The Advantages of a Community Currency – An OCA Perspective

Abstract

There is an ongoing debate about the advantages and disadvantages of community currencies in the literature. Proponents of a local currency outline the economic, social and ecological benefits. However, empirical studies find mainly social networking effects and almost no economic influence. It seems that the economic advantage of community currencies does not prevail (at least at first). This paper explores why this is the case and how this situation could be changed. Even when taking into account that the true value of the alternative payment system lies beyond its economic benefit, it would still be desirable to deliver on the promises made when introducing it. The Optimum Currency Area (OCA) Theory allows for even more economic advantages given that a region is not an OCA and therefore should introduce its own currency. In order to illustrate these interrelations, the example of Saxony in Germany is explored.

Introduction

The literature concerning community currencies can be considered as rather ambivalent.[1] On the one side, there are the proponents of community currency systems, mostly affiliated with a project which is about to introduce or already operates with a local currency, outlining the various economic, social and ecological benefits (e.g. Kalinowski 2011). On the other side, there are scientific case studies which acknowledge the efforts by the respective prospects but mainly find social effects (e.g. Seyfang 2001). There are also critics who doubt the social networking impact (e.g. Rösl 2006).

Nevertheless, community currencies are not simply a modern phenomenon initiated by environmental and social groups. In fact, the origins of community currencies reach back to ancient Egypt. There, two different types of money were used, one for long-distance trade and one for local exchange (Hallsmith and Lietaer 2010). Further, community currencies proved to be helpful in times of economic distress as the development of emergency money after the First World War has shown (Rösl 2006). Keynes regarded this development as one solution to the liquidity trap (Keynes 1936).[2] The evolution of community currencies has also been appreciated by Irving Fisher (1933) as he recommended the use of stamp scrips[3] in order to encourage spending. Friedrich Hayek (1976) also favored the introduction of private moneys which circulate in competition to already existing ones. Similarly to these considerations, Robertson (1989) imagined a system where a 'world currency' would be used at the international level, national currencies operate on the national level and some form of community currencies could be adopted at the local level. As a matter of fact, the current situation where only one currency incorporates all function of money (unit of account, store of value and medium of exchange) is quite unique. In history, usually separate currencies served for the respective functions (Seyfang and Longhurst 2013). It has to be kept in mind that community currencies do not seek to replace the existing, principal currency but rather to complement it.

Even though the concept of community currencies has been known throughout history, it has received a remarkable attention in the past 20 years, especially in Europe. The following map shows currently operating community currency projects or similar initiatives in European countries[4]:

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1 The term 'community currency' is used in here to describe a parallel money system that may take on different forms (following the approach of Seyfang and Longhurst 2013). Thus, the terms for e.g. community currency, time-currency, local exchange system and inter-company credit system are used interchangeably.

2 The liquidity trap is a situation where low interest rates stop people from holding interest-bearing assets and make them hoard cash instead. As community currencies often involve a carrying tax, the return on holding cash is lowered giving more incentives to hold interest-bearing assets again (Champ 2008).

3 A Stamp Scrip is another form of a community currency.

4 Data as of February 2014. Please note that this map is not exhaustive as some projects are too small to be included in databases.

Figure 1: Community currencies currently in operation in Europe.
(Source: Complementary Currency Resource Center, Wikipedia, Selamis (2013), Regiogeld (2014), Creative Commons, own illustration)

Obviously, community currency projects are not restricted to bigger cities but can also be found in rural areas. Still, capital cities always attract some form of local currency and mostly not only one but several currencies. These clusters sometimes even have the same initiators. It seems that in Eastern European countries community currency projects do not develop as frequently as in Western European countries but it may be possible that these are simply not registered in the conventional databases.

Usually, community currencies are introduced by a local civil society of a non-profit organization. The respective organization emits the currency and therefore can be interpreted as a regional bank (Rösl 2005). The currency is mostly constructed such that it continually circulates within the scheme and thus does not leave the region (Seyfang 2001). In many cases, the money loses its value after a certain time in order to encourage spending (Rösl 2005). Often, the exchange rate between the principal currency and the community currency is fixed to one in order to simplify all transactions. As it will be shown further below, this might be a crucial characteristic of the community currency that determines its economic success.

In order to give an overview over the existing literature, section two summarizes the main advantages of and the respective critical arguments against community currencies. After that, the Optimum Currency Area (OCA) Theory will be used in order to stretch the economic

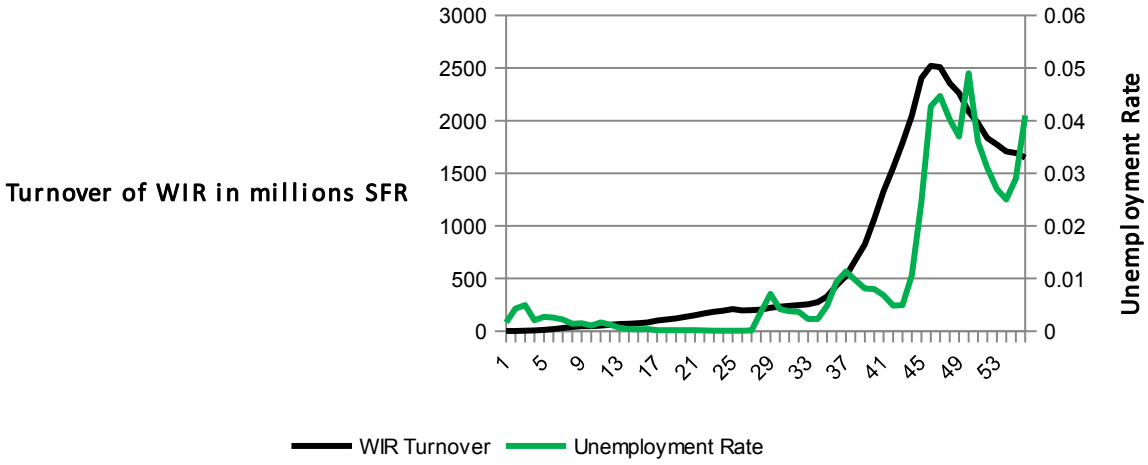
arguments in favour of community currencies under certain circumstances. Section four takes the example of Saxony in Germany to examine whether a community currency in this state would be economically beneficial. The last section concludes.

Advantages and disadvantages of Community Currencies

Overall, community currencies seek to support the local community in an economic, social and environmental way. The majority of projects aims to create a counterweight to globalization and therefore only local firms are enabled to participated in the system (Rösl 2006). As outlined above, a global economic crisis is a good starting point for many projects. Certainly, globalization has also a lot of benefits but some negative consequences (such as environmental destruction and disintegration of communities) cannot be neglected (Glover 1999).

There are many different types of community currencies which serve individual purposes (next to the general ones), too. For example, depreciative money loses its value over time and has its origin in a model by Silvio Gesell (1949) where capitalists should be hindered to hold all their money just in the bank and not allow it to circulate (Rösl 2006). In here, the general advantages of community currencies will be outlined while mentioning individual scope for design.

Economically, community currencies assist small businesses in the first place as they mostly provide them a further source of liquidity (Kalinowski 2011). Especially in times of a crisis, this tool boosts the local economy and leads to macroeconomic stabilization (Nilsen 2002). Thus, many community currencies seem to circulate countercyclical as businesses use them more intensively when conventional credit standards are tight. The following figures show that sometimes the turnover of the community currency tracks the unemployment rate and sometimes not.[5]



5 It has to be taken into account that countercyclical behavior of community currencies only prevails if the turnover of the currency is sufficiently high. Companies do not have enough confidence in small projects and thus do not consider them as an alternative financing and payment resource.

Figure 2: Evolution of WIR turnover and unemployment rates in Switzerland from 1948 to 2003.
(Source: Stodder 2009, Historical Statistics of Switzerland 2014, own illustration)

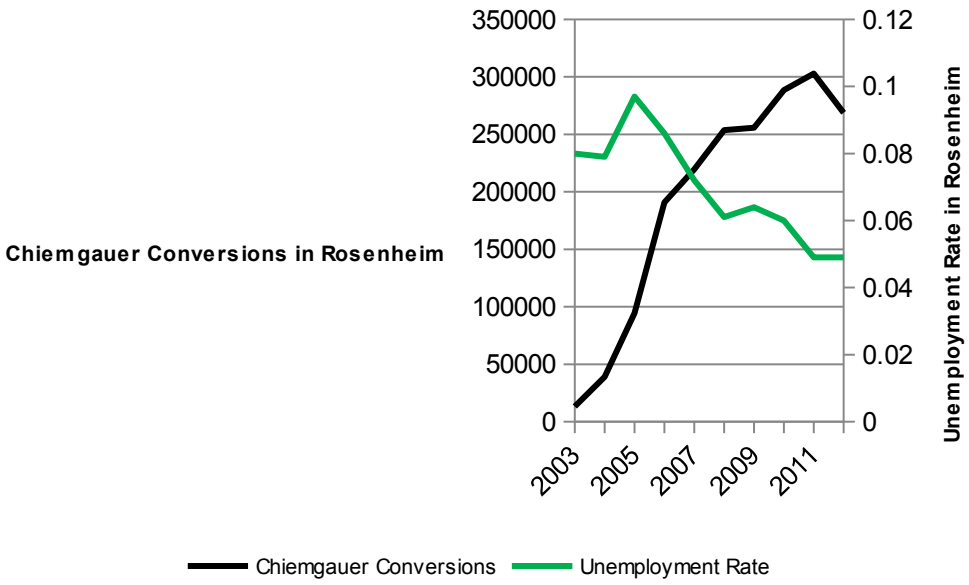


Figure 3: Evolution of Chiemgauer conversions and unemployment rates in Rosenheim from 2003 to 2012.
(Source: Chiemgauer 2014, Regionaldatenbank, own illustration)
[more examples following]

Community currencies further intend to assist low-income and unemployed people to engage in the formal economy (Seyfang 2001). Sometimes there are new employment possibilities due to the community created by the new currency (Slay 2011 in Seyfang and Longhurst 2013). Many projects seek to revalue the term 'work' and try to put more emphasis on traditionally less recognized employment sectors such as informal work (Douthwaite 1996). With regard to the economically negative effects of globalization, community currencies try to create a system of self-reliance (Seyfang 2001). If there is more focus on producing and trading inside a specific community, the region becomes more diversified (Pacione 2011). The loyalty of local companies may be enhanced, for example by a mutual credit system among regional firms and a stimulated desire to support each other (Shuman 2000). These networking effects are especially valuable for small companies and start-ups. Even with respect to economic development objectives by a regional government, a community currency could increase the certainty that an investments stays within the region (Pacione 2011).

On the environmental side, a community currency shorts distribution channels because economic activity mainly stays within a region (Rösl 2006). Less transportation clearly serves the environment. Community currency projects often aim at creating an alternative economy which might result into changed consumption patterns such as towards more recycling or the orientation towards organic food production (Briceno and Stabl 2006). Education and activism within the new community could promote this green movement (Machiba 1998). Some currencies are even backed by real resources such as energy limiting the extreme expansion of the currency and rising awareness of the environmental dimension of consumption (Swann 1981). Other projects directly reward environmentally conscious

behavior due to subsidies out of the profit created by the currency (Holdsworth and Boyle 2004). Another possibility could be more attractive financing conditions for sustainable investment projects like in renewable energy systems (Turnbull 2009).

Next to environmental benefits, there are also social advantages of community currencies. Compared to the investment in sustainability projects, some initiatives use the generated profit to support regional social projects and reward social conscious behavior such as neighbor support (Collom 2008). As a result, responsibility and community welfare is enhanced (Glover 1999). Additionally, the common currency may serve as a recognition tool for members within the alternative milieu creating community spirit and a stronger network (Rösl 2006).

Apart from all those benefits, there are some critical concerns towards community currencies. A major point of criticism refers to the creation of a system of self-reliance. This hampers cross regional trade and thus has negative effects on development (Rösl 2006). The division of labour leads to comparative advantages and the integration of sales markets which promotes more economic growth and job placements than individual markets. This is not only true for the region introducing the new payment system but also for the former trading partners. In here, it needs to be considered that community currencies seek to complement the principal currency and not to replace it. Thus given its small impact, trade might not be affected much (Williams 1996). Rösl (2006) further points out that community currencies are especially often to find in regions with low unemployment. People there can afford the luxury of for example a depreciative money. As a result, all the economically and socially exclusion advantages are almost obsolete. However, as figure 1 has shown, community currencies are also quite popular in regions of economic distress (such as Greece) and tend to be used countercyclical (see figure 2). Moreover, some characteristics of community currencies make it very difficult to accept them, for example the depreciation over time (Champ 2008). They are also often denominated in small quantities making them not attractive for higher payments by the consumers (Rösl 2006). Usually people are willing to buy with the new currency but would like to be paid with the principal currency in order to be fully flexible on how they spend their earnings (Kalinowksi 2011). This may lead to many failures even if the community currency itself might be a good instrument for a region. Thus, a relatively simple design may be favorable. If a community currency serves as a source of liquidity for regional companies, then arbitrage effects need to be considered. The favourable financial conditions may be used by companies to take out a loan denominated in the community currency, exchange the money into the principal currency and invest it and receive interest payments. Therefore they can make a profit without supporting the local economy. If many companies follow this strategy, the regional initiative which grants the loans might not be able to continue to finance this behavior. At a small scale, the costs might be covered by membership fees etc. but if the community currency grows, this situation is not sustainable. Another critical point concerns the relatively high transaction costs and administration of community currencies (Glover 1999). These have to be seen relatively to the created benefits. Especially if the economic value does not prevail that easily, it might be more profitable to directly invest in a social and environmental network and therefore saving some costs when achieving similar benefits (Rösl 2006). Furthermore, community currencies are mainly used by people who are concerned with the regional economy (at least at the beginning) and thus the presence of the currency is rather obsolete (Rösl 2006).

It can be argued that the true value of community currencies lies outside their economic impact but it is still desirable to point out advantages over other traditional community enhancing projects (Machiba 1998). Seyfang (2001) showed that the aims of community currencies can be achieved but mostly only in small quantities. These results are not very satisfying especially with regard to the primarily economic goals of community currencies such as more resilience and greater inclusion of unemployed (Glover 1999). In order to achieve greater economic effects, the community currencies need to be designed as such as economists in history have imagined a parallel currency: They need to be in a real competition with the principal currency. However, as long as the exchange rate is fixed, no great economic difference will arise.

The OCA Theory in the context of Community Currencies

Different exchange rate regimes have a significant impact on an economy's resilience towards external shocks. Community currencies with flexible exchange rates may therefore be able to achieve the economic goals set by many initiatives. The following example with a shock in demand illustrates these interrelations:[6]

Consider a negative shock in the goods market, for example due to a slump in overall demand[7]. People decided to save more and drastically cut their spending. As a result, productivity decreases because no one wants to buy any of the products produced. Companies react with suspension of staff, there are more unemployed and as a result even less demand (shift to the left of the curve representing the goods market equilibrium, see figure 4). This leads to a lower demand for the community currency as people earn less money or even nothing and companies make less sales. Thus, interest rates for the community currency fall (from i1 to i2).

6 For a more detailed presentation of the mechanism, see Blanchard and Illing (2008).

7 A similar analysis can be made for a shock in the money market, but in order to show the power of flexible exchange rates, one example is seen as sufficient in here.

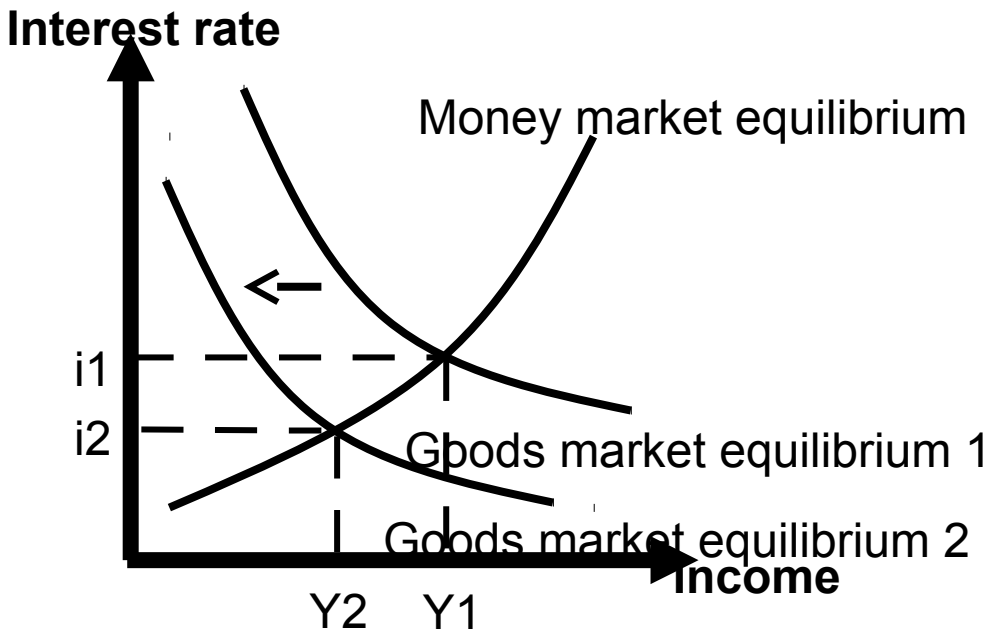


Figure 4: Reactions after a shock in the goods market.
(Source: Blanchard and Illing 2008, own illustration)

In order to react accurately to this recession, it depends which kind of exchange rate regime is under operation. In the case of fixed exchange rates between the community currency and the principal currency, the community currency bank needs to put money out of the market in order to bring back the interest rate into its original equilibrium and to maintain the stable exchange rate. However, this leads to lower investments and less production in the region making the recession even worse. As a consequence, regional governmental spending needs to be increased to stimulate the economy and to get out of the recession. This is done by raising taxes or taking out public debt.

Under a flexible exchange rate regime by contrast, the regional government does not need to do anything. In fact, the exchange rate works as an absorber of the demand shock. As the interest rate decreases, the community currency experiences a depreciation relative to the principal currency. If this is the case, people demand more products from the region because they are relatively cheaper. This stimulates the local economy leading to higher demand for community currency money and thus to higher interest rates. The process continues until the exchange rate returns to its point of origin.

According to economic theory, flexible exchange rate may enable community currencies to fully unfold their economic advantages. However, there are some regions which should not let their exchange rate flow freely but rather fix it to the principal currency. The Optimum Currency Area (OCA) Theory is concerned with this subject. The literature concerning the optimal choice of a currency area dates back until the beginnings of the last century. The path-breaking contribution by Robert Mundell in 1961 marked a turning point since it laid down the theoretical foundations for the OCA Theory. He concluded that if the conditions to smoothen or even reduce asymmetric shock for specific regions are exogenously given then the optimum area for a currency should not be fixed to national borders. He also underlined the fact that a common currency (i.e. a fixed exchange rate) has the benefit of more intense

trade integration but this has to be compared to the cost due to the lost independence in monetary policy. As a result, he found three key conditions that could make a monetary union more beneficial for a country: Similarity in macroeconomic shocks, wage flexibility and labour mobility. Based on his thoughts, in the pioneering phase of the OCA Theory many scientists tried to continue this list and created a whole set of criteria which might be necessary to form a monetary union. McKinnon (1963) added the importance of openness and trade integration to the theory assuming that smaller countries with a larger share of tradeables in output would be more suitable to form a monetary union. A third, very influential paper has been presented by Kenen in 1969 which highlighted fiscal integration as an important criterion of the OCA Theory. Furthermore, he found that either a similar production structure or high product diversification may help to avoid asymmetric shocks leading to a more stable monetary union. These contributions can be considered as the fundamental guide of the OCA Theory. During the 1970s, the conditions have been analysed more deeply and their importance relative to one another has been explored (see Ishiyama 1975 and Corden 1972). At the same time, however, the theory received a more critical judgment by most scientist as the different criteria proved to be inconsistent and led to inconclusive results (Tavlas 2009). By then, most economists saw the theory to have come to a dead end with no further significant contributions to be expected (Cecco 1974). However, these evaluations proved to be wrong: The OCA theory experienced a significant revival in the early 1990s. This was mainly due to the fact that European countries faced the possibility of forming a monetary union. Further, there have been some new insights to the OCA theory mainly regarding the actual importance of exchange rates to absorb asymmetric shocks (Grauwe 2007) and the endogeneity of some of the OCA criteria (Frankel and Rose 1996). Mostly, the OCA literature focuses on the formation of greater monetary unions i.e. giving up a national currency and not on introducing a new one. However, some studies conclude that the abandonment of a currency is not recommended and thus point towards the option of more currencies within the region. Usually, the decision whether to narrow down or to widen a currency union is based on a cost-benefit analysis. The benefits of more currencies with flexible exchange rates may extend the advantages of community currencies above. In the following, the costs and benefits of introducing more currencies will be presented.[8]

If a region has its own currency, it has the possibility to set an individual exchange rate policy and thus receives an instrument to adjust to movements in the external value of the currency (Mankiw and Taylor 2011). This is a significant gain in economic flexibility as the country has the possibility to absorb shocks in order to achieve its economic objectives as it has been shown above (Lewis and Mizen 2000). Still, there are some doubts whether the exchange rate might be such an effective instrument to correct asymmetric demand shifts (Sarno and Taylor 2006). This is the point where ’monetarists’ separate from ’keynesians’ as the former do not see the exchange rate as a very effective tool, especially in the long run. Keynesians, on the other hand, assume that there are more wage and labour rigidities making the exchange rate a quite powerful instrument (Sarno and Taylor 2006). Additionally, devaluation should not be used too often to correct misalignments because this can affect expectations about the future development of exchange rates and thus the instrument becomes less effective. That is why most community currencies are fixed towards the principal currency

8 In here, only permanent costs and benefits will be considered since costs that arise in the transition period from floating to permanently fixed exchange rates have a once-and-for-all character and can be neglected in the face of continuous benefits in the long run (Gros and Thygesen 1999).

(such as the Euro or the Dollar) in the region. If a strong community currency with high faith in it could be established, then the option of floating exchange rates should be considered.

Furthermore, a community currency would allow a region to perform its own monetary policy regardless of the decision by the common central bank of the principal currency. During a recession, lower interest rates could be a tool to stimulate the economy. If only a small region within a big monetary union is affected by the downturn, then there is no possibility to lower the interest rate as this would increase inflation in the whole common currency area (Griffiths and Wall 2004). But a community currency could allow for lower interest rates. This advantage is already outlined in the community currency literature as tightened credit standards during a recession make it difficult for small companies to operate smoothly. However, credit dominated in the local currency could stimulate the regional economy.

Next to the ease of credit constraints for local companies, the community currency could also help the regional government to adjust its budget deficit. In a monetary union, a region cannot use fiscal policy in order to absorb shocks as its budget is limited due to restrictions within the union (Griffiths and Wall 2004). This can cause conflicts between members of the monetary union. It is actually possible to consider the community currency to help out community governments in times of economic distress.

With many currencies in circulation, no trade balance problems arise between regions: Usually, economies that grow fast tend to import even more and thus need to depreciate their currency in order to continue to grow (Sarno and Taylor 2006). In the case of income elasticities of exports being higher than income elasticities of imports, then no misalignments evoke. Still, no risk is imposed on a region when a community currency can avoid such misalignments.

On the other hand, there are also costs due to the introduction of more currencies. First of all, trade with other regions will be hampered as outlined above: Transactions costs are higher as they are associated with converting charges for different currencies (Griffiths and Wall 2004). Further, factors of production might be less efficiently allocated as capital controls are introduced. Thus, capital cannot freely move to regions with higher marginal productivity. The same holds true for a worse allocation of labour (Pilbeam 2006). Micco et al. (2003) studied the change in trade among members of the EMU and found an increase in trade by eight to 16 percent in comparison to other members of the European Union. On the other hand, Zhao and Kim (2009) showed that in the CFA Franc Zone there has been almost no change in intra-regional trade across member countries.

A common currency makes markets more transparent. Thus, more currencies make it easier for manufactures to maintain price differentials across countries and markets making them nontransparent (Pilbeam 2006). However, nowadays a common currency might contribute less to a more transparency in markets than new technical developments for an international price comparison (Bordo 2000). And even if there is a common currency, national borders can continue to create impediments to trade (Grauwe 2007).

A floating exchange rate imposes uncertainty over future exchange rates which can have a negative impact on trade and investment (Griffiths and Wall 2004). This impedes to enter long-term contracts and long-term planning (Lewis and Mizen 2000). With less trading and higher risk, there are negative consequences as comparative advantages are not executed

resulting for example in less variety of products, higher prices and less economies of scale (Griffiths and Wall 2004). Higher financial fragility may result into less investments and thus less economic growth (Buigut and Neven 2005). Furthermore, uncertainty due to exchange rate movements is likely to be the source of asymmetric shocks (Grauwe 2007). However, there is no empirical evidence for a strong relationship between economic growth and exchange rate uncertainty (Sarno and Taylor, 2006).

Moreover, a common currency can be a further step into political unity after a common history with a similar culture, religion or language (Bordo 2000). The more currencies are introduced, the less political unity and thus the less cooperation may be promoted among regions. Additionally, the likelihood of an asymmetric political shock is greater: Strong monetary interference from the authorities causes more uncertainty in the market, e.g. at which time they interact with monetary stabilization in an inflationary country (Neumeyer 1998). Nevertheless, a complementary currency does not cancel out the cooperative effects of the principal currency and still allows for a community to have its individual unit of account.

Last but not least, the more currencies circulate, the less important becomes the principal currency and the less it is used outside of the monetary union. As a result, the issuers of the currency concerned achieve lower benefits. Higher profits of the central bank are distributed to the authorities of the monetary union leading to more governmental spending (Grauwe 2007). It should be noted, however, that for example the profits by the US Federal Reserve are about 0.5 percent of GDP and thus these additional profits can be considered as relatively small (Grauwe 2007). A community currency decreases the use of the principal currency but this impact is also negligible small especially when used as a complementary currency.

The following table summarizes the benefits and costs of community currencies with flexible exchange rate according to the OCA Theory:

Benefits	Costs
Individual exchange rate policy	Hampered trade
Individual monetary policy	Less transparency
Individual fiscal policy	Higher uncertainty
No trade balance problems	Less political cooperation
	Lower importance of principal currency

Table 1: Benefits and costs of community currencies with flexible exchange rates.

If a community currency is to be introduced, the benefits need to outweigh the costs. The OCA Theory generally analyses conditions under which it would be optimal for a group of countries to adopt a common currency (Mankiw and Taylor 2011). ‘Optimality’ is therefore defined as the situation when it is possible for each country to minimize the costs and maximize the benefits of joining a union (Burda and Wyplosz 2009). In here, the context will be reversed and the situation under which the introduction of an additional currency is rather favourable will be analysed. For a more illustrative analysis, Saxony will be taken as an example.

The OCA Criteria and the example of Saxony

In the following, different OCA criteria will be explained and empirical approximations for the respective factors for the case of Saxony will be presented.

In a region with sticky prices and wages, macroeconomic adjustments via the exchange rate become especially necessary (Mundell 1961). Otherwise, the adjustment over prices and wages will take a very long time making the process even more painful. Labour market institutions (like the degree of centralization of the labour unions) influence real wage flexibility (Grauwe 2007). Interestingly, extreme characteristics of a labour union are rather preferable for a monetary union as after a supply shock, there would be no bargaining for higher wages. By contrast, an intermediate degree of centralization would result into that and thus ask for less monetary integration (Grauwe 2007). Therefore, if we have a country where labour market institutions differ across regions (some more centralized than others) then a regional currency might be attractive. Unfortunately, there is no data for Saxony with regard to the degree of labour market centralization. However, if a comparison between East and West Germany already results into great differences in centralization, then this might also be the case for the comparison between Saxony and the rest of Germany. Figure 5 shows the percentage of employees recruited with collective pay commitment in East and West Germany from 1998 to 2010:

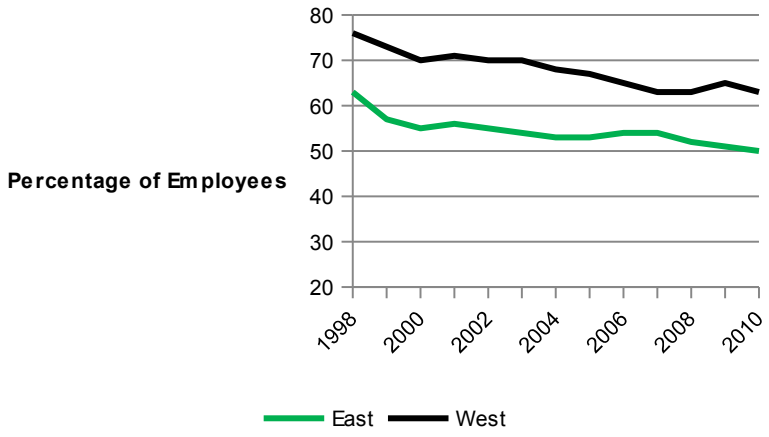


Figure 5: Percentage of employees recruited with collective pay commitment in East and West Germany.
(Source: WSI Tarifarchiv (2014), own illustration)

Labour market in West Germany seem to be more centralized than in East Germany indicating that labour market institutions differ across Germany. As a result, the introduction of individual currencies could be favourable.

Mundell (1961) also outlined the importance of labour mobility in order to adjust to a macroeconomic shock. Unemployed workers simply migrate from their home country to a region where there is excess demand for labour and where there are lower prices and wages and thus production is more profitable (Copeland 2008). As a result, unemployment will fall in the country of origin as its marginal product increases until the higher real wages are

justified. Figure 6 shows influx and outflux of the 18 to 65 years old relative to population for all German States:

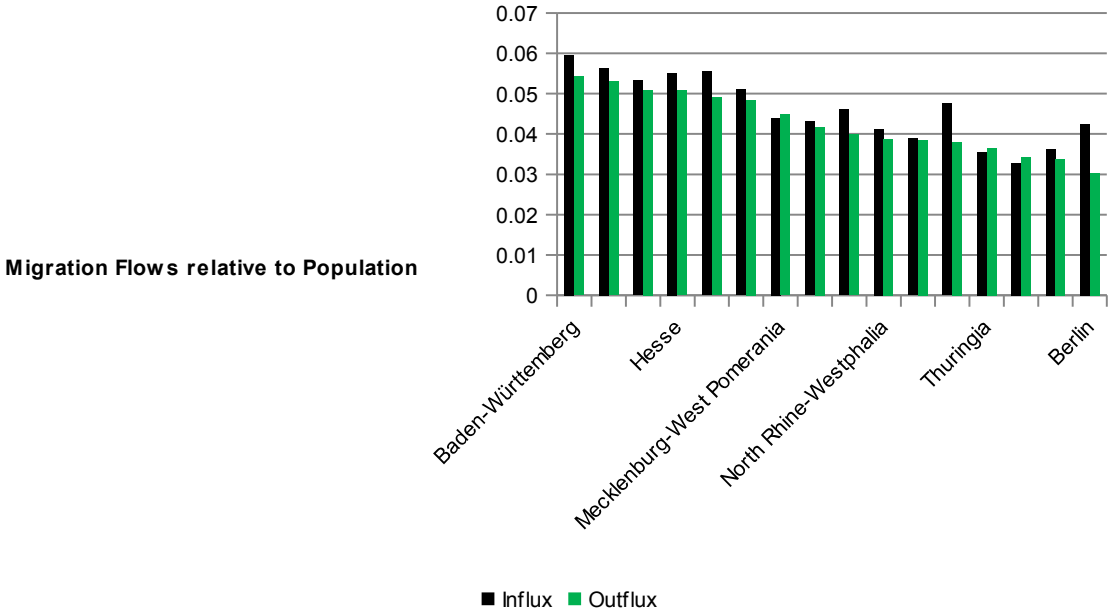


Figure 6: Influx and outflux of 18 to 65 years old relative to population in 2012 for all German States. (Source: Regionaldatenbank 2014, own illustration)

With respect to both, influx and outflux migration, Saxony can be considered as a country with relatively low labour mobility compared to other German States. Of course, migration flows are not the only variables explaining labour mobility but they can serve as an approximation on how willing people are to leave their home. Still, because there are no typical factors present which usually hamper labour mobility (such as language barriers, non-portable pensions and generous unemployment benefits, see Copeland 2008) there might be at least some adjustment over this OCA criteria in case of a macroeconomic shock.

In addition to labour mobility, Mundell (1961) further referred to capital mobility as an important source to alleviate asymmetric shocks. A loss in competitiveness could be balanced out if factors of production can easily move from the country in recession to the country with more favourable conditions (Burda and Wyplosz 2009). Then, the exchange rate as a toll for macroeconomic adjustments is not necessary and thus the introduction of a community currency is not very reasonable. However, physical capital cannot be used to alleviate short run misalignments as the installation of plants and equipment takes usually longer periods of time. Further, Krugman (2011) sees a major cause of the current crisis in the EMU from the very high capital mobility (especially from the North to the South) in Europe because it has led to increased discrepancies in the balance of payments within the monetary union. *[indicator for Saxony following soon]*

As it has been pointed out by Ingram (1962), financial market integration may cushion temporary asymmetric shocks, for example through borrowing from surplus countries. Further, this would lead to high financial capital mobility in case of changes in interest rates which could eventually cause a convergence of these. A highly integrated financial market

could work as a private insurance scheme against asymmetric shocks: For example, if each resident in a monetary union holds stocks from different countries, then everyone pays a price drop in the equity market due to a loss in economic activity in one country. At the same time, everyone benefits from an increase in stock prices in another country (Grauwe 2007). It can be assumed that there is a strong financial capital integration of Saxony in Germany as interest rates are equal across Germany and everyone can privately assure himself against shocks via the stock market.

If there are many asymmetric shocks in a country, the exchange rate could be a useful instrument to react to them in order to avoid an adjustment over price levels. When economic cycles are rather synchronized, then the introduction of individual currencies for each region within a country might not be useful as every region within the country enters the recession and the recovery phase afterwards at the same time (Mankiw and Taylor 2011). The symmetry of business cycles can be measured via the standard deviation of the difference in output growth rates between Saxony and other German States. Table 2 shows how much growth rates in every German State from 2000 to 2012 on average differed from Saxony

German State	Standard Deviation of Growth Rates
Saarland	2.98
Bremen	2.46
Berlin	2.44
Baden-Württemberg	2.19
Lower Saxony	1.94
Schleswig-Holstein	1.85
Hamburg	1.83
Mecklenburg-West Pomerania	1.70
Brandenburg	1.53
Hesse	1.47
Bavaria	1.40
North Rhine-Westphalia	1.29
Rhineland-Palatinate	1.21
Saxony-Anhalt	1.14
Thuringia	1.07

Table 2: Standard deviation of the difference in growth rates of all German States with respect to Saxony for the time frame from 2000 to 2012.
(Source: Statistisches Bundesamt 2014, own calculations)

It seems that growth rates are quite similar to neighbor states such as Saxony-Anhalt and Thuringia but differ much from those of Saarland and the city states. Therefore, it can be assumed that shocks affect Germany quite differently.

In order to absorb macroeconomic shocks, product diversification could be an insurance against disturbances (Kenen 1969). If a country is not very diversified, then a shock affects the whole economy in the same way. Different currencies within the country could help to avoid this. The share of different industries of total Gross Domestic Product (GDP) may indicate the degree of diversification. Assuming that Germany as a whole is relatively diversified, the comparison of Saxony with respect to Germany and other German states shows the diversification of the state.

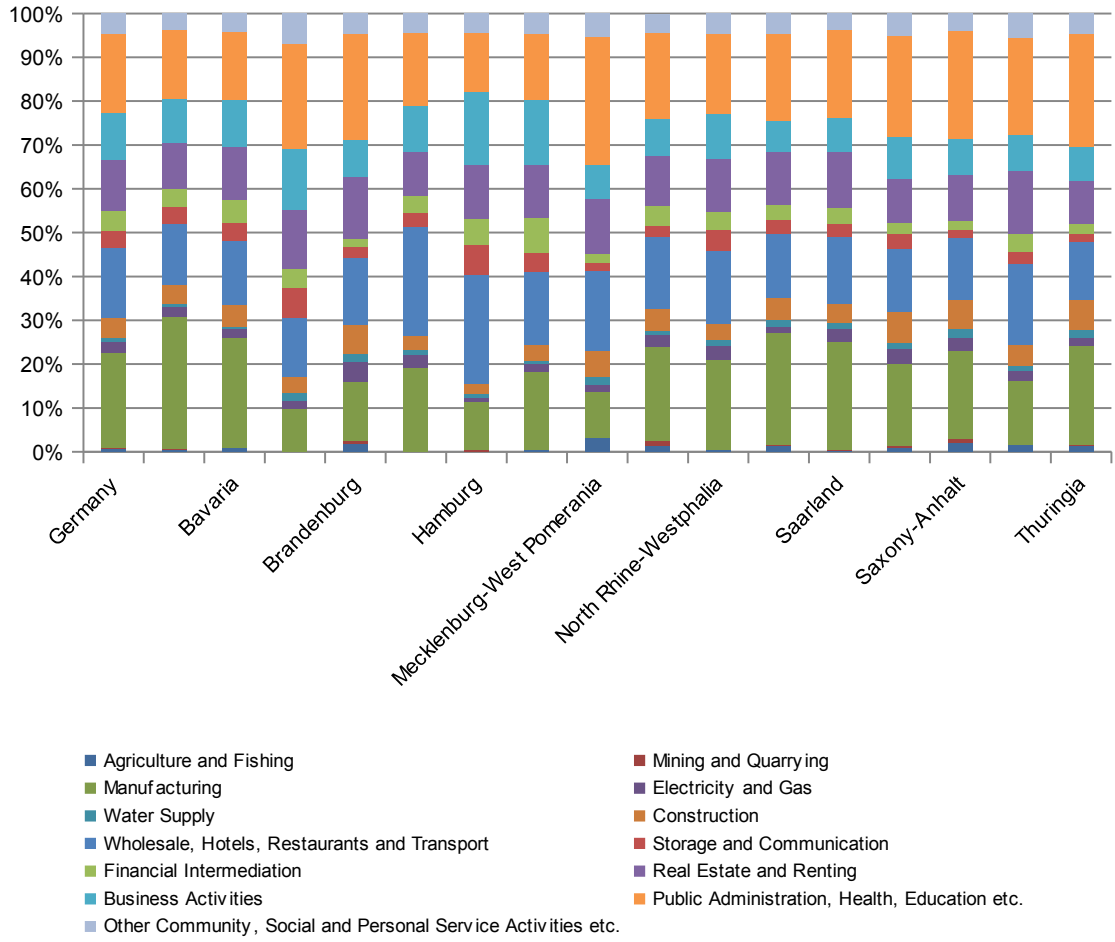


Figure 7: Share of different industries of GDP in the respective German States in 2010. (Source: Statistisches Bundesamt 2014, own calculations)

Saxony does not seem much less diversified than other German States. There is somewhat less economic activity in manufacturing and more in construction and public administration compared to Germany as whole but Saxony seems better positioned than e.g. Mecklenburg-West Pomerania.

In general, it is more beneficial if there are no persistent differences in inflation rates in a country with only one currency (Silva and Tenreyro, 2010). Differences in inflation rates may be due to divergent economic policies, labour market institutions or the simple preference for a certain rate of inflation (Mongelli 2002). In Germany, inflation rates may be different between cities and rural areas, however, empirical evidence does not point towards great differences between German states:

German State	Inflation Rate 2011
Baden-Württemberg	2.1%
Bavaria	2.1%
Berlin	2.3%
Brandenburg	1.9%

Bremen	2.5%
Hesse	1.9%
Mecklenburg-West Pomerania	2.4%
Lower Saxony	2.1%
North Rhine-Westphalia	2.2%
Rhineland-Palatinate	2.1%
Saarland	2.2%
Saxony	2.0%
Saxony-Anhalt	1.9%
Thuringia	2.0%

Table 3: Inflations rates for different German States in 2011; please note that Hamburg and Schleswig-Holstein do not publish individual inflation rates.
(Source: Statistisches Bundesamt 2014, own calculations)

In theory, different growth rates of the Gross Domestic Product (GDP) can lead to different growth rates of imports resulting in high and chronic deficits in trade accounts for fast-growing economies (Sarno and Taylor 2006). In Germany, growth rates differ significantly among states favoring the introduction of individual currencies:

German State	GDP Growth Rate 2012
Baden-Württemberg	1.7%
Bavaria	2.0%
Berlin	2.4%
Brandenburg	2.3%
Bremen	2.7%
Hamburg	2.5%
Hesse	1.6%
Mecklenburg-West Pomerania	4.0%
Lower Saxony	2.6%
North Rhine-Westphalia	1.7%
Rhineland-Palatinate	2.4%
Saarland	0.7%
Saxony	1.3%
Saxony-Anhalt	2.6%
Schleswig-Holstein	2.5%
Thuringia	1.4%

Table 4: GDP growth rates for all German States in 2012.
(Source: Statistisches Bundesamt 2014)

McKinnon (1963) defined openness as a major factor which increases the benefits from joining a monetary union. A very open economy is more vulnerable to greater inflation or higher unemployment after a change in exchange rates and therefore seeks for a relatively stable exchange rate system. Alesina and Barro (2002) have shown that a small, open economy heavily trading with another member of the monetary union which is relatively larger and with which it has a similar business cycle would gain most out of joining the union. As a region within a country can generally be considered as open (as it needs to trade a lot with other regions because it cannot produce everything on its own), individual currencies are not favourable in this regard. *[indicator for Saxony following soon]*

There is general consensus in the literature that a similar policy attitude increases the success of a monetary union (Cohen 1993). Thus, if a country is highly politically integrated then the introduction of community currencies becomes less worthwhile. Bayoumi and

Masson (1995) found that fiscal transfers have an important role as a ’stabiliser’ (and not only as a ’redistributer’). Political integration is very strong in Germany, even though there are individual states with some governmental autonomy. Furthermore, there are fiscal transfers across states in Germany making the use of the same currency across the country easier. It can be argued, however, that individual currencies would make fiscal transfers less necessary and could foster the individual approach of each German state (even though there is strong political integration, each state promotes its autonomy at the same time).

Conclusion

Even though community currencies have much more to offer than just economic benefits for the respective region, it would still be desirable to implement then as such as they actually fulfill economically what they promise. Furthermore, if more people should be convinced about the project (and there also politicians), economic advantages play also an important role. A community currency with flexible exchange rate might be an option in order to do so. However, it still needs to be considered that not every region is suitable for flexible exchange rates. Here, the OCA criteria evaluate which exchange rate regime is to be preferred. As the example of Saxony has shown, some criteria point towards the introduction of more currencies while others do not. It therefore needs to be assessed which factors are rather important for the region (i.e. which will impose most troubles during a recession) and which could be neglected. Saxony could be a good candidate for a community currency although it is fairly well integrated in Germany. A detailed cost-benefit-analysis could help to decide whether or not to introduce more currencies.

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