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**Stabilization cocktails for a Eurozone Crisis-Solving Framework
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Abstract

As of late 2014, the Eurozone still has yet to enter a path of sustained recovery which brings dismal conditions to many European citizens, especially in the periphery. Optimum Currency Area theory can be used to analyze single currency areas, yet is little operational due to conceptual confusion. In this paper, a new conceptual paradigm that makes currency area theory useful to decision-makers is proposed. This paradigm relies on two prongs: on one side, the study of deviations from an ideal currency area and on the other, the stabilization mechanism cocktails. Stabilization mechanisms and their impact on different macro shocks are then presented in a table. The framework resulting from this paper will be useful for conducting a constructive dialogue between Eurozone Member states on the future of their currency union.

Keywords

Eurozone, Optimal Currency Area, Stabilization Mechanism, Macroeconomic Shocks, Internal devaluation, European Union

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Introduction

Optimal Currency Area (OCA) is a theory in economics used to describe and analyze economical dynamics in monetary unions and has received a lot of research interest at the advent of the European Monetary Union and later on during the Eurozone crisis. At the moment of writing in late 2014, the Eurozone crisis is still ongoing as dismal unemployment in the periphery attests. Innovations to the theory can help understand the crisis and devise mechanisms that alleviate the living conditions of millions of Europeans.

This paper's contribution is to propose a new conceptual paradigm while acknowledging and incorporating the valuable previous contributions. First, problems with the current paradigm will be discussed and a new one will be proposed. Second, a new way to conceive currency area theory in two parts will be exposed: deviations from an ideal-type and the stabilization mechanism cocktail. Third, different shocks and the offsetting ability of particular stabilization mechanisms will be condensed into a single table in order to illustrate in a more graphical and explicit way the paper's findings in the paper. Last, a short discussion on the euro's objective will identify the need for a reform of its structure.

In a certain way, this paper is naïve: it explores mechanisms of currency unions and disregards the difficult political implications of the mechanisms. Discussions on the future of the European Monetary Union look more like a trench-war positional negotiation over specific points than a principle-based negotiation that caters to the greater good. As such, this paper aims to offer a novel and productive way to frame currency union problems in a bid to help decision-makers achieve better unions.

Currency Area Theory Conceptualization

There is a very high number of relevant and important contributions to optimal currency area. However, optimal currency area theory, in its current state, is highly descriptive yet little operational and oddly named. In his famous paper (Mundell, 1961), Richard Mundell properly used the concept of optimum: he implicitly argued for an ideal currency area to be optimized in a flexible exchange rate regime on two fronts. On one hand, there should not be a detrimentally high number of currencies; on the other hand, members of a currency area should go through the same economic shocks. Noting that currencies are closely tied to states as an expression of their sovereignty and a proliferation of currencies was unlikely, he discarded the importance of the first optimizing feature, treating only shocks as being relevant.

What Mundell implicitly optimized in his paper was economic activity: he posed both an inflation target and an unemployment one as being possible objectives without committing himself to any of the two. Mundell's argument can be summarized this way: if shocks were perfectly proportionally symmetrical in different regions of a currency area, then a single one-size-fits-all monetary policy would offset shocks perfectly.

To account for the case of non-synchronized shocks, Mundell also introduced correction mechanisms – factor and labour mobility – without distinguishing them from the (implied) optimization criteria. His work had laid down the foundation for an operational framework to be built, yet the subsequent literature strayed off from the idea of optimization and stepped into a *grocery list* paradigm where a list of features (unfortunately called criteria in the literature) was added to currency area literature.

Broz (Broz, 2005) drew up a list of features of optimal currency areas that appear in the literature: labour mobility, wage and price flexibility, openness, diversification of production and exports, size of the economy, inflation differential, capital mobility, international risk sharing, usefulness of money, effectiveness of monetary policy, credibility of monetary authorities, specialisation, similarity of shocks, monetary shocks, real shocks, external nominal shocks, effectiveness of exchange rate adjustments, labour market institutions, business cycle synchronisation and the presence of a dominant trading partner. With an optimization process including so many arguments (often called criteria in the literature), making sense of this cacophony is a daunting task!

An interesting feature of currency area theory is the obsessive question of whether a currency area is an optimal currency area. Yet, the optimal currency area is never clearly defined, leading to a state of intellectual limbo where the central question is not accompanied by a testable hypothesis. Some authors such as Caporale and Pittis (Caporale et al., 1998) and Kouparistas (Kouparistas, 1999) run tests of business cycle synchronicity as the criterion for defining an optimal currency area, sometimes using a benchmark to test against. Krugman and Obstfeld (Krugman and Obstfeld, 2009) and Eichengreen (Eichengreen, 1991) use another approach where the Eurozone is compared to other currency unions such as the United States: the more the features between the two are similar, the more the Eurozone is closer to an optimal currency area. The problem with such an approach is that it fails to acknowledge that for every currency area, there is a unique optimal (ideal) currency area². Would there be a single optimal currency area model, then there would be only one economic model that should be pursued. This would in turn imply that there is one type of society that is best and all countries should converge towards that ideal type to be “economically sound”.

To make currency area theory relevant and useful for prescribing, conceptual clarity needs to be achieved. The first step to exit this dead-end is to drop the term “optimum” in *optimum currency area* theory to account for a plurality of possible optimums³, disentangle the terminology and reduce the number of optimization criteria and arguments as much as possible. The next step is to focus currency area theory on two fields: the methods to identify how currency areas are different from their ideal and the study of shock stabilizers that build the bridge between a currency area and its ideal. Applying the theory to particular cases will then lead to the identification of existing cocktails of shock stabilizers⁴ and allow the crafting of new unique cocktails, thus allowing the theory to be used for achieving meaningful prescriptions.

Most if not all authors have used the word *criteria* to describe features of currency area theory such as shock synchronicity and factor mobility. If an optimization logic is to be used (which is, after all, what *optimal* currency area’s name implicitly suggests us to do), then the word *criteria* should represent what is optimized (e.g. GDP growth or employment rate). In non-technical

² The discussion on acceptable risk profiles in the Eurozone section shall shed more light on this statement.

³ Here, the plurality of optimums does not refer to local and global optimums. Global optimums are the only optimums of interest in this text.

⁴ Whether shock stabilizers were conceived with the intent to achieve stabilization effects or not does not change anything to the fact that they exist.

language, optimization criteria can be phrased as the ideal characteristics of the currency area (e.g. GDP growth rate of 3% yearly; average annual inflation rate of 3%).

Features such as shock synchronicity and labour mobility should be, in optimization language, called arguments: they are the ways that the objective is reached. Another way to call them would be stabilization mechanisms.

To sum up, optimization criteria are what you optimize; an argument is how you reach that optimal state.

Shock synchronicity is very important to currency areas as it allows monetary policy to fit the needs of all regions, which means that the central bank has a degree of ascendancy over economic cycles. However, it is not an end in itself: it is important because it affects economic performance, which is what really matters. A currency area could have non-synchronized shocks yet make up for the lack of synchronicity (which implies that the central bank may not target a particular sub-region of the currency area in order to stimulate this sole region) by organizing fiscal measures that stimulate ailing regions. Examples of such currency areas are plentiful and are the norm: see fiscal transfers and spending in Canada, the United States and most, if not all, politically stable countries⁵.

Deviations from an ideal-type

An ideal currency area has to be defined so that deviations from that ideal can then be appraised. The difficulty in this branch of currency area theory, for economists, wouldn't come from defining an ideal-type – no one needs to be an expert to have an opinion. The difficulty comes from evaluating the difference between the ideal and reality. Further difficulty comes from devising forecasts about the probable future behaviour of a system of economies.

The choice of an economic target of the currency union is important: an unemployment⁶ target treats all citizens equally whereas an output (GDP) target assigns more importance to higher-earning citizens. A very low inflation rate hinders certain stabilization mechanisms whereas a higher inflation rate penalizes liquidity-holders yet enhances the efficiency of certain stabilization mechanisms. Also, it must be kept in mind that an optimal currency area may be defined through more than one objective, with weights not being necessarily equal.

Economic science can offer answers as to what is efficient and what is most likely to lead to higher growth in a currency union given a series of assumptions. But it cannot offer an answer to what people find fair and desirable. This choice is, by nature, political and pertains to the realm of *vivre-ensemble* – a sort of contemporary, explicit social contract between, at the same time, states among themselves and peoples among themselves. Other economic criteria may be derived from the economy yet do not pertain to mainstream neoclassical nor Keynesian literatures: degree or speed of convergence between Member states, level of regional imbalance, divergence of economic output variability, etc. Objectives that are more intrinsically political can

⁵ Many papers later referenced give quantitative examples of such measures

⁶ There is no consensus as to which measure of (un)employment should be tracked. Unemployment and employment, both in levels and rates, are interesting indicators of economic health, yet are affected by a changing macro environment.

also be the object of a currency union: identity forging, transforming the international scene, achieving an identity and so on.

All is not gloom and doom for economic science: on one hand, using economic theory to define a currency area ideal is pretentious and vain – on the other hand, using economic theory and tools to construct a currency area that corresponds as close as possible to the defined ideal is sound.

Studying the ability of a currency area to have corresponded to its ideal is straightforward: historical data about the fulfillment of its objectives is available. However, things get messy when it comes to forecasting whether it will do so in the future or not. Two statistical approaches can shed an interesting light: the frequentist (historical) and the Bayesian (relying both on historical records and on expert judgment) approaches. There is no perfect way to identify the deviations, but using different methods can bring us closer to the point where our understanding is good enough to warrant sound policies.

There is a rich literature on macroeconomic shocks and they can be broken down into different families such as industry-specific shocks, demand shocks, banking shocks, asset value shocks, etc. For every possible macroeconomic shock, a degree of vulnerability should be identified. The difference in the degree of vulnerability to those shocks and the likelihood that they'd happen disjointly (not at the same time) in different Member states of a single currency area is what should be understood as shock asymmetry⁷.

A frequentist (purely historical) account of past deviations can provide us with a good idea of what the future may look like, yet it cannot guarantee predictions' accuracy in a future world that wouldn't function like the past one. However, a deal of subjectivity is introduced in the selection of assumptions that make the models viable. Furthermore, not all currency unions have a long record of being a currency union⁸ and cannot offer enough relevant data, especially on once-every-fifty-year (or rarer) events or risks that are fairly new⁹.

In order to formulate an understanding of fundamentals that will be useful in the Bayesian approach, we must define this difference in an operational way: an approach using Bayesian networks such as the one suggested by Rebonato (Rebonato, 2010) allows that. Ultimately, subjectivity will be present in this process as subjective judgment will have to be cast either when selecting methodology for calculating probabilities, models or when assigning probabilities based on expert judgment. Obviously, the results should then be translated in a language understandable to non-initiates so they can become useful to decision makers.

Ultimately, a risk profile for the single-currency area will be defined using the above methods. Attempting to reach a risk profile where no economic output variations were possible would imply an omnipotent state that heavily redistributes wealth. Macroeconomic risk cannot be

⁷ Studies on the synchronization of business cycle first apply a filter (e.g. Hodrick-Prescott, Baxter-King, etc.) that smoothens out outliers – yet, outliers are of high interest to us since we are mostly interested in shocks that are too important to be corrected by a weak cocktail of stabilization mechanisms.

⁸ The European Monetary Union (EMU) isn't the first currency union: most if not all countries are actually single-currency areas comprised of heterogeneous regions.

⁹ Such an example is off-balance-sheet risk stemming from derivatives, swaps, futures, etc.

avoided: authorities must find a satisfying compromise between risk exposure and economic performance, and the composition of the stabilization mechanism cocktail.

Stabilization Mechanism Cocktails

The next step to make currency area theory relevant to decision makers is to define the shock stabilizing mechanisms' ability to offset specific shocks – for not all shock stabilizers are equally efficient across the board. Two types of stabilization mechanisms can be distinguished: the automatic and discretionary stabilizers¹⁰. An important advantage of automatic stabilizers over discretionary ones is that automatic ones do not require any coordination of political authorities once it has been put in place.

A striking feature and huge drawback of a single currency area is the absence of a one-size-fits-all-countries monetary policy when asymmetric shocks hit it. However, this should be no news for anyone. Single currency areas for regions hit by asymmetric shocks are the norm rather than the exception: countries like Canada and the United States contain various regions governed by different economical dynamics. As a case in point, Kouparitsas from the Federal Reserve of Chicago (Kouparitsas, 2001) has identified 5 U.S. core regions that have similar business cycles and 3 non-core regions that aren't synchronized with the previous 5.

Although a currency union does indeed have the monetary policy tool available, it cannot use it in an asymmetrical manner – the interest rate of a central bank cannot vary geographically. As such, an asymmetric shock becomes much harder to deal with than a symmetrical one: should the whole currency area be hit by a symmetrical shock, the usual approach of an expansionary monetary policy¹¹ would do a lot to offset the shock. However, what is of interest to currency area theory is what can be done when a one-size-fits-all policy is not an option. Such a situation occurred in the Eurozone crisis when certain countries suffered from housing market and demand shocks that were quite different across the currency area¹².

The length at which the different mechanisms are discussed is not indicative of their relative importance. The presentation of the stabilization mechanisms aims at providing an overall picture of the field that makes the previous theoretical section more understandable. Every stabilization mechanism can be (and indeed have been) the subject of paper devoted exclusively to them.

Automatic mechanisms

Federal taxation

The case of the U.S. is interesting – not so much for having different economic regions but in seeing how it deals with asymmetric economic shocks. Sala-i-Martin and Sachs (Sala-i-Martin and Sachs, 1991) have estimated that in the case of a shock reducing disposable per capita income in a given region, the shock will be offset by the federal government through an automatic reduction in federal income tax of 34% and by federal transfers equal to 6% of the shock, effectively mitigating 40% of the shock. Their calculations indicate that an equal shock in a non-federative Europe would be offset by a 0,5% reduction in EU-level taxation, falling very short of

¹⁰ Although the decision to set up an automatic stabilizer is discretionary, its application does not depend on a subsequent decision and kicks in automatically.

¹¹ This supposes that the macro environment allows for monetary policy to be effective (e.g., the lower zero-bound on interest rates isn't hit).

¹² See Eurostat series on the demand component of GDP and House Price Indexes.

the United States' 40%. Bayoumi and Masson (Bayoumi and Masson, 1995) find a mitigating factor value of 31% for the U.S..

It is tempting to disregard the previous argument in favour of federal spending by thinking that taxes are taxes regardless of their origin or use. However, as the authors point out, without federal taxes, current regional fiscal deficits have to be paid back through higher regional taxation in the future. With federal taxes, lower tax revenues from one region are compensated by higher future taxes spread out across all regions of the federation, which actually acts as an interregional insurance scheme.

Quite naturally, government taxation implies a spending of tax money. Unemployment benefits, social security, education, healthcare, countercyclical automatic transfer mechanisms and education are natural candidates for federal spending that act as automatic shock stabilizers. However, some types of spending are more countercyclical than others: unemployment benefit transfers grow faster than elementary education spending during a recession. Another candidate for federal spending is the discretionary measure of federal localized countercyclical spending that will be discussed later.

In the Eurozone context, Member states transfer revenues to the EU based on their GNI (Gross National Income), a portion of the VAT and through a portion of import tariffs and duties. These transferred revenues actually act like federal taxes. However, their current low level offers a limited amount of interregional insurance. Raising the level of EU-level taxes would be difficult in the current political context but would offer more stabilization mechanisms to the currency union.

Relative wage flexibility and inflation

Milton Friedman (Friedman, 1953) makes a very strong case in favour of exchange rate flexibility to assure a higher wage flexibility:

The argument for a flexible exchange rate is, strange to say, very nearly identical with the argument for daylight savings time. Isn't it absurd to change the clock in summer when exactly the same result could be achieved by having each individual change his habits? All that is required is that everyone decide to come to his office an hour earlier, have lunch an hour earlier, etc. But obviously it is much simpler to change the clock that guides all than to have each individual separately change his pattern of reaction to the clock, even though all want to do so. The situation is exactly the same in the exchange market. It is far simpler to allow one price to change, namely, the price of foreign exchange, than to rely upon changes in the multitude of prices that together constitute the internal price structure.

In a currency union, there is no exchange rate: all states share the same currency. Adjusting relative wages between Member states is thus extremely difficult as it cannot rely on exchange rate mechanisms. Wages have a characteristic called downward rigidity: they are very hard to lower (for a description of the phenomenon in the U.S., see Daly et al. (Daly and Hobijn, 2012)).

However, nominal wages do not need to go down for relative wages to improve: if wages are stable in a crisis-stricken country yet are rising outside the crisis-country, then relative wages will improve. Inflation serves as a natural price corrector for wages: wages that are not raised during a year are worth less by the same proportion as inflation rises. Instead of negotiating wages

downwards, employers can opt for a much more socially acceptable approach of nominal wage freezing relying on uneven inflation across the currency union to achieve relative price corrections. Without inflation, that relative adjustment is not possible.

If inflation in a currency area were moderate and controlled¹³, it could serve as a natural lubricant for inter-country wage price corrections. The lower inflation is, the slower the corrective effect is. With very low inflation, the corrective effect could be very long and painful.

In the Eurozone context, this phenomenon is coined *internal devaluation*. However, with low inflation, the Eurozone barely achieved internal devaluation: between 2008 and 2012, average hourly labour costs excluding agriculture and public administration relative to the Eurozone average (in other words, internal devaluation) reduced by 7,6% and 18,3% for Portugal and Greece while Spain benefited from an *internal devaluation* of merely 0,37% (Eurostat, 2013 and own calculations).

Inflation

In the event of a balance sheet recession, higher inflation can create an upward pressure on burst asset prices, alleviating the decrease in asset value. Also, a moderate target for inflation offers a larger buffer against the possibility of reaching the zero-lower bound¹⁴ than a low inflation target, thus giving more space for monetary policy to stabilize a depressed economy.

In the Eurozone context, some Eurozone countries favour a low inflation target and strongly oppose a higher target. The current European Central Bank (European Central Bank, 2014) target is “below, but close to, 2% over the medium term”. However, some researchers such as Leigh (Leigh, 2009) indicate that a higher inflation target (4%) would be more beneficial for stabilization purposes.

Labour mobility

Regardless of the real scope of labour mobility, it would hardly be politically acceptable that economically-performing Member states of a currency union drain the best workers out of the less-performing Member states. Labour mobility could, however, help flatten out variance in economic disturbances. Even if labour were able to relocate itself according to the market’s needs, assets and infrastructures that the labour uses are not all flexible: houses or a metro transport system may not, for instance, be moved from Finland to Spain. Large and sudden (because mobility implies a fast speed of change) fluxes in labour’s location would be likely to destabilize regions losing an important share of labour and could potentially be more destabilizing than stabilizing.

In the Eurozone context, labor mobility between Member states is limited due in part to the many languages of the EU. Bentivogli and Pagano (Bentivogli and Pagano, 1999) found that “net migration inflows to shocks to the relative unemployment rate is nil in the Euro-11 area”.

Banking union

¹³ 4% should be understood as moderate.

¹⁴ The zero-lower bound is attained when central bank interest rates cannot go lower than 0 and holding cash money becomes as attractive as bank assets, thus greatly diminishing the role of monetary policy.

There are two main components to a banking union: a supervisory body and a resolution body. The first assures uniformity in banking rules and standards, and, above all, their application; the second assures that an ailing bank will be resolved properly with state-of-the-art expertise. However, the origin of the money involved in bank resolution can be a cause of conflict between states of a currency union. If there is an international insurance scheme, Member states' budget won't be seriously hampered by a bank failure on its territory. In this specification, adopting a banking union can break the link between banks and states which can be unhealthy in the case of a shaky state's bonds being purchased massively by precarious banks operating on that state's territory. The stabilizing effect of a banking union stems from the supervisory body and resolution bodies being managed and directly accountable to a centralized body, avoiding moral hazards on the Member state side, especially in the event of a banking crisis caused by a deflation of assets.

In the Eurozone context, such a banking union was proposed, the Single Supervisory Mechanism will come into effect in November 2014 while the Single Resolution Mechanism will take start operating in 2016.

Discretionary Mechanisms

Countercyclical fiscal spending

Member state fiscal spending can stimulate demand and contribute to economic recovery. However, it greatly fragilizes sustainability of public debt in the case of a long, slow recovery. Federal countercyclical fiscal spending can channel resources from economically thrifty booming states to ailing ones without endangering a crisis-stricken country's debt position. However, such interregional transfers can be questioned and considered unfair should they not correspond to the conception of solidarity within the currency area.

In the Eurozone context austerity, fiscal spending is pro-cyclical and countries facing economic difficulties are engaging in austerity measures in an unsuccessful bid to contain a rising public debt, thus deepening the economic crisis.

Asymmetric fiscal stimulus

Suppose a currency union made of countries A and B who trade together. Country A is suffering from a recession and its households, highly indebted, would use any new income on debt deleveraging – this describes a demand shock in an economy with leveraged households. In the meantime, country B is sailing calmly through blue waters. If country A cannot, for a reason or another, engage in fiscal stimulus through transfers from another country or higher budget deficit, it can stimulate its economy out of recession through exports to country B. One way to achieve that is through a stimulation of B's economy through an expansionary fiscal policy that will overheat B's economy, boost inflation but, most importantly, will increase imports from country A, thus stimulating A's economy. In other words, asymmetric fiscal expansion can improve a Member state A's exports and the B's economic output at the expense of inflation pressure in Member state B.

In the Eurozone context, some researchers such as in't Veld (Veld, 2013) from the European Commission posit that "countries not facing financial market pressure" should be running "temporary stimulus measures" in order to stimulate the depressed EU Member states.

Central bank interest rate

Despite currency union central banks being unable to devise a one-size-fits-all policy, it can deliberately adopt policies that favour crisis-stricken regions over healthy ones. Returning to the example of countries A and B of a fictitious monetary union, an expansionary monetary policy would have the same effect as an expansionary fiscal policy, although its impact would most likely be felt faster as fiscal policy is typically slower. Whether this would be fair or not would depend on how solidarity is perceived in the monetary union. This option could prove to be costly for unity within the currency union if the country suffering from an inadequate monetary policy would consider it to be unjustified by its conception of solidarity.

In the Eurozone context, the European Central Bank has been reducing its interest rate to stimulate economic activity except for a brief interlude in 2011. This had the effect to stimulate ailing Member states while also over stimulating Member states that were doing better.

Central bank market operations

When a currency area state suffers from high premiums on its bonds, the central bank may purchase or promise to purchase those bonds to soothe the premiums. The central bank may also support private banks by lending them money at a very low cost.

In the Eurozone context, this is exactly what the European Central Bank has done with Long-term refinancing operations (LTRO) and Outright monetary transactions (OMT). However, these operations are not consensual within Member states and are a cause of strong dissent.

Stabilization Mechanisms and Macroeconomic Shocks

The following table presents a partial list of stabilization mechanisms and their impact on four macroeconomic shocks: demand shock, balance-sheet recession, relative competitiveness misbalance, and state debt overleverage. The table's objective is to present a clear overview of the theoretical framework and how it articulates itself in real-life situations.

Table 1: stabilization mechanisms and macroeconomic shocks

Stabilization Mechanism	Demand Shock	Balance-sheet recession	Relative Competitiveness Misbalance	State debt overleverage	Adjustment Speed	Drawback
Federal taxation – countercyclical spending	High	High	Alleviates but doesn't solve	Low	Medium	Political acceptance reliant on conception of solidarity
Federal taxation – acyclical spending	Medium-low	Low	Spending on human capital can reduce competitiveness gaps	Low	Slow	Impact on stabilization is low
Federal taxation – discretionary spending	High	High	Spending on productive capacity can reduce competitiveness gaps	High	Medium ; depends on shock to be corrected	Political acceptance reliant on conception of solidarity
Relative Wage flexibility and inflation	Low	Low	Solves competitiveness misbalance; speed dependant on inflation level	Medium if fiscal position is endangered by competitiveness misbalance	Slow ; speed is positively correlated to inflation level	Higher inflation levels can conflict with asymmetrical monetary policy preferences
Asymmetric fiscal stimulus	Depends on interstate trade	Depends on interstate trade	Effect channelled through inflation in the relative wage flexibility and inflation mechanism	Trade flowing from indebted state to healthy stimulated state can increase fiscal capacity	Slow	Asymmetrical fiscal expansion likely entails asymmetrical inflation; inflation can be conflict with monetary policy preferences.
Inflation	-	Medium to high	Effect channelled through inflation in the relative wage flexibility and inflation mechanism	Higher inflation raises borrowing costs, hindering the ability to pay back	Slow	inflation can be in conflict with monetary policy preferences
Labour mobility	-	-	Low	Potentially harmful	Very slow	Actual effectiveness is low. Still, a high effectiveness could be politically harmful
Banking Union	-	High	-	Low	Medium-slow	Different preferences among states on acceptable risk profiles
Countercyclical Member state fiscal spending	High	Medium	Alleviates but doesn't solve unless spending directed at productive capacity	Harmful to the state's fiscal position	Medium	Without other mechanisms, this tool might cripple a state's capacity to repay its sovereign debt
Central bank policy	Low to medium	Medium to high	Effect channelled through inflation in the relative wage flexibility and inflation mechanism	Can alleviate pressure on the debt's interest rate	Fast	Central bank has to favour crisis-stricken states over healthy ones: political acceptance reliant on conception of solidarity
Central bank market operations	-	Medium	-	Greatly alleviates interest rate pressure but doesn't solve	Very fast	Political acceptance reliant on conception of solidarity

The Eurozone - What is the optimal currency area and its characteristics?

The first and most important question when studying a currency area is to ask what it should achieve. Traditionally, currency area theorists have focused on a given flavour of economic activity. Interestingly the goal of the European Monetary Union (EMU) is two-fold. Apart from achieving economic prosperity (which is believed to be attainable with low inflation), a political goal is to be achieved through the Euro currency: further integration of Europe and its unity.

Angela Merkel, chancellor of Germany, regards the Euro's role very highly: she stated that "The euro is our common destiny, and Europe is our common future" (Spiegel Online, 2010) and that "If the euro falls apart, Europe will fall apart, and Europe is a work of peace-building" (Smith, 2011)). As such, "The euro is much, much more than a currency" (Spiegel Online, 2011). Nick Clegg, British deputy Prime Minister, said that a collapse of the Eurozone would be an "ideal recipe for an increase in extremism and xenophobia" (BBC News, 2012)¹⁵.

The importance of the political aspect cannot be overstated: the European Union was the laureate of the 2012 Nobel Peace Prize for its efforts in democratizing its new Member states and supporting pacification around its border. Whether it has achieved so or not is debated, but one fact cannot be debated: many European leaders state they strongly believe in the EU's contribution to peace.

However, the objectives of the euro – and thus, the Eurozone – are very broadly defined. The European Commission (European Commission, 2014) writes that the euro strengthens the single market and brings "closer co-operation among Member States for a stable currency and economy to the benefit of us all". Basically anything goes under this statement. To answer the question whether the Eurozone is an optimal currency area, the Eurozone Member states need to first define in **operational terms** what their ideal currency area is. What economic risk profile does the Eurozone feel comfortable with? What non-economic objectives does the Eurozone fulfil? What is the conception of solidarity within the Eurozone? What level of fiscal transfers between Member states, if any, is acceptable? Are higher EU-level taxes acceptable? How do Member states feel about different inflation targets?

Then, it follows that the stabilization cocktail should allow the Eurozone to present a risk profile that corresponds to what it feels comfortable with. It might turn out that the actual Eurozone is Europe's optimal currency area – only Europeans are apt to judge whether their currency area fulfills their needs and expectations.

But then, again, it might turn out that the current Eurozone crisis is a symptom of a currency union that was concluded too hastily without a clear understanding of its full macroeconomic consequences. This view seems to be, at least to a certain extent, supported by Rompuy, Barroso, Juncker and Draghi (van Rompuy et al., 2012) who write in a very diplomatic language that (emphasis not in original text):

¹⁵ One has to be cautious about a purely causative link between the economic situation and extremism: various reports point indicate that the main driver of adhesion to populist extremist parties are beliefs about immigrants while the economic situation is merely a catalyst (see Goodwin (Goodwin, 2011) and The Economist (The Economist, 2012)). The economic situation should be understood as a component of the recipe and not the whole recipe itself.

“In order to protect against negative fiscal externalities, it is important that fiscal risks are shared where economic adjustment mechanisms to country-specific shocks are less than perfect. This is clearly the case in the euro area, where labour mobility is comparatively low, capital flows are susceptible to sudden swings that can undermine financial stability, and structural rigidities can delay or impede price adjustments and the reallocation of resources. In such cases, countries can easily find themselves pushed into bad equilibria with negative implications for the euro area as a whole”

The Pew Research Center (Pew Research Center, 2013) notes that “The European Union is the new sick man of Europe. The effort over the past half century to create a more united Europe is now the principal casualty of the euro crisis. The European project now stands in disrepute across much of Europe.” This is no surprise given that the Eurozone’s real GDP in the third quarter of 2014 was inferior to its pre-crisis level¹⁶ while average unemployment of the youth was 23.8% for 2013¹⁷. Core inflation, measured by the overall price index excluding energy, food, alcohol and tobacco, has failed to even come close to 2% as is the European Central Bank’s target¹⁸ and is set to be even lower for 2014, raising concerns over deflation¹⁹. Worse, Krugman (Krugman, 2013) points out that “arguments over European monetary policy aren’t just a battle of ideas; increasingly, they sound like a battle of nations, too”. It could be argued that the Eurozone is a healthy currency area, but in the face of the data and political landscape, it would require intellectual dishonesty and twisted criteria to do so.

The baby should not be thrown out with the bathwater. The framework presented in this paper can be used to frame the dynamics of the Eurozone in a constructive way that should avoid unproductive finger-pointing. Member states dissatisfied with the current state of affairs are not doomed to live in a euro currency area defined by a rigid system: they can and should enter an urgent and intense dialogue with their currency area partners to update the composition of the stabilization mechanism cocktail so it can address their needs and desired macroeconomic risk exposure.

Conclusion

Mundell’s famous 1961 article was revisited in order to highlight the optimization-oriented nature of the theory at its inception. A new operational framework emerged from the clarification stemming from a return to an optimization paradigm. Two sub-fields were identified and described: the deviations from an ideal currency area and stabilization mechanisms. The latter were then contextualized in the Eurozone crisis. Then, an illustrative table exposing the effect of different stabilization measures on different kinds of shocks was presented. The nature of the ideal behind the Eurozone was discussed and it was concluded that the Eurozone fails to deliver basic economic performance and does not fulfil its function of bringing Europe closer in together.

¹⁶ The 2014-Q2 real GDP was 97,6% of what the 2008-Q1 GDP was. Source of Data: Eurostat, namq_gdp_k series

¹⁷ See series lfsq_urban for the 15-24 unemployment rate

¹⁸ One could argue that the HICP overall index is a better measure and should be used to assess the inflation target, yet it shows the same long-term trend as core HICP measures which have much less variance

¹⁹ See series prc_hicp_aind and prc_hicp_manr from Eurostat

Further research can be done to expand the roster of stabilization mechanisms and to further define the impact of the mechanisms on a higher number of macroeconomic shocks. Additionally, the theoretical framework could be applied to actually facilitate discussions between Eurozone Member states on the state of the currency union.

References

Bayoumi, T., Masson, P.R., 1995. Fiscal flows in the United States and Canada: Lessons for monetary union in Europe. *Eur. Econ. Rev., Symposium of Industrial Organizational and Finance* 39, 253–274. doi:10.1016/0014-2921(94)E0130-Q

BBC News, 2012. Clegg warns of Europe “extremism” [WWW Document]. BBC News. URL <http://www.bbc.co.uk/news/uk-politics-18139454> (accessed 9.23.14).

Bentivogli, C., Pagano, P., 1999. Regional Disparities and Labour Mobility: the Euro-11 versus the USA. *LABOUR* 13, 737–760. doi:10.1111/1467-9914.00113

Broz, T., 2005. The Theory of Optimum Currency Areas – A Literature Review. Privred. Kretanja Ekon. Polit. 2005, 52–78.

Caporale, G.M., Pittis, N., Prodromidis, K., 1998. Is Europe an Optimum Currency Area? Business Cycles in the EU. *J. Econ. Integr.* 14, 169–202.

Daly, M., Hobijn, B., 2012. Why Has Wage Growth Stayed Strong? *FRBSF Econ. Lett.* 2012.

Eichengreen, B., 1991. Is Europe an Optimum Currency Area? (Working Paper No. 3579). National Bureau of Economic Research.

European Central Bank, 2014. ECB: Definition of price stability [WWW Document]. URL <http://www.ecb.europa.eu/mopo/strategy/pricestab/html/index.en.html> (accessed 9.24.14).

European Commission, 2014. Why the euro? [WWW Document]. URL http://ec.europa.eu/economy_finance/euro/why/ (accessed 9.24.14).

Eurostat, 2013. Labour costs in the EU27. Eurostat News Release 54/2013.

Friedman, M., 1953. The Case for Flexible Exchange Rates, in: *Essays in Positive Economics*. University of Chicago Press, pp. 157–203.

Goodwin, M., 2011. Right Response: Understanding and Countering Populist Extremism in Europe [WWW Document]. Chatham House. URL <http://www.chathamhouse.org/node/6687> (accessed 9.24.14).

Kouparitsas, M.A., 1999. Is the EMU a viable common currency area? a VAR analysis of regional business cycles. *Econ. Perspect.* 2–20.

Kouparitsas, M.A., 2001. Is The United States an Optimum Currency Area? An Empirical Analysis of Regional Business Cycles (SSRN Scholarly Paper No. ID 295566). Social Science Research Network, Rochester, NY.

Krugman, P., 2013. The Money Trap. *N. Y. Times Opin. Page.*

- Krugman, P., Obstfeld, M., 2009. Optimum Currency Areas and the European Experience, in: *International Economics: Theory and Policy*, Addison-Wesley Series in Economics. Addison-Wesley, pp. 565–593.
- Leigh, D., 2009. *Monetary Policy and the Lost Decade: Lessons from Japan*.
- Mundell, R., 1961. A Theory of Optimum Currency Areas. *Am. Econ. Rev.* 51, 657–665.
- Pew Research Center, 2013. *The New Sick Man of Europe: the European Union*.
- Rebonato, R., 2010. *Coherent Stress Testing: A Bayesian Approach to the Analysis of Financial Stress*. Wiley, Chichester, West Sussex, UK : Hoboken, NJ.
- Sala-i-Martin, X., Sachs, J., 1991. *Fiscal Federalism and Optimum Currency Areas: Evidence for Europe From the United States (Working Paper No. 3855)*. National Bureau of Economic Research.
- Smith, G.T., 2011. *Amid the Panic, Merkel Will Have Little Choice*. *Wall Str. J.*
- Spiegel Online, 2010. *Tackling the Debt Crisis: Protests in Europe Ahead of Euro Summit*. Spiegel. Online.
- The Economist, 2012. *Culture matters more*. The Economist.
- Van Rompuy, H., Barroso, J.M., Juncker, J.-C., Draghi, M., 2012. *Towards a Genuine Economic and Monetary Union*.
- Veld, J. in 't, 2013. *Fiscal consolidations and spillovers in the Euro area periphery and core*. *Eur. Econ. Economic Papers*, 32pp.