism (EFSM): €750bn = €60bn EU + €440bn via EFSF + €250bn by IMF
10 May 2010	Implementation of the EFSM and the creation of the European Financial Stability Facility (EFSF), a special purpose vehicle for the channeling of the rescue loans
	ECB announces further unconventional measures
18 May 2010	1 day before the refinancing of a large amount of Greek debt is due: EU provides 1st disbursement for Greece
04 Aug 2010	EFSF becomes operational
19 Oct 2010	Agreement to create a permanent European safety net in near future
21 Nov 2010	Ireland requests financial support from EFSM
28 Nov 2010	Agreement on granting financial assistance to Ireland
11 Mar 2011	Decision to reduce the interest rates and extend maturities of the loans for Greece
24–25 Mar 2011	Agreement that the lending capacity of the EFSF should be increased
31 Mar 2011	ECB suspends application of minimum credit rating threshold for Irish government debt instruments
07 Apr 2011	Portugal requests financial support from EFSM
17 May 2011	Agreement on granting financial assistance to Portugal
07 July 2011	ECB suspends application of minimum credit rating threshold for Portuguese government debt instruments
21 July 2011	To reduce the interest rates and extend maturities of the EFSF loans; agreement to provide further financial assistance to Greece via the safety net and a "voluntary" contribution of the private sector

Only the Brussels summit in December 2011 appeared to have made any real progress: European leaders took a first step towards a EA fiscal "compact", with binding rules on public finances and backed by automatic sanctions. However, this was then overshadowed by the controversy over Britain's veto of a European-wide treaty backing the fiscal compact. Therefore, Germany's goal of finalizing the compact by forcing all 27 EU members to include it in their constitutions failed and hence the renewed attempt to introduce effective automatic and credible (binding) sanction mechanisms failed again.

Furthermore, this fiscal pact was watered down soon after its proposal and decision by the complaints and interventions of single member countries, and now only an intergovernmental solution seems possible.[41] However, experience with intergovernmental solutions creates doubts with respect to the stability and/or effectiveness of such a solution—there are fears that it might turn out to be merely a short-term solution and not able to ensure mid- to long-term stability in the EA.

6 Conclusions

A monetary union can only be expected to be truly sustainable if it does not experience endogenous real divergence among its member countries. First, populations in the poorer (emerging) acceding countries expect a certain kind of convergence among "club" members with respect to living standards. Second, populations in richer admitting countries expect that they will not have to continually bear more and more financial burden to subsidize the poorer member countries (which would be the case if real divergence occurred). Thus, the legitimacy of a monetary union is likely to be dependent upon a certain kind of endogenous real convergence within the union. Third, the functioning of a monetary union is dependent upon institutional-structural convergence among member countries so that business cycle asymmetry is not too large within the union, because otherwise the common central bank cannot work efficiently with its one-size-for-all interest rate policy.

In this paper I have asked whether there are theoretical and empirical indicators that a monetary union, in particular the European Monetary Union, leads or has led to real convergence across its member countries. While the theory on this question is rather quiet, empirical evidence shows that over a certain period of time (before and after entry into the monetary union) convergence has occurred. However, as soon as a large-scale global crisis emerged, convergence stopped and divergence arose; the question is for how long? The reason for this reversal was, among other things, construction failures within the European Monetary Union.

[41] And even this solution would likely be a weak compromise. As we often experienced, it is unlikely that reform decisions will eventually be completely implemented. There will be pressure from lobby groups as well as a natural slowdown of reform efforts as soon the crisis weakens.

These construction failures meant that sanction mechanisms regarding violations were never anticipated to be strong. Therefore, private markets did not expect the "no bailout" to be binding, and this resulted in a leveling of interest rates (due to a reduction of spreads) among heterogeneous member countries before and after the date of entry into the European Monetary Union. Lower interest rates (cheap credit) were used by some of the emerging new member countries to raise their consumption expenditure and to produce excessive credit booms, thus creating inflation pressures and an asset price bubble. When this bubble burst, these countries[42] were left with significant debts and deficits (together with rising interest rates due to again-rising spreads, as soon as the financial markets recognized that an easy bailout was not possible). This eventually produced economic divergence *and* political tensions between the poorer emerging and the richer member countries with growing bailout demands against richer member countries; thus, the legitimacy of the European Monetary Union was also reduced in donor countries.

Therefore, the main message is this: before entry into the monetary union, there is a high incentive to reform to meet the entry criteria. However, this reforming zeal apparently stops soon after entry. This can only be overcome by (i) a change in the construction principles of the European Monetary Union towards implementing strict fiscal rules and (quasi-) automatic sanction mechanisms and (ii) a shift away from accepting new union members for solely foreign policy reasons.

On the whole, although there is no specific model that can be followed to establish a successful economic and monetary union, certain pitfalls and precautions can be taken into account. In this paper, I have identified some of them—as a lesson from the current European debt crisis. As a conclusion, I come to the following suggestions:

First: do not create an economic and/or monetary union solely for foreign policy reasons; such a construction is not stable or sustainable.

Second: think twice before you try to establish a union consisting of structurally heterogeneous countries.[43] However, if you do, then the third recommendation is particularly important.

Third: ensure that you have the appropriate incentive mechanisms installed. These include strict rules and (quasi-) automatic sanction mechanisms.

Appendix

See Table 4.

[42] And also other emerging member countries were affected via contagion.

[43] That is, the more heterogeneous an economic union is with respect to the development stage of its potential members, the more dangerous or costly is the step towards establishing a monetary union.

Table 4 GNI per capita

	Average growth rates and variance of growth rates of GNI per capita						
	Average growth rate		Variance of growth rate		GNI per capita in % of EEC6		
	1980–1994	1995–2008	1980–1994	1995–2008	1980	1995	2008
EEC6	0.064	0.041	0.00055	0.00024	100.000	100.000	100.000
GIPS	0.064	0.055	0.00059	0.00031	69.506	71.836	85.343
Greece	0.040	0.050	0.00052	0.00065	86.290	69.699	79.429
Ireland	0.064	0.067	0.00107	0.00177	64.626	76.376	102.456
Portugal	0.065	0.047	0.00147	0.00025	54.002	63.101	66.776
Spain	0.059	0.056	0.00049	0.00038	69.634	74.222	89.459
Estonia	:	0.090	:	0.00096	:	29.313	58.231
Hungary	:	0.059	:	0.00093	:	40.600	53.098
Poland	:	0.070	:	0.00044	:	34.440	66.776

Data source: OECD

Notes: Annual gross national income per head in US$ at current prices and current Purchasing Power Parity (PPP); for Estonia, the average growth rate and variance of growth rate of GNI per capita refer to the period 1996–2008; ":" indicates unavailable data; EEC6 refers to the six founding member states: Germany, France, Italy, the Netherlands, Belgium and Luxembourg of the EEC

References

Barro R, Sala-i-Martin X (1995) Economic growth. McGraw-Hill, New York
Berger W, Wagner H (2005) Interdependent expectations and the spread of currency crises. IMF Staff Papers 52(1):41–54
Berger W, Kißmer F, Wagner H (2007) Monetary policy and asset prices: more bad news for 'benign neglect'. Int Finance 10(1):1–20
Christodoulakis N (2009) Ten years of EMU: convergence, divergence and new policy priorities. Natl Inst Econ Rev 208:86–100
Darvas Z, Szapary G (2008) Euro area enlargement and Euro adoption strategies. In: European economy economic papers 304, European Commission, Brussels
De Grauwe P, Mongelli FP (2005) Endogeneities of optimum currency areas: what brings countries sharing a single currency closer together? ECB, Working paper no. 468
Emerson M et al (1992) One market, one money. An evaluation of the potential benefits and costs of forming an economic and monetary union. Oxford University Press, Oxford
European Commission (1996) Economic evaluation of the internal market. European Economy: Reports and Studies 4/96
European Commission (2000) Exchange rate strategies for EU candidate countries. European Commission ECOFIN (521/2000-EN), Brussels
European Commission (2002) Report on macroeconomic and financial sector stability developments in candidate countries, by directorate-general for economic and financial affairs of the European commission. European Economy no. 8, ISSN 1608–9022
Frankel JA (2005) Real convergence and euro adoption in central and eastern Europe: trade business cycle correlations as endogenous criteria for joining EMU. In: Euro adoption in the accession countries – opportunities and challenges. IMF, Washington, DC
Frankel JA, Rose AK (1997) Is EMU more justifiable ex post than ex ante? Eur Econ Rev 41(3–5):753–760
Funke N, Kißmer F, Wagner H (2006) International lessons for the property price boom in South Africa. S Afr J Econ 74(2):205–214
Galor O (1996) Convergence? Inferences from theoretical models. Econ J 106:1056–1069
Grosser D (1992) Ordnungspolitische Orientierungen und wirtschaftliche Entwicklungen. In: Gabriel WO (ed) Die EG-Staaten im Vergleich. Opladen, pp 382–413
Hochreiter E, Wagner H (2002) The road to the Euro - exchange rate arrangements in transition economies. Ann Am Acad Polit Soc Sci 579:168–182
IMF (2002) Recessions and recoveries. International Monetary Fund: world economic outlook, Washington, DC
IMF (2009) World economic and financial surveys: crisis and recovery (04/09) International Monetary Fund: world economic outlook, Washington, DC
Kose MA et al (2006) Financial globalization: a reappraisal. NBER working paper no. 12484, Cambridge, MA
Landmann O (2012) Rotating slumps in a monetary union. Open Econ Rev 23(2):303–317
Marelli E, Signorelli M (2010) Institutional, nominal and real convergence in Europe. Banks Bank Syst 5(2):140–155
Mongelli FP (2008) European economic and monetary integration, and the optimum currency area theory. European economy – economic papers 302, directorate general economic and monetary affairs, European Commission
Papademos L (2006) On the road to the euro: progress and prospects of the new member states. Speech at conference "The ECB and its watchers VIII", 5 May 2006
Raileanu Szeles M (2011) Exploring the economic convergence in the EU new member states by using nonparametric models. Institut für Wirtschaftsforschung, Halle
Sala-i-Martin X (1996) The classical approach to convergence analysis. Econ J 106:1019–1036
Wagner H (1995) Europäische Wirtschaftspolitik. Perspektiven einer Europäischen Wirtschafts- und Währungsunion (EWWU). Springer, Berlin

Wagner H (1997) Wachstum und Entwicklung. Theorie der Entwicklungspolitik. Oldenbourg Verlag, 2nd ed. Munich and Vienna
Wagner H (2001) Monetary integration and real convergence. In: The European economic and monetary union: regional and global challenges. Nomos, Baden-Baden, pp 79–95
Wagner H (2002a) Pitfalls in the European enlargement process – financial instability and real divergence. Discussion Paper 06/02, Economic Research Centre of the Deutsche Bundesbank, Frankfurt/M
Wagner H (2002b) Growth effects of 'heterogeneous' economic integration: the example of EMU-enlargement. J Econ Integrat 17(4):623–649
Wagner H (2005a) Comments on "Euro adoption in the accession countries: vulnerabilities and strategies". In: Euro adoption in central and eastern Europe, IMF, Washington, DC
Wagner H (2005b) Globalization and financial instability. Int J Soc Econ 32(7):616–638
Wagner H (2005c) Reform in the new EU member states - will a 3-pillar pension system work? E Eur Econ 43:27–51
Wagner H (2006) Fiscal issues in the new EU-member countries – prospects and challenges. SUERF Studies 2006/1, Vienna
Wagner H (2010) The causes of the recent financial crisis and the role of central banks in avoiding the next one. Int Econ Econ Pol 7(1):63–82
Wagner H (2012a) Is there an endogenous convergence in a monetary union? OCA-theory vs empirical evidence. Working paper (mimeo), University of Hagen
Wagner H (2012b) Is harmonization of legal rules an appropriate target? Lessons from global financial crisis. Eur J Law Econ 33(2):541–564