

EDITORIAL

In this Working Paper Franz Pauer, an economist in the Financial Markets Division of the Oesterreichische Nationalbank, surveys a number of important questions related to the issue of asymmetric shocks and monetary union. He lists the pros and cons regarding the issues raised and also attempts some personal conclusions.

This Working Paper therefore differs from its usual contents and its targeted audience. It is specifically directed to the general public interested in monetary union issues who requires quick references in non-technical language but profound analysis.

Note: The views expressed in this Working Paper are strictly those of the author and do not, in any way, commit the Oesterreichische Nationalbank.

Eduard Hochreiter

Editor

June 25, 1996

Imprint: Responsibility according to Austrian media law: Peter Achleitner, Secretariat of the Board of Executive Directors, Oesterreichische Nationalbank.

Published and printed by Oesterreichische Nationalbank, Wien.

WILL ASYMMETRIC SHOCKS POSE A SERIOUS PROBLEM IN EMU?

by

Franz Pauer

Oesterreichische Nationalbank

June 1996

The author would like to thank Eduard Hochreiter, Romana Lehner, Reinhard Petschnigg, Doris Ritzberger-Grünwald, Helene Schuberth and Norbert Schuh for their comments and Romana Lehner for her language assistance.

TABLE OF CONTENTS

	page
1. Introduction and overview	6
2. What are the advantages and disadvantages of EMU	8
2.1. What are the (potential) macroeconomic benefits of EMU?	8
2.2. What are the (potential) macroeconomic costs of EMU?	11
2.3. Conclusions	17
3. How relevant will country-specific shocks be in EMU?	19
3.1. What are shocks and how can they be classified?	19
3.2. Which impacts do shocks have on the economy?	23
3.3. How likely are country-specific shocks in EMU?	26
3.4. Conclusions	35
4. How useful is monetary policy in coping with country-specific shocks?	37
4.1. How much will the actual applicability of monetary policy as a shock absorber be reduced in EMU?	37
4.2. How can monetary policy support the adjustment process?	40
4.3. Under what circumstances is monetary policy not beneficial to the adjustment process?	42
4.4. What does empirical evidence indicate?	43
4.5. Conclusions	45
5. How useful is fiscal policy in coping with country-specific shocks?	46
5.1. How much will the actual leeway of fiscal policy as a shock absorber be reduced by the fiscal convergence criteria?	46
5.2. How can fiscal policy support the adjustment process?	48
5.3. Under what circumstances is fiscal policy not beneficial to the adjustment process?	50
5.4. What does empirical evidence indicate?	52
5.5. Conclusions	52
6. How useful are intra-union fiscal transfers in coping with country-specific shocks?	53
6.1. How can fiscal transfers support the adjustment process?	53
6.2. Under what circumstances are fiscal transfers not beneficial to the adjustment process?	56
6.3. Are fiscal transfers for stabilisation and income support compatible with the principle of subsidiarity?	57
6.4. What does empirical evidence indicate?	58
6.5. Conclusions	59

7.	How useful is labour mobility in coping with country-specific shocks?	60
7.1.	How can labour mobility support the adjustment process?	60
7.2.	Under what circumstances is labour mobility not beneficial to the adjustment process?	61
7.3.	What does empirical evidence indicate?	61
7.4.	Conclusions	62
8.	How useful is wage flexibility in coping with country-specific shocks?	63
8.1.	How can wage flexibility support the adjustment process?	63
8.2.	Under what circumstances is wage flexibility not beneficial to the adjustment process?	68
8.3.	What does empirical evidence indicate?	69
8.4.	Conclusions	70
9.	How useful is capital mobility in coping with country-specific shocks?	71
9.1.	How can capital mobility support the adjustment process?	71
9.2.	Under what circumstances is capital mobility not beneficial to the adjustment process?	72
9.3.	What does empirical evidence indicate?	74
9.4.	Conclusions	74
10.	How useful is corporate flexibility in coping with country-specific shocks?	75
10.1.	How can corporate flexibility support the adjustment process?	75
10.2.	Under what circumstances is corporate flexibility not beneficial to the adjustment process?	77
10.3.	What does empirical evidence indicate?	77
10.4.	Conclusions	77
11.	Do nominal convergence criteria sufficiently reflect the potential problems of country-specific shocks in EMU?	78
11.1.	Is the achievement of a high degree of price stability a good indicator for the ability to adjust to asymmetric shocks?	78
11.2.	Is the sustainability of the government financial position a good indicator for the ability to adjust to asymmetric shocks?	79
11.3.	Is exchange rate convergence a good indicator for the ability to adjust to asymmetric shocks?	80
11.4.	Is interest rate convergence a good indicator for the ability to adjust to asymmetric shocks?	81
11.5.	Conclusions	81
12.	Summary	82
	References	90

1. Introduction and overview

At its meeting in Madrid in December 1995, the European Council confirmed that Stage Three of Economic and Monetary Union (EMU) would start on January 1, 1999. The preparations required for the establishment of the European System of Central Banks (ESCB) and for the conduct of a single monetary policy are well under way. The changeover to the euro will complete the process of economic and monetary unification in Europe.

The single currency will avert the disruptions caused by speculative attacks. It will reduce exchange rate uncertainties and thus contribute to sustainable and non-inflationary growth throughout the euro area. However, besides the numerous advantages of a single currency there are also some disadvantages. By definition, EMU involves the loss of national monetary autonomy. As a consequence, national central banks will no longer be able to respond to country-specific shocks by adopting monetary policies that differ from that of the union as a whole. This problem and related issues are surveyed in this paper. The author examines the likelihood of asymmetric shocks in EMU and the ability of various policies and mechanisms to adjust to them.

The paper is organised as follows: Chapter 2 gives a brief summary of the potential costs and benefits of EMU. Its main purpose is to put the loss of monetary autonomy in proper perspective. The disappearance of monetary policy as a national policy instrument is one of several disadvantages of EMU which have to be contrasted with its advantages.

Chapter 3 starts with a definition and some classifications of economic shocks and continues with a presentation of their effects on prices, production and employment in the short and long run. The main part of this chapter examines the question of whether the frequency and intensity of asymmetric shocks is likely to change in EMU.

Chapter 4 discusses whether monetary policy is in fact a useful instrument to cope with country-specific shocks. It first asks how much leeway monetary policy actually has to respond to asymmetric shocks in the present situation and to what extent this leeway is used by the monetary authorities of the member states of the European Union (EU). It then describes a number of situations in which monetary policy measures may be beneficial or detrimental to a successful adjustment to nationally

diversified shocks. Finally, like the following chapters, it presents some empirical findings on the subject.

Chapters 5 and 6 focus on the question whether fiscal policies - either at the national or at the EU level - are likely to cope with country-specific economic disturbances. They outline how national fiscal policy measures and fiscal transfers across countries may support or hamper the adjustment to asymmetric shocks. In addition, chapter 6 puts forward some considerations on the compatibility of intra-union transfers with the principle of subsidiarity.

The following two chapters examine whether labour market flexibility could be a useful instrument to adjust to country-specific disturbances in EMU. The two dimensions of labour market flexibility, namely labour mobility and wage flexibility, are analysed in detail in chapters 7 and 8 respectively. Moreover, a number of empirical comparisons with existing monetary unions are presented.

Chapter 9 evaluates the various roles capital mobility can play with respect to asymmetric shocks. It explains how capital inflows and outflows can hamper or foster the emergence of shocks and how they can facilitate or hinder the adjustment to them.

A final adjustment mechanism to economic disturbances, namely corporate flexibility, is analysed in chapter 10. It underscores the importance of innovation and imitation to overcome a shock lastingly and to promote economic development as a side effect.

Chapter 11 tries to answer the question to what extent the Maastricht criteria reflect the actual adjustment ability of the examined mechanisms. It asks whether the achievement of a high degree of price stability, the sustainability of the government financial position, exchange rate convergence, and interest rate convergence are good indicators for the ability of a country to adjust to asymmetric shocks. The concluding chapter 12 provides a summary of the findings of this paper.

2. What are the advantages and disadvantages of EMU?

2.1. What are the (potential) macroeconomic benefits of EMU?

Elimination of transaction costs between EMU members

Costs of currency exchange will disappear

With the replacement of national banknotes and coins by euro banknotes and coins in the second phase of Stage Three of EMU, the necessity to convert currencies between EMU members will disappear and so will the related costs. Human and financial resources employed to exchange multiple moneys will then be available for more useful purposes and thus for an increase of the society's welfare.

In its Green Paper, the European Commission (1995) has estimated the annual economies in exchange costs resulting from the adoption of a single currency in the EU (as a whole) at 0.3 to 0.4 per cent of the Union's GDP.

Costs of information, search, and calculation will abate

A common currency also leads to a reduction of other transaction costs, including costs of information, search, and calculation. These economies are due to the fact that a single currency enhances the role of money as a unit of account and thus increases transparency.

Reduction of exchange rate volatility and its costs

At the beginning of Stage Three of EMU, the exchange rates of the initial members' currencies will be fixed irrevocably. As a consequence, exchange rate volatility vanishes between them.¹ It goes without saying that exchange rate volatility and its disadvantages will be reduced substantially only if the number of EMU participants is large or if an exchange rate arrangement between participating and non-participating EU countries is established to minimise exchange rate fluctuations between them.

¹ It has also been argued that thanks to the enlargement of the currency area and the pooling of foreign exchange reserves, exchange rate variations vis-à-vis third currencies may decrease as well.

Hedging costs will decline

Given the elimination of exchange rate risk among EMU members, the need to hedge against exchange rate losses abates. Resources needed to provide hedging facilities can thus be devoted to more efficient uses. As financial instruments for insuring against the negative impacts of volatility and uncertainty are not always available for all economic agents, the overall benefit of the decline in exchange rate volatility exceeds the decrease in hedging costs.

The allocation function of the price system will improve

The decline in exchange rate volatility will reduce the uncertainty about future prices. As price signals strongly influence the decisions of economic agents concerning production, consumption and investment, the quality of these decisions should improve as prices become more predictable. Expressed differently, with decreasing exchange rate uncertainty the price system should become more efficient in allocating resources. According to the European Commission (1995), this is an important prerequisite "for the single market to work smoothly".

An inefficient allocation mechanism due to high exchange rate volatility can be particularly costly in the case of investment decisions. If an investment is made on the basis of an exchange rate which subsequently alters its value considerably, the investment may turn out to be unprofitable and the related production may have to be abandoned. A massive waste of resources will be the consequence. Such an inefficient allocation of scarce resources can be avoided only if exchange rate risks are eliminated completely.

Keener competition

Completion of the internal market and creation of a unified financial market

The European Commission (1995) and the European Monetary Institute (1995) emphasise the crucial role of a single European currency for the completion of the internal market. They anticipate that the changeover to the euro will contribute to consolidating the foundations of the single market and will enhance its advantages.

By eliminating exchange rate risk between the countries participating in Stage Three of EMU, the existing freedom of movement for capital and financial services within

the EU will gain a new dimension. A unified financial market will be created, which will be deeper, more liquid and more competitive than hitherto. As a result, the European financial market will become more appealing.

Price competition between domestic and foreign suppliers will rise

Transaction and hedging costs resulting from multiple currencies have the same effect on international trade as transportation costs. They drive a wedge between the domestic and the foreign price of goods or services and hence reduce competition between internal and external suppliers. For example, if a producer calculates an offer in foreign currency he has to add the exchange commission and an extra charge for the foreign exchange risk (either his actual hedging costs or a risk premium) in order to cover his additional costs. These extra costs resulting from the fact that supplier and purchaser are located in different currency areas may be high enough to prevent the most efficient supplier from securing the order.

Price discrimination will decline

The adoption of a single currency will also reduce the scope for price discrimination between national markets, which will benefit the final consumer. Such price differentiation is only possible because national markets in Europe are still segmented. The expenses for currency conversion, the explicit and implicit hedging costs, and the lack of transparency, which all originate from the existence of multiple currencies in Europe, contribute to this segmentation. After the introduction of the euro, households and enterprises will be in a better position to make genuine cross-border comparisons of prices and hence foster competitive efficiency.

Trade will be redirected from third countries to EMU participants

The economies related to the replacement of several currencies by one will ceteris paribus lead to a reorientation of trade from third countries to EMU participants. Apart from this direct effect resulting from declining transaction and hedging costs between EMU members, European monetary integration will also have an indirect effect on competitiveness as it is likely to enhance the productivity of the countries participating in EMU due to keener competition.

Realisation of joint monetary sovereignty

The collective management of EMU's monetary policy by the participating central banks will increase its effectiveness and sovereignty. The dilemma between internal and external policy requirements, which monetary authorities in the EU frequently face today due to speculative attacks, will not abate until the highly integrated financial markets are supplemented by a common European monetary policy. Bofinger (1994) argues that a larger currency area is also likely to increase the efficiency of monetary targeting due to more stable aggregate money demand functions.

2.2. What are the (potential) macroeconomic costs of EMU?

Costs of introducing the single currency

The main costs of introducing a common currency will derive from replacement operations, e.g. the exchange of notes and coins, the conversion of other means of payment and outstanding financial contracts into the single currency, the adaptation of computer programmes, the adjustment of price quotations to the new accounting unit and the modification of monetary policy instruments.

The costs of introducing the single currency incur only once and are for the most part overhead costs. Hence, the introduction costs for the individual country hardly depend on the size of EMU.

Danger of insufficient anti-inflationary credibility of the ESCB

Provisions of Maastricht Treaty should strengthen ESCB's credibility

The Maastricht Treaty contains a number of provisions whose aim is to secure a high anti-inflationary credibility of the future union central bank. The most important requirements in this respect are the independence of the ESCB ², the maintenance

² Article 107 TEU says: "When exercising the powers and carrying out the tasks and duties conferred upon them by this Treaty and the Statute of the ESCB, neither the ECB, nor a national central bank, nor any member of their decision-making bodies shall seek or take instructions from Community institutions or bodies, from any government of a Member State or from any other body. The Community institutions and bodies and the governments of the Member States undertake to respect this principle and not to seek to influence the members of the decision-making bodies of the ECB or of the national central banks in the performance of their tasks."

of price stability as its primary objective³ and the prohibition of monetary financing of the public sector through the ESCB or through privileged access to financial institutions.⁴ The entry conditions (convergence criteria) which have to be fulfilled by the countries joining EMU will also strengthen the anti-inflationary credibility of the ESCB.

However, markets may lack confidence in the new monetary institution

The above provisions on inflation are at least as tough as those applying to the national central banks with the highest reputation in the field of price stability. Nonetheless, doubts have been raised about the anti-inflationary credibility of the European Central Bank (ECB). The crucial question is whether the new central bank will be able to impose the same degree of price discipline in Europe as its most successful predecessors managed to enforce in their respective countries prior to setting up EMU. The simple fact that the ECB is a completely new institution without its own reputation for complying with stringent anti-inflationary requirements may disquiet financial markets. Their scepticism with regard to the stability orientation of the ECB will be the greater the more countries with a very short record of price stability are going to participate in EMU from the very beginning of Stage Three. If markets are not fully convinced that the ECB is at least as stability-oriented as the most solid national central banks, they will charge a risk premium on financial assets denominated in euro. Hence, the interest rates of the least inflationary countries would increase as a result of their participation in EMU, with negative effects on growth and employment. If, in addition, the single currency weakens against other major world currencies, the inflation rates of all participating countries will rise.

Financial markets' confidence in the stability orientation of the new central bank may be weakened by their suspicion that some EMU participants could try to gain from higher inflation in exchange for temporarily lower unemployment, higher revenues

³ Article 105(1) TEU says: "The primary objective of the ESCB shall be to maintain price stability. ..."

⁴ Article 104(1) TEU says: "Overdraft facilities or any other type of credit facility with the ECB or with the central banks of the Member States (hereinafter referred to as 'national central banks') in favour of Community institutions or bodies, central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of Member States shall be prohibited, as shall the purchase directly from them by the ECB or national central banks of debt instruments."

Article 104a(1) TEU says: "Any measure, not based on prudential considerations, establishing privileged access by Community institutions or bodies, central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of Member States to financial institutions, shall be prohibited."

from seigniorage ⁵ and a reduction of the real value of public debt. Markets may fear that the individual ESCB members' commitment to price stability may not be unconditional and that the actual monetary policy stance will in fact be the result of a compromise which ignores the strict anti-inflationary provisions of the Maastricht Treaty.

Stabilisation costs of reducing inflation and budget deficits ⁶

Reducing inflation expectations may be costly in the short run

It is often argued that a reduction of inflation rates to the low level required by the respective convergence criterion ⁷ can be very costly for countries with a comparatively unfavourable track record of price stability. In order to push the inflation rate below the reference value, they may be forced to tighten monetary policy to such an extent that they cause a "credibility recession" with output and employment falling sharply. As a result, EMU would start as a "deflationary community" which is the opposite fear expressed in the previous section, namely that EMU could become an "inflationary community".

Although it has been widely acknowledged that in the long run countries cannot really choose between inflation and unemployment, the short-term costs of moving to a higher degree of price stability still exist, or in the words of de Grauwe (1992), "the short-run Phillips curve is still alive". This means that countries aiming at lower inflation rates are likely to face a temporary loss in output and employment. Policies of disinflation during the early 1980s, which resulted in a considerable increase in European unemployment, confirm the existence of this dilemma. From this experience one can conclude that joining EMU under the conditions of Maastricht, i.e. reducing the inflation rate before entering Stage Three, may indeed entail some unemployment costs for countries which have been relatively inflation prone in the

⁵ Revenues from seigniorage accrue in the process of money creation, when the central bank receives interest-bearing assets in exchange for central bank money. The revenues will be the larger the higher the inflation rate and hence the nominal interest rate is.

⁶ These costs arise already before a country enters EMU. They must not be confused with the costs resulting from country-specific shocks in EMU.

⁷ According to Article 109j (1) of the Treaty on European Union (TEU) and Article 1 of the attached Protocol (No. 6), one important requirement for countries entering Stage Three of EMU is "the achievement of a high degree of price stability ... apparent from a rate of inflation ... observed over a period of one year before the examination, that does not exceed by more than 1½ percentage points that of, at most, the three best-performing Member States in terms of price stability." This requirement is usually referred to as the *inflation criterion*.

past.⁸ However, in view of the fact that the disinflation process is nearly complete in most EU countries, the costs related to it have already accrued.

The short-term growth effects of budget consolidation are uncertain

Negative effects on output and employment may arise not only from the need to reduce the inflation rate in accordance with the Maastricht Treaty but also from the requirement to avoid excessive public deficits.⁹ In order to achieve a sustainable financial position of public households, a restrictive fiscal policy will be inevitable in the case of an excessive deficit. This may reduce domestic demand, jeopardise growth and increase unemployment.

Whether a budget consolidation has short-term costs in terms of forgone output and employment or not depends primarily on the instruments used, on the openness of the economy, on the firmness of the consolidation measures, on the reactions of capital markets and private households, and on the policy stance of major trading partners. Negative growth and employment effects are more likely if the requirement to consolidate the budget leads to concurrent restrictive fiscal policies in many EU countries.

A curtailment of budget deficits via a reduction of public investment and consumption directly leads to a decline in total demand for domestically produced goods (domestic value added). The size of the actual output loss depends among other things on the propensity of public demand to import, which is usually rather low. Hence, cuts in government expenditures for goods and services will in the first place mainly affect domestic demand.¹⁰ Lower subsidies and social transfers or higher taxes and public fees generally result in a decline of private consumption and investment. The immediate restrictive impact of these measures on aggregate

⁸ The immediate participation of an inflation-prone country in a monetary union which enjoys a high degree of anti-inflationary reputation could lead to an abrupt reduction of inflation expectations and consequently help to avoid significant losses in production and employment. Apart from conflicting with the convergence requirement of a high degree of price stability, this disciplinary argument ("tying one's hands") can, however, hardly be employed in the case of EMU, as the reputation of this new institution essentially depends on the solidity of its initial members.

⁹ According to Article 104c TEU, Article 109j (1) TEU, Article 1 of the attached Protocol (No. 5) and Article 2 of the attached Protocol (No. 6), one important requirement for countries entering Stage Three of EMU is "the sustainability of the government financial position ... apparent from having achieved a government budgetary position without a deficit that is excessive". The definition of an excessive deficit is based primarily on the existence of a government deficit exceeding 3% of GDP and/or a government debt exceeding 60% of GDP (for the exemptions see [footnotes 45 and 46](#)).

¹⁰ In order to avoid a growth-dampening effect in the longer run, productive expenditures (such as research and development, training and education, and investment in infrastructure) should not be cut significantly.

demand for domestic goods will essentially depend on the private sector's propensity to save and to import.¹¹ Via the multiplier the initial squeeze of demand due to the withdrawal of fiscal stimulus will be reinforced and prolonged for some time. However, the multiplier effect will be counteracted by a *crowding-in effect* (a negative *crowding-out effect*). If private consumption and investment have been dampened by excessive government deficits, a budget consolidation is likely to reverse this development and stimulate private demand. The two main mechanisms that produce this *crowding-in effect* are interest rates and rational expectations of economic agents.

If a government makes a firm commitment to substantially reduce budget deficit and public debt by embarking on a decisive consolidation effort, financial markets will expect inflation and the danger of exchange rate depreciation to decline. As a consequence, they will reduce the inflation premium on long-term interest rates. Furthermore, with decreasing government deficits and debt ratios the solvency risk and the related premium will also decline.¹² The decline in interest rates may stimulate investment and production and hereby offset at least part of the growth-dampening effect of the deficit reduction. In addition, the debt-servicing burden of private firms and households will ease and their liquidity situation will improve, which could benefit private demand.

Private demand will also be crowded in if economic agents have rational expectations. To the extent that today's consolidation measures will diminish tomorrow's public debt service, forward-looking consumers and investors expect budgetary pressures to decline and taxes to be reduced after some time. As the anticipated tax cuts will increase the disposable incomes in the future, households will tend to save less and consume more at present. This mechanism is referred to as Ricardian equivalence. The strict version of this hypothesis says that imbalances in public households have no economic consequences. This extreme view is, however, barely supported by empirical evidence. Nevertheless, some compensation for the decline in government demand might be caused by this reaction pattern.

¹¹ Tax increases are generally regarded as unfavourable for long-term growth, while reductions in subsidies and social transfers are often expected to have a positive effect on production and employment in the medium and long run. This is due to the fact that both taxes and transfer payments to private households and companies are likely to have distorting effects. Hence, their reduction should increase economic efficiency and growth.

¹² Given the impact of ageing populations on health and unfunded pension systems, the solvency of the public sector crucially depends on foresighted budgetary policies. Markets will evaluate the long-term sustainability of these policies and respond accordingly. If debt ratios continue to rise, the danger of a *hard landing* or *portfolio saturation* scenario increases. For a brief description of this scenario, see European Monetary Institute (1996), Box 4, pp. 38-39.

The IMF (1995) points out that the expansionary effects of the two mechanisms described above may outweigh the traditional negative short-term impulse from fiscal consolidation and consequently bring about a negative multiplier. It is argued that such an outcome is especially likely in countries with very large budgetary imbalances and credible consolidation efforts. The IMF found evidence of a negative multiplier for the 1983-86 stabilisation programme in Denmark and the 1987-89 consolidation in Ireland. Greece, Italy and Sweden are seen as particularly promising candidates for a similar development, provided that they adopt decisive deficit reduction measures.¹³

Hence, the reduction of government deficit and debt ratios required by the Maastricht Treaty as a precondition for entering EMU does not necessarily imply a decline in aggregate demand in the countries concerned. According to the findings of the IMF, even a huge fiscal contraction need not lead to cuts in production and employment. Such an outcome is, however, less likely if most other EU countries also pursue a very restrictive policy course at the same time.

Disappearance of monetary policy as a national policy instrument

With the start of Stage Three of EMU, the participating countries will lose their monetary autonomy. They will be unable to conduct an independent monetary policy and hence deprive themselves of an economic policy instrument. In EMU, national economic goals can no longer be pursued by altering exchange rates or interest rates. This will pose no problem if disturbances of economic activity are similar across member countries, as the common central bank will then be able to respond adequately. However, if disturbances are unevenly distributed across countries or the reactions of economic agents differ significantly, a national policy response is needed. In this case the absence of an independent monetary policy represents a cost of monetary unification.¹⁴ The *theory of optimum currency areas*, which has been pioneered by Mundell (1961), suggests a number of (alternative) preconditions that have to be fulfilled, in order to avoid that a country will be hurt if it relinquishes its national currency. One main intention of this paper is to analyse to what extent these preconditions are fulfilled in the European Union.¹⁵

¹³ For further details see IMF (1995), Box 2, pp. 24-25.

¹⁴ The nature of this problem is particularly evident in the following case: If demand shifts from one part of EMU to another and hereby produces deflationary tendencies in the former and inflationary trends in the latter part, the ECB, which has to take care of overall price stability in the Union has no reason to change its course. Nevertheless, the monetary policy stance is in this case inappropriate for both parts.

¹⁵ Gnan (1994) presents an overview (Table 5) of recent empirical studies about the question which EU and EFTA countries come closest to forming an optimum currency area.

Reduced availability of fiscal policy as a national adjustment mechanism

As monetary policy can no longer be used in EMU to react to country-specific disturbances, fiscal policy may have to play a more active role in the adjustment process. This, however, will not be a realistic option in EMU, as the imposition of ceilings on budget deficits and public debt ¹⁶ significantly reduces the leeway of fiscal policy. ¹⁷ The decision to prohibit governments from surpassing certain deficit and debt levels, which has been made in order to avoid inflationary pressures in EMU, therefore has an unfavourable side effect. In other words, the stipulation of the Maastricht Treaty to restrict budget deficits hinders both an awkward and a beneficial use of them.

2.3. Conclusions

Costs and benefits rise overproportionally with the size of EMU

Obviously, the benefits of EMU will be the larger the more countries participate. The economies in transaction costs will accumulate in proportion with the number of participating countries. Also the gains from intensifying competition will expand proportionally with the size of EMU. Exchange rate stability and its beneficial effects can be expected to rise overproportionally with the size of the union as more countries with an unstable currency are likely to participate. It is evident that the creation of a monetary union which consists exclusively of countries whose exchange rates did not or barely move against each other can hardly bring about much additional gain in terms of exchange rate stability.

The risks of EMU also seem to rise disproportionately with the number of its members. This is especially true for the anti-inflationary credibility of the ESCB. The risk premium demanded by markets will be the larger the more countries with a comparatively short track record of price and exchange rate stability are participating in EMU. Furthermore, the potential costs related to the disappearance of the exchange rate as a national adjustment instrument might be the higher the more countries with a long history of devaluations join the monetary union as they seem to need this instrument as a shock absorber.

¹⁶ See footnote 9.

¹⁷ This does not only apply to country-specific shocks but also to union-wide shocks.

In a nutshell, both overall costs and overall benefits of EMU rise more than proportionately with its size. As a consequence, determining the number of initial EMU members is a matter of risk aversion. With the establishment of entry barriers in the form of convergence criteria, EU members decided in Maastricht to stay on the safe side. The most likely procedure resulting from this decision is a start of EMU with probably only a small number of stability-oriented countries. Thus, the new union central bank would replace exclusively national central banks which enjoy a high anti-inflationary reputation. In addition to inheriting some of the reputation of its predecessors, the ECB would be enabled to build its own credibility during a starting period. In this way, the ECB would not have to pursue a pronounced restrictive course in order to convince the markets of its stability orientation, thereby risking a "credibility recession". The danger that markets demand a premium on interest rates for financial assets denominated in the single currency should be very small under such a transition scenario. However, as mentioned above, the benefits would not be very large either in this case. After the ECB will have successfully established its own anti-inflationary reputation, also countries with a less impressive track record in price stability could join without great risks but with large gains.

Is monetary autonomy really needed to adjust to asymmetric shocks?

In the preceding cost-benefit-analysis the loss of monetary autonomy has been identified as a potential cost factor of EMU. The inability of monetary policy to respond to country-specific disturbances, however, does not necessarily mean that a group of countries presently exposed to asymmetric shocks should not form a common currency area. A definite decision should only be made after a number of fundamental questions have been answered: First, will the creation of a monetary union change the likelihood of asymmetric shocks? If they become less probable, an independent monetary policy will lose importance. Second, is a nationally autonomous monetary policy really an effective instrument to adjust to country-specific shocks? If money is neutral, this is not the case and consequently monetary policy autonomy has no great utility. Third, assuming that monetary policy instruments would be useful in dealing with nationally differentiated shocks, could other policy instruments provide an alternative adjustment mechanism? If national fiscal policy or fiscal transfers across EMU members could help to absorb shocks, the surrender of monetary policy independence would not be a great disadvantage. Finally, do market clearing mechanisms exist that allow for a quick and comparatively smooth adjustment to nationally differentiated disturbances? If the flexibility of labour and capital markets as well as the adaptability of enterprises is sufficiently large, giving up monetary autonomy would not be too costly. These

questions are dealt with in the following chapters, beginning with the discussion about the likelihood of shocks in a monetary union.

3. How relevant will country-specific shocks be in EMU?

3.1. What are shocks and how can they be classified?

Definition of shocks

An economic shock is a (major) disturbance of the equilibrium between supply and demand caused by a change of the economy's environment or by an alteration of economic agents' behaviour. Graphically it is manifested in a significant shift of the supply or demand curve (see diagrams in chapter 3.2.).

Classification of shocks by symmetry

A *symmetric shock* can be defined as an economic disturbance that affects all parts of a unity simultaneously, e.g. all countries of a monetary union (union-wide shock), all regions of a country (country-wide shock), or all sectors within a union or country (aggregate shock). An *asymmetric shock* consequently is defined as an economic disturbance that affects the various parts of a unity to a different extent, e.g. only one country of a monetary union (country-specific shock), only one region of a country (regional shock) or only one industry within a union or country (sectoral shock).

In this paper the term "symmetric shock" is used as a synonym for "union-wide shock". The designation "asymmetric shock" should be regarded as an equivalent term for "country-specific shock" or "nationally differentiated shock" within a monetary union.

Classification of shocks by duration

A *temporary shock* is an economic disturbance which will be reversed within a relatively short time. A *permanent shock*, by contrast, is a lasting disturbance. Similar to this classification is the categorising in *cyclical* and *structural shocks*. A

problem of these classifications is that it is generally extremely difficult to predict whether an emerging shock is temporary or permanent.

Classification of shocks by market side and direction

A positive (negative) *demand shock* is represented by a shift of the demand curve to the right (left). This means that at every price customers demand a larger (smaller) quantity than before. A positive (negative) *supply shock* is represented by a downward (an upward) shift of the supply curve. This means that for every quantity suppliers demand a lower (higher) price than before.

This paper only deals with negative demand and supply shocks, which are likely to have real costs in terms of output and employment losses. Positive shocks are not analysed.

Classification of negative demand shocks by causing or triggering factors

Negative monetary shocks ¹⁸

An increase in interest rates leads to a decline in interest-sensitive investment and consumption. A rise in the real effective exchange rate (caused either by monetary policy or market forces) reduces the demand for domestically produced goods. ¹⁹

Negative fiscal shocks

Budget consolidation measures affect the economy via increasing public revenues and reducing public expenditure. The overall demand effects of restrictive fiscal policies have been described in detail in chapter 2.2.

Negative savings and investment shocks (cyclical shocks)

A marked increase in the propensity to save and a significant decrease in the propensity to invest lead to a decline in demand for domestically produced goods, unless it is fully offset by rising net exports (due to declining imports and relative prices). As a complete compensation is not very likely, an autonomous decline in private consumption or investment, whatever the reason for this shift may be, usually triggers a cyclical downturn.

¹⁸ *Monetary shocks* are usually contrasted with *real shocks*. While the former represent disturbances in the monetary sphere of the economy, the latter appear in the real sphere.

¹⁹ This is represented by a shift of the demand curve to the left. However, if the vertical axes of the demand and supply diagram do not represent the domestic but the foreign currency, a revaluation is depicted as an upward shift of the supply curve.

Negative foreign shocks

A negative demand shock triggered by external events may have the following reasons:

- **DECLINING AGGREGATE DEMAND IN MAJOR EXPORT MARKETS:** This may be the outcome of a cyclical downturn or a recession, the result of political disruptions ²⁰ or military conflicts or the outcome of a change in preferences.
- **DECLINING PRICES OF FOREIGN GOODS AND SERVICES:** Foreign producers may be able to cut prices because they are pioneers in adopting new technologies (process innovation) which bring about lower production costs. As a result, demand for comparatively expensive domestic goods declines.

Price competitiveness of domestic relative to foreign producers may also decline when new competitive suppliers appear on the international market. This is the case if countries that used to pursue isolated economic policies enter the world market with highly competitive prices in certain sectors. ²¹ In addition, the lifting of trade barriers between world market participants (e.g. as a result of world-wide trade liberalisation agreements) reveals the factual competitiveness in terms of production costs that has been disguised by high tariffs and other protective measures. The same is true for the reduction of transportation costs. All three developments lead to an increased division of labour between countries and to shifts in demand.

- **IMPROVING QUALITY OF FOREIGN GOODS AND SERVICES:** If foreign producers take the lead in introducing new products or in improving the quality of existing goods and services (product innovation) and in ameliorating their marketing (market innovation) they will attract demand from less innovative producers.

²⁰ A typical example was the breakdown of the Soviet Union and its effects on Finland.

²¹ According to the World Bank (1995), in 1978 about a third of the world's work force lived in countries with centrally planned economies. At least another third lived in countries maintaining high barriers to trade and investment. By the year 2000 fewer than 10% of workers are expected to live in countries largely disconnected from world markets, if recent trends continue.

Classification of negative supply shocks by causing or triggering factors

Negative factor price shocks

- **INCREASING CAPITAL COSTS:** On the supply side, a jump in interest rates (due, for example, to increased exchange rate risk or restrictive monetary policy) enhances the capital costs of production, which is represented in an upward shift of the supply curve.
- **INCREASING UNIT LABOUR COSTS:** A jump in unit labour costs (in domestic currency) brought about by a rise in nominal wages that outstrips the expansion of labour productivity (either domestic wages grow too fast or domestic labour productivity grows too slowly or a combination of both) ceteris paribus raises the price of the product.
- **INCREASING TAXATION OF FACTORS:** Rising taxes on factors of production (e.g. income taxes on wages and profits, payroll taxes, investment taxes) have the same effect on production costs as surging interest rates or unit labour costs.

Negative import price shocks

A jump in the price of imported inputs (e.g. energy, raw materials, semi-finished products) in domestic currency resulting either from rising prices in foreign currency or a devaluation of the domestic currency increases domestic production costs, which is represented in an upward movement of the supply curve. ²²

Asymmetric effects of symmetric shocks

Even if economic policy preferences of countries participating in a monetary union coincide and shocks are exclusively symmetric, problems of asymmetry may arise as a result of country-specific differences in the response to uniform economic

²² An upward shift of the supply curve represents an increase in import prices only under the assumption that domestic supply (measured on the horizontal axis) includes foreign inputs. However, if the quantity of supply (and demand) is a representation of domestic value added, then the supply curve will not move upwards in the case of rising import prices. Instead, the demand curve will shift to the left, which can be easily understood if one regards domestic value added (domestically produced components of total domestic supply) as complementary to inputs from abroad (foreign produced components of total domestic supply). If prices of the foreign components increase this will lead not only to declining demand for them but also for the complementary domestic components whose prices did not rise. To sum up, a hike in import prices can be regarded both as a supply shock and as a demand shock. Which interpretation is superior depends on the analytical purpose.

developments or common monetary policy measures. This means that some country-specific adjustment is needed on top of the common policy response.

In a monetary union, a revaluation or devaluation of the common currency may affect member countries differently. The impact of such exchange rate changes on relatively open countries will be larger than on comparatively closed ones.²³ In particular, small open economies recording major trading or financial links with countries outside the monetary union may come under strain if their outside partners pursue exchange rate policies which differ widely from those of the monetary union.

The interest rate policy of the common central bank may also have diverging impacts across union members. In other words, the transmission mechanism, which transfers monetary policy signals into the real economy, differs among countries. This is due to structural and institutional particularities of national financial markets, which have a decisive influence on the speed and intensity of central bank measures.

Also institutional differences in the labour markets can lead to divergent developments in countries facing the same disturbances. For example, when all members of a monetary union are subject to a terms-of-trade loss of a similar size, the effect this has on domestic wages and prices and finally on production and employment very much depends on how social partners respond. If the trade unions of a country try to protect employees from having to take their share of the decline in real national income,²⁴ the upward shift of the supply curve will be larger than in a country whose trade unions accept the inevitable reduction of real wages from the very beginning. As a consequence, the increase in prices and wages and the decline in output and employment will differ across countries even if the initial shock is symmetric.

3.2. Which impacts do shocks have on the economy?

Short-run effects

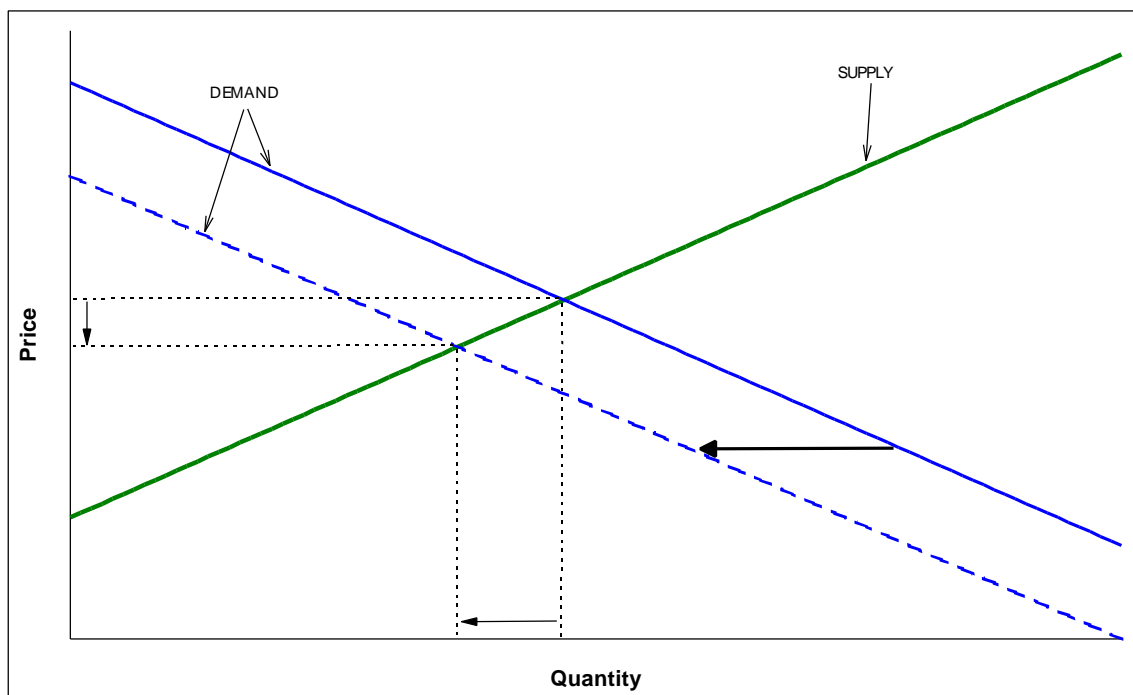
Given conventional price elasticities of demand and supply, a negative demand shock in a market reduces both the price and the quantity of the goods produced. As diagram 1 shows, the equilibrium moves downwards along the supply curve when

²³ In this context, openness is defined as the ratio between the extra-union trade of a country and its GDP.

²⁴ In the case of a terms-of-trade loss, the decline of real national income results from the redistribution of incomes in favour of foreign suppliers.

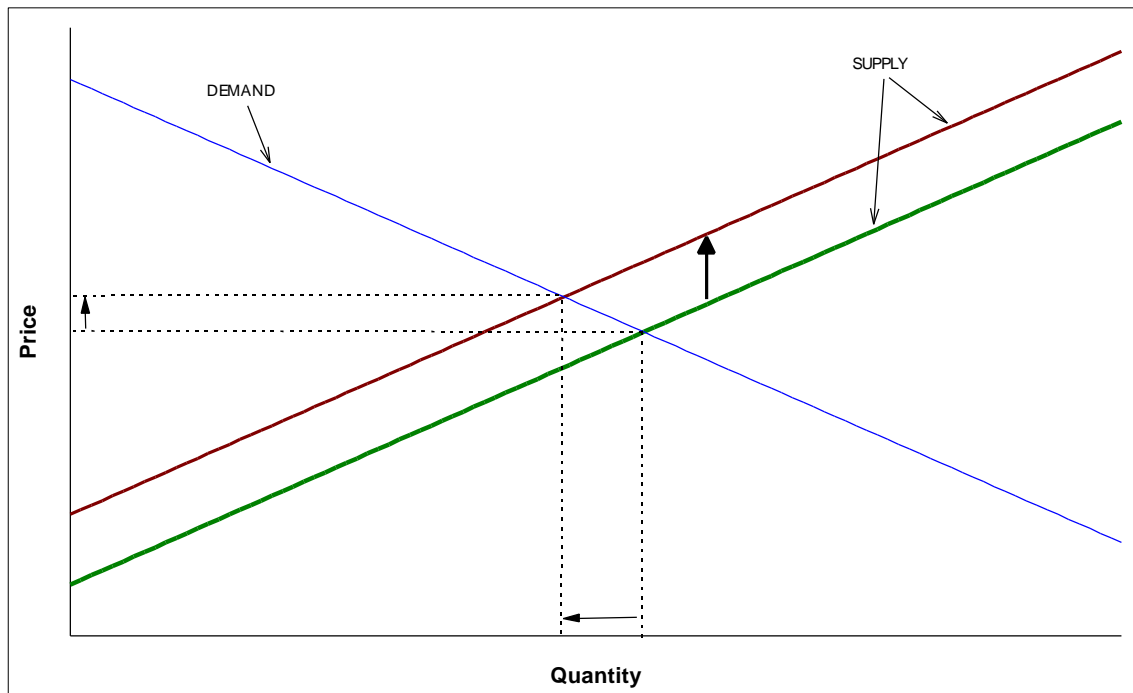
the demand curve is shifted to the left. The lower output in the new equilibrium of the market is coupled with lower income and employment, which will normally not return to their former levels automatically but call for deliberate adjustment activities.

Diagram 1: Negative demand shock



A negative supply shock in a market increases the price and reduces the quantity of the goods produced. As can be seen from diagram 2, the equilibrium moves upwards along the demand curve when the supply curve is shifted upwards. The lower output in the new equilibrium is coupled with lower employment but not necessarily with lower overall income. This is due to the fact that the income earned by some factors has increased. Whether overall income in the new equilibrium of the market is lower or higher than before depends on the price elasticity of demand: If this elasticity is lower than one, overall market income will increase and vice versa. Like in the case of a demand shock, a return to the output and employment levels registered originally will not come automatically.

Diagram 2: Negative supply shock



Long-run effects

Recovering the higher levels of output and employment that had been recorded before the negative demand or supply shock emerged requires active adjustment measures of the suppliers (the enterprise, the sector, the country). Such activities must either result in reduced production costs (e.g. by cutting wages, increasing labour productivity, lowering taxes, devaluing the currency) or in increased demand (e.g. by improving marketing or ameliorating products). A cut in production costs is represented by a downward shift of the supply curve, while sales promotion measures shift the demand curve to the right. Either movement is capable of bringing output and employment back to the levels where they started, though not necessarily at the original equilibrium price.

The activities taken in order to adjust to shocks encourage economic development. In this sense, a continuous series of demand and supply shocks constitutes economic progress. Shocks lead to unrest in the markets and provide for competition and dynamism. In an equilibrium, by contrast, all market participants are satisfied with regard to their expectations. Nobody has an incentive to start new activities.

Solely a disturbance of the equilibrium between supply and demand (the emergence of shocks) induces adjustment activities, which lead to improvements in the production process (process innovation and imitation), to the introduction of new goods and services (product innovation and imitation) and to the opening up of new markets (market innovation). Hence, in the long run, shocks increase production, employment and prosperity, provided that the challenge of economic disturbances is accepted and seen as a chance.

3.3. How likely are country-specific shocks in EMU?

Will the frequency and seriousness of asymmetric shocks change in EMU? There is hardly any convincing argument why foreign shocks (shocks triggered by events outside the monetary union) should become more or less likely with the creation of EMU. They may at best become less asymmetric in their effect if trade patterns and industrial structures become more similar between participating countries (see below). The likelihood of domestic disturbances, however, may significantly change due to the transformation of the whole system of economic management resulting from the monetary and economic integration process in Europe.

Monetary shocks

In EMU, shocks resulting from a nominal exchange rate change between member countries are by definition no longer possible. Shocks emanating from exchange rate variations vis-à-vis third currencies remain likely but will predominantly be symmetric.²⁵ In addition, disturbances caused by pursuing a distinct national interest rate policy are also excluded.

National abuse of monetary policy will disappear

National monetary authorities may (be urged to) misuse monetary policy for short-sighted "stop and go" operations, for the creation of electoral cycles and for the accommodation of unsound economic developments. In all three cases, domestic monetary policy is either the source of the shock or it tolerates the disturbance instead of counteracting it.

²⁵ They can have asymmetric effects if the degree of openness vis-à-vis third countries, the structure of foreign trade with non-members and the invoicing are different among EMU members. Such trade-related asymmetric disturbances could play a role in a small monetary union, if its members' dependence on trade with EU countries that do not yet participate in EMU differs widely. A significant devaluation in one of the non-member countries may therefore affect the economies of the EMU members quite differently.

Alesina and Gatti (1995) found that an independent and inflation-averse central bank (as the ECB is designed to be) does not only reduce average inflation but also eliminates 'politically induced' output variability, since monetary policy is not under the direct control of governments whose preferences may change. As Bean (1992) points out, the pressure on monetary authorities to deviate from their medium-term-oriented disinflationary policy stance usually is especially strong around election times, calling for restrictive policies in the post-election period. He argues that such a pattern of behaviour is unlikely in EMU, since elections are not synchronised across the Community. As a consequence, the danger that the Governing Council of the ECB votes for a temporary loosening of its policy stance due to short-term political pressure should be small.

Apart from directly causing disturbances, central banks may also abuse their position to accommodate inadequate responses to shocks and thus delay adjustment. For example, if monetary policy backs wage hikes with additional money creation the unsustainable situation will be prolonged or even aggravated (see also chapter 4.3.). This will no longer be possible for countries participating in EMU as the abandonment of nationally autonomous monetary policies impedes a short-sighted recourse to exchange rate adjustments if a meaningful co-ordination of domestic economic policies is difficult to achieve.

Asymmetric speculative exchange rate shocks will disappear

Recent experience has shown that exchange rate movements in the European Monetary System (EMS) did not always reflect economic developments across countries but were often purely speculative. As a matter of fact, foreign exchange markets did not press for realignments in the Exchange Rate Mechanism (ERM) despite diverging fundamentals between participating countries until mid-1992. Thereafter, exchange rates tended to overshoot the equilibrium range. Moreover, markets then even required parity changes which obviously were not based on macroeconomic fundamentals but on other reasons (e.g. the markets' expectation of policy changes or their attempt to test the central banks' willingness to intervene in favour of currencies under pressure).

Speculative attacks against currencies are facilitated by the enormous size of foreign exchange transactions in fully liberalised international financial markets. In such an environment, market participants can even succeed in enforcing exchange rate changes that are not justified by macroeconomic developments and that are not

useful in solving structural problems. If the speculative exaggerations lead to sustained exchange rate misalignments, they may cause severe disturbances in the real economy of the countries affected. In EMU, exchange rate shocks triggered by speculative attacks can no longer arise between member countries.

The loss of an autonomous foreign exchange policy within EMU has to be contrasted with observed market failures in the present situation. Samuel Brittan brings this to the point: "Too many analysts assume that in the absence of EMU floating exchange rates will adjust slowly and smoothly to changing fundamentals. The comparison should be between an imperfect EMU and a Europe of currencies overshooting and undershooting in the wake of speculative pressures."²⁶

Asymmetric speculative interest rate shocks will disappear

An asymmetric economic slump *ceteris paribus* reduces the inflation rate of the country concerned. Given that its nominal interest rates are determined by the world market, this leads to a rise in its real interest rates and thereby worsens the recession. With output falling and unemployment rising, foreign exchange markets may find that the situation is unsustainable and will sooner or later force monetary authorities to loosen their policy stance. Under these circumstances they expect a devaluation and demand higher nominal interest rates with the effect that real interest rates increase further.²⁷ As a consequence, output and employment losses will be even larger. Such vicious circles have been occasionally observed in the ERM in recent years, whereby the country that registered one of the lowest inflation rates for many years (France) was forced to raise interest rates in order to defend its currency against devaluation expectations. In addition to production and employment losses, another detrimental consequence of resisting the speculative attacks was a considerable increase in the fiscal deficit, which could have been avoided if monetary authorities had been able to pursue a less restrictive course. With the introduction of a single currency, asymmetric cyclical shocks will no longer be aggravated through jumps in interest rates induced by speculative attacks.

²⁶ Brittan, S. (1995), p. 14.

²⁷ In other words, by demanding higher interest rates, markets signal that a country needs lower interest rates.

Asymmetric reactions to joint monetary policy measures may appear

Countries forming a monetary union may be confronted with the problem that their economies do not react uniformly to common monetary policy measures but respond stronger or faster in some countries than in others (see also chapter 3.1.).

For example, in Germany, Austria²⁸ and a number of other EU countries, aggregate demand is much less affected by short-term interest rates than by long-term ones. In these countries, short-term interest rates which are directly influenced by monetary policy have no great effect on the financing costs of business investment, government deficit and private housing. Contrary to that, short-term mortgage financing in the United Kingdom and in Ireland strongly affects the real economy. This makes the impact of monetary tightening more severe there. In France, short-term financing of business investment plays a much greater role than in Germany, with the effect that French companies suffer much more from rising central bank rates than German firms. In Italy, the average maturity of the huge public debt is comparatively short, with the consequence that changes in official interest rates lead to strong fluctuations of the government's debt service. As interest expenditures of the public sector accrue in the form of interest income primarily in domestic private households, they increase private households' ability to consume. Hence, in Italy the use of the interest rate instrument may even produce a perverse effect.

Obviously, the monetary transmission mechanism differs widely across EU countries. In this field, some structural and institutional convergence is desirable before EMU starts. As part of their preparatory work for EMU, the European Monetary Institute (EMI) and the national central banks intensively discuss measures to reduce these potential disturbances. Some convergence is occurring already: For example, the proportion of new British mortgages on fixed interest is rising. Also the importance of short-term government debt financing in Italy will dwindle if the size of public debt declines and if its average maturity rises as a result of decreasing inflation (volatility). Should Italy qualify for EMU membership, both conditions will be met as falling debt ratios and inflation rates are a precondition for participating in EMU.

²⁸ For details see Glück and Weninger (1995).

Fiscal shocks

In EMU fiscal policy will be restrained by the obligation of participants to avoid excessive deficits.²⁹ The respective provisions of the Maastricht Treaty demand from governments to keep their deficit below 3% of GDP and their debt below 60% of GDP while allowing at the same time for some dynamism. As a consequence, economic shocks resulting from running excessive government deficits and from curtailing them subsequently will become less likely in EMU.

Fiscal policy, like monetary policy, may be misused to create electoral cycles, to pursue "stop and go" policies and to support unsustainable developments. In the case of policy cycles, the government does not stabilise economic fluctuations but creates them. Contrary to the behaviour of automatic stabilisers, discretionary fiscal policies can be applied only with a time lag and may therefore have a pro-cyclical effect in the end. Fiscal policy may also retard the adjustment to structural shocks if it subsidises obsolete industries. In so far as fiscal policy is the source of economic disturbances, its reduced leeway in EMU is an advantage rather than a disadvantage.

Wage shocks

The participation of a country in EMU should increase the wage discipline of its social partners, as they will realise that the safety valve of realignments is removed. The adoption of a single currency sends a clear signal to all labour market participants that excessive wage increases would have detrimental effects on output and employment. With the abandonment of their monetary autonomy, national central banks make a strong anti-inflationary commitment which is likely to reduce inflation expectations quickly and at comparatively low cost. There is some evidence from countries belonging to the hard core of the EMS that employees and trade unions seem to accept this constraint. A similar effect is reported by Hochreiter and Winckler (1995), who show that the definitive shift of the Austrian exchange rate policy to a DM-peg triggered the necessary change in behaviour of social partners and ultimately made the country part of an optimum currency area with Germany.

Contrary to this optimistic scenario, some observers fear that increased transparency in EMU could tempt trade unions to aim at greater wage equality

²⁹ The present discussion of a "stability pact", however, shows that there are considerable doubts as to whether this obligation can be effectively enforced in Stage Three of EMU by the sanctions provided for in the Maastricht Treaty.

between member countries ignoring persistent differences in labour productivity. Such behaviour would indeed lead to negative wage shocks in countries with relatively low levels of productivity and thus create unemployment and impede the catching-up process. As employees of these countries cannot count on monetary policy and fiscal transfers to bail them out, this scenario does not seem very likely.

Cyclical shocks

Monetary unification strengthens economic integration. Expanding trade between EMU members will dampen country-specific business cycles as the increased dependence on exports and imports to and from other EMU participants will have an offsetting effect. As a consequence, the intensity of nationally differentiated business cycles is likely to abate gradually.

Sectoral shocks

Sector-specific shocks are likely to become country-specific shocks, if industrial activities are highly concentrated in certain member states. By contrast, economies sharing the same industries probably experience similar disturbances in the case of a sectoral shock. In highly diversified economies, industry-specific shocks will not cause major aggregate disturbances anyway.

European monetary integration enhances the division of labour

According to the European Commission (1990), the introduction of a single currency serves the aim to reap the full benefits of the Single European Market. In this sense EMU will contribute to intensify the integration of the European economies. As extended economic integration can lead to more regional specialisation, the probability of sectoral shocks affecting exclusively one country or a few may increase in EMU. Whether asymmetric sectoral shocks - induced either by domestic or foreign events - will in fact become more likely as a consequence of monetary unification depends on the kind of specialisation.

If specialisation increases because integration makes it easier to utilise comparative advantages, geographical concentration of industries and thus the probability of asymmetric sectoral shocks will rise in EMU. With the reduction of transaction costs and the disappearance of other impediments to trade brought about by extended integration, industrial activities are likely to be shifted to countries that have comparative advantages in the production of the respective goods and services (e.g.

existence of natural resources, a favourable climate, an appropriate infrastructure, a specialised labour force, low prices of production factors and of other inputs).

If increased specialisation arises from a better exploitation of economies of scale made possible by enhanced integration (which for example reduces the need to produce close to the final market), sectoral shocks can have both symmetric and asymmetric effects on countries. They will have distinct asymmetric effects if each country specialises in a different industry. They will be symmetric if the division of labour between EMU members takes place within the same industries. In the case of intra-industry specialisation, economies of scale can be achieved despite the dispersion of production over many countries. This is feasible if individual countries manufacture only part of the whole product range of an industry or solely several components of a product on a large scale.

Enhanced division of labour may have conflicting effects on the frequency and magnitude of asymmetric sectoral shocks

The experience other monetary unions made with asymmetric sectoral disturbances may throw some light on the possible developments in this field after monetary unification in Europe. The assumption that closer integration may lead to higher regional concentration of industries is supported by empirical studies³⁰ which compare industrial diversification in the United States with that in the European Union. At least for the manufacturing sector³¹ economic activities are much more concentrated in the United States than in Europe. According to Krugman (1991), the greater regional specialisation of manufacturing industries in the USA relative to those in the EU is a function of the common currency. This suggests that the introduction of a single currency will lead to significant regional dislocation in Europe. Expressed differently, when the EU completes its internal market with the move to EMU it may experience similar regional concentrations of industries over time as those observed in the USA today. Should the adoption of a single European currency in fact bring about a concentration process of this kind then the European monetary union will at worst be as bad off as the US monetary union.

The comparatively high degree of regional concentration of manufacturing activities in the USA prima vista seems to be inconsistent with the finding³² that variations in aggregate output of US regions are stronger correlated than those in EU countries.

³⁰ For a survey see Bayoumi and Eichengreen (1994) and de Grauwe (1992).

³¹ Bayoumi and Eichengreen (1994) found that apart from manufacturing and primary goods, the EU is more diverse than the USA, at least at the one-digit SITC level.

³² See for example Bayoumi and Eichengreen (1994).

However, this ostensible contradiction vanishes if one takes into consideration the following differences between the United States and the European Union: First, the economies of the US regions are more closely linked to each other by trade than those of the EU countries³³ with the consequence that regional economic disturbances in the USA have a greater effect on neighbouring economies than in the EU. Second, the federal fiscal policy in the USA has a dampening effect on regional shocks as automatic stabilisers redistribute income from prospering to contracting regions. In the EU, this mechanism does not exist. On the contrary, autonomous national fiscal policies themselves cause economic disturbances and thus contribute to the small correlation in output growth within Europe. Last but not least, the common monetary policy in the USA affects all regions similarly while in Europe nationally independent monetary authorities occasionally create country-specific cycles.

There is broad consensus that EMU will intensify competition and consequently lead to a process of industrial consolidation in Europe. There is, however, considerable dissent about the most likely form the inevitable adjustment will have. Reinforced regional concentration as implied by the US situation is far from being anticipated unanimously. There are a number of other possible responses to the enhanced competition induced by EMU. Stronger competition between companies of different countries may well lead to the displacement of some of them. However, this does not necessarily mean that production will be dislocated and concentrated in one country or a few. Instead, firms may merge or take over other firms in the same trade and hereby achieve both economies of scope and economies of scale by specialising on certain parts of the combined product range in each location of production.

Another argument against the view that the process of competitive displacement related with monetary unification will lead to higher regional concentration of industries in Europe and thus to asymmetric sectoral shocks is the observation that large companies increasingly employ sub-contractors to deliver parts of the final product. The components manufactured by the parts suppliers are assembled in the main plant. The system of sub-contracting is strongly fostered by monetary unification as it removes the exchange rate risk which foreign sub-contractors are exposed to. As a consequence, the regional diversion of industries may even increase over time in EMU. This argument is supported by the findings of Hochreiter and Winckler (1995), who argue that the close peg of the Austrian schilling to the Deutschmark might have contributed to the rising share of intra-industry trade in

³³ Increased trade between regions is only a logical consequence of an enhanced division of labour between them.

Austria's total trade with Germany. A major factor in this development was the strong increase in the Austrian sub-contracting industry for the German automotive production.³⁴ Regional concentration may be counteracted not only by the adoption of a single European currency but also by EU regional funds as they have some influence on the decision of large manufacturing companies where to place a new plant for the production of components.

Gros and Thygesen (1992) state that most trade between EU countries is already of the intra-industry type and Goodhart and Smith (1993) expect that the dynamic process in the European Union probably will make all member states more alike with the result that sectoral shocks will generally be symmetric rather than asymmetric in the future. Experience shows that these expectations are not unfounded. At least in the past, the integration process in Europe did not lead to an increased specialisation of countries in certain industries. As table 1 reveals, the share of intra-industry trade in total trade between EU member states has increased steadily in most countries.

Table 1: Intra-industrial trade as a share of intra-EC-trade

	EC 6			EC 12		
	1958	1963	1970	1970	1980	1987
BLEU	0.54	0.60	0.66	0.69	0.70	0.77
Denmark	-	-	-	0.41	0.52	0.57
Germany	0.47	0.57	0.67	0.73	0.78	0.76
Greece	-	-	-	0.22	0.24	0.31
Spain	-	-	-	0.35	0.57	0.64
France	0.61	0.68	0.73	0.76	0.83	0.83
Ireland	-	-	-	0.36	0.61	0.62
Italy	0.42	0.48	0.59	0.63	0.55	0.57
Netherlands	0.50	0.57	0.64	0.67	0.73	0.76
Portugal	-	-	-	0.23	0.32	0.37
United Kingdom	-	-	-	0.74	0.81	0.77

Source: Sapir (1992)

³⁴ In 1992, some 85% of the value of Austria's car imports was offset by exports of the automotive sub-contracting industry, while at the beginning of the 1970s this industry was practically non-existent.

Even if sectoral activities should turn out to concentrate in certain regions, country-specific shocks will not necessarily become more likely. This would only be correct if the boundaries of the region concerned exactly coincide with the borders of a country. In most cases, however, specialised industrial regions are solely a part of a country. And if a section of a country is hit by an asymmetric shock, monetary policy is not a suitable adjustment instrument anyway as it cannot aim at isolated parts of the national currency area.

3.4. Conclusions

In this chapter, economic shocks have been defined as (major) disturbances of the equilibrium between supply and demand. Their classification according to symmetry, duration, market side, direction and cause is of eminent importance when examining the usefulness of different adjustment mechanisms to shocks and their effects on prices and volumes of production. As regards the repercussions of negative demand and supply shocks (positive shocks are left out of consideration) on output, income and employment, their unfavourable short-term consequences have to be distinguished from the chances they offer for prosperity and the creation of jobs in the long run.

It has been pointed out that in EMU certain asymmetric shocks will disappear while others are likely to emerge less often or with lower intensity. This means that the frequency and magnitude of domestic disturbances are largely policy dependent. Shocks resulting from exchange rate movements between member countries or from interest rate hikes provoked by speculative attacks on national currencies will vanish altogether. As according to Bofinger (1994) monetary shocks have been much more common in the EU than real demand shocks, this should reduce the problem of asymmetric disturbances considerably in EMU. Country-specific shocks induced or prolonged by fiscal policy measures can be expected to abate as the requirement to avoid excessive deficits reduces the leeway of fiscal policy. Increasing trade among countries participating in EMU will have a dampening effect on asymmetric business cycles. There are conflicting views about the likelihood of country-specific sectoral disturbances and asymmetric wage shocks in EMU. Inasmuch as divergencies among the future members of EMU persist with respect to wage rigidity, trade patterns and the monetary transmission mechanism, symmetric shocks and joint

policy responses may produce asymmetric effects in Stage Three. However, all in all, the importance of asymmetric domestic shocks should decline through EMU.

Bayoumi and Eichengreen (1992) observed that shocks to the United States show considerably more coherence than shocks to the European Union (EU12 except Luxembourg). Furthermore, they found that the US regions adjust to shocks more quickly than the EU countries. The policy implications of these findings are, however, somewhat ambiguous: On the one hand, they suggest that the European Union is less suited to form a monetary union than the United States, because it seems to require multiple exchange rates. The fact that asymmetric disturbances are more frequent and the adjustment to them takes longer in the EU countries than in the US regions may render the renunciation of an adjustment instrument more costly for Europe than for the United States. On the other hand, the findings of Bayoumi and Eichengreen also indicate that asymmetric shocks become less likely after the formation of a monetary union, which would support the hypothesis propounded in the previous paragraph. This interpretation is also confirmed by the finding that supply and demand disturbances to the countries of the stability-oriented core of the EMS (Belgium, Denmark, France, Germany and the Netherlands) have been smaller and more correlated across neighbouring countries than the shocks affecting the other EU members (Greece, Ireland, Italy, Portugal, Spain and the United Kingdom).³⁵ The large difference in magnitude and symmetry of shocks between the EU core and the EU periphery is also a convincing argument in favour of a two-speed monetary union.

The fact that country-specific shocks cannot be excluded in the future suggests not to give up monetary policy autonomy, if exchange rate changes are an effective way to adjust to such disturbances. Whether monetary policy is in fact an appropriate instrument to respond to economic shocks will be discussed in the next chapter.

³⁵ The findings of Hochreiter and Winckler (1995) that Austria did not form an optimum currency area with Germany at the time of the adoption of the DM orientation of the schilling in the early 1970s supports this view. They argue that the Austrian central bank and government implemented a series of policy measures which led to the formation of an optimum currency area with Germany in the mid 1980s. However, they ascribe this development more to the real wage flexibility in Austria than to an increase in the symmetry of shocks.

4. How useful is monetary policy in coping with country-specific shocks?

4.1. How much will the actual applicability of monetary policy as a shock absorber be reduced in EMU?

When joining EMU, a country entirely gives up its ability to adjust to asymmetric disturbances by pursuing a nationally differentiated monetary policy stance. The proper questions are therefore, how much leeway does monetary policy actually have to respond to country-specific shocks outside EMU and to what extent is this leeway used by the monetary authorities of the EU countries.

In an environment of free capital movements, fixed exchange rates are an impediment to an efficient monetary policy

Given fully liberalised capital transactions, risk-adjusted national interest levels cannot deviate much from the world interest level as interest rate differentials immediately give rise to substantial capital movements. In such an environment monetary policy is inefficient if exchange rates are fixed. Hence, countries with basically fixed exchange rates, like those of the core-ERM, will in fact not lose a policy instrument when joining EMU. They just give up something they have not been using for a long time.³⁶ And these countries fulfil the criterion of exchange rate stability³⁷ called for by the Maastricht Treaty.

In an environment of free capital movements, flexible exchange rates are a necessary condition for an efficient monetary policy

While monetary policy is inefficient in the core-ERM, it can be efficient in countries that practice some sort of floating. Under conditions of fully liberalised capital movements and flexible exchange rates, a change in official interest rates will ceteris

³⁶ The definitive abandonment of an actually unused exchange rate instrument will not only incur no costs in terms of a reduced policy autonomy but it will benefit economic policy by relieving it from its obligation to respond to unjustified speculative attacks on the national currency.

³⁷ According to Article 109j (1) TEU and Article 3 of the attached Protocol (No. 6), one important requirement for countries entering Stage Three of EMU is "the observance of the normal fluctuation margins provided for by the exchange-rate mechanism of the European Monetary System, for at least two years, without devaluing against the currency of any other Member State. ... In particular, the Member State shall not have devalued its currency's bilateral central rate against any other Member State's currency on its own initiative for the same period." This requirement is usually referred to as the *exchange rate criterion*.

paribus give rise to capital flows and consequently lead to exchange rate movements. In the case of a negative demand shock, monetary policy can therefore ease the adjustment process by inducing a depreciation of the currency and thus increasing the price competitiveness of domestically produced goods and services. The same effect may occur even without active measures of monetary authorities if markets respond to a negative asymmetric shock by putting downward pressure on the exchange rate of the country affected.

At present, about half of the EU members have more or less floating exchange rates: Five countries do not participate in the ERM, which basically is a system of fixed but adjustable exchange rates. Some ERM members have repeatedly made use of exchange rate realignments in the recent past or are extensively using the fluctuation band which was widened to $\pm 15\%$ in August 1993. Since then, the term "fixed exchange rate regime" seems to be justified only for those ERM members which do not make full use of this wide band.

Are flexible exchange rates a sufficient condition for an efficient monetary policy?

It has been shown that countries following a stability-oriented exchange rate policy will not incur additional costs in terms of a reduced leeway of economic policy if they participate in EMU. As they have in fact already given up their monetary autonomy, the actual applicability of monetary policy as a shock absorber will not be affected. But what about those EU members that have been using exchange rates as a policy instrument time and again in the past? How much room for manoeuvre does the monetary policy of these countries really have to respond to country-specific shocks at present? The answer to this question depends largely on the durability of the effect a nominal exchange rate change has on the real exchange rate. If nominal exchange rate adjustments do not alter real exchange rates permanently, a country is not losing much when joining a monetary union.

Experience shows that devaluations usually trigger price-wage-spirals with the effect that a change in nominal exchange rates alters real exchange rates only temporarily. A devaluation raises the prices of imported goods and services and consequently increases domestic inflation via various channels. Rising prices of imported consumer goods directly influence the consumer price index. Price increases of investment goods and raw materials raise the cost of domestic production and thus further lift consumer prices. If workers do not accept the related loss of purchasing power but demand higher nominal wages as a compensation, a new round of cost

and price increases is set off. These price increases feed back again in the wage-formation process and so forth. The vicious circle of devaluation, inflation and rising wages reduces the initial real devaluation and its favourable growth and employment effects. Whether these positive effects will completely disappear depends on the openness of the economy³⁸ and on the willingness of the social partners to accept some loss of purchasing power. There is empirical evidence, however, that in most European countries changes in nominal exchange rates have only a temporary effect on real exchange rates and thus on competitiveness.³⁹ Over time the nominal devaluation results in domestic cost and price increases which tend to restore the initial level of price competitiveness. Under these circumstances exchange rate policy is not an efficient instrument to overcome asymmetric shocks lastingly. It can at best help to gain time for a smoother adjustment. In order to be successful in permanently improving price competitiveness, a devaluation has to be backed by the willingness of the social partners (in particular wage-earners) to accept an exchange-rate-induced reduction in real incomes (see also chapter 4.2.).

The ability of monetary policy to facilitate the adjustment to economic shocks is not only called into question by empirical evidence but also by the literature on rational expectations. According to this literature, a devaluation is not a flexible instrument which can be frequently used to correct disturbances in an economy. It states that a prolonged record of price stability largely depends upon credible and steadfast economic policies. If monetary authorities renege on their commitment to pursue a stability-oriented policy, the public will immediately respond by changing its expectations. The authorities' credibility will suffer and they will find it difficult to regain an anti-inflationary reputation without an austere process of disinflation which may be very costly in terms of output and employment. Hence, the attempt to mitigate the negative real effects of an economic shock by expansionary monetary policies is very likely to be frustrated in the long run. As soon as policy-makers are going to restore the initial lower level of inflation and inflation expectations, they will have to pay a price. When used once, a devaluation affects its use in the future, because it creates strong expectational effects. The anticipation that it may be used again changes the behaviour of economic agents and thus complicates macroeconomic policy making. For example, the macroeconomic responsibility of social partners in the wage formation process may weaken if they expect a bailout by a devaluation in the case of declining price competitiveness. In a nutshell, a

³⁸ Although a full compensation of the nominal devaluation by wage and price increases is not very likely in a comparatively closed economy, it has to be acknowledged that the growth effect of a devaluation in such an economy is small anyway.

³⁹ See discussion in de Grauwe (1992).

devaluation is a dangerous instrument which may not bring about the desired results but hurt those who use it.

4.2. How can monetary policy support the adjustment process?

Transitory support during temporary demand shocks

In the case of a temporary demand shock, monetary policy can help to keep cyclical fluctuations within reasonable limits. Like other forms of stabilisation policy, an anti-cyclical use of monetary policy aims at reducing the magnitude of a temporary economic disturbance and the costs related to it. A negative demand shock can trigger multiplier and accelerator effects leading to losses of production, employment and incomes that exceed those of the initial shock by far. These undesirable dynamic mechanisms can be restrained by expansionary policy measures whereby monetary policy can play an important role, provided that its primary goal of price stability is not jeopardised, which is, however, not very likely in a situation of a demand shortfall.

Monetary policy can stabilise demand basically in two ways: First, by adjusting nominal interest rates, it changes the interest payments made and received by private households and firms. Second, by influencing real interest rates (via nominal interest rates and/or inflation expectations), it directly affects the investment and saving decisions of the private sector. The latter channel of monetary policy transmission operates via the change of relative prices. Companies tend to invest more if the price of borrowed funds or the yield of financial investment declines relative to the marginal efficiency of capital. Private households increase their present consumption if it becomes less expensive in terms of forgone future consumption due to declining real interest rates. However, this mechanism has not always proved very effective. In contrast to that, the cash-flow effects of monetary policy have become fairly important in recent years not least as a result of financial deregulation. Declining nominal interest rates support demand via the effect they have on the cash-flow positions of private borrowers. If they are unable to further increase their borrowing because of a lack of creditworthiness, they cannot maintain their investment and consumption levels in a situation of a shock-induced decline in current incomes unless their debt service decreases thanks to lower interest rates. The magnitude of the cash-flow effect is determined by three principal factors: the net indebtedness of individual households and companies, the responsiveness of

their credit and debit interest rates to changes in central bank rates, and their ability to further increase borrowing.⁴⁰

By definition, a temporary shock will be reversed within some time. This is, however, not necessarily true for all the effects it produces. A temporary economic disturbance may also bring about some lasting negative consequences, especially in the labour market. A strong increase in unemployment during a cyclical downturn leads to demotivation and dequalification (or absent qualification) of the idle work-force. As a result, the unemployed have considerable difficulties in finding a job during the next upswing. At the same time employers may be confronted with a lack of sufficiently qualified personnel and thus rising wages. Seen against this background, stabilisation policies do not only smooth demand over time but help to suppress the emergence of structural problems and social tensions. An active use of monetary policy for anti-cyclical purposes can contribute to preserve the human capital of the work-force and to keep youth as well as long-term unemployment low, with the positive side effect that structural sources of inflation are brought under control.

Transitory support during the phase of adjustment to permanent demand shocks

Like in the case of a temporary demand shock, monetary policy can also help to facilitate the adjustment to permanent demand shocks. However, considerable caution is necessary in order to avoid that the adjustment support provided by monetary policy does not in fact reduce the adaptation efforts (see chapter 4.3.). An expansionary intervention of monetary authorities may be justified if means of production abruptly become economically obsolete or if major markets collapse unexpectedly. The output and employment losses connected with such events cannot be compensated immediately by adjustment efforts of enterprises, even if they respond quickly to the shock. This is due to the reasonably long maturing time of innovations and imitations in the field of production methods, products and markets. The modernisation of manufacturing plants, the introduction of new product lines and the acquisition of new markets generally require some time. If overall demand in the transition phase is not supported by other sources, the decline of production, employment and incomes induced by the sudden appearance of structural demand deficiencies is likely to trigger multiplier or accelerator effects and thus aggravate the situation. In such a transitory phase, monetary policy can play a useful role.

⁴⁰ For further details concerning the channels of monetary policy transmission see Bank for International Settlements (1994), pp. 136-144.

Enabling real wage flexibility when money illusion exists

One method to adjust to negative asymmetric shocks is a reduction of real wages. If workers resist a downward adjustment of their nominal earnings but have money illusion, the necessary decline in real earnings can be brought about through an increase in prices at unchanged nominal wages.⁴¹ An elegant measure to benefit from both the money illusion of the labour force and an improvement of international price competitiveness is a devaluation. This exchange rate adjustment increases the price level of imported goods and reduces unit labour costs in common currency. An additional advantage of devaluations compared to nominal wage cuts is the fact that exchange rates can be moved without delay when a nationally differentiated shock requires an adjustment, while wage contracts can only be modified on the occasion of the next wage negotiations. To sum up, as long as money illusion exists, exchange rate policy provides a powerful instrument for a timely reaction to asymmetric disturbances.⁴² However, if workers do not only resist a reduction of nominal wages but also of real ones, national monetary policy cannot play a constructive role as a catalyst in the adjustment to country-specific shocks (see chapter 4.1.). Estimated wage equations from Jackman et al (1991) and Andersen (1992) show that real rigidities are more common in the EU than nominal ones. As a consequence, the disappearance of monetary policy as a national policy instrument in Stage Three of EMU will not be a big loss.

4.3. Under what circumstances is monetary policy not beneficial to the adjustment process?

Monetary stabilisation policy may become destabilising because of its delayed effect on the real economy

A major criticism of anti-cyclical monetary policies is that their impulses usually need quite a long time to work through into the real economy. As a result of this lengthy transmission mechanism, an initially anti-cyclical measure may finally turn out to have a pro-cyclical effect. Hence, when employed to correct temporary demand

⁴¹ Due to learning effects, however, money illusion as a rule is a temporary phenomenon.

⁴² In the case of money illusion, participation in EMU obstructs the adjustment to asymmetric shocks in two ways: It deprives the countries affected of the instrument that renders real wage flexibility feasible if nominal wages are rigid. At the same time, nominal wage rigidity is likely to become a more severe problem in a monetary union aiming at price stability because the resulting low growth rates for aggregate nominal wages reduce the scope for real wage cuts by not fully adjusting nominal wages to inflation.

shocks, monetary policy always runs into danger to produce a counterproductive result.

Monetary policy may prevent or delay structural adjustment

Although some cautious support from monetary policy may be justified under certain conditions in the initial phase of economic shocks, it is evident that structural shocks call for structural adjustment measures. Monetary policy is not able to solve structural problems. It can at best prevent the decline in incomes brought about by structural disturbances from accelerating due to multiplier effects. If monetary authorities are too supportive they may even hamper the necessary adaptation and restructuring of the economy. A massive devaluation, for example, initially strongly improves price competitiveness and thus renders the modernisation of manufacturing methods and the introduction of new products less urgent. It can be seen that a soft currency option rather disguises structural weaknesses than reducing them. Contrary to that, a hard currency option tends to disclose structural deficiencies and to press for genuine adjustment measures. It works as a structural whip.⁴³

In the case of a negative supply shock caused by a wage push, an expansionary monetary policy is particularly damaging, because it accommodates untenable developments and thus exacerbates economic difficulties. The restoration of equilibrium wages takes longer if monetary policy tries to offset the negative effects of rising unit labour costs on total domestic demand and employment.

4.4. What does empirical evidence indicate?

Erkel-Rousse and Mélitz (1995) try to answer the question whether a country can reduce the costs of asymmetric shocks through independent monetary policy outside a monetary union. Due to lack of data, only Germany, France, Italy, the United Kingdom, Spain and the Netherlands are included in their study, which covers the period from 1970 to 1992. In order to assess the sacrifice that each of these EU

⁴³ Froats (1995) points out that a hard currency policy may also create perverse incentives in terms of structural adjustment. While he acknowledges the favourable role of such a policy in encouraging the exit from uncompetitive plants and declining industries, he also recognises the danger that it renders workers and investments more likely to flow to the non-tradable and financial sectors, whose contribution to overall economic prosperity may be limited. He rightly recommends that the *stick* (nominal appreciation, phasing-out of state subsidies) has to be combined with the *carrot* (positive incentives for labour and capital mobility) in order to avoid that the tradable sectors 'lie down and die'.

countries would suffer from the surrender of national monetary policy autonomy, the authors identify a separate shock which causes exchange rate jumps in the short run and has therefore similar effects as monetary policy. Among the various disturbances they identify in their analysis, the shock to the relative velocity of money at home and abroad is regarded as the one causing abrupt exchange rate movements. In a next step they try to determine the extent to which such jumps in exchange rates bring about short-run movements in volumes. It is true that only short-run volume effects bear witness to the ability of monetary policy to help stabilise the economy.

The results of their structural vector autoregressive model are interpreted by Erkel-Rousse and Mélitz as follows: "With the possible exception of the United Kingdom, Germany represents the only country where the relative-velocity shocks provide an important source of unexpected real behaviour in the short run. This shock explains to a large extent the surprises in output performance in Germany over a six-quarter horizon. By comparison, for Spain, France, Italy and the Netherlands, this shock accounts for almost none of the unexpected short-run behaviour of output or the current account. On this evidence the four countries would thus lose little by surrendering their monetary policy independence. ... The shocks generally explain a lot of the surprise movement in inflation in the analysis - exceptionally so for France and the Netherlands. Thus, the evidence indicates that monetary policy feeds directly into prices rather than volumes in all four countries. In other words, the four countries seem to offer textbook examples of cases where monetary policy has no value as a stabilisation device." ⁴⁴

The study of Erkel-Rousse and Mélitz supports the experience that devaluations often give rise to price increases which tend to offset the initial improvement in price competitiveness. Nonetheless, the beneficial effects of devaluation are not always wiped out quickly by faster inflation, which can be demonstrated by a few examples. One of them is the realignment of the Belgian franc in 1982. Its devaluation by 8.5% proved very successful with regard to output and current account developments. However, it has to be admitted that this success was to a great extent the result of the policy measures that accompanied the realignment: Fiscal and monetary policy were tightened, and an incomes policy was instituted which included the temporary abolition of the wage-indexing mechanism. Finally, the favourable outcome of the devaluation was largely the result of people's willingness to accept a decline in their real incomes. The devaluation of the Finnish markka in response to severe domestic and foreign shocks is another example of a successful exchange rate adjustment.

⁴⁴ Erkel-Rousse and Mélitz (1995), non-technical summary.

The markka was devalued in 1991 and 1992 and continued its depreciation in 1993. Although it lost nearly a third of its value vis-à-vis the strongest ERM currencies between mid-November 1991 (devaluation against the Ecu) and March 1993, the inflation rate in Finland continued to decline and thus contributed to the improvement in price competitiveness. The strong increase in net exports, which was induced by the devaluation and supported by the wage restraint, helped prevent an even deeper recession. The inevitable restructuring of foreign trade after the breakdown of Finland's largest trading partner, the Soviet Union, was facilitated by the massive decline in relative prices. With the advancing reorientation in foreign trade and the accelerating recovery of the economy, the Finnish markka began to recover strongly. The Finnish example of the early nineties shows that exchange rate flexibility can be a useful instrument to cushion the adverse effects of large asymmetric shocks during a transitory period. However, such positive examples are rare, even in the Finnish history.

4.5. Conclusions

In certain situations, a nationally independent monetary policy can be useful in coping with asymmetric shocks. It can reduce country-specific cyclical fluctuations and impede negative repercussions of permanent sectoral shocks to the rest of the economy via multiplier and accelerator effects. In this way, it changes the dynamics of the adjustment, thus making it less costly in terms of lost output, employment and human capital during the transition period towards long-run equilibrium. Monetary policy can play an especially important role in the adjustment to shocks if there is money illusion among workers. In this case, where nominal wages are sticky, it brings about the required reduction of real wages via a devaluation.

The potentially useful role of monetary policy in the adjustment process to country-specific shocks must, however, be confronted with its barely convincing empirical results and its potential dangers. An overly supportive monetary policy is more likely to delay or hamper an inevitable structural adjustment than to promote it and to make it socially less painful. As regards the usefulness of exchange rate adjustments as an instrument to cope with asymmetric shocks, empirical evidence for most European countries shows that a devaluation cannot in the long run undo such disturbances. From this outcome it can be concluded that money illusion does not exist among the European work-force or is only rather weak. The existence of real wage rigidity, however, makes the exchange rate an ineffective tool of adjustment to country-specific economic disturbances. Furthermore, a devaluation is obviously not

a flexible instrument that can be applied regularly. When used once, it creates expectations in the public, which reduce its effect in the future. To sum up, the application of monetary policy for the adjustment to asymmetric shocks is a double-edged sword, the empirical evidence of its utility is not convincing and it cannot be used repeatedly. The answer to the question of how much leeway monetary policy in reality has to respond to country-specific shocks outside EMU is therefore: little to none. As a consequence, a participation in EMU and the related surrendering of national monetary policy independence seems to be not too costly even for those EU members that have been employing the exchange rate instrument occasionally in the past. Those EU countries, which have in fact been pegging their currencies to the DM for some time, will only give up a policy instrument which they have not been using anymore.

5. How useful is fiscal policy in coping with country-specific shocks?

5.1. How much will the actual leeway of fiscal policy as a shock absorber be reduced by the fiscal convergence criteria?

If monetary policy cannot be deployed to respond to country-specific shocks because it lacks the desired results or it is not available in a monetary union, the adjustment to asymmetric economic disturbances must be brought about by other policies and mechanisms. One possible instrument principally qualified to support the adjustment to shocks is fiscal policy. In EMU, however, the scope of fiscal policy as a shock absorber will be curtailed by the imposition of ceilings on budget deficits and public debt. How much will the leeway of fiscal policy as an adjustment mechanism to nationally differentiated shocks in fact be reduced by these provisions of the Maastricht Treaty? The answer to this question depends on the interpretation of the respective convergence criteria and on the assessment of the actual leeway countries have in an integrated Europe in the absence of EMU.

Convergence criteria leave some leeway for national fiscal policy

The requirement of the Maastricht Treaty to keep the deficit of the public sector at or below 3% of GDP leaves the government comfortable scope to respond to asymmetric shocks if under favourable cyclical conditions a balanced budget is

aimed at. Moreover, this stipulation contains some dynamic elements which ensure a slightly larger room for fiscal manoeuvre in the case of non-cyclical shocks in an economy.⁴⁵ The stipulation which forbids a public debt ratio exceeding 60% of GDP also allows for a dynamic interpretation.⁴⁶

After all, the individual countries of the EU will retain more fiscal leeway to respond to asymmetric shocks in the future EMU than the members of most other monetary unions, e.g. the Canadian provinces and the American states, have today.

A number of governments have no room for budgetary manoeuvre anyway

The argument that the household criteria would unduly reduce the flexibility of fiscal policy in the case of asymmetric shocks stands in contrast to the fact that public households in a number of EU countries have no room for manoeuvre anyway. In these countries, fiscal policy is unable to serve as a shock absorber inside and outside a monetary union.

Large budget deficits lead to problems of sustainability

Experience shows that governments using budget deficits to absorb negative economic shocks quickly realise that such policies cannot be maintained for very long. Budget deficits result in rising public debt which will have to be serviced in the future. If the nominal interest rate on the public debt exceeds the nominal growth rate of GDP, a debt dynamics is induced which leads to an ever increasing debt ratio. Sooner or later, the level of public debt relative to GDP becomes unsustainable and calls for corrective action. Governments are then forced to cut budget deficits sharply or to run surpluses for a number of years, no matter whether the country is hit by another shock or not. These considerations make clear that fiscal policy is not a very flexible instrument for the correction of shocks either. When used once, large budget deficits, like devaluations, affect their use in the future.

⁴⁵ According to Article 104c (2(a)) TEU the ratio of the planned or actual government deficit to gross domestic product must not exceed the reference value of 3%, "unless
- either the ratio has declined substantially and continuously and reached a level that comes close to the reference value;
- or, alternatively, the excess over the reference value is only exceptional and temporary and the ratio remains close to the reference value".

⁴⁶ According to Article 104c (2(b)) TEU, the ratio of government debt to gross domestic product must not exceed the reference value of 60%, "unless the ratio is sufficiently diminishing and approaching the reference value at a satisfactory pace."

In an increasingly integrated Europe, national fiscal impulses are weakened by spill-over effects

In an open economy, a considerable portion of the additional expenditure financed through increased government borrowing is likely to flow into higher net imports and thus to reduce the expansionary effect on the domestic economy. Given the potentially large spill-over effects, the efficiency of fiscal policy as an instrument for the absorption of shocks seems to be mediocre. The insufficient ability of national fiscal policy to confine expansionary measures to the domestic economy is inconvenient for both the country which is in need of some additional demand because it has been hit by an asymmetric shock and the other countries which may be in the midst of a boom so that additional foreign demand has inflationary effects.

The economic integration of Europe has reduced the effectiveness of fiscal measures not only on the expenditure side but also on the revenue side. This is particularly true for the taxation of profits and capital income. If the tax rates imposed on them are significantly above those of other EU members, production and capital are likely to be withdrawn from the high-tax country. In the Internal Market, there is also little scope for the increase of indirect taxes because this would reduce price competitiveness with negative effects on demand and employment at least in border regions. Price competitiveness would also be put at stake if wage and payroll taxes were set well above the European average. It is true that the restricted leeway to raise taxes is not an immediate problem in the case of a negative shock because tax cuts are more appropriate in such a situation. However, the tax burden may have to be increased subsequently in order to service the debt incurred by the public sector during the period of adjustment to asymmetric disturbances. Hence, the limits on the ability to raise taxes in the future will limit governments' ability to run budget deficits in the present.

5.2. How can fiscal policy support the adjustment process?

Although the previous discussion has illustrated that the actual capability of fiscal policy to counteract asymmetric shocks is not very large, some fiscal adjustment measures will be introduced in this section. Fiscal policy can respond to shocks and their detrimental effects basically in three ways: It can reduce social costs (social policy), support demand (stabilisation policy) and promote structural adjustment (structural policy). Inasmuch as these measures are financed by government borrowing, they can be regarded as an act of inter-generational solidarity, where

future generations of the same country will have to service the government debt accumulated by the present generation.

Reduction of social costs of economic shocks

The worst effect of economic shocks normally is the loss of employment and income. Fiscal policy can soften these negative social consequences by financially compensating the persons concerned. With this relatively passive response to economic disturbances, fiscal authorities shield the newly unemployed from a considerable decline in their living standards and impede a loss of social and political cohesion. Moreover, an adequate system of social protection contributes to steady expectations and thus to stabilise private consumption.

Compensation of demand shortfalls caused by shocks

The application of fiscal policy as an instrument for the stabilisation of demand can be explained by the same arguments as the use of monetary policy for this purpose: When a negative demand shock hits the economy, an expansionary fiscal policy in the form of discretionary measures or automatic stabilisers can ease the recession dynamics produced by multiplier and accelerator effects. In this way, it curbs the decline of employment and thus safeguards the qualification and motivation of the labour force.

The stabilisation of demand through fiscal policy can be best achieved via automatic stabilisers. According to Goodhart and Smith (1993), automatic stabilisers are constituted by "differences in fiscal variables that are a function of the rate of change of economic activity".⁴⁷ Although there is considerable overlap between fiscal measures having a stabilisation effect and those producing a redistributive effect (e.g. a progressive income tax), Goodhart and Smith illustrate that stabilising measures need not be redistributive. As an example they suggest an unemployment benefit which is provided only for a limited period and thus relates fiscal expenditure to the change in unemployment, but not to its long-run average level.

Assessing the effectiveness of various fiscal instruments as automatic stabilisers requires a prior look at the channels through which income flows are assumed to stabilise demand fluctuations. Like in the case of monetary policy, there are two possible mechanisms: One leads to stabilisation via the effect of fiscal transfers on household incomes and hence consumption. However, as the impact of transfers on

⁴⁷ Goodhart and Smith (1993), p. 419.

permanent incomes may be small, consumption may increase only insignificantly. The other mechanism stabilises demand primarily via the effect fiscal transfers have on household liquidity. In this case the main effect of transfers is on the cash flow of otherwise constrained private households. Transfer payments targeted at this group of households should be extremely effective as their propensity to consume is clearly above the average.

Promotion of adjustment to structural shocks

As mentioned above, fiscal policy can make the adjustment to structural shocks socially less detrimental by compensating people for part of their income losses. In addition, it can also play a more active role in the adjustment process. Fiscal incentives for investments in research and development, the promotion of vocational (re)training and the modernisation of the infrastructure are just a few examples of useful measures in the field of structural policy.

5.3. Under what circumstances is fiscal policy not beneficial to the adjustment process?

Fiscal stabilisation policies may become destabilising if their timing is wrong

Economic fluctuations caused by temporary shocks are by definition short-lived and not always easy to recognise quickly. This makes the timing of stabilisation policies critical to their success. Experience shows that the timing of fiscal policy operations is hard to get right. This is especially true for discretionary stabilisation measures whose effect on the economy will be delayed by long lags of recognition, decision and preparation and therefore run the risk of becoming in fact destabilising. The danger to become counterproductive is far smaller in the case of automatic stabilisers, provided that they are related to variables that lead real output change or are at least concurrent with it. Automatic stabilisers that are based on lagging variables, such as unemployment, may produce similar problems as discretionary fiscal stabilisation measures.

Another problem of fiscal stabilisation policies is the initial uncertainty about the nature of a shock. If it is not clear whether an emerging disturbance will affect demand or supply, the decision to stimulate aggregate demand is hazardous,

because mistaken expansion in the face of a supply shock may aggravate the misalignment and raise the ultimate cost of restoring competitiveness.

Fiscal policy may prevent or delay structural adjustment

It is true that well-designed fiscal policy measures are able to promote structural change. Nonetheless, experience shows that fiscal policy often encourages structural conservation. This applies especially to subsidies and tax reliefs granted to structurally weak industries. The support from government often reduces the incentive and the pressure to take the inevitable corrective measures. Apart from its potential negative effects on the entrepreneurs' capacity to adjust, fiscal policy measures may also reduce the flexibility of workers. If they aim at largely maintaining employment and income in the case of a structural shock, they will alleviate the pressures that induce wage flexibility and investment in human capital. In the long run, fiscal policy cannot provide a substitute mechanism when adjustment of relative wage costs and prices is needed or when the phasing out of unprofitable production calls for the establishment of new industries.

Nunnenkamp (1993) sees the demand for state intervention as a typical reaction to micro-economic inefficiencies. He argues that the request for safekeeping measures is short-sighted because the longing for the drug "protection" gives rise to typical addiction effects: First, drug abuse guarantees narcotisation only for a limited time. In the longer run the desired effect vanishes due to habituation, and withdrawal becomes painful. On a long-term basis the drug "protection" harms even the benefiting sectors. Second, the environment of the drug abuser will be affected. In the case of protective measures the non-benefiting sectors suffer from the forced up prices for inputs they have to buy from the protected sectors. Finally, continued drug abuse results in an increasing misappreciation of the environment. With reference to protection this means that international economic challenges are repressed.

To sum up, if fiscal policy is too supportive it is likely to delay structural adjustment thus creating high macroeconomic costs. In view of these unfavourable results, it can be concluded that sometimes the best promotion of structural change by fiscal policy is to do nothing at all.

5.4. What does empirical evidence indicate?

The study of Erkel-Rousse and Mélitz (1995), which was presented in chapter 4.4., also tries to answer the question of whether a country is able to reduce the costs of asymmetric shocks through nationally autonomous fiscal policy inside a monetary union. In order to get an idea about the value of preserving fiscal policy independence inside EMU, the authors identify a separate shock which affects domestic absorption in the short run and has therefore similar effects as fiscal policy. They argue that fiscal policy could be helpful in stabilising output in a monetary union, if absorption shocks explain a great deal of the forecast errors in output. In this light, the results delivered by the econometric model make the authors conclude that the retention of independent fiscal policy would be important for all analysed EU countries except possibly Germany.

5.5. Conclusions

Fiscal policy can provide effective instruments to facilitate the adjustment to economic disturbances: Taking the form of stabilisation policy, it can counteract the emergence of a vicious circle of declining income, consumption and employment. In the form of structural policy, it can promote structural change through carefully directed incentives. And used as social policy it can ease the detrimental social consequences of negative shocks. However, each aspect of fiscal policy holds some risk: Stabilisation measures may turn out to be destabilising due to the fairly long time lag between the emergence of the shock and the impact of the measures on the economy. Fiscal support of structurally weak sectors may delay indispensable fundamental changes and social transfers may reduce labour market flexibility.

Insofar as fiscal policy delivers such counterproductive results when trying to cope with asymmetric shocks, a possible reduction of its leeway in EMU would not be a great loss. This argument is also backed by the fact that in an increasingly integrated Europe a large proportion of fiscal impulses spill over to neighbouring economies. Moreover, the frequent use of fiscal policy for the absorption of shocks quickly leads to sustainability problems. Some European countries have already made this unpleasant experience. The leeway of their fiscal policy is in fact absent, even without convergence criteria. And for those countries which pursued sound policies in the past, the budgetary room for manoeuvre will remain effective enough to counteract nationally differentiated shocks by means of cautious and well-designed fiscal measures.

6. How useful are intra-union fiscal transfers in coping with country-specific shocks?

6.1. How can fiscal transfers support the adjustment process?

If national fiscal policies are little effective in an economic and monetary union and if their flexible use is hampered by problems of sustainability or due to the restrictions imposed by the convergence criteria, a stronger fiscal integration among EMU-members would be an alternative way to support a country in absorbing an asymmetric shock or in bearing the adjustment costs. An inner-European financial compensation mechanism directed at cushioning country-specific shocks can be regarded as an act of inter-regional solidarity, where the present generation of other countries pays for the net transfers to the country affected by the disturbance. As in the case of national fiscal policy, such transfer payments can be made to stabilise demand, to reduce social costs and to assist structural change. Although any noteworthy financial compensation for countries hit by asymmetric shocks is not foreseen between EMU-participants,^{48 49} the potential advantages and disadvantages of this instrument should be analysed to get an idea of its effectiveness.

Compensation of demand shortfalls caused by country-specific shocks

An intra-union financial compensation mechanism which aims at alleviating nationally differentiated shocks can take either an explicit or an implicit form. In the case of an explicit inter-regional compensation scheme, the country affected by the shock receives discretionary transfer payments from the other members of the monetary union. An implicit inter-regional compensation scheme requires a somewhat stronger fiscal integration among member states. Expressed differently, part of the budgetary powers of national governments would have to be centralised at the union level. A central budget allows that countries hit by negative shocks enjoy the benefit of rising transfers from it and reduced contributions to it. Hence, a

⁴⁸ The size of the EU budget currently amounts to 1.2% of EU GDP compared with an average of 48% of GDP accounted for by national government spending in EU countries [see Breuss (1995)]. Moreover, the leeway for a discretionary fiscal policy is restricted by the fact that the EU budget is drawn up for a five-year period and must not run a deficit.

⁴⁹ The Maastricht Treaty only requires the member states to regard their economic policies as a matter of common concern and to coordinate them within the ECOFIN Council along broad guidelines (Article 103 (1) TEU).

common budget automatically redistributes in favour of countries whose production declines, thereby stabilising income and reducing the severity of the disturbance. In order to operate effectively as an automatic stabiliser, marginal transfer receipts of individual countries from the central budget as well as their marginal contributions to it should be sensitive with respect to a deterioration in leading or coincident cyclical indicators. The average receipts and contributions are not relevant for the size of the stabilisation effect but for the magnitude of overall income redistribution. However, as already mentioned during the discussion of national fiscal policies (see chapter 5.2.), most fiscal measures have both a stabilisation and a redistributive effect.

One concrete suggestion for an implicit inter-regional compensation scheme is the establishment of a union-wide unemployment fund, which was already presented in the MacDougall Report.⁵⁰ According to this proposition, part of the contributions of individuals in work would be paid into a common fund and part of the payments to individuals out of work would come from that fund. The automatic income redistribution brought about by this centralised unemployment insurance scheme helps to curb the cyclical downward spiral triggered by country-specific shocks and to reduce their social costs.

Support of economically underdeveloped regions

Inter-regional compensation schemes whose main objective is stabilisation lead to a redistribution of incomes in favour of countries which suffer from asymmetric shocks. As the probability to be hit by a country-specific disturbance appears to be fairly evenly distributed among "poor" and "rich" countries, such inter-regional stabilisation schemes may well lead to a redistribution of incomes from "poorer" to "richer" countries. If the aim is not stabilisation but the reduction of inequalities between countries and regions of a monetary union, alternative fiscal instruments must be used. According to Goodhart and Smith (1993), this kind of redistribution is achieved if the differences in the fiscal variables employed are functions of the level of economic activity.

It has to be admitted that the economic underdevelopment of certain regions has hardly anything to do with the problem of asymmetric shocks in a monetary union. Nevertheless, this issue should be briefly touched upon in the discussion of intra-union fiscal transfers because it is sometimes argued that with the disappearance of monetary autonomy national authorities will not only lose a policy instrument for the

⁵⁰ For further details see European Commission (1977).

adjustment to asymmetric shocks but also for the protection of backward regions with low productivity growth and thus declining price competitiveness.⁵¹

Differences in per capita income between members of a monetary union can be reduced by fiscal transfers from high-income countries to low-income countries. Such transfers can be used either to boost low incomes directly or to support structural change and development and thus increase incomes indirectly. A mere redistribution of incomes from the rich to the poor would require a common European social policy, which is politically delicate and may even be counterproductive to development (see chapter 6.2.). It will, however, become inevitable if the social standards of the EU members registering comparatively low labour productivity rise to the level of those recording high productivity. Questions of reducing the differences in social standards and wages are omnipresent in the discussion about *social dumping* (rich countries accuse poor countries of paying low wages and providing insufficient social protection in order to improve their price competitiveness) and *social protectionism* (poor countries accuse rich countries of attempting to deprive them of their main comparative advantage by calling for harmonised wages and social protection).

The largest hindrance to the economic catch up process of backward regions is usually not their low income level but their barely attractive supply. Even huge income transfers in favour of regions with underdeveloped economies would hardly bring about a boom in demand for locally produced goods and services. The beneficiaries of the transfer payments do not purchase tradable products of their home region for the same reason other people do not buy them, namely the lack of supply and/or its insufficient competitiveness in terms of quality and price. A survey for the European Commission covering some 10,000 companies⁵² revealed that the most important factors determining regional competitiveness are the proximity of vocational training facilities, the availability and quality of school education and training facilities, the availability of certain types of infrastructure, the business culture and the social climate. Financial transfers should therefore be used primarily to improve the supply side of the economy (infrastructure, human capital, business services, production methods, products, etc.). In this way, value added and primary income of less developed regions will rise and the catch up process will be reinforced. The existing structural funds of the EU (Articles 130a through 130e TEU) which are directed at strengthening the Community's economic and social cohesion

⁵¹ The capability of monetary policy to accelerate the development process, e.g. by devaluing the currency, must be seen at least as critically as its capacity to absorb country-specific disturbances.

⁵² For a detailed description of the results of this survey see Nam et al. (1991).

widely follow these objectives. They are, however, not responsive to movements in regional incomes and have therefore no stabilising effect on demand, production and employment.

6.2. Under what circumstances are fiscal transfers not beneficial to the adjustment process?

Fiscal transfers may become destabilising if their timing is wrong

As in the case of national fiscal policy, the timing of stabilisation measures is also critical for the effectiveness of intra-union transfers. If such transfers, whether discretionary or automatic, have an effect only after some time, they may act in the wrong direction.

Redistributive fiscal transfers may hamper economic adjustment and development

Inter-regional fiscal transfers which are essentially redistributive have to be seen critically because they produce a number of disincentives. One argument is that continuing income transfers lead to an institutional habit of dependence on the part of the beneficiaries. Some evidence for that has been presented for the Canadian Atlantic provinces and the Italian Mezzogiorno.⁵³ Another argument is that a redistributive scheme signals to employees that they will be bailed out if they lose their jobs due to excessive wage growth. A significant redistribution of incomes within the framework of a common European social policy could increase the wage level in countries with low labour productivity to an extent that they lose their price competitiveness. As a consequence, unemployment would rise considerably. In this way, social policy would not reduce but create social problems. Redistributive transfers may not only discourage the poor from working more or more efficiently but also the rich if they suffer from high taxes which are raised to provide the transfers. The consequences are a misallocation of resources, inefficiency and lower growth. An additional problem of income redistribution schemes is that they provide a fiscal disincentive for local governments to pursue rigorous and effective labour market policies (see also next chapter).

⁵³ See for example Courchene (1993) and Micossi and Tullio (1991).

6.3. Are fiscal transfers for stabilisation and income support compatible with the principle of subsidiarity?

The aim of an inter-regional compensation scheme is to support incomes in countries hit by asymmetric shocks and in regions with a low level of economic activity. In both cases the beneficiaries are predominantly persons registered as unemployed. Social transfers for the unemployed, however, constitute only one instrument to cope with labour market problems. There are a number of other policy measures to reduce the hardship of unemployment. The best method is to prevent its emergence. This can be achieved among other things through a moderate wage policy or investment in human capital. A different method is to conceal unemployment by means of public employment programmes, short-time working, early retirement or easy access to invalidity pensions. Hence, registered unemployment is only the residual that shows up when preventive and disguising measures do not exist or fail.

In their fight against social problems brought about by unemployment, different countries choose different combinations of the three basic policy elements. Some countries lay the emphasis on preventive action, while others respond to actual unemployment chiefly by hiding it. Both groups of countries would be put at a disadvantage by a centralised unemployment benefit system because they would have to make contributions to the scheme but receive very little because of their low level of registered unemployment. On the other hand, countries whose labour market policies focus on directly supporting the unemployed would be favoured by a system that supports exclusively one method of reducing problems related to unemployment.

A centralised unemployment benefit scheme is unfair as it redistributes only the costs of unemployment benefits but not the costs of the other methods to keep the burden of unemployment low. Undoubtedly, those methods also produce significant costs for the people in work and for the public sector and the tax payers respectively. The early retirement of unemployed people raises pension payments. Public employment programmes, vocational retraining and other forms of active labour market policy also increase government expenditure and call for higher taxation to finance it. In addition to a rising tax burden, employees also bear some direct costs for the protection of their jobs insofar as they accept moderate wage increases or short-time work. As a consequence, countries whose costs of keeping registered unemployment low are not shared by other countries can hardly be expected to participate in the financing of unemployment benefits there.

An intra-union compensation system with a strong bias towards unemployment benefits would encourage national governments to redirect the emphasis of their labour market policies in favour of transfer payments related to unemployment. This would in many cases lead to a reduced efficiency of unemployment related policies and thus conflict with the principle of subsidiarity, according to which a larger unit should take over a task only if the smaller unit is not able to carry it out efficiently.

6.4. What does empirical evidence indicate?

As there is virtually no fiscal stabilisation scheme within the European Union, the importance of a centralised budget for the absorption of asymmetric shocks can only be determined by examining existing monetary unions. Goodhart and Smith (1993) provide an overview of relevant studies for the United States and do some own research work. They refer to Sachs and Sala-i-Martin (1991), who investigate the extent of fiscal stabilisation in the nine census regions of the USA, over the period 1970-88. Sachs and Sala-i-Martin calculate the contribution made by taxes and transfers to overall fiscal stabilisation on the basis of estimated elasticities of tax payments and federal transfers with respect to changes in personal incomes net of taxes and transfers. They conclude that a one-dollar-lower level of regional income leads to a stabilising fiscal offset of 35 to 44 cents. The largest part of this compensation comes from changes in federal tax payments (between 33 and 37 cents per dollar). Changes in federal transfers have a significantly smaller stabilising impact (between 1 and 8 cents per dollar). Goodhart and Smith do not share the view that these results can be interpreted as evidence for a high degree of fiscal stabilisation in response to regional income shocks. In their opinion, the analysis of Sachs and Sala-i-Martin demonstrates that the federal budget of the USA has a large redistributive effect, which is achieved primarily through the progressive structure of the income tax system.⁵⁴

The appropriate focus of an analysis of stabilisation is the effect of changes in income over time rather than of cross-section differences in income levels. Goodhart and Smith mention a study conducted by von Hagen (1991), who regresses the change in real per capita federal expenditure and taxes in individual states on the change in gross state product (GSP). Von Hagen finds that a decrease in GSP of 1% reduces federal income tax payments also by 1%, implying a reduction in taxes of 8 cents for each dollar decline in GSP. The stabilising effects brought about by

⁵⁴ During most of the reference period (1970-1988) the income tax system of the USA was considerably more progressive than it is today.

expenditure are found to be even smaller. Federal transfer payments to individuals rise by 2% if GSP falls by 1%, which is equivalent to about 2 cents per dollar change in GSP. Hence, the combined stabilising effect of taxes and transfers seems to be of the order of 10 cents per dollar change in GSP. Von Hagen concludes from this result that the USA provides an example of a monetary union working without a significant fiscal compensation mechanism to balance regional shocks. Goodhart and Smith criticise that von Hagen does not adequately explain why the estimates he gets using data in first differences should differ so greatly from those obtained by Sachs and Sala-i-Martin using data in levels. They reassess von Hagen's approach and find that the structure of the federal fiscal system of the USA engenders significant stabilisation whereby the response of federal income taxes to changes in local incomes has the largest effect.

6.5. Conclusions

Any noteworthy fiscal transfer system for the absorption of asymmetric disturbances is not foreseen between the countries participating in EMU. The existing structural funds of the EU aim primarily at the promotion of economic development in problem regions and not at the cushioning of structural shocks. On the one hand, the lack of an intra-union transfer scheme is a disadvantage as it could play a stabilising role in the case of country-specific shocks. On the other hand, the existence of such a system can also have a number of drawbacks. Like national fiscal policy, inter-regional transfers can be counterproductive because their timing may be wrong and they may produce a number of economic disincentives. A special problem are centralised unemployment benefit systems as they discriminate against countries whose labour market policies are not directed primarily at providing benefits to the unemployed but at impeding the emergence of unemployment or at hiding it. In order to avoid such discrimination, other parts of economic and social policy would have to be centralised, too. However, this would be in sharp contrast to the principle of subsidiarity laid down in the Maastricht Treaty. In addition, the sense of solidarity between countries is not yet by far as pronounced as it is within countries. And noticeable financial transfers without a distinct spirit of good fellowship are more likely to have a dividing than a uniting effect.

The loss of national monetary sovereignty, the reduction of fiscal policy leeway and the lack of intra-union fiscal transfers in EMU call for other adjustment mechanisms in the case of asymmetric disturbances. If policy instruments are not adequate, markets have to play an active role in the adjustment to shocks. Provided that market

mechanisms adjust easily and overcome disequilibria quickly, nationally differentiated shocks need not imply notable costs for countries lacking the option of an autonomous policy response. Or the other way round, policy intervention for stabilisation or redistribution is necessary if there are significant market failures. The following chapters analyse how markets can contribute to the absorption of asymmetric shocks and whether they are efficient or not. Labour market flexibility will be examined first, starting with regional labour mobility.

7. How useful is labour mobility in coping with country-specific shocks?

7.1. How can labour mobility support the adjustment process?

The mobility of labour between regions or countries is one of the classical adjustment mechanisms to asymmetric shocks. As first outlined by Mundell (1961), labour mobility reduces the need of exchange rate realignments as a means of restoring equilibrium in the labour market. The emigration of unemployed workers from countries hit by adverse shocks directly reduces the redundant work-force there. The movement of labour from economically weak to more prospering regions is a passive response to the detrimental consequences of a country-specific shock. It is the last resort if more active measures to reverse an economic disturbance are not available, have not been taken or were not successful. It is predominantly an instrument for the long-term adjustment to permanent shocks.

Migration can be assisted through policy action aiming at the reduction of impediments to mobility. Removing the rigidity of housing markets, eliminating the inflexibility of vocational access regulations as well as other legal or administrative requirements, easing the transfer of pension claims and facilitating the integration of immigrants and their families are examples of useful measures. The *freedom of establishment* and the *free movement of labour* in the Common Market essentially contribute to diminish the obstacles to labour mobility in the European Union.

7.2. Under what circumstances is labour mobility not beneficial to the adjustment process?

High labour mobility may generate self-sustaining decline

In Europe, migration is often seen less as a solution than as a problem which does not only bring about social and political tensions but may reinforce the economic decline in depressed regions. If the active and skilled work-force leaves the economically weaker regions a vicious downward spiral may develop as the *brain drain* is coupled with a decrease in private demand and tax receipts which discourages private and public investment.

High labour mobility may reduce wage flexibility

Emigration as a reaction to asymmetric shocks can be seen as a flight from the economic problems of a region. High labour mobility may even impair adjustment mechanisms aiming at restoring competitiveness and high economic activity in countries hit by adverse shocks. From this point of view, it can be argued that low rather than high labour mobility is the best precondition for a monetary union. This is so, because a large migration from regions with high unemployment to areas with low unemployment prevents the geographical wage distribution from becoming unequal enough to make investments in the former profitable. If linguistic, cultural, social, historical and other barriers exist among member states of a monetary union, labour mobility will be low. As a consequence, wages in countries hit by a negative shock will decline relative to those in more prospering economies and thus create an incentive to invest there. However, this mechanism will only work if the increase in the wage difference between regions is not undermined by other impediments such as high social transfers or a solidly united wage policy.

7.3. What does empirical evidence indicate?

Bayoumi and Eichengreen (1994), Goodhart and Smith (1993) and Gros and Thygesen (1992) report a number of studies analysing labour mobility within and between European countries and across the states of the USA. The studies about migration in the United States show that a major part of the adjustment to asymmetric shocks occurs through movement of labour from regions with declining employment to regions with rising employment. The disequilibrium in regional labour markets is

removed primarily by the outward migration of the redundant work-force. Real wages by comparison respond relatively little to regional disturbances in the United States.

In Europe, inter-regional flows of labour do not constitute an important adjustment mechanism to asymmetric shocks. Migration between EU countries is much lower than movement of labour between US states. The comparatively low mobility in Europe is to a large extent due to the fact that the EU is not a federal state and has no common language. However, even after adjusting for these differences, labour migration is still considerably higher in the United States than in Europe. Various studies reveal that mobility in the USA is roughly two to three times as high as mobility *within* European countries. French and German workers, for example, are only a third as likely to move between 'départements' or 'Länder' as Americans are to move between states. It can be concluded therefore that even in the existing European 'monetary unions' the examined adjustment mechanism to regional shocks is little effective. This is especially true for the southern EU member states where inter-regional labour mobility is lower than in the northern members. As labour flows across countries do not seem to be an important adjustment mechanism in Europe, large wage differentials will remain and will be needed in Europe after the start of Stage Three of EMU.

7.4. Conclusions

Experience shows that migration can be a useful instrument to cushion the detrimental consequences of asymmetric shocks if other adjustment methods are not available, not used or not successful. In Europe, labour mobility is still very low compared to existing monetary unions. As a consequence, other adjustment mechanisms will have to play a more active role and may even be supported by low labour mobility in this function. One example for this is wage flexibility whose capacity to absorb asymmetric shocks will be analysed in the next chapter. Unlike in other monetary unions, the wage level of an EMU member hit by a country-specific shock will not be kept high by outward migration of the redundant work-force nor by fiscal transfers from other members nor by centralised wage policies. On the contrary, real wages should decline sooner or later and thus contribute to the restoration of price competitiveness.

8. How useful is wage flexibility in coping with country-specific shocks?

8.1. How can wage flexibility support the adjustment process?

Wage cuts as interim solution until other adjustment methods work

Like monetary and fiscal policies, wages that are highly responsive to country-specific shocks can keep output and employment losses within limits. In other words, wage flexibility can fulfil a bridging function for the time period between the emergence of the shock and its disappearance (temporary shock) or until it is overcome by other adjustment methods (permanent shock).⁵⁵ The more real wages respond to negative shocks the sooner markets will be cleared and the lower adjustment costs in terms of output and employment losses will be. The reduction of relative wages and thus unit labour costs induces a decline in relative prices, which brings about a real effective devaluation of the exchange rate. The related increase in price competitiveness stimulates foreign demand and thus enhances capacity utilisation of domestic factors of production. As soon as the asymmetric shock is overcome because the cycle has reversed or structural problems have been settled by other means, the initial wage level can be restored. If wages do not adequately respond to asymmetric shocks, the decline of equilibrium demand, production and employment will be larger and the restoration of the initial level of economic activity will take longer than in the case of sufficient wage flexibility.

In the case of a temporary negative demand shock, employment losses can also be limited by working time flexibility. In other words, downward flexibility of total wages (pay roll) can manifest either as a reduction of hourly wages given unchanged working hours or as a reduction of working hours with hourly wages remaining unchanged. While the former kind of flexibility affects employment indirectly via declining relative prices and rising demand, the latter has a direct effect on employment without changing demand. Short-time work coupled with an equivalent reduction of total wages is without doubt a particularly useful instrument for bridging temporary sectoral shocks. The shock-induced decline in overall working hours of the affected sector is evenly distributed among the work-force of the sector and does not hit only a few who lose their jobs. One important advantage of such a response to sectoral shocks is that it prevents dequalification and demotivation of the idle

⁵⁵ In the case of wage shocks, however, the reduction of wages to their equilibrium level is the essential adjustment measure.

work-force and thus helps to keep structural unemployment low. Another benefit is that once the sector-specific cyclical downturn has been reversed or the structural problems of the sector have been overcome, production can quickly be expanded with the available well-trained personnel.

Wage cuts as permanent solution if other adjustment methods do not work

Structural shocks related to technical progress and international trade permanently eliminate low-skill jobs in manufacturing

In recent decades, structural shocks in industrialised countries predominantly led to a downsizing of low-skilled labour. There are two main reasons for this development. One explanation is that technical progress, which has always been a major source of structural change, is skill-biased. It raises the productivity of, and the demand for, high-skilled workers relative to low-skilled workers. As a matter of fact, the simple and monotonous activities previously carried out by unskilled or semi-skilled workers have been taken over by machines and robots which are controlled and serviced by highly qualified experts. Consequently, assuming unchanged relative wages, the demand for low-skilled industrial labour declines rapidly while that for high-skilled labour is pushed up. A second explanation for the massive decline of low-skill jobs in industry is the shift of the related production to the developing world. Thanks to the low wage level of their huge unskilled labour force, developing countries have a comparative advantage in producing and exporting goods that use such labour intensively. To sum up, low-skilled industrial workers have suffered most from structural change in the past decades as their jobs have either been taken over by automatic machines or by workers in developing countries.

New low-skill jobs can only be created if wage costs decline

What to do with the low-skilled workers made redundant by permanent shocks? Basically, there are three alternatives: to leave them unemployed or to try to re-employ them either by reducing their gross wages or by improving their marketable skills. As experience shows (see below), the latter appears not to be a realistic option for a large proportion of the low-skilled unemployed. Consequently, only the unemployment option and the low-wage option are left for those who lost their low-skill jobs in industry and are not able or not motivated to acquire better vocational qualifications. The reduction of wages, however, does not mean that the idle work-force can be re-employed in the tradable goods sector. In the industries belonging to

it, workers would have to compete with their colleagues in developing countries whose wages can be kept extremely low because of the moderate cost of living there. Workers in the industrialised world, where the cost of living is considerably higher, would not be able to make a living with wages that low. As a consequence, new low-paying jobs can, if at all, only be created in the non-tradables sector. To sum up, a reduction of low-skill wages can be a permanent solution to the unemployment problem caused by structural shocks, if other adjustment methods are not available or not used.

Apart from the improvement of vocational qualifications, which has already been mentioned, another method to bring unskilled persons back to work is to compensate for their declining market income using instruments of the tax and benefit system (e.g. negative income taxes). By driving a wedge between (lower) market and (higher) take-home pay, new low-wage jobs would be created and the unemployed would be motivated to be no longer on the dole and accept these low-paying jobs.

How can wage flexibility be increased?

Reviewing income-supporting policies

The previous discussion of various adjustment instruments to asymmetric disturbances has revealed that most of them may foster wage rigidity if not used carefully. Every policy measure that strongly supports disposable incomes is likely to prevent real wages from declining in the case of an adverse shock. If a country-specific slump in demand is entirely or largely compensated by anti-cyclical fiscal policies or accommodating monetary policies, the work-force will not see the necessity to accept a reduction in real wages. If unemployment benefits are very high compared to earned incomes, which is particularly likely for low-skilled workers, the downward pressure on wages exerted by the unemployed might be negligible.

Abolishing minimum wage regulations

Wage flexibility can also be undermined by minimum wage regulations laid down in the law or in collective agreements. If low-skill wages cannot fall below the minimum wage, which may become necessary in the case of certain structural shocks, the related jobs will disappear over the medium term. Though desirable on equity grounds, minimum wage and social welfare programmes may add to wage rigidity and thus increase long-term unemployment. ⁵⁶

⁵⁶ Kromka (1996) discusses this problem more fundamentally.

Improving the wage formation system

Heylen (1993) explains the inflexibility of wages in the EU countries among other things by the wage determination system, which in most countries is neither completely decentralised and therefore in close accord with market developments nor completely centralised and therefore macroeconomically reasonable.

Wage negotiations between labour and industry at the top level take into account the unemployment situation, which reduces the risk that those losing their jobs become structurally unemployed. This is possible because centrally organised unions, which in fact represent all employees of an economy, do not subordinate the employment goal to the income goal. This type of unions are able to internalise the external effects of wage moderation. Lower inflation rates and higher price competitiveness brought about by moderate wage increases lift real purchasing power and ameliorate employment prospects. Improving public finances as a result of lower transfer payments and higher revenues due to a low level of unemployment reduce the tax burden. All employees and union members are going to benefit from these external effects. As soon as the centralist negotiation level is left, the positive external effects of a moderate wage rise can no longer be internalised by the negotiation partners, which often leads to uncompromising and conflicting negotiations with the results being neither market-oriented nor macroeconomically reasonable. This is due to the fact that those groups which benefit from large wage increases can shift the costs at least partly to other participants in the economy.

Most EU countries take a medium position as regards the degree of centralisation of wage bargaining and the strength of the unions. According to Heylen (1993), especially France, Italy, the UK, Spain and Ireland are characterised by largely uncoordinated negotiations at several levels. Contrary to that, labour market relations in Germany, the Netherlands and Denmark are more harmonic, with the wage negotiations taking place mainly at the top level.⁵⁷ In most other member countries of the EU12, either the employment responsibility of the social partners has to increase or the influence of market forces has to strengthen if the wage flexibility necessary in a monetary union is to be achieved.

⁵⁷ For Austria, Handler and Hochreiter (1996) point to the interesting fact that albeit the centralised wage bargaining process has been based on the notion of solidarity (similar increases in contracted wages despite sectoral differences in productivity growth) sectoral wage differentials increased considerably over time. The reason is that contracted wage increases have been supplemented/offset by substantial positive/negative wage drift.

How can vocational skills be improved?

Increasing incentives to invest in marketable skills

Policies to promote wage flexibility have to be supplemented by measures to improve skills in order to avoid that the unemployment problem is merely replaced by a low-wage employment problem. Only education and training ensure that the unemployed poor do not become working poor.⁵⁸ It can transform an unskilled jobless person into a productive worker with marketable skills and thus qualify current low-skill unemployed for higher-wage jobs. Here, the government has to play an active role, as the market does not create sufficient incentives for workers and employers to invest in human capital. This market failure is due to the fact that the social returns from such investment exceed their private returns. Employers are reluctant to invest in the skills of their employees because they may be enticed away by other companies. In this case, the discrepancy between private and social returns can be eliminated by subsidies or tax incentives. Workers may hesitate to improve their qualifications if the discounted future receipts resulting from it do not cover the present costs. As the time-horizon of low-skilled people is usually comparatively short, their discount factor is high, which requires a large increase in the expected future income to cover the costs. This dilemma can be reduced if the government takes over all or part of the financial costs of training, which may also be necessary in view of the fact that unemployed often face tight credit constraints. Another policy measure to diminish the described dilemma consists in widening the effective wage difference between unskilled and skilled labour. This can be achieved, for example, by eliminating minimum wage regulations or by reducing the progression of the income tax system.

Improving the education system

Active labour market policies in the field of education and training generally cannot provide short-run remedies for rising unemployment caused by structural shocks. Experience shows that improving the skills of unemployed is difficult. The World Bank (1995), for example, states that retraining can help certain groups of workers but is unlikely to provide a panacea. The success of training schemes in bringing unemployed back to work is at best mixed. In general, education and training need to take place at an earlier stage in order to be effective with respect to employment and income. To address the problems of low-skill unemployment and low-wage

⁵⁸ Families with at least one full-time income that fall below the poverty line are often labelled as "working poor".

employment in the long run, the quality of basic education must be improved and the transition from school to occupation has to be facilitated.

8.2. Under what circumstances is wage flexibility not beneficial to the adjustment process?

As outlined in the previous chapter, downward wage flexibility can be a useful instrument for the adjustment to shocks during a transitional period in which more permanent solutions have to be found. Like in the case of overly supportive monetary and fiscal policies, the necessary fundamental adjustments, however, may be delayed if wages are too accommodating. This is particularly true if workers respond to asymmetric shocks at the sector or enterprise level by accepting a widening of the wage differential relative to the rest of the economy. This *microeconomic wage flexibility* has to be distinguished from *macroeconomic wage flexibility*⁵⁹ which allows an economy-wide adjustment of wages without violating the *law of one price*. If companies affected by a negative demand shock succeeded in beating down prices for wages, capital and other inputs to a level that a decline in sales can be avoided, competitiveness would be determined primarily by the ability to force down input prices and not by the ability to introduce innovations. Prices in such a degenerated system of competition would be fully flexible and the entrepreneur would lose his function to take risky decisions which are rewarded or sentenced by the market.

In a system of dynamic competition, by contrast, permanent adjustment to the factor prices prevailing in the market is an essential precondition for structural change and economic development. If wages are rigid at the microeconomic level, because workers' mobility between companies and sectors is high, competition in the goods markets will focus on efficiency and innovation. And it is the improvement of products, production and marketing methods that helps permanently overcome adverse shocks in a world where productivity and non-price competitiveness are of paramount importance. Froats (1995) points out that in such a world collective bargaining has to extend beyond wage negotiations to wider issues of cost structure, productivity and workplace flexibility.

⁵⁹ For this classification of wage flexibility see Knöbl (1990).

8.3. What does empirical evidence indicate?

A number of studies have shown that real wages do not respond flexibly to rising unemployment in Europe. They are also comparatively rigid in the United States, while they are very flexible in Japan. Brandsma et al. (1991) found that the average short-term elasticity of the consumption wage function⁶⁰ to the level of unemployment in the twelve members of the European Community (excluding the wrong sign for Ireland) was -0.10 (compared with -0.22 for the USA and -1.17 for Japan). Excluding Portugal, the average long-run elasticity of wages to unemployment of the other eleven members was -0.17 (compared again with -0.22 for the USA and -1.17 for Japan). Studies by Jackman et al. (1991) obtained similar results: The long-term effect of unemployment on real wages turned out to be relatively weak in the European Community compared with Japan and the EFTA countries (inclusive of the three new EU members), while real wage rigidity and hysteresis were relatively high.

Wage rigidity prevents the creation of low-skill jobs in Europe

As regards the redundant unskilled work-force, it is obvious that Europe and the United States have been pursuing opposite policies to tackle this problem. In short, the USA created low-paying jobs for the low-skilled unemployed, while Europe paid them unemployment benefits. The massive job creation in the USA during the past two and a half decades went hand in hand with an increase in wage differentials, whereby the relative position of unskilled workers has deteriorated particularly strongly. It is not surprising therefore that a large proportion of the newly created jobs were low-wage. Buckberg and Thomas (1995) report, for example, that of all new service and manufacturing jobs created net in the USA between 1979 and 1993, 63% were in sectors offering wages 20% or more below the average. In Europe, where skill-based wage differentials have widened much less than in the United States, many low-paying jobs have effectively disappeared, which helps to explain the heavy concentration of unemployment among unskilled, low-productivity workers there.

Moreover, the expansion of total employment in the European Union was considerably below that in the United States. According to the IMF (1995), employment in the USA was about 60% higher in 1994 than in 1970.⁶¹ In the EU, by

⁶⁰ The consumption wage is the real take-home pay.

⁶¹ Source: IMF (1995), Box 4, pp. 32-33.

contrast, it was nearly stagnant in this period.⁶² Surprisingly, the diverging growth rates of employment went hand in hand with similar expansion rates in real GDP and in the capital stock. From this combination of developments it can be concluded that the capital-labour ratio and the labour productivity in Europe rose significantly more than in the United States, thus enabling a larger increase in the European wage level. However, the higher real wages benefited a declining share of the European labour force. The massive substitution of capital for labour in Europe was clearly encouraged by wage rigidity, while declining real wages of low-skilled workers in the USA kept this substitution process and the increase in unemployment within narrow limits.

8.4. Conclusions

In a well-functioning monetary union, wage flexibility is an important substitute for exchange rate flexibility as an adjustment channel. Flexible wages can abate production and employment losses caused by country-specific shocks. Like monetary and fiscal stabilisation policies, the downward flexibility of real wages fulfils above all a stabilising function. Its favourable effect on price competitiveness helps keep the shock-induced decline in aggregate demand within limits. In this way, it bridges the time until the economic disturbance has been overcome permanently by other adjustment means which take some time to have an effect. A permanent reduction of real wages is only reasonable if a lasting adjustment by other mechanisms is not possible. If such an adjustment is possible, wages which respond too easily to asymmetric shocks could even undermine a more fundamental adjustment to them. However, this danger is relatively small in Europe, as most countries have a wage determination system which is detrimental to wage flexibility, although some progress has been made in a number of countries in recent years.

As long as real wages are rigid, an adjustment of real exchange rates in response to a country-specific shock is not achievable in a monetary union. Nevertheless, this is not a plausible argument against the participation of a country in EMU because the existence of real wage rigidity rules out any permanent adjustment of real exchange rates outside EMU as well. To sum up, real wage rigidity inside a monetary union is not worse than outside.

If wage flexibility and labour mobility are low, if an intra-union fiscal compensation system does not exist, and if national monetary and fiscal policies have no leeway,

⁶² The increase in EU employment in 1991 was primarily due to German unification.

what is left to cope with the problems posed in EMU by country-specific shocks? The answer is capital mobility and corporate flexibility. These two adjustment methods will be dealt with in the following chapters.

9. How useful is capital mobility in coping with country-specific shocks?

9.1. How can capital mobility support the adjustment process?

Capital flows can facilitate the adjustment to shocks

Owing to the complete liberalisation of capital transactions and the high degree of financial market integration in Europe, capital, unlike labour, is a highly mobile production factor nowadays. Capital inflows constitute an additional source of finance which allows domestic investment to exceed domestic saving. They are therefore well suited to facilitate the adjustment to nationally differentiated shocks. In the case of a temporary foreign demand shock, capital imports can finance the external imbalance resulting from the decline in exports. Such balance of payments financing allows a more gradual adjustment to external shocks. It avoids the grave and dire consequences of an immediate response in the form of a sharp contraction of imports.

Capital flows into countries experiencing a permanent disturbance can contribute to finance the inevitable structural change and thus accelerate the adjustment process. The future returns on these investments can be used to service the foreign debt incurred to finance them. In order to attract enough capital, the investment opportunities of the countries concerned must offer a rate of return above that prevalent in other countries. This can be achieved among other things by lower taxes or lower wages. Hence, the effectiveness of capital mobility as an adjustment mechanism depends on the existence of other adjustment instruments, namely budgetary leeway and wage flexibility. By contrast, movements of private capital may be inversely correlated with intra-union fiscal transfers for income support, which tend to push up wages. Expressed differently, fiscal transfer receipts may lead to a crowding out of private capital inflows.

Capital flows can apply disciplinary pressure on policy makers and thus hinder the emergence of policy shocks

High capital mobility should not only facilitate the adjustment to shocks but may also impede the emergence of policy-induced disturbances. If capital is mobile, economic policies are more vulnerable to the sanctions of financial markets because investors are able to turn to alternative capital users. They can refuse to finance budget deficits or demand higher interest rates for public debt issues if they regard the course of fiscal policy as unsustainable. Financial markets can withdraw their capital from a country that does not respond to looming economic problems adequately and in time. Hence, they can apply considerable disciplinary pressure on governments not to deviate from the right path. By refusing credit, by demanding higher interest rates and by attacking the exchange rate (outside EMU), financial markets may prevent policy-makers from pursuing a course that leads to substantial economic disturbances.

9.2. Under what circumstances is capital mobility not beneficial to the adjustment process?

Capital flows can hinder the adjustment to shocks

A high degree of capital mobility does not necessarily mean that countries hit by an asymmetric shock can take capital inflows for granted. On the contrary, they may be confronted with massive capital outflows which render the adjustment even more difficult than in the case of low capital mobility. Financial markets respond to country-specific shocks by withdrawing capital if they expect these disturbances to deteriorate the economic perspectives of the country concerned. While net capital imports provide additional funds for the financing of stabilisation and restructuring measures, net capital exports require domestic saving to surpass domestic investment. As a consequence, the decrease of consumption and investment has to exceed the shock-induced decline in national income. This aggravates the adverse effects of the shock and retards permanent adjustment measures.

The fact that capital outflows tend to augment the problems of country-specific disturbances does not suggest, however, that capital inflows always promote the absorption of shocks. Like other adjustment instruments, capital movements may reduce the efforts to find permanent solutions to asymmetric shocks. If inflows of

funds are too large and last too long, overconsumption will continue and the necessary structural adjustment may be delayed.

Capital flows can contribute to the emergence of shocks

It has been argued that high capital mobility allows financial markets to apply disciplinary pressure on governments pursuing unsound policies and ignoring the deterioration of economic fundamentals. The question is whether deviations from a sound policy course really trigger harsh reactions of financial markets in order to bring policy-makers back on the right track before it is too late. Experience shows that the assessment of economic policies and macroeconomic developments by the markets is often unreliable and that they do not always warn and discipline governments in time. Hence, capital mobility does not necessarily increase the pressure on policy-makers to discontinue unsound policies that are most likely to result in country-specific disturbances.

Capital mobility may not only fail to hamper the emergence of asymmetric shocks and to facilitate the adjustment to them, but it may even generate economic disturbances. An excessive capital inflow, for example, can easily lead to a sharp appreciation of the real exchange rate with negative consequences for net exports, production and employment. If the monetary authorities of the country concerned rely on an exchange-rate-based nominal anchor as the principal anti-inflation instrument, they will try to maintain a stable nominal exchange rate by intervening in the foreign exchange market. If they are unable to completely offset the effect of their interventions on monetary growth, the liquidity of the banking system will increase and thus permit an excessive expansion of domestic credit. As a consequence, inflation will rise and real exchange rates will appreciate. The same effect is achieved if monetary authorities allow a nominal appreciation of the currency. In each case, the real appreciation constitutes a negative supply shock which erodes the price competitiveness of the country and leads to a discrimination of the tradables sector with regard to investment. The loss of competitiveness and the insufficient investment in the export-oriented sectors may bring about a deterioration in the current account and a decline of actual and potential growth because an insufficient outward orientation of the economy cuts off the country from the dynamic growth forces of the world market.

9.3. What does empirical evidence indicate?

Empirical evidence suggests that capital mobility can both facilitate and impede the emergence as well as the absorption of shocks. As regards the disciplinary function of financial markets, experience shows that they are not always a reliable guide for policy-makers because markets' opinions are often very volatile and not based on macroeconomic fundamentals. At the beginning of the nineties, for example, financial markets did not respond to diverging economic developments among ERM members by withdrawing capital from problem countries or by requiring higher risk premiums from them. However, higher risk premiums for the fundamentally weak currencies could have helped to cope with growing macroeconomic imbalances. A higher interest rate differential vis-à-vis the Deutschmark would have allowed monetary authorities of ERM countries to conduct a more restrictive policy in order to bring inflation down. Moreover, higher interest rates would have increased the interest service on the public debt, which may have made budget consolidation more pressing. An appropriate interest rate differential would therefore have acted as an automatic adjustment mechanism. In reality, however, economic policy decision-makers and social partners got only appeasing signals from the markets. They were not disciplined by rising risk premiums and in some cases they were even hindered from adopting corrective measures in due time.

On the other hand, financial markets have occasionally demanded parity changes and higher risk premiums which were not based on macroeconomic fundamentals. The speculative attacks against the French franc are prominent examples where markets tried to enforce economically not justifiable realignments. Speculative capital outflows in response to increased political uncertainty pushed domestic interest rates up and thus curbed consumption and investment. In this case, high capital mobility definitely contributed to the emergence of negative demand shocks.

9.4. Conclusions

Capital mobility allows to spread the adjustment to shocks over a longer period of time and to accelerate the inevitable fundamental adjustment measures. If capital is highly mobile, government policies are more exposed to the sanctions of financial markets and governments are therefore more inclined to pursue sound policies. However, experience shows that capital mobility does not always bring about these favourable results. Excessive capital inflows reduce the incentives for fundamental adjustment measures, accommodate unsound policies and may even produce

negative supply shocks by pushing the real exchange rate up. Capital outflows aggravate the problems of country-specific shocks and render their solution more difficult.

10. How useful is corporate flexibility in coping with country-specific shocks?

10.1. How can corporate flexibility support the adjustment process?

Innovation and imitation of production techniques, products and marketing

The instruments presented so far provide primarily short-term solutions for the adjustment to economic disturbances. They are quite useful to bridge the transitional period between the emergence of a shock and its final disappearance. However, they are, in general, not particularly suited to overcome a shock lastingly. Long-term solutions for permanent shocks must be found primarily by entrepreneurs. In other words, a lasting adjustment requires corporate flexibility. If the adjustment capacity of companies is insufficient, they will fail sooner or later.

The decline in output caused by a shock can be reversed either through cost-cutting measures represented by a downward movement of the supply curve or through sales promotion activities represented by a shift of the demand curve to the right. In the first case, the curtailment of production costs improves price competitiveness and consequently raises demand. If lower prices for inputs are disregarded, the necessary decrease in costs can be achieved only by an improvement of production methods. The modernisation of manufacturing techniques raises productivity and thus reduces costs. While a downward shift of the supply curve is the result of process innovation and imitation, the shift of the demand curve to the right is brought about by product and market innovation and imitation. The introduction of new products and the further development of existing ones improves quality competitiveness and therefore raises demand. The capturing of new markets, the modernisation of sales methods and the adaptation of marketing strategies also pushes demand. To sum up, the entrepreneurs' capacity to innovate and imitate essentially determines whether a country can lastingly overcome an asymmetric

disturbance or not. After all, corporate flexibility in this sense ensures that shocks become the motor of economic development and not of economic decline.

How can corporate flexibility be increased?

The best method to increase corporate flexibility is to refrain from measures which reduce the modernisation pressure on companies.⁶³ Their management is most likely to make timely adjustment efforts if it otherwise risks heavy losses or even the bankruptcy of the firm. Inasmuch as this default risk is reduced by supporting measures, the entrepreneurs' inclination to change and innovate will decline because the related strategic decisions are risky as well. Subsidies, tax reliefs, protectionist measures, devaluations and highly flexible wages are likely to reduce corporate flexibility and thus the adjustment to structural shocks.

Nonetheless, there are various policy measures which can actively contribute to enhance the economy's capacity to innovate and adjust. The OECD (1995), for example, suggests to advance the technological know-how of companies. The Advisory Group on Competitiveness (1995), established at the European Council of Essen, calls for carefully directed measures in favour of small and medium-sized companies which play a crucial role in the conversion of research and technological progress into new products and services. It recommends a better access of these companies to suitable forms of finance, a European technology foresight programme and the elimination of excessive and unpurposeful regulations. Fiscal incentives for applied research and development and measures to increase the flexibility of the education system are further useful strategies to promote innovation.

Economic agents' view on the real long-term adjustment needs of an economy can be improved by monetary policies directed at stabilising exchange rate expectations. In this sense, fixed exchange rates, which provide a clear anchor for modernisation requirements, may contribute more to overcome structural shocks than flexible exchange rates. Generally speaking, long-term rule-oriented economic policies are more conducive to corporate flexibility than short-term activism in reaction to shocks.

⁶³ However, certain regulations are more likely to promote the technological advance of companies than to hamper it. The stipulation of demanding environmental standards, for example, may encourage companies to do research and development in this field. As a result, they are more likely to take the technological lead and gain an edge.

10.2. Under what circumstances is corporate flexibility not beneficial to the adjustment process?

Flexible reactions of companies to negative shocks by means of innovation and imitation can hardly produce adverse effects on the economy as a whole. However, if corporate flexibility aims at short-term profit maximising, it may perhaps miss to set the course for the adjustment to longer-term problems. Corporate flexibility in the sense of short-termism may therefore not be beneficial to the adjustment to asymmetric shocks.

10.3. What does empirical evidence indicate?

A study of the German *Institut für Arbeit und Technik* ⁶⁴ on behalf of the European Commission states that Europe has fallen back in the industrial modernisation process. This applies to productivity growth and even more to the development of new technologies and the opening-up of new markets. The study diagnoses that European industry has been acting within outdated structures for years and has lost much of its innovative capacity. Hence, manufacturing and services will hardly be able to keep up competitiveness and employment lastingly.

However, a study presented by Jud and Sturn (1996) shows that technology policy in Europe has recognised these weaknesses and consequently changed its orientation in recent years. Partly due to budget constraints, existing support programmes and research institutions have been streamlined and redesigned. Public technology programmes now tend to ameliorate research infrastructure, improve cooperation between science and business, enhance human capital and focus only on a few technology areas and on small and medium-sized enterprises.

10.4. Conclusions

When looking at the long-run effects of economic shocks in chapter 3.2., it has been argued that disturbances of the equilibrium between supply and demand are a prerequisite for economic development. It is the Schumpeterian process of creative destruction which constitutes economic progress. Entrepreneurs who respond to adverse shocks by innovation and imitation in the field of products, production methods and marketing essentially contribute to this progress. The capacity to

⁶⁴ Die Presse, July 14, 1995, Vienna, p. 15.

change and innovate thus constitutes one of the main functions of a company's management in a dynamic market economy.

The Maastricht Treaty demands the fulfilment of a number of nominal convergence criteria from countries wishing to participate in the final stage of EMU. These criteria are a prerequisite for a smooth start of the monetary union. Their aim is to guarantee that price stability can be achieved by the ECB without too much friction. Market related adjustment mechanisms to country-specific shocks (labour mobility, wage and corporate flexibility ⁶⁵) are not referred to *expressis verbis* in the Treaty. The same is true for policy instruments serving this purpose (national fiscal policies, intra-union fiscal transfers). In this context, de Grauwe makes the following sarcastic comment: "The remarkable thing about the Maastricht entry conditions is that they have so little to do with economics. Even more remarkable, the economic theory of monetary unions has stressed completely different conditions from those adopted at Maastricht." ⁶⁶ These conditions, namely the existence of alternative adjustment methods to asymmetric shocks, may, however, be hidden behind the convergence criteria mentioned explicitly. The next chapter will try to answer the question to what extent the Maastricht criteria reflect the actual capacity of these mechanisms to promote the adjustment to asymmetric shocks.

11. Do nominal convergence criteria sufficiently reflect the potential problems of country-specific shocks in EMU?

11.1. Is the achievement of a high degree of price stability a good indicator for the ability to adjust to asymmetric shocks?

The high degree of price stability ⁶⁷ demanded from a country before entering the final stage of EMU should ensure that its wage and corporate flexibility are also high. It is unlikely that inflation remains low if wages are rigid or if productivity hardly increases because companies are reluctant to invest in new production techniques. Hence, the inflation criterion indirectly requires that the flexibility of wages and the

⁶⁵ Capital mobility is not considered because capital movements are completely free within the EU.

⁶⁶ De Grauwe (1994), p. 161.

⁶⁷ See footnote 7.

adjustment capacity of companies are adequate in the future member countries of EMU.

Does the fulfilment of the inflation criterion therefore necessarily mean that the respective countries enjoy sufficient wage and corporate flexibility? This conclusion is not admissible, simply because a low inflation rate can be achieved at the expense of a strong increase in unemployment. If disinflation can only be brought about with rising unemployment, wage and corporate flexibility are not high enough and the observed convergence of inflation is only a seeming one that is not firmly secured by a lasting change of behaviour. In order to improve the information content of the inflation criterion with respect to wage and corporate flexibility, a simultaneous look at labour market and current account developments seems to be indispensable.

11.2. Is the sustainability of the government financial position a good indicator for the ability to adjust to asymmetric shocks?

The provision of the Maastricht Treaty concerning the avoidance of excessive deficits ⁶⁸ covers two different time periods. First, it requires public debt and deficit ratios to be reduced below certain limits before a country is allowed to enter EMU. Second, it demands that these ceilings are not exceeded by countries already participating in EMU. Inasmuch as this provision leads to a reduction of existing unsustainable deficits, it helps regain some actual leeway of fiscal policy to respond to future asymmetric shocks. In this sense, the fiscal convergence criteria contribute to restore the public sector's adjustment capacity which has been lost in a number of EU countries. The prohibition of excessive deficits within EMU, however, may well restrict a fully flexible response of national fiscal policies to country-specific disturbances.

Although the fiscal convergence criteria are likely to reduce budgetary flexibility somewhat within EMU, they may at the same time increase the flexibility of other adjustment mechanisms. This can be explained as follows: Wage and corporate flexibility will not rise until the reduced leeway of economic policy is realised by social partners. Only the awareness that the degrees of freedom of economic policy have been reduced to an extent that it can no longer counteract the adverse effects of undue wage and price increases may induce economic agents to adjust to the new situation in their own interest. A clear and credible policy rule can contribute to

⁶⁸ See footnotes 9, 45 and 46.

increase this awareness and thus lead to the required change in behaviour. The excessive deficit provision constitutes this kind of transparent and reliable policy rule.

The adjustment capacity of companies may be increased by the fiscal convergence criteria in two other ways: First, low government deficit and debt ratios are usually reflected in low interest rates which encourage investment in improved products and manufacturing techniques. Second, ceilings on public debt and deficit may prevent governments from supporting structurally weak sectors via fiscal incentives which are likely to delay fundamental adjustment measures.

11.3. Is exchange rate convergence a good indicator for the ability to adjust to asymmetric shocks?

The exchange rate criterion ⁶⁹ demands the adjustment of economic agents' behaviour to the circumstances prevailing in a monetary union. As country-specific shocks cannot be alleviated by exchange rate changes in a monetary union, a correction of relative prices has to be brought about primarily by the adjustment of relative wage costs. A decline in relative unit labour costs requires either a contraction of relative wages or a comparatively strong rise in productivity. While the former calls for downward wage flexibility, the latter demands high corporate flexibility with respect to process innovation and imitation. To ensure that economic agents will show such beneficial behaviour within EMU, they should already practice it before the start of Stage Three by deliberately renouncing devaluations (as well as the full exploitation of the present fluctuation band). In this way, the fulfilment of the exchange rate criterion is an indication that wage earners and companies respond so flexibly to shocks that exchange rate adjustments become unnecessary. One precondition for this kind of indirect proof of flexibility is the actual emergence of a negative shock during the reference period (two years). Even more important, market-driven exchange rate developments must prove suitable for the assessment of a country's maturity to participate in EMU. This will only be the case if the determination of exchange rates by markets is dominated by economic fundamentals and not by speculative forces. As already mentioned, recent experience has shown that the opinion of the markets is a rather unreliable yardstick (see chapter 9.3.).

⁶⁹ See footnote 37.

11.4. Is interest rate convergence a good indicator for the ability to adjust to asymmetric shocks?

Together with the exchange rate criterion, the interest rate criterion⁷⁰ delivers the financial markets' evaluation of a country's ability to join EMU. From the size of the long-term interest rate differential vis-à-vis the anchor currency it can be seen whether markets perceive a devaluation risk for a certain currency or not. Under normal conditions, a narrow interest rate differential means that market participants judge the development of relevant fundamentals, including the adjustment capacity of the economy, favourably. High interest rate differentials are normally a result of devaluation expectations triggered by large differences in inflation expectations. As the wage and corporate flexibility of a country affect the inflation expectations of financial markets and because inflation expectations have an effect on the rate of return of long-term bonds, the fulfilment of the interest-rate criterion should reflect flexible wages and enterprises. In view of the fact that the interest rate criterion allows a comparatively large deviation from the lowest national bond rates, this argument has to be used with caution. Moreover, the criticism voiced against the exchange rate criterion also applies to the interest rate criterion.

11.5. Conclusions

It goes without saying that high wage and corporate flexibility facilitate the fulfilment of the Maastricht criteria. It is also true that the fulfilment of the convergence criteria is a good indicator for sufficiently flexible wages and enterprises. However, it is not necessarily a guarantee for them. As the ability of wages and companies to adjust to asymmetric shocks is indispensable in a monetary union, it may be useful not to rely exclusively on the nominal convergence criteria when evaluating a country's maturity for EMU membership but to include also a direct judgement of its adjustment capacity. If the nominal convergence criteria cannot prevent countries with insufficient adjustment capacity from participating in EMU and from suffering as a consequence, additional entry barriers may be useful. However, before establishing additional criteria, it should be analysed whether a strict application of the existing

⁷⁰ According to Article 109j (1) TEU and Article 4 of the attached Protocol (No. 6), "the durability of convergence achieved by the Member State and of its participation in the exchange-rate mechanism of the European Monetary System" has to be "reflected in the long term interest rate levels." This means that "observed over a period of one year before the examination, a Member State has had an average nominal long-term interest rate that does not exceed by more than 2 percentage points that of, at most, the three best-performing Member States in terms of price stability."

convergence criteria, putting particular emphasis on lasting convergence, would not produce the same effect.

12. Summary

This paper deals with the issue of asymmetric shocks and the adjustment to them in a monetary union. In a first step, the potential advantages and disadvantages of EMU were analysed. The loss of monetary autonomy and the reduced availability of fiscal policy as a national adjustment instrument were identified as macroeconomic costs of EMU. Additional costs will arise from the introduction of the euro and may result from the required significant reduction of inflation and budget deficits as well as from an insufficient anti-inflationary credibility of the ECB in the eyes of the markets. The elimination of transaction costs and exchange rate volatility between EMU members as well as the increase in competition are seen as the major macroeconomic benefits of EMU since they will enhance economic efficiency and improve competitiveness of the participating countries. It was found that both advantages and disadvantages are likely to increase more than proportionately with the number of initial EMU members. This does not mean, however, that the start of Stage Three should be postponed until a comparatively large group of EU countries fulfils the entry conditions laid down in the Maastricht Treaty. On the contrary, in order to ensure a high degree of anti-inflationary credibility of the ECB it might be best to start EMU with just a few countries that enjoy a high reputation in terms of price stability. Hence, the newly established central bank could inherit some of the anti-inflationary standing of its predecessors and build its own credibility in an initial phase. Subsequently, also countries with a less impressive track record in price stability could join EMU without great risk but with large gains. In such a transition scenario both an "inflation community" and a "deflation community" is likely to be avoided.

The fact that monetary policy will be unable to respond to country-specific disturbances in EMU does not necessarily imply that countries hitherto exposed to asymmetric shocks should not form a common currency area. If nationally differentiated shocks become less likely as a result of monetary integration, the relevance of nationally independent monetary policies will decrease. Indeed, there is evidence that certain shocks will completely disappear in EMU while the frequency and magnitude of others will decline. Economic disturbances due to nominal exchange rate movements between member countries will by definition no longer be

possible in a monetary union. The same applies to interest rate hikes provoked by speculative attacks on national currencies. Shocks emanating from exchange rate movements vis-à-vis third currencies may still occur but will predominantly be symmetric. Country-specific disturbances originating from monetary policy, e.g. "stop and go" operations, the creation of election cycles, and the accommodation of unsustainable developments, will vanish altogether. Disturbances brought about by a similar misuse of fiscal policy will become less likely as budgetary leeway will be restricted in EMU. The probability of country-specific wage shocks should also decline as the changeover to a single currency sends a clear signal to all labour market participants that excessive wage increases would have detrimental effects on output and employment. Nationally differentiated business cycles will be dampened by expanding trade relations between EMU members. There are conflicting views about the likelihood of country-specific sectoral disturbances in EMU. Some economists point to the fact that manufacturing activities are much more concentrated in the United States than in Europe and explain this with the degree of monetary integration. They conclude that the EU will experience a similar regional concentration of industries when it completes its internal market with a move to EMU. There is no doubt that the increase in competition resulting from the monetary and economic integration process in Europe will bring about greater specialisation. However, this will not necessarily lead to a higher degree of geographical concentration. If specialisation increases due to better exploitation of economies of scale and scope, regional concentration and thus the probability of asymmetric shocks should broadly remain unchanged or may even decline. Sectoral diversification in Europe will not change if firms located in different EMU countries merge or take over other firms with the aim to specialise on certain parts of the combined product range in each production site. Geographical concentration of industries will decline if large companies increasingly employ sub-contractors to deliver parts of the final product. The system of sub-contracting is strongly fostered by monetary unification as it eliminates the exchange rate risk foreign sub-contractors are exposed to. If the trend towards greater specialisation originates from a better use of comparative advantages, a relocation of production will be very likely and hence geographical concentration and the probability of country-specific sectoral shocks will rise.⁷¹ As the various forms of specialisation induced by EMU will have conflicting effects on regional concentration, the net effect is not likely to be very significant. All in all, the frequency and intensity of asymmetric shocks, especially those of domestic origin, should decline with the realisation of EMU. As a

⁷¹ As comparative advantages in modern economies are primarily "made" (e.g. technical infrastructure, qualification of the work-force, labour relations, taxation, economic policy) and not "given" (e.g. mineral deposits, climate, landscape, natural ports) the dislocation of production is not an irrevocable consequence of monetary and economic integration.

consequence, monetary autonomy, which will have to be abandoned in EMU, will at the same time become less needed.

After having examined to what extent a nationally independent monetary policy may be needed in the future as an instrument to adjust to asymmetric shocks, the paper discussed the question whether monetary policy is in fact an appropriate instrument to respond to economic disturbances. It was found that under certain conditions an autonomous monetary policy can be useful in coping with asymmetric shocks. It can reduce country-specific cyclical fluctuations and prevent negative repercussions of permanent sectoral shocks for the rest of the economy in a transition phase. It is a powerful adjustment instrument if workers resist nominal wage cuts but have money illusion. In this case the reduction of real wages required for the adjustment to country-specific shocks can be brought about comparatively easily and quickly by a devaluation. However, monetary policy is a dangerous instrument which may even hamper the adjustment to shocks if it is not used with great caution. First, it may become destabilising because of its delayed effect on the real economy. Second, if it is too accommodative, it is more likely to delay or hamper an indispensable structural adjustment than to promote it. Third, experience shows that devaluations usually trigger price-wage-spirals with the effect that a change in nominal exchange rates does not alter real exchange rates lastingly. This means that money illusion does not exist in the long-run and monetary policy therefore cannot play a constructive role in overcoming wage rigidity. Finally, an exchange rate adjustment is not a flexible instrument that can be applied repeatedly without negative repercussions. When used once, it creates expectations in the public, which reduces its effectiveness in the future. To sum up, the use of monetary policy for the adjustment to asymmetric shocks is a double-edged sword which may not bring the desired results but hurt those who use it. As a consequence, the loss of monetary autonomy in EMU should not be too costly even for countries that employed the exchange rate instrument occasionally in the past. Those EU member states which have been pegging their currencies to the DM for quite a long time will only give up a policy instrument they have not been using any more.

If national monetary policy cannot be employed to respond to asymmetric shocks because it is not available in a monetary union or it lacks the desired results or both, the adjustment to nationally differentiated disturbances may be supported by fiscal policy measures. In this context, the paper analysed the availability and the usefulness of both national fiscal policy measures (inter-generational solidarity) and intra-union fiscal transfers (inter-regional solidarity). As regards the actual availability of these policy instruments, it was pointed out that fiscal transfers for

stabilisation purposes are not foreseen among EMU participants at present and that the leeway for national fiscal policies might be small in EMU for a number of reasons: first, several countries have been running high deficits in the past and will therefore hardly be able to take recourse to expansionary adjustment policies in the future; second, fiscal convergence criteria impose ceilings on budget deficits and public debt; and finally, in an increasingly integrated Europe, a large proportion of fiscal demand impulses will spill over to neighbouring countries. On the assumption that national fiscal policy has sufficient leeway and fiscal transfers do exist, it was explained that these instruments can respond to shocks and their effects basically in three ways: In the form of stabilisation policies, they can counteract the emergence of a vicious circle of declining income, consumption and employment. In the form of structural policies, they can promote structural change through carefully directed incentives. And as social policies, they can ease the detrimental social consequences of negative shocks. However, it has turned out that each aspect of these policies entails some risk. Stabilisation measures may prove destabilising due to a long time lag between the emergence of a shock and the impact of the measure on the economy. Fiscal support of structurally weak sectors and regions may delay indispensable fundamental changes and social transfers may reduce labour market flexibility. A particular problem in this context are centralised unemployment benefit systems. They discriminate against countries whose labour market policies are not directed primarily at providing benefits to the unemployed but at concealing unemployment or impeding its emergence, which might be economically more efficient. In view of the fact that many EU countries have already lost their fiscal room for manoeuvre and considering the potential counterproductive results of fiscal measures directed at the absorption of shocks, the restricted leeway of fiscal policy in EMU and the absence of a union-wide stabilisation and redistribution system should not pose a large additional problem.

The loss of national monetary sovereignty, the reduction of fiscal leeway and the lack of intra-union fiscal transfers call for other adjustment mechanisms in the case of asymmetric disturbances in EMU. It has been argued that markets have to play an active role in the adjustment to shocks if policy instruments are inadequate in this respect. Labour market flexibility and its two dimensions - regional labour mobility and wage flexibility - were examined first. Labour migration from economically weak to more prospering regions can, in principle, be a useful instrument to cushion the detrimental consequences of asymmetric shocks. In contrast to the United States, where this adjustment mechanism plays an important role, labour mobility is still extremely low in Europe. However, labour migration is a rather passive response to negative consequences of an asymmetric shock. It is the last resort if more active

measures to reverse an economic disturbance are not available, have not been taken or have not been successful. In addition, low labour mobility may support wage flexibility as the wage level of an EMU member hit by a country-specific shock will not be kept high by outward migration of the redundant work-force nor by fiscal transfers from other members nor by centralised wage policies.

Flexible wages were identified as a useful substitute for exchange rate flexibility when asymmetric shocks call for a response of the economy. Like monetary and fiscal policies, the flexibility of real wages has above all a stabilising function. Its effect on price competitiveness helps keep a shock-induced decline in production and employment within limits. Temporary wage cuts can ease the impact of economic shocks until they are finally overcome by other adjustment means which take some time to have an effect. A permanent reduction of real wages is reasonable if a lasting adjustment by other mechanisms is not possible or politically not acceptable. If real wages do not respond flexibly to an increase in unemployment, which was found to be the case not only in the EU but to a lesser extent also in the USA, an adjustment to a country-specific shock via a change in the real exchange rate is not feasible. Nevertheless, this is not a plausible argument against the participation of a country in EMU because the existence of real wage rigidity rules out a permanent adjustment of real exchange rates outside EMU too.

If the flexibility of labour markets is low, if an appropriate intra-union fiscal compensation mechanism does not exist, and if the leeway of national monetary and fiscal policies is insufficient, capital mobility and corporate flexibility will have to play the leading role in the adjustment to asymmetric shocks should they emerge in a monetary union. Thanks to the complete liberalisation of capital transactions and the high degree of financial market integration in Europe, capital, unlike labour, is a highly mobile production factor nowadays. Capital inflows allow to spread the adjustment to shocks over a longer period and to accelerate the inevitable fundamental adjustment measures. It was also pointed out that free capital outflows may increase the disciplinary pressure on governments to pursue sound policies and may thus hamper the emergence of policy shocks. However, experience has shown that capital mobility does not always bring about these results. It was demonstrated that "excessive" capital inflows reduce the incentives for fundamental adjustment measures, accommodate unsound policies and may even produce supply shocks by pushing the real exchange rate up. Massive capital outflows in response to a country-specific shock may aggravate the economic situation of the country concerned and render the adjustment to the disturbance even more difficult than in the case of low capital mobility.

It was demonstrated that the above instruments and mechanisms may be quite useful to bridge the transition period between the emergence of a shock and its final disappearance. However, there are some doubts as to whether they are suited to overcome a shock lastingly. It was argued that long-term solutions for permanent shocks must be found primarily by entrepreneurs. Entrepreneurs who respond to adverse shocks by innovation and imitation in the field of products, production methods and marketing essentially contribute to economic progress, which, according to Schumpeter, is a process of creative destruction. The capacity to change and innovate thus constitutes one of the main functions of a company's management in a dynamic market economy. If an entrepreneur responds to a shock only or mainly by calling for higher subsidies, lower taxes, lower wages, protectionist measures or a devaluation of the currency, he is actually not an "entrepreneur" who takes strategic decisions but a "rent seeker" with a short perspective. It was stated that fixed exchange rates, which provide a clear anchor for modernisation requirements, promote innovation and change and may thus contribute more to avoid and/or overcome structural shocks than flexible exchange rates. In general, long-term rule-oriented economic policies have proved to be more conducive to corporate flexibility than short-term activism in reaction to shocks.

It was illustrated that a negative shock brings about a reduction of equilibrium demand (in short: demand) for domestically produced goods and services either by a shift of the demand curve to the left or an upward move of the supply curve (price increase). After having reconsidered the various adjustment instruments and mechanisms, their mode of operation should also be described in terms of moving demand and supply curves. An expansionary monetary policy normally shifts the demand curve to the right and thus increases demand, output and employment.⁷² An expansionary fiscal policy increases demand by prompting both a shift of the demand curve to the right and a downward movement of the supply curve. The shift of the demand curve is brought about mainly by increased public expenditure and private consumption stimulated by higher transfers and lower taxes. The movement of the supply curve may be the consequence of improved public services (e.g. infrastructure, research and development), increased subsidies and reduced taxes offered to industry. The effects of inter-regional fiscal transfers on demand should be similar to those obtained by the corresponding instruments of national fiscal policies. In the case of an income redistribution which is exclusively used by the beneficiaries

⁷² In the case of a devaluation, the demand increase caused by the shift of the demand curve to the right is partly offset by an upward movement of the supply curve caused by a devaluation-price-wage-spiral.

for imports, the demand and supply curve will not change. A wage cut moves the supply curve downwards, thus leading to higher demand, output and employment. Lower wages, however, will also shift the demand curve to the left and thus partly offset the increase of demand resulting from declining prices. Process innovation is reflected in a downward shift of the supply curve, while product and market innovations are mirrored by a movement of the demand curve to the right with the overall effect of rising demand. The emigration of jobless certainly lowers unemployment but it reduces demand too as it shifts the demand curve to the left.

The employment of certain adjustment instruments may impair the application and the effectiveness of others. An expansionary monetary policy may reduce the pressure to keep wages sufficiently low and to modernise production. The same is true for several instruments of national fiscal policy and of inter-regional compensation schemes. Overly supportive unemployment benefits will not only be a disincentive to accept lower wages and/or increase productivity but also to migrate to more prosperous regions. High labour mobility will reduce the urgency of wage flexibility. And a significant contraction of wages in reaction to shocks will alleviate the pressure to modernise production methods and products.

The final chapter of this paper tried to answer the question whether the fulfilment of the Maastricht convergence criteria is a suitable indicator for the actual ability of a country to adjust to asymmetric shocks especially via flexible wages and enterprises. It was argued that the achievement of a high degree of price stability (inflation criterion) will be unlikely if wages are rigid or if productivity increases only very slowly because companies are reluctant to invest in new production methods. The fulfilment of the inflation criterion therefore indirectly requires adequate flexibility of wages and sufficient adjustment capacity of companies in the future members of EMU. The obligation to avoid excessive deficits (deficit and debt criterion) helps regain leeway of fiscal policy to respond to future asymmetric shocks. Moreover, the awareness of social partners that economic policy cannot lastingly offset adverse effects of undue wage and price increases is enhanced by a transparent and reliable policy rule. The excessive deficit provision constitutes such a rule and is thus likely to induce the necessary change in behaviour. The provision may also prevent governments from supporting structurally weak sectors via fiscal incentives which often delay fundamental adjustment measures. The fulfilment of the exchange rate criterion is an indication that wage earners and companies respond so flexibly to shocks that exchange rate adjustments become unnecessary. Comparatively low long-term interest rates (interest rate criterion) mean that market participants judge the development of relevant fundamentals, including the adjustment capacity of the

economy, favourably. By and large, it can be said that the fulfilment of the convergence criteria is a good indicator for sufficiently flexible wages and enterprises, provided that the criteria are applied rigidly.

Finally, will asymmetric shocks pose a serious problem in EMU? The answer is "not really". If EMU is established according to the provisions of the Maastricht Treaty, country-specific shocks are unlikely to create much more difficulties inside EMU than they will do outside.

REFERENCES

- Alesina, A. and Gatti, R. (1995): "Independent central Banks: Low Inflation at No Cost?", *American Economic Review*, 85, May, pp 196-200.
- Andersen, P. (1992): "OECD country experiences with disinflation", in: Blundell-Wignall, A. (editor): "Inflation, disinflation and monetary policy", Reserve Bank of Australia.
- Arrowsmith, J. (1995): "Economic and Monetary Union in a Multi-tier Europe", *National Institute Economic Review*, 152, May, pp. 76-106.
- Bank for International Settlements (1994): "64th Annual Report", Basle.
- Bayoumi, T. and Eichengreen, B. (1992): "Shocking Aspects of European Monetary Unification", *CEPR Discussion Papers*, 643.
- Bayoumi, T. and Eichengreen, B. (1994): "One Money or Many? Analyzing the Prospects for Monetary Unification in Various Parts of the World", *Princeton Studies in International Finance*, 76, September.
- Bayoumi, T. and Prasad, E. (1995): "Currency Unions, Economic Fluctuations and Adjustment: Some Empirical Evidence", *Discussion Paper Series*, 1172, Centre for Economic Policy Research, May.
- Bean, C. R. (1992): "Economic and Monetary Union in Europe", *Journal of Economic Perspectives*, 4, Fall, pp. 31-52.
- Bofinger, P. (1994): "Is Europe an Optimum Currency Area?", *CEPR Discussion Papers*, 915.
- Brandsma, A. et al. (1991): "Quest - A macroeconomic model for the countries of the European Community as part of the world economy", *European Economy*, 47, Part II, March.
- Breuss, F. (1995): "Die vierte EU-Erweiterung - um Österreich, Finnland und Schweden", *WIFO Monatsberichte*, 2/95, pp. 105-125.
- Brittan, S. (1995): "Economics world wrong on EMU", *Financial Times*, June 26, p. 14.
- Buckberg, E. and Thomas, A. (1995): "Wage Dispersion and Job Growth in the United States", *Finance & Development*, June, pp. 16-19.
- Courchene, Th. J. (1993): "Reflections on Canadian federalism: Are there implications for European economic and monetary union?", in: "The economics of Community public finance", *European Economy (Reports and studies)*, 5/93, pp. 123-166.
- Deutsches Institut für Wirtschaftsforschung (1995): "Gratwanderung zur Eurowährung?", *Wochenbericht*, 29, 20. Juli, pp. 1-6.
- El-Agraa, A. M. (ed.) (1994): "The economics of the European Community", Harvester Wheatsheaf.
- Erkel-Rousse, H. and Mélitz, J. (1995): "New Empirical Evidence on the Costs of European Monetary Union", *Discussion Paper Series*, 1169, Centre for Economic Policy Research, May.
- Europäische Kommission (1994): "Mehr Arbeitsmarktflexibilität in der Europäischen Gemeinschaft", *Europäische Wirtschaft*, 56, pp. 191-224.
- European Commission (1977): "Report of the study group on the role of public finance in European integration", chaired by Sir Donald MacDougall, *Economic and Financial Series*, A13, April.
- European Commission (1990): "One market, one money", *European Economy*, 44, October.
- European Commission (1995): "Green Paper on the Practical Arrangements for the Introduction of a Single Currency", Brussels.
- European Monetary Institute (1995): "The Changeover to the Single Currency", November, Frankfurt.
- European Monetary Institute (1996): Annual Report 1995, Frankfurt.
- Flassbeck, H., Horn, G. A., Zwiener, R. (1992): "Rigide Preise, flexible Mengen - Ansätze zu einer dynamischen Analyse von Angebots- und Nachfrageschocks", *Sonderheft 149*, Deutsches Institut für Wirtschaftsforschung, Berlin, Duncker & Humblot.
- Froats, D. K. (1995): "Sozialpartnerschaft und Hartwährungspolitik: Political Prerequisites and Effects of the Austrian Hard Currency Policy, and Implications for Post-Maastricht Monetary Union in

- Europe", in: Hochreiter, E. (editor): "Austrian Exchange Rate Policy and European Monetary Integration", *Working Papers of the Oesterreichische Nationalbank*, 19, pp. 4-26.
- Garganas, N. C. (1993): "The implications of a single European currency and monetary policy: prospects and policy issues", *CEPS Working Document*, 77.
- Glück, H. and Weninger, F. (1995): "Der Transmissionsprozeß in Österreich", *Berichte und Studien*, 2/95, Oesterreichische Nationalbank, pp. 51-62.
- Gnan, E. (1994): "Austria's Hard Currency Policy and European Monetary Integration", *De Pecunia*, Vol 6, No. 3, December, pp. 28-72.
- Goodhart, C.A.E. and Smith, S. (1993): "Stabilization", in: "The economics of Community public finance", *European Economy (Reports and studies)*, 5/1993, pp. 417-455.
- Grauwe de, P. (1992): "The Economics of Monetary Integration", New York, Oxford University Press.
- Grauwe de, P. (1994): "Towards European Monetary Union without the EMS", *Economic Policy*, 18, April, pp. 148-185.
- Gros, D. and Thygesen, N. (1992): "European Monetary Integration", London and New York, Longman and St.Martin's Press.
- Handler, H. and Hochreiter, E. (1996): "The Austrian Economy in the Wake of Joining the EU", Paper prepared for the meeting of the CEPS Economic Policy Group on May 7.
- Hochreiter, E. and Winckler, G. (1995): "The advantages of tying Austria's hands: The success of the hard currency strategy", *European Journal of Political Economy*, 11, pp. 83-111.
- IMF (1995): "World Economic Outlook", May 1995, Washington.
- Jackman, R., Layard, R. and Nickell, S. (1991): "Unemployment: Macroeconomic performance and the labour market", Oxford, Oxford University Press.
- Jud, Th. and Sturn D. (1996): "Wie gestalten andere europäische Länder ihre Technologiepolitik?", *Wirtschaftspolitische Blätter*, 1/1996, pp. 35-42.
- Knöbl, A. (1990): "Europe: Why does Unemployment Differ?", *WIFO Working Paper*, 38.
- Kromka, F. (1996): "Würde und Schrecken der Arbeit", *Wirtschaftspolitische Blätter*, 2/1996, pp. 121-132.
- Krugman, P. (1991): "Geography and Trade", Cambridge: MIT Press.
- Majocchi, A and Rey, M (1993): "A special financial support scheme in economic and monetary union: Need and nature", in "The economics of Community public finance", *European Economy (Reports and studies)*, 5/1993, pp. 457-480.
- Mélimitz, J. (1995): "The current impasse in research on optimum currency areas", *European Economic Review*, 39 (1995), pp. 492-500.
- Micossi, S. and Tullio, G. (1991): "Fiscal imbalances, economic distortions and the long-run performance of the Italian economy", paper prepared for the International Workshop on Global Macroeconomic Perspectives, Rome, 29 and 30 May.
- Mundell, R. (1961): "A theory of optimum currency areas", *American Economic Review*, 51, September, pp. 657-665.
- Nam, Ch. W., Nerb, G., Russ, H. (1991): "Measurement of regional competitiveness in Europe by survey: application of survey technique in a new field", Paper prepared for the 20th CIRET Conference, Budapest, October.
- Nunnenkamp, P. (1993): "Worüber die Wirtschaft klagt und wofür sie selbst verantwortlich ist: Unfähige Politik, unternehmerische Prinzipienlosigkeit und der Standort Bundesrepublik", *Zeitschrift für Wirtschaftspolitik*, 3/93, pp. 273-293.
- OECD (1986): "Flexibility in the Labour Market: The Current Debate", November, Paris.
- OECD (1995): "Economic Outlook 57", June, Paris.
- Prud'homme, R. (1993): "The potential role of the EC budget in the reduction of spatial disparities in a European economic and monetary union", in "The economics of Community public finance", *European Economy (Reports and studies)*, 5/1993, pp. 317-351.

Advisory Group on Competitiveness (1995): "Improving European Competitiveness. Second Report to the President of the European Commission and to the Heads of State and Government of the Union", *Europe Documents*, 1966/1967, December 14.

Sapir, A. (1992): "Regional integration in Europe", *Economic Journal*, 102, pp 1491-1506.

Tavlas, G. S. (1993): "The Theory of Optimum Currency Areas Revisited", *Finance & Development*, June.

World Bank (1995): "World Development Report 1995", Washington D.C.

Viñals, J. (1994): "Building a Monetary Union in Europe: Is it worthwhile, where do we stand, and where are we going?", *Documento de Trabajo*, 9412, Banco de España.

Zotter, Th. (1995): "Europäische Währungsunion? Zur Diskussion um optimale Währungsräume", *Wirtschaft und Gesellschaft*, 3/1995, pp. 407-424 and 4/1995, pp. 555-578.

Aug. 28, 1990	Pauer Franz	1 ⁷³⁾	Hat Böhmer-Bawerk recht gehabt? Zum Zusammenhang zwischen Handelsbilanzpassivum und Budgetdefizit in den USA ⁷⁴⁾
Mar. 20, 1991	Backé Peter	2 ¹⁾	Ost- und Mitteleuropa auf dem Weg zur Marktwirtschaft - Anpassungskrise 1990
Mar. 14, 1991	Pauer Franz	3 ¹⁾	Die Wirtschaft Österreichs im Vergleich zu den EG-Staaten - eine makroökonomische Analyse für die 80er Jahre
May 28, 1991	Mauler Kurt	4 ¹⁾	The Soviet Banking Reform
July 16, 1991	Pauer Franz	5 ¹⁾	Die Auswirkungen der Finanzmarkt- und Kapitalverkehrsliberalisierung auf die Wirtschaftsentwicklung und Wirtschaftspolitik in Norwegen, Schweden, Finnland und Großbritannien - mögliche Konsequenzen für Österreich ⁷⁵⁾
Aug. 1, 1991	Backé Peter	6 ¹⁾	Zwei Jahre G-24-Prozeß: Bestandsaufnahme und Perspektiven unter besonderer Berücksichtigung makroökonomischer Unterstützungsleistungen ⁷⁶⁾
Aug. 8, 1991	Holzmann R.	7 ¹⁾	Die Finanzoperationen der öffentlichen Haushalte der Reformländer CSFR, Polen und Ungarn: Eine erste quantitative Analyse
Jan. 27, 1992	Pauer Franz	8 ¹⁾	Erfüllung der Konvergenzkriterien durch die EG-Staaten und die EG-Mitgliedswerber Schweden und Österreich ⁷⁷⁾

⁷³⁾ vergriffen / out of print

⁷⁴⁾ In abgeänderter Form in Berichte und Studien Nr. 4/1990, Seite 74 ff. erschienen

⁷⁵⁾ In abgeänderter Form in Berichte und Studien Nr. 4/1991, Seite 44 ff. erschienen

⁷⁶⁾ In abgeänderter Form in Berichte und Studien Nr. 3/1991, Seite 39 ff. erschienen

⁷⁷⁾ In abgeänderter Form in Berichte und Studien Nr. 1/1992, Seite 54 ff. erschienen

Oct. 12, 1992	Hochreiter E. (Editor)	9 ¹⁾	Alternative Strategies For Overcoming the Current Output Decline of Economies in Transition
Nov. 10, 1992	Hochreiter E. and Winckler G.	10 ¹⁾	Signaling a Hard Currency Strategy: The Case of Austria
Mar. 12, 1993	Hochreiter E. (Editor)	11	The Impact of the Opening-up of the East on the Austrian Economy - A First Quantitative Assessment -
June 8, 1993	Guzel Anulova	12	The Scope for Regional Autonomy in Russia
July 14, 1993	Mundell R.	13	EMU and the International Monetary System: A Transatlantic Perspective
Nov. 29, 1993	Hochreiter E.	14	Austria's Role as a Bridgehead Between East and West
Mar. 8, 1994	Hochreiter E. (Editor)	15	Prospects for Growth in Eastern Europe
June 8, 1994	Mader Richard	16	A Survey of the Austrian Capital Market
Sept. 1, 1994	Palle Andersen and Peter Dittus	17	Trade and Employment: Can We Afford Better Market Access for Eastern Europe?
Nov. 21, 1994	Jouko Rautava	18 ¹⁾	Interdependence of Politics and Economic Development: Financial Stabilization in Russia
Jan. 30, 1995	Hochreiter E. (Editor)	19	Austrian Exchange Rate Policy and European Monetary Integration - Selected Issues -
Oct. 3, 1995	Hans Groeneveld	20	Monetary Spill-over Effects in the ERM: The Case of Austria, a Former Shadow Member

Dec. 6, 1995	Roman Frydman et al	21	Investing in Insider-dominated Firms: A Study of Voucher Privatization Funds in Russia
March 5, 1996	Rutger Wissels	22	Recovery in Eastern Europe: Pessimism Confounded ?
June 25, 1996	Franz Pauer	23	Will Asymmetric Shocks Pose a Serious Problem in EMU?
