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The Endogeneity Approach of the Theory of Optimum Currency Areas - What does it mean for ASEAN + 3?

Horst Loechel and Stefan Baumann

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Abstract

The paper analyzes if and how the experiences of European integration can be used for the progress of East Asia integration especially of the ASEAN+3 countries[1]. Of special interest is the relevance of the new endogeneity approach of monetary integration for East Asia. The question is discussed in theoretical as well as in empirical terms. It can be shown that despite of the extensive gap between the level and the process of regional integration in Europe and East Asia there exist some conclusions of the endogeneity approach which can be useful for integration in East Asia as well. In practical terms it is concluded that monetary integration in East Asia could make progress via sub grouping of clusters of countries at best with the instrument of a kind of an 'Asian snake' similar to the European exchange rate system in the early 70's.

Contact:

Horst Löchel, Prof. Dr.
Shanghai International Banking and Finance Institute
Chairman and Vice President

Stefan Baumann, MBA
China European Business School, Shanghai

17F/D, World Plaza, 855 Pudong South Road
Shanghai 200120, P. R. China

Sea of Clouds, 23B, 138 Qinghai Road
Shanghai 200041

Phone: + 86 21 5836 9891
FAX: + 86 21 5836 9581
Email: horst.loechel@sibfi.com

Phone: +86 13761696721

Email: sjbaumann@gmail.com

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[1]   The ASEAN+3 countries include Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam (ASEAN) plus China, Japan, and South Korea.

Content

1 Introduction

Regional integration always works in the tense relationship between political and economic integration, which was noted already by the founders of the theory of regional integration like Tinbergen (1954) and Balassa (1962), for example. Furthermore, regional integration heavily depends first on the area and second on the point in time, which means that it is a non-linear process. Higgott (1998) has shown this for Europe and Chia (2000) for East Asia. For example, whereas the starting point of European integration process was mainly driven by political reasons, especially to avoid any further war in Europe after the disaster of the Second World War, the current integration process in South East Asia has obviously an economic background, especially the destructive impact of the Asian crisis as pointed out inter alia by Haggard (2000) and Goldstein (1998). Furthermore, time matters. For example, whereas the European integration process faces some crisis now, the integration process in Asia develops quite well even if it happens more or less spontaneously as has been shown by Abo (2000).

But in any case regional integration has to have a goal otherwise it loses its momentum. The Europeans have chosen right from the beginning monetary integration as such a driving force. The idea was, as Mongelli (2002) pointed out in his 'triangle of European integration', that monetary integration triggers economic integration which in turn leads to the final goal of more political integration.

The triangle of European integration
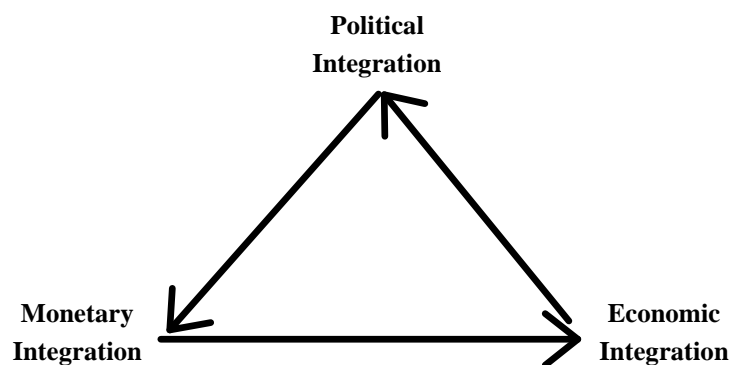
Based on this background the purpose of the following essay is first of all to show how monetary integration has worked in Europe so far. We develop our ideas in the framework of the theory of Optimum Currency Areas (OCA), which was founded by Mundell (1961), McKinnon (1963), and Kenen (1969) and enhanced by Frankel and Rose (1997, 1998) to the so-called endogeneity approach of OCA. Based on the theoretical as well as empirical results we try to show what these experiences could mean for the process of regional integration in the ASEAN + 3 countries.

The main conclusion is that the endogeneity approach matters also to the Asean+3 countries despite the extensive differences in the integration levels as well as processes between Europe and South East Asia. In practice this means, once some integration steps have been defined like, for example, the commitment on the first East Asian Summit in December 2005 in Kuala Lumpur, to establish a Free Trade Area in a certain number of years, internal forces are at work which fosters the integration process. Therefore, the most important point is the definition and setting of integration goals to reach.

The paper is organized as follows. In section 2 it follows an introduction into the theory of OCA. Section 3 introduces the endogeneity approach and we discuss the contradictions to the so-called 'specialization approach' in section 4. Section 5 shows then the empirical evidence of integration in the European Monetary Union (EMU) after the introduction of the EURO for the areas of trade, business cycle, relative prices and inflation rate, and the financial markets. Based on these results we analyze for the same items the present state of integration in the countries of ASEAN + 3 in section 6. It follows a comparison of European and East Asia integration combined with a recommendation based on the European experiences for the further integration process in East Asia in section 7. The paper ends with a summary and an outlook.

2   The Theory of Optimum Currency Areas

The theory of optimum currency areas (OCA) starts in its origin as a simple static cost-benefit analysis (see, for example, De Grauwe, 2000, and Loechel, 1998). The main idea was that benefits from a common currency result in principle from an increase of the gains of trade; i. e. a common currency increases the trade and therefore the economic benefit of the involved countries. Examples for that effect are decreasing transaction costs, the elimination of the exchange rate risk and higher price transparency.

On the other hand a monetary union has to face costs as well. Especially, the loss of national control of exchange rates and the interest rate mechanism, decreasing the impact of macro-economic stabilization policy. This is especially the case if fiscal policy remains a national issue as in the European Monetary Union (EMU)[2]. As a consequence this means that no country of the monetary union can peruse some real adjustment in the face of asymmetric disturbances or business cycle shocks even if prices and wages are sticky and therefore useless or insufficient for the necessary adjustment process.

The simply following chart which puts together the benefits and the costs of a monetary union shows the analytical core of the old theory of OCA. The horizontal axis measures the degree of economic integration between the involved countries. Economic integration itself is thereby a multi-dimensional variable consisting of prices, trade, financials, business cycles,

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[2]   The so-called 'Stability and Growth Pact', which was founded in 1997, is the only supra national fiscal guideline for the EMU countries. It states that the deficit of the member states of EMU should not exceed 3 % of its GDP. But the sanction mechanism is such week that the pact in reality puts only if any pressure on national policy via public opinion rather than formal rules (for this judgment compare, for example, the statement of ECB, 2005d).

and product and labor market integration. The related hypothesis is self-evident: The higher economic integration, the higher (lower) the benefits (costs) of a monetary union of a country. Therefore, the BB-schedule, which stands for the benefits of a monetary union, has a positive slope, whereas the CC-schedule, the costs of the union, is negative.

Cost-benefit-analysis of the OCA theory
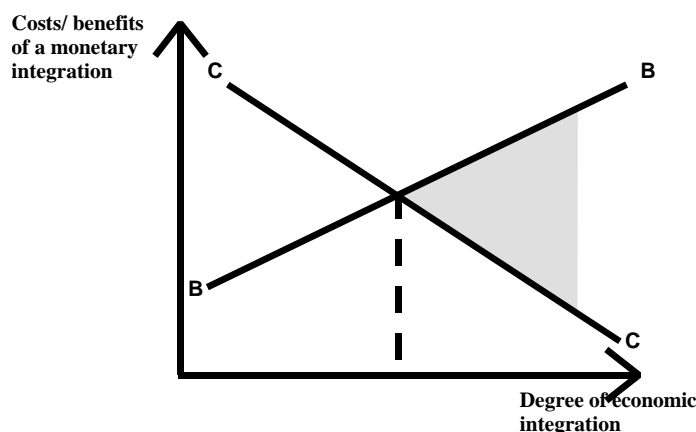
From a pure economic point of view it is quite clear that a country should join a monetary union if the benefits exceed the costs, which is obviously the case if the integration level is beyond the intersection of the BB and CC schedule (the so-called OCA-Area). The question, of course, is how this theoretical result could be transferred in an empirically testable hypothesis. For this purpose the OCA-literature develops so called OCA-properties for monetary integration which were summarized by Bayoumi and Eichengreen (1993, 1996), for example. These properties cover economic indicators like price and wage flexibility, factor mobility, degree of openness, degree of diversification in production and consumption, similarities of inflation rates, and last but not least the degree of political integration.

Before the start of the EMU in 1999 there was a lot of empirical research following that line, for example, like the study of IMF (1997). Despite differences in methodologies, period of examinations, and results there was one mainstream finding, which states that only the so-called 'core countries' are really ready for a monetary union given the requirements of the OCA-properties (for a summary, see, for example, Loechel, 1998). These 'core countries '-the so called 'DM bloc' because of the dominance of the German 'DM' as the anchor currency - consisted of Germany, France, the Netherlands, Belgium, Austria, and Denmark[3]. This somehow disillusioning result was mainly the outcome of the low price and wage flexibility across Europe, the low mobility of labor, the diversities in the business cycle and last but not

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[3] A recent more sophisticated study by Gonzalez and Launonen (2005) which uses the risk premiums of forward exchange rates as convergence criterion confirms the result.

least the still too low level of political integration, especially in terms of fiscal policy as pointed out in a well-known study by OECD (1999).

But politics preferred another way[4]. As everybody knows, EMU was founded in 1999 with 11 countries, while Greece joining EMU one year later. The decision was based on the so-called Maastricht criteria, named by the small Dutch town where in December 1991 the timeline to EMU was framed (for details see De Grauwe, 2000, chap. 6). By January 1999 at the latest, so the decision, EMU had to be founded and the Council of Ministers would decide by qualified majority which countries had met the five convergence criteria[5].

3   A new view: The endogeneity approach

The endogeneity approach is a dynamic enhancement of the static version of the CA-theory.[6] It analyzes and measures the intrinsic processes within a monetary union towards an optimum currency area from a positive as well as a normative perspective.[7] That is to say, instead of using an ex ante perspective as in the old theory of OCA, the new one focuses more on an ex post view as shown by Mongelli (2002) as well as by De Grauwe and Mongelli (2005). Whereas the old paradigm asks ex ante which countries are appropriate for a monetary union, the new one focus on the question whether and how fast an already established monetary union moves into the direction of an OCA.

The different views of the problem are accompanied with a change of the methodology. The new OCA puts the focus on the endogenous changes within a monetary union, whereas the old one compares, as we saw, the costs and benefits of selected variables in some moment of time. Therefore, the switch from the old to the new theory of OCA could be also described as the move from a static to a dynamic perspective. Whereas the old theory asks which countries are ready for a monetary union the new one put the question in this way: What happens within a monetary union?

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[4]   Already the famous „One Market, One Money" report by Emerson et al. (1992) points out that „there is no ready-to-use theory for assessing the costs and benefits of economic and monetary union." The theory of optimum currency area has, in the view of the report, provided only important insights but is far away from being a decision tool.

[5]   The convergence criteria are: 1. Price stability is defined as an inflation rate which is not higher than 1.5 % of the average of the three EMU countries with the lowest rate. 2. The long interest rates must be within 2 % of the average of the three countries with the lowest rates. 3. The national budget deficit must not exceed 3 % of GDP. 4. Public debt must not exceed 60 % of GDP. 5. The currency of the countries had to stable in so far that the currency must not have been devalued in the previous two years and should not remain within a normal fluctuation band (2.25 %) of its central parity rate in the exchange rate mechanism.

[6]   Actually, the endogeneity approach as it was initiated by Frankel and Ross (1997, 1998) started as a critique of the cost-benefit analysis of the theory of optimum currency areas claiming that, for example, trade integration and business cycle correlations are jointly endogenous and therefore immeasurable for the old ex ante approach.

[7]   The terms 'positive' and 'normative' are used in the sense of scientific statements which are related to facts and figures only, whereas the second term implies an opinion or judgment.

For the endogeneity approach two variables are crucial: economic openness, e. g. intra-trade and the correlation of income, e. g. business cycle correlations between the member states of the union. The reason is that countries sharing a high level of either trade integration and income correlation among them will find it beneficial sharing a single currency due to gains of trade and the absence of asymmetric shocks.

In the following graph the so-called OCA-line is an equilibrium line on which the costs and benefits of a monetary union are just balanced (see De Grauwe and Mongelli, 2005). That is to say all combinations of income correlation and degree of openness are in a way, balances of costs and benefits of a monetary union. For example, point (1) as well as point (2) are equally balanced costs and benefits despite the fact that the former has a higher (lower) degree of income (openness) as the later.

### Endogeneity approach of the OCR theory
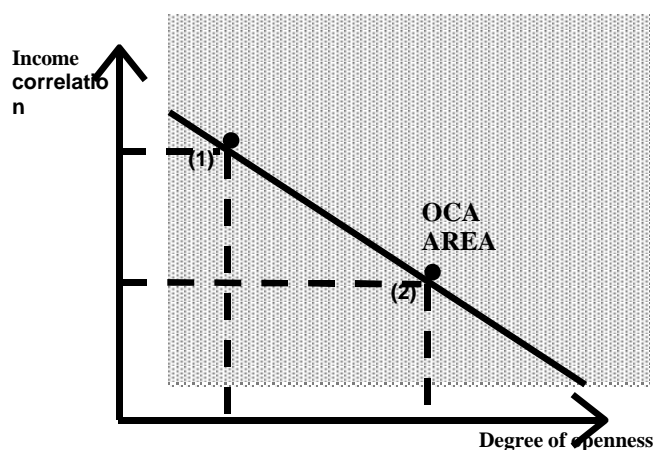
OCA line

The downward slope of the straight line is because of the trade-off between the two forces. An increase (decrease) in symmetry and therefore a decline (increase) of the asymmetric shocks, for example, has to be offset by a decrease (increase) in the degree of economic openness, i.e. trade, in order to stay in equilibrium of costs and benefits. All points to the right of the OCA-line therefore show combinations of income correlation and openness for which the benefits of the monetary union exceed the costs and vice versa.

The question, of course, is in which direction an already established monetary union will move: Closer to an OCA, or the opposite way as indicated by the arrows on each cluster group in the graph below? The graph shows three regimes of economic integration: the European Union (EU) of 25 countries now, the overall EMU of 12 countries, and a monetary union between the above mentioned core countries only, which fulfilled the criteria of the OCA theory already before the start of EMU. It is assumed that whereas the EMU of 6 would already be an OCA, the real existing EMU of 12 is still not and the EU of the 25 countries is far away from it.

Moreover, it is not only intra-trade and business cycle correlation, the two endogenous variables of the model, which determines the direction of adaptation. But there are other, exogenous variables as well, which influence the process. Take for example, the flexibility of wages and prices. Clearly, an increase of this kind of flexibility will bring each cluster group closer to an OCA as indicated by the downward slope of the OCA line. That is to say, in the process towards an OCA not only cluster groups move but the OCA-line as well. Whereas the former is driven by the development of the degree of business correlation and openness the latter is influenced by exogenous variables like flexibility of goods and factor markets or financial market integration, for example.

Dynamics in the endogeneity approach
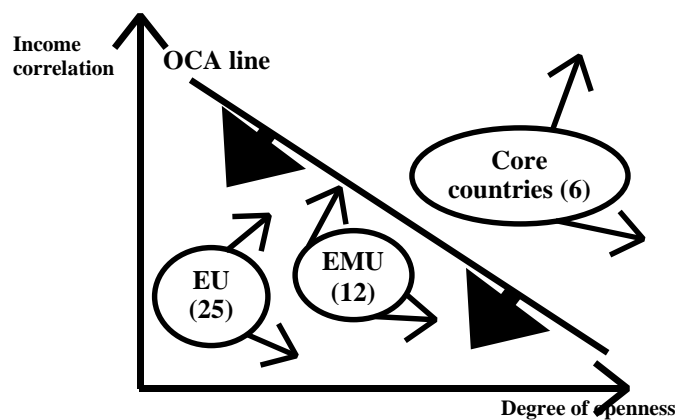
4   Specialization versus endogeneity

Actually, there are two contradicting views about the directions of changes for countries which have already joined a monetary union. The first view is the so-called specialization hypothesis developed by Krugman (1991, 1993). Krugman's point is routed in trade theory and increasing returns to scale as a single currency removes some obstacles to trade and encourages economies of scale.

The hypothesis states that countries if they become more integrated and therefore their reciprocal openness rises, they will also specialize in the production of those goods and services for which they have a comparative advantage following Ricardo's famous comparative advantage theorem (see, for example, Krugman and Obstfeld, 2000, chap. 2). Therefore, members of a currency area would become more diversified and hence more vulnerable to asymmetric shocks. Correspondingly their income will become less correlated. Whether an established monetary union or any other form of economic integration moves in the direction of a OCA depends therefore obviously on the question whether the negative impact of declining income correlation will be offset by a rising degree of openness.

The argument of Krugman was recently backed by Kalemli-Ozcan and others (2003), who argue that higher financial integration lead to more asymmetric fluctuations as well because of specialization in production. The reason for that is due to the fact that a higher degree of financial market integration leads in general to lower risks which in turn make specialization in production more attractive, which is normally combined with higher risks.

The contrary hypothesis was developed within the endogeneity approach. Actually, Frankel and Rose (1996, 1998) postulate a positive link between income correlation and trade integration. The basic intuition behind this judgment is that increasing trade more or less automatically tends to narrow the business cycle gaps between the involved countries and therefore decline the importance of asymmetric shocks as the main costs of a monetary union. The reason is that the removal of trade barriers allows demand shocks spreading across the trading partners and leads therefore to a more correlated business cycle.

Moreover, Krugman's point is mainly based on the assumption of increasing economies of scale. But actually economics of scale do not matter so much any more in developed countries because of the switch from the industrial to the service society. A point which was made by De Grauwe and Mongelli (2005)[8].

5 European evidences

In the following we summarize the empirical research about the development of the integration process with EMU since its start in 1999. Four areas are in focus: trade developments, business cycle correlation, price convergence, and financial market integration.

Trade developments

A drop in exchange rate volatility can increase the volume of trade in two ways: either via more export units per company or by an increasing number of firms which are engaged in trade. There is a broad consensus in literature that only the second channel – increasing number of exporting firms – could have a significant impact on trade within a monetary union (see, for example, Baldwin et al., 2005). In model terms this means that the effect of reduction or even elimination of exchange rate uncertainty via fixed exchange rate regimes or even a currency union has non-linear features, like the convex continuous curve in the graph below, because otherwise the effect is quite insignificant as shown by the dashed straight line.

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[8] Last but not least the experience of the United States can be seen as contradiction of Krugman's hypothesis.

The 'Rose-effect'
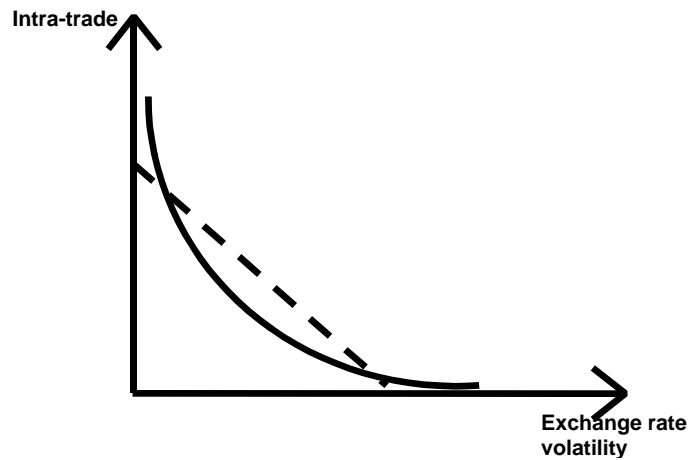
The trade volatility link is called the 'Rose effect' because of a seminal paper by Rose (2000) in which a kind of a gravity model of trade is used for a panel of 186 countries for the period of 1970 to 1990 with the robust result that countries within a monetary union traded around 2.3 times more with the other members of the union than with outsiders[9].

Although several studies have built upon this framework and provide support for the thesis (for an overview see Baldwin et al., 2005) Rose (2001) itself is somehow cautious regarding the consequences for EMU because of the fact that most countries in the sample of his original study are small and often poor ones like dependencies, territories, overseas departments, or colonies. Honohan (2001), for example, argues explicitly that because of this sample no inference can be made regarding the effects of the creation of EMU.

Actually, the evidence of the impact of the Euro on intra-trade is still limited. One problem, of course, is the fact that EMU was first founded in 1999 so that the available data set is limited. Nevertheless, Berger and Nitsch (2005) provide a sophisticated data set for the EMU countries for the long run. From this perspective it can be shown that the impact of the Euro on trade within the Euro area is so far simply a continuation of an historical trend which started with the Marshall Plan in 1948[10]. The line in the following graph from the study of Berger

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[9] The gravity model was originally used by Tinbergen (1962), where geographical distance was seen as a determinant of international trade patterns. The modern theory draws its gravity model from physics. In economic terms, attraction is trade, mass is GDP, and distance keeps distance (see De Grauwe and Mongelli, 2005).

[10] Other historical events of European integration were the Treaty of Rome in 1957, the Werner Plan in 1969, the foundation of the European Monetary System (EMS) in 1979, the Delors Report in 1988, the Maastricht Treaty 1991, the single market in 1993, the introduction of the Euro in 1999, and finally the enlargement in 2004.

and Nitsch (2005) reports that the estimated regression coefficient for all years since 1954 is significantly unequal to zero and increasing, which means intra trade is progressively increasing in the examination period for the EMU countries. Obviously, there is no special trade effect of the introduction of the Euro so far.

Evolution of trade intensity - European countries[11]
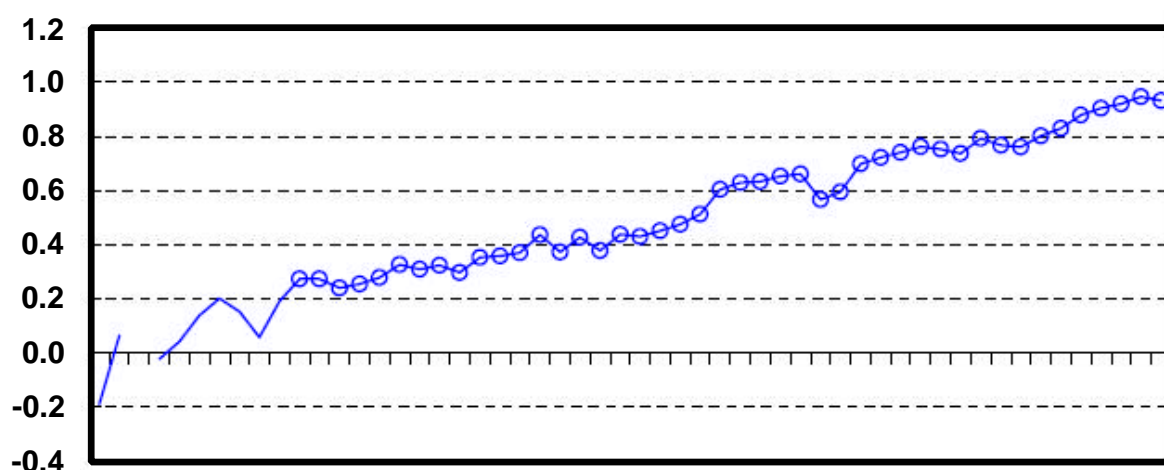
Of course, from this result it can not be concluded that a monetary union like the EMU has no special effect on intra trade. Obviously, time matters. The trade creating effects of a monetary union may take some time to be felt. Rose (2004), for example, suggests a period of about 15-20 years.

Business cycle correlation

As already mentioned the endogeneity approach of the theory of OCA predicts a close linkage between trade extension and business cycle correlation within a currency union, which refute the above mentioned specialization approach (see, for example, Frankel and Rose, 1996, and Rose and Engel, 2002). Actually, the reality of EMU proves this hypothesis so far.

The ECB (2005a, 2005f) has recently published two short studies which measure the dispersion of real GDP growth rates since 1970 for the countries joining the Euro area as well as the dispersion of its constitutional components, the output gap as a cyclical component and the trend growth as a long run component. The figures below show the result in non-weighted and weighted terms.

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[11] Berger and Nitsch (2005), Estimated coefficients derived from pooled regressions. Circle indicates that the coefficient is significant at the 5% level.

As far as the output gap is concerned, it seems that its dispersion decreased significantly in the course of the 90s, and has remained broadly stable at a low level in the last five years. Regarding the trend growth rate, dispersion increased in the course of the 80s and for most of the 90s, but has fallen somewhat since the late 90s.

Dispersion in real GDP growth rates[12]
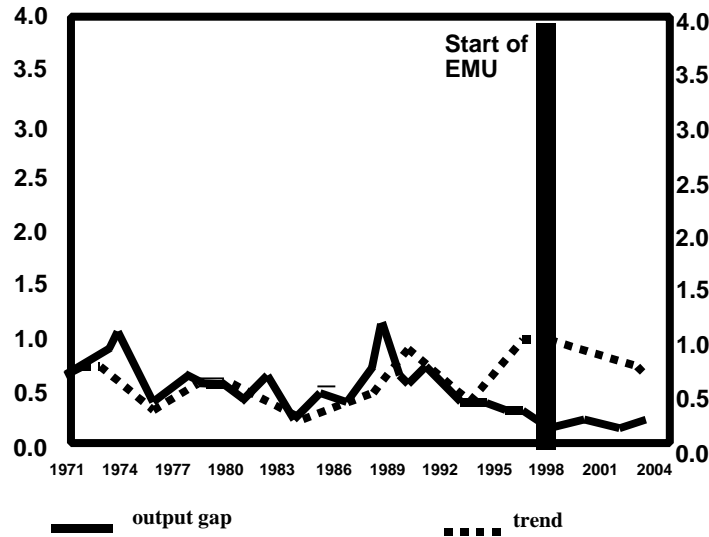
These results imply at least two interest features. First of all, the increase of the correlation of the output gap and therefore the business cycle was obviously triggered by the announcement of EMU in the Maastricht treaty in the beginning of the 90s in combination with the launch of the single market in 1993 rather than by the introduction of the Euro itself. Secondly, the fall of the trend growth rate especially since the introduction of the Euro comes obviously from the comparable under-performing growth rates of the three largest economies in the Euro area, France, Germany, and Italy, which consist of over 70 % of the GDP of the Euro area. The introduction of the Euro so far has not triggered economic growth.

Anyway, both results are consistent with the endogeneity approach because each of them shows a higher business cycle correlation and therefore lower shock vulnerability in connection with the introduction of a monetary union. In the framework of the OCA-theory this means that the costs of a monetary union declines after or correlated with its introduction. On the other hand this does not necessarily mean that the average growth of the currency area and therefore the economic benefit will increase. As we clearly see for EMU the low performer countries dominate the growth rate of the whole area so far. This judgment is supported by the fact that the study of the ECB (2005f) shows that the breakdown of the variance of real GDP growth rates across the Euro area countries indicates a large decrease in the contribution of the cyclical component to dispersion and, simultaneously, a large increase in the contribution stemming from trend growth differences, mainly since the beginning of the 90s.

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[12] ECB (2005f), p. 43

<u>Price convergence</u>

Regarding price convergence one has to distinguish between the convergence of the inflation rate, the absolute price level, and the relative price, e. g. the prices of similar goods in the different countries of EMU. Actually, as it can be seen from the following chart prepared by ECB, the inflation rate in EMU is converging but the driving force was more the announcement and the way to EMU rather than the establishment of EMU itself. Since the start of EMU in 1999 no further convergence can be seen. On the other hand the dispersion of the inflation rates in EMU is close to levels observed across the 14 US metropolitan statistical areas but higher than that recorded in the four US census regions.

Dispersion of annual inflation[13]
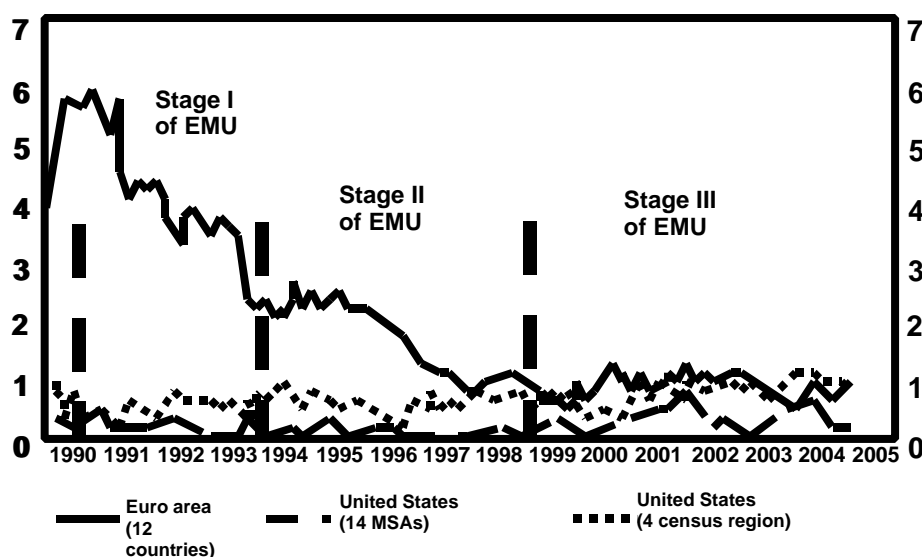
Busetti et al (2006) figures out that the well-known Balassa-Samuelson effect combined with price rigidities are the main reasons for the still existing inflation rate dispersion in the EMU[14]. Practically more important than the reasons are the consequences of inflation dispersion for a consistent monetary policy in the Euro area. For example, whereas in the period 1999 to 2004 the inflation rates of Germany were on average significantly lower than the average inflation rate in EMU the rates of Greece, Spain, Ireland, Netherlands, and Portugal were significantly higher.

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[13] ECB (2005b, p. 62), 14 US metropolitan statistical areas (MSAs) and the four US census regions, un-weighted standard deviation in percentage points

[14] The Balassa-Samuelson effect explains inflation pressure if the wages in non-tradable goods speed up with the same rate as tradable goods, but keeps behind of the productivity growth of the later, which in turn leads to price pressure.

It follows, that for any nominal interest rate Germany had a significantly higher real interest rate than the countries where the inflation rate is higher with the related bad impacts for growth. The inverse is true for high inflation countries. Thus, because the average inflation rate of the euro zone is the benchmark for ECB's interest rate policy it follows that this policy is probably too tight for Germany – hampering growth - and too soft - pushing inflation - for the other countries. Therefore, it is not easy to expect that the divergences will decline in future.

The empirical results for relative price movements are quite similar. Relative price dispersion in the Euro area declines over much of the 90s but there is no evidence of a tendency for prices to convergence even more after the introduction of the Euro as De Grauwe and Mongelli (2005) pointed out based on relevant empirical studies. This lack of the law of one price fits very well with a recent study by Fabiani et al. (2005) and Alvarez et al. (2005).[15] They show that monopolistic price competition, e. g. price discrimination and mark-up rules, are the most common price setting rule in the Euro area. Therefore, convergence of relative price in the Euro area can not work because there are no homogenous markets even for tradable goods.

Financial market integration

As pointed out by ECB (2005) probably the most import convergence progress can be seen in financial market integration since the start of EMU. Of course, especially in money markets the integration is pretty high although the repo segment, in which banks exchange short run liquidity against collaterals, is less well integrated as the unsecured deposit market as has been shown (see ECB, 2005).

Furthermore, the bond markets, especially in its treasury segment, are highly integrated. Thus, for example, the yield differentials between government bonds exceed today only rarely 40 basis points or so, which is the case since the announcement of the irrevocable fixed parities of the euro currencies in May 1998. Since then the spread keeps more or less stable but the volatility of the yields considerably declines as Adjaoute and Danthine (2003) have proved. The same authors have shown that the equity risk premium have decreased in EMU since the introduction of the Euro therefore reducing the cost of capital. Moreover, there are also some evidences that the structure of equity returns and therefore risk has changed to industries and sectors rather than countries.

Last but not least banking integration is facing slow progress in EMU as Angeloni and Ehrmann (2003) have pointed out. Whereas wholesale banking is more and more integrated, retail banking still remains domestic. One reason for that is the still slow pace of intra banking M&A activities in Europe. Maybe the recent take over of the German HypoVereinsbank by the Italian Unicredit is a starting point for more consolidation in Europe and therefore for a higher integration of the banking market as well.

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[15] For a summary see ECB (2005g).

Putting together all four integration areas the picture is mixed. Whereas there is some integration progress in business cycle correlation and financial markets, the introduction of the Euro seems to have no significant effect on intra EMU trade and price convergence so far. From a theoretical point of view it has to be stated that the endogeneity hypothesis is neither proved nor disproved yet[16]. Therefore, it has to be seen how the integration process within the EMU keeps going in the coming years.

6 Present state of integration in ASEAN + 3

We now analyze the present state of economic integration in the ASEAN + 3 region[17]. In general, one may expect that the integration should be not as advanced as in the EU and the EMU mainly because the Asian countries are looking at a much younger history of economic cooperation. However, the integration process has made significant progress, especially in economic terms. It can be said that regional integration in Asia is much more economic and less politically driven than in Europe.

Trade integration

In 1993, the ASEAN countries launched the so called Common Effective Preferential Tariff (CEPT) agreement, suggesting a significant decrease in tariffs to achieve eventually a free trade area for the ASEAN region[18]. By the end of 2004, six out of the 10 ASEAN countries had brought 99 percent of their products in the CEPT Inclusion List down to the targeted tariff range of 0-5 percent (ASEAN, 2006). While these trade barriers have been mostly removed, the level of intra-ASEAN trade has not significantly increased. The export within the region accounted for 21.7 percent of the total ASEAN exports in 2004, remaining at a similar level as 1993, when the CEPT agreement was launched and the share was 21.14 percent (ASEAN, 2005).

The intra-regional trade share increases significantly, when looking at the whole East Asian region. Kawai (2005a) arrives at a share of 54 percent for the East Asia-15 countries in 2003, and has increased significantly from 34.7 percent in 1980.[19] This share is higher than the one of the NAFTA region (46 percent), but lower than the intra-trade in the EU-15 (64.4 percent).

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[16] De Grauwe and Mongelli (2005, p. 29) interpret the evidences a little bit more optimistic as they stated: "The different endogeneities that exist in the dynamics towards optimal currency areas are at work. How strong these endogeneities are and how quick they do their work remains to be seen. Some non-economic factors may play a role as well." A similar judgement is given by De Grauwe and Melitz (2005).

[17] The ASEAN+3 countries include Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam (ASEAN) plus China, Japan, and South Korea.

[18] For an overview of economic integration in Asia, see Lamberte (2005).

[19] Kawai defines East Asia-15 as the ASEAN+3 countries plus Hong Kong, China and Taiwan, China.

The main reason for higher intra-trade when including Japan, South Korea and China can be seen in the different comparative advantages between the countries. Japan and South Korea offer more high-skilled production, while the other countries have their competitive advantage in labor-intensive work, suggesting that products are shipped to different countries for different stages in the value-chain (ECB, 2004). Japan has become together with the US the most important trading partner for ASEAN, accounting for 13.72 percent in 2004, while the US reached 14.08 percent and the EU 11.5 percent (ASEAN, 2005). China is the fourth most important trading partner with 7 percent.

Overall, it seems that there is a natural trade linkage between the ASEAN+3 countries despite the lack of a common currency and still-existing trade barriers like tolls and tariffs.

Intra-regional Trade Share[20]
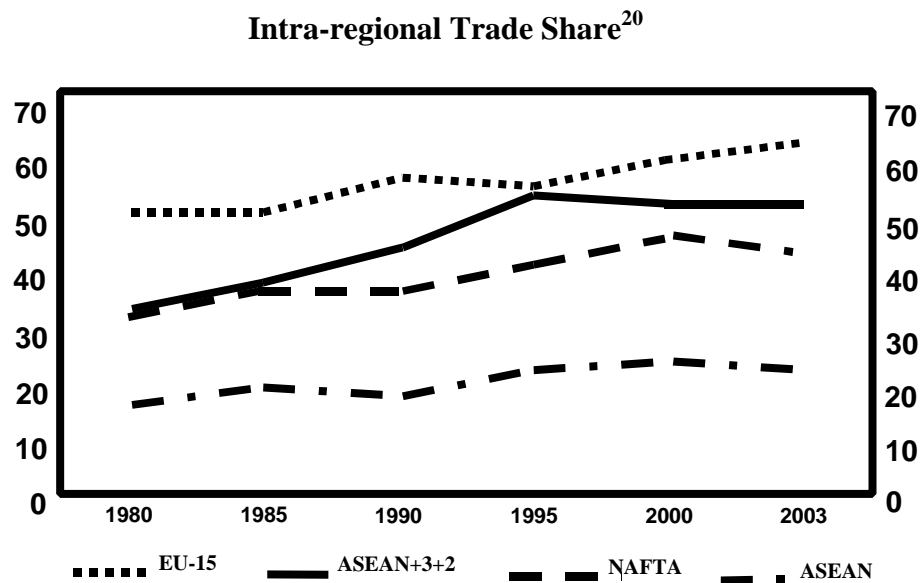
Business cycle correlation

As mentioned before, it is of interest to analyse if increasing trade integration also leads to a higher harmonization of business cycles. Shin and Wang (2004) did not find such a strong correlation for the case of 12 Asian economies. Moreover, they identify that it is important what kind of trade two countries share. Intra-industry trade is a source of higher output correlation, while inter-industry trade does not bring business cycles of countries closer together.

According to Shin and Wang, intra-industry trade increases over a long period of time, but drops when countries such as Japan or Korea are already far-developed. Eventually, these developed economies become more specialized, so that intra-trade will decrease in favour of inter-trade. This then again means that higher trade integration does not necessarily lead to higher synchronization of business cycles.

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[20] In percentage, Kawai (2005), The intra-regional trade is defined as the ration of trade of the region to the overall trade.

Shin and Wang's findings are mainly supported by Calderón et al. (2005), who also presume intra-industry trade to be important for higher business cycle harmonization.

Arriving at similar results, Sato and Zhang (2005) conclude that it is less suitable for the whole East Asian region to form a currency union. They identify just subgroups of countries to have a rather high degree of output synchronization at this stage, while other countries such as Japan do not seem to have a significant correlation in supply, exchange rate and demand shocks. Sato and Zhang point out that it is therefore unlikely that Japan can play a similar role in Asia as Germany in the European region, at least not now.

Ramayandi (2005) makes the case of the five core ASEAN countries Indonesia, Malaysia, Thailand, Singapore and the Philippines to test their ability to absorb shocks. The results present a significantly higher positive correlation, so that these countries now face more common structural shocks affecting their economies. Ramayandi therefore suggests that these five benefit from reducing the operating costs of implementing policies if they integrate their monetary systems.

Overall, it can be said that even if intra-trade will further increase in the ASEAN+3 countries, this might not necessarily mean that business cycle correlation will also increase significantly enough to set off the costs of a monetary unification in terms of lower ability to absorb asymmetric shocks.

When looking at economic shocks in the whole East Asian region, Sánchez (2005) does not see any high correlation between shocks in the different countries, but finds that the economies display rather diverse supply characteristics. In addition, economic integration is hampered by countries following different inflation targets. As Sánchez points out, this can become a difficult issue for an ASEAN monetary integration, but might be less of a crucial issue for a monetary union comprising the entire East Asian region.

Exchange rate regimes

After the financial crisis in 1997, most ASEAN countries pursued a more flexible exchange rate regime away from the US dollar (Kim and Lee, 2004). Singapore, the Philippines, Thailand and Indonesia all follow a policy of floating - either independently or managed. Korea also changed to a floating regime. Only Malaysia went into a direct peg with the US dollar.[21]

In the following years after the crisis, the exchange rates between countries in the region have stabilized. Branson and Healy (2005) researched the correlation of monthly changes in dollar exchange rates between the currencies of the ASEAN+China countries. For most countries, there is a strong positive correlation since the year 2000, indicating common co-movements against the dollar. Similar results are shown for monthly changes in reserve money.

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[21] Malaysia as well as China changed to a managed floating currency regime in 2005

Branson and Healy conclude that a movement to explicit currency coordination does not require a large change in the countries' current policy positions. The ASEAN's, and ASEAN plus China, already conduct monetary policy in such a way as to maintain stability in exchange rates.

For the case of Japan, South Korea and China, Zhang and Lan (2005) researched nominal and real effective exchange rates. When looking at the real effective exchange rates, they arrive at a Pearson correlation which is negative between China, Japan, and China and Korea; while Japan and Korea have a correlation of 0.45. For comparison, the correlation between Germany and France was 0.64, i.e. 40% higher than that of Japan and Korea. Zhang and Lan conclude that this lack of synchronization in real effective exchange rate movement is a great obstacle of forming a currency union between China and Japan and Korea.

Financial market integration

In May 2000 at the ASEAN+3 Financial Ministers Meeting in Chiang Mai, Thailand, the so-called Chiang Mai Initiative (CMI) was reached as a first step towards monetary cooperation (Wang, 2003). CMI has two components: an expanded ASEAN Swap Arrangement built on the earlier ASEAN Swap Arrangement (ASA) and a network of bilateral swap arrangements among ASEAN Japan, Korea and China. In addition, the ASEAN countries have developed a Roadmap for the Integration of ASEAN in Finance. The goal of a single currency is expected to be the last step towards an ASEAN Economic Community (AEC), targeted to be reached in 2020. Under the Roadmap, the following areas have been identified to be crucial for monetary integration: (a) capital market development, (b) capital account liberalization, (c) financial services liberalization and (d) ASEAN currency cooperation.

Measuring the region's financial integration is a difficult and complex process as stated by Lamberte (2005), so that we limit our analysis to some straight-forward facts.

One measurement for financial integration could be the quantity of capital flows in the region. It can be found that intra regional financial flows had declined after the 1997–1998 financial crises, as Japanese banks reduced their lending and Japan as well as other countries in the region decreased their FDIs. For the stock markets, Oh et al. (2005) find that in the post-crisis period stock markets in East Asia moved more tightly with the US and in a lesser extent with each other. This can be seen as a sign of globalization rather than regionalization. However, when JPY is applied instead of USD, the Asian countries show less country specific effect on their stock markets, which then could suggest a progressed integration at a regional level.

Similar results can be found in the bond markets. While in general the levels of cross-market differentials in interest rates and bond yields have been declining in recent years, they are still significant in East Asia (ABM, 2005). Institutional and regulatory barriers to cross-border capital flows prevent partly further integration of capital markets. In addition, the relatively small market size, low liquidity as well as structural weaknesses of the financial markets increase transaction costs and lead to higher perceived risks.

This result does not come as a surprise. For financial market integration, monetary integration is most important. The region is lacking an anchor currency or even a joint exchange rate

mechanism (Oh et al., 2005a). In addition, East Asian banks rarely go across borders to be present in neighboring countries (Lamberte, 2005). Therefore, countries in East Asia might rather pursue their integration with the global financial markets than within the region.

7 Regional Integration in Europe and ASEAN+3: Similarities and differences

Given the evidences the level of regional integration in South East Asia and Europe is quite different. Europe is far ahead which is not a surprise given the developments in the past 60 years or so. Probably of more interest is the fact that the driving forces are different. Whereas Europe is mainly politically driven and monetary integration is used as a kind of an engine, regional integration in South East Asia is mainly economically driven, especially by intra-industry trade which is only slightly behind the level of Europe (see ECB, 2004, and 2005e). The different approaches are probably one main reason for the significant lack of supranational institutions in East Asia compared to Europe[22].

The reason for the institutional weakness of South East Asia is obviously diversified political, cultural, and international traditions and interests as well as different religions and roots. Take the case of the first East Asia Summit in December 2005 in Kuala Lumpur. In political terms it was obvious that whereas China, for example, prefers an independent development of the East Asian countries including the ASEAN + 3 countries, Japan is still in strong favor of the USA as the traditional leadership power in Asia not at least because it is concerned about a dominance by China as pointed out by Lu (2005). Somehow the situation is not so far from that in Europe today where countries like UK and Poland are in strong favor of the USA whereas Germany and France prefer a more independent way. Of course, history matters in Europe as well.

Although triggered by political goals European integration has been mostly driven by monetary integration starting with the co-operation of the Central banks in the 60's, followed by the introduction of the 'European snack' after the breakdown of the Bretton Woods currency system in the 70's and the 'European Monetary System' in the 80's until last but not least the Maastricht treaty and the introduction of the EURO in the 90's[23]. Of course, monetary integration was always accompanied by general economic integration like the introduction of a free trade zone, a customs union, and the common market as has been shown by Dorrucci et al. (2002).

Despite the integration progress the EU is still far away from total economic integration not to speak of a political one. Economically, especially a joint fiscal policy is still missing although there was some progress in recent years which is known as the Lisbon agreement (see ECB, 2005c, and 2006).

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[22] The most important institutions in Europe are the European Central bank, the European Commission, the European Council, the European Parliament, and the European court.

[23] Chown (2003) provides an overview about Monetary Unions and the history of the world's exchange rate systems since the 18th century.

In political terms the EU is still sticking to the so-called 'intergovernmental' approach, which means that national policies and therefore interests dominate European policy. Actually, there is no such thing like a joint European policy, which the Iraq war made once again very clear. The failure of the European constitutions to unite in 2005 has moreover shown that the enlargement of the EU in 2004 has probably widened the political gap within EU rather then unified it.[24]

Despite the integration differences between Europe and ASEAN+3 the message of the endogeneity approach still matters for ASEAN+3. Because in general terms it states that once an integration process has started, normally integration makes further progress which in turn triggers new and further integration goals. That is to say the progress of integration depends on the dynamic of the integration progress.

Of course, regional integration is always a non-linear process simply because of the complexity of the matter. In practice this means that throwbacks are natural events in the integration process. But non-linearity has a positive feature as well because exogenous events can lead to jumps in integration levels. Take for example the German reunification in 1989, which triggered the Maastricht treaty in 1991 which in turn become the EURO. Another historical example is the break-down of the Bretton Woods exchange rate system in 1971 and finally in 1973 which led to the first European exchange rate mechanism, the already mentioned 'snack', which not only accelerated the European monetary integration process but also deepened the political integration because of the entry of the UK into the EU in 1973.

Given the experiences of European integration it seems to be reasonable for the progress of regional integration of ASEAN+3 to define realistic integration goals and to catch historical changes of integration if they occur. For example, the declaration of the First East Asia Summit to establish a East Asian Free Trade Area in the next 10 years, combined with the intention to build an East Asian Economic Community covering also some political elements within the next 20 years, is surely a step in the right direction (see Shi, 2005).

Regarding monetary integration, there is a broad consensus in research that the present issue could not be to form a monetary union rather to implement certain monetary coordination instruments (see, for example, the recent studies by Glick, 2005, Sanchez, 2005, and Zhang et al, 2004). One reason for that judgment is the fact that there is no anchor currency yet in East Asia like it was the German Deutsch Mark in Europe, which could be used as a kind of a magnet of monetary integration. Actually, the Chinese Yuan, probably the most important currency in East Asia despite of the Yen, is still not floating yet.

Moreover, despite of trade integration cross-country supply divergences between the East Asia countries are still strong combined with clear evidences for the existence of asymmetric shocks which was recently pointed out by Sanchez (2005). As has been shown by Zhang

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[24] The new constitution was designed in order to keep the EU workable with 25 members as well. It was rejected by a referendum in France and the Netherlands. The enlargement on May 1st 2004 covered ten countries: Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia. The more economic aspects of enlargement was the topic of the 3rd ECB conference in 2004 (see Detken, 2004). Weimann (2003) applies the OCA theory for the new countries.

(2004), even the higher flexibility of labor markets, wages, and prices in East Asia compare to Europe can not offset the evidence of strong asymmetric shocks in East Asia.

On the other hand Phui Ling (2001) and Zhang (2004) have discussed the possibility of a kind of sub-grouping of the ASEAN + 3 countries in order to foster monetary integration. Both studies favored at least three potential clustering of countries for a monetary union mostly due to the absence of strong negative effects of asymmetric shocks. These groups are: Singapore and Malaysia, Japan and South Korea, and, of special political interest, Taiwan and Hong Kong. Incidentally, these groups represent the Southeast region, the Northeast Asian as well as the Greater China region.[25]

An also political forceable possibility of increasing monetary integration in East Asia could be the introduction of a kind of an 'Asian snake', for example. In practical terms this means fixing a local currency to each other but let the basket of these currencies float against the US-Dollar. This approach kills two birds with one stone. On the one hand there could be no speculation attached because the exchange rate against the US Dollar is free-floating. On the other hand the cost of flexible exchange rates between the countries disappears because they are fixed or at least almost fixed.

Alternatively as proposed by Williamson (2005) the cluster groups could define a joint basket of currencies and fix their exchange rates to this basket as China has done with the Yuan. This would guarantee that no change in third-country exchange rates would disturb the trading relationships among the East Asian countries themselves. This approach has some advantage over the 'snack' solution because it covers not only the US-Dollar but other world currencies like the Euro and the Yen as well.

In any case there should be progress in monetary integration in East Asia. As has been especially stressed by Sanchez (2005) trade and financial integration reinforce each other via certain spillovers which over time lead to more mature conditions of economic integration. In the reverse this means that no progress in monetary integration will probably also hamper other parts of economic integration as, for example, the scheduled establishment of a free trade zone. Therefore, at least as already suggested by Kawai (2005) the East Asian countries should implement a monetary institute which coordinates on a voluntary basis and with no decision power for the time being the exchange rate policies of the different countries.

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[25] ,Sup-grouping is a kind of the European idea of integration by 'two velocities' which faces a renaissance just today in Europe because of the current crisis. In Europe the approach means that, for example, countries like France and Germany plus eventually the Benelux-countries (Belgium, Netherlands, and Luxembourg), could progress to a deeper level of integration whereas the other EU countries stay at the present state. In economic terms this could lead, for example, to a joint fiscal policy, and in politics to a joint foreign policy including joint military or similar steps.

8   Conclusions

There are mainly three conclusions of our analysis. Firstly, regional integration in Europe and East Asia is much different, not only on the level of integration. Whereas, for example, integration is mainly politically driven in Europe in East Asia it is more or less a spontaneous result of economic developments, especially in trade. Furthermore, East Asian countries are much more diversified in tradition, religious and political systems as well as in the developmental stage of the economies than the European countries. Thus, for example, East Asia covers fully fledged market economies like Japan on the one hand as well as transformation countries like China or still emerging markets like Thailand, Malaysia and so on, on the other. Because of these disparities there is a huge lack of institutional integration in East Asia, whereas the European Union has already built up a huge variety of sustainable institutions. This fits with the observation that monetary integration is far behind trade integration in East Asia.

Secondly, despite these differences there are still some experiences of European integration which could be useful for regional integration in East Asia. First of all, the endogeneity approach will also work in East Asia. That means, once some integration arrangements are realized - for example, the decision to establish a free trade zone in a certain period of time – this will create an internal integration dynamic. That means, regional integration is a path dependent process.

Furthermore, European integration is clearly a non-linear process. Periods of steady developments have been alternated with periods of rapid, erratic progress or even setbacks. For the integration process in East Asia it follows that ASEAN + 3 has to build up a platform to be ready for historical changes once they emerge. For example, the recently established East Asian Summit could be the starting point for such a platform.

Thirdly, globalization matters. There is no doubt that European integration has benefited Europe in international competition. Probably most important is the role of the Euro as the second international reserve currency after the US-Dollar and the exchange rate stability within the Euro area. Therefore, in a global perspective ASEAN + 3 is the East Asian countries' answer to increasing its global competitiveness. From a certain perspective East Asia is already behind in global developments because not only Europe has sped up in regional integration but also North and South America with the well-known NAFTA and the MERCOSUR agreement.

From the perspective of regional integration in East Asia it seems most important to set up some integration institutions in order to make further progress. One idea developed in this article is the set up of a kind of 'Asian snake' based on the European exchange rate system in the 70's. In practice this means that either certain countries fix their local currencies jointly against a basket of currency or they fix it to each other but let it float against all other currencies including the US-Dollar.

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