

Boston Summer School 2014

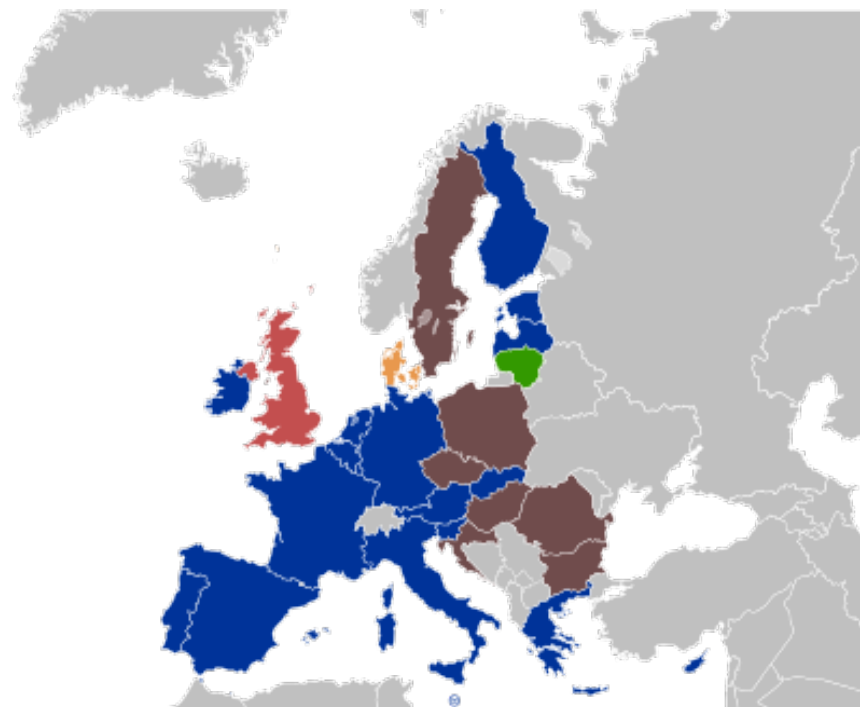
The Theory of Optimal Currency Areas - Implications for the Optimal Design of the Euro Area

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Motivation

- The European Monetary Union (EMU): Creation of a currency area consisting of 18 sovereign countries:
- Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Slovenia, Spain.



- EMU is unique: Up today, no other group of countries has attempted to reach such high levels of monetary integration without fiscal and/or political centralization:
 - Member states have a large degree of political and fiscal autonomy. National governments decide alone on:
 - Budgetary expenditures and tax policy.
 - Labour market conditions, etc.
 - However, a single monetary authority – the ECB - decides on a common monetary policy:
 - ECB takes monetary policy decision for the whole euroarea, it does not differentiate between the individual member states.

- Why did European countries seek to create a monetary union? An important driver was of course the political will:

“The introduction of a common European currency is [...] above all an expression of shared economic and political beliefs and therefore also a symbol for shared cultural roots.”



- But did it also make sense from an economical point of view? Joining a monetary union has benefits but also costs.
- The benefits of a currency union:
 - Elimination of the inflation-bias problem, since monetary policy less influenced by interests of individual countries → less temptation to create inflation.
 - Decreased transaction costs → more trade among member states.
 - Decreased information costs of money, since exchange rate risks are eliminated → less price volatility of imported goods, less effort necessary to hedge exchange rate risks.
 - More liquid foreign exchange markets, which reduces ability of speculators to influence exchange rates.

➤ The costs of a currency union:

- Membership in a monetary union entails a loss of autonomy over domestic monetary policy and of exchange rate flexibility.
- Monetary and exchange rate policy cannot be used as a stabilizing tool in the event of asymmetric shocks in the individual member states.
- Business cycle divergences among member states might even become exacerbated.

- Consider two countries, domestic and foreign.
- The domestic country is hit by a negative demand shock:
 - Domestic consumption and production fall below long-term levels.
 - Deflationary pressures, prices fall.
- The following two scenarios are considered:
 - **Scenario 1:** Independent monetary policy with flexible exchange rates.
 - **Scenario 2:** Monetary union, no exchange rate flexibility.

Scenario 1: Independent monetary policy with flexible exchange rates:

→ Domestic CB lowers interest rates, which leads to a devaluation of its currency vis-à-vis the foreign country:

- Domestic country: Lower interest rates spur investment and consumption. Devaluation spurs exports. The economic downturn is dampened.
- Foreign country: Appreciation of local currency abroad dampens production due to depressed export activity.

⇒ National monetary policy acts as buffer against effects of asymmetric shocks and prevent divergence of national business cycles.

Scenario 2: Monetary union, no exchange rate flexibility:

- Deflationary pressures and falling prices in the domestic country.
- Average inflation in monetary union falls, but to a smaller extent than in the domestic country:
- Common CB lowers interest rates for both countries, but cut is lower than in Scenario 1. No exchange rate adjustments possible.
 - Domestic country: Lower interest rates spur investment and consumption, but to a lesser extent than under Scenario 1; No boosting effects on exports → Negative effect of shock on economy more pronounced.
 - Foreign country: Consumption and investment grow faster, since interest rate level lowered also for foreign country. No dampening effect on exports → Economy gets stimulated.

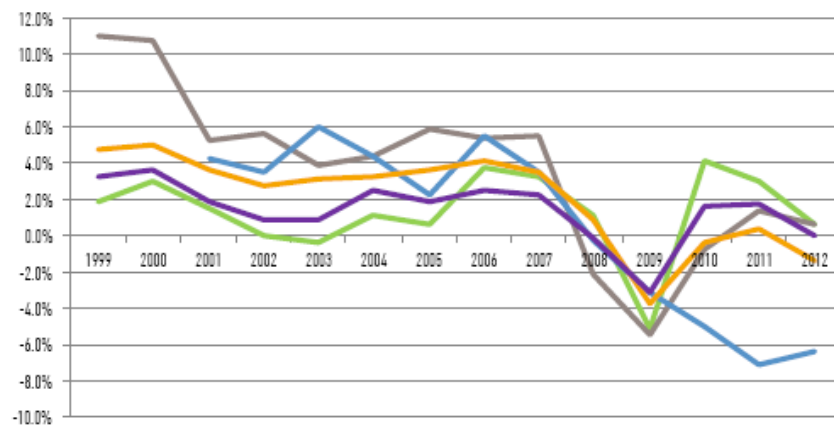
- ⇒ Business cycles and consumption in both countries more volatile and more asynchronous in a monetary union than under independent monetary policy.
- ⇒ Less possibility to use monetary policy to stabilize one country without destabilizing the other in case of asymmetric shocks.
 - A recession in one country cannot be weakened by a depreciation in the exchange rate or by a sufficiently expansive monetary policy, because it would damage the other countries.
 - A boom in one country cannot be moderated by appreciation in the exchange rate or a sufficiently restrictive monetary policy, because it would damage the other countries.
- ⇒ Thus, in case of asymmetric shocks, monetary policy in a monetary union might not be optimal for all countries.
- ⇒ This is an unavoidable cost of a currency area.

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Motivation

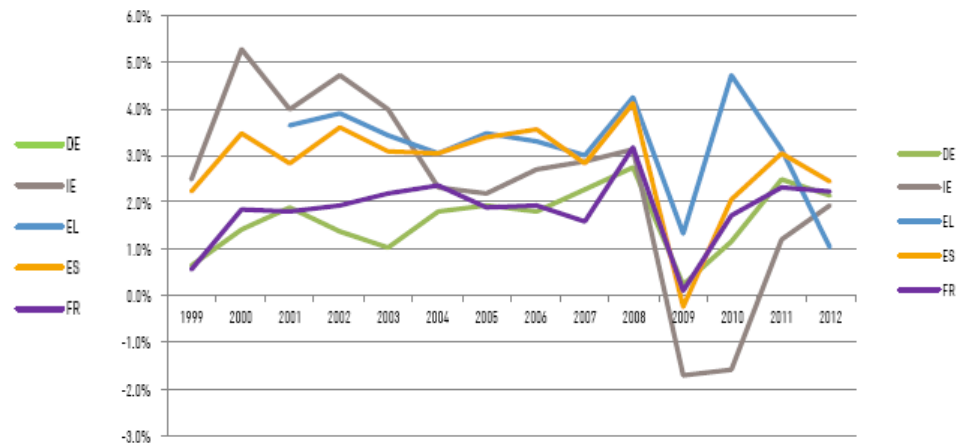
- And indeed, EMU countries certainly faced a-symmetric shocks in the past and business cycles and inflation developments are quite heterogenous:

FIGURE 1b ▶ Real GDP growth in selected Eurozone countries, 1999-2012



Source: AMECO February 2013

FIGURE 2b ▶ Inflation (HICP) in selected Eurozone countries, 1999-2012



Source: AMECO February 2013

➤ Important questions:

- Given the benefits and risks of joining a monetary union, for which countries is it recommendable to form a monetary union?
- Should currency area borders coincide with national borders?

➤ The Theory of Optimum Currency Areas (OCA):

- Identification of characteristics that potential members of a monetary union should (ideally) possess, such that the benefits are higher than costs when giving up nationally tailored monetary policy.
- Seminal work by Mundell (1961), McKinnon (1963), Kenen (1969). Many more papers followed that elaborated on the criteria proposed.

- Given the problem described in the Illustrative Example, what would be your intuitive idea, which countries could join a monetary union and under which circumstances.
 1. Country specific shocks should be only of small magnitude.
 2. Countries should experience similar shocks.
 3. Alternative shocks absorbers should be present.
 4. Country characteristics suggest that benefits of a monetary union are large.

- The criteria discussed in the literature on OCA Theory also rest on these four considerations.

Theory of Optimum Currency Areas

- Countries form an optimal currency area under the following conditions:
 1. **Country specific shocks should be only of small magnitude.**
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Theory of Optimum Currency Areas

1. Country specific shocks should be only of small magnitude.
 - a) High degree of diversification (Kenen, 1969):
 - Highly diversified economies are better candidates for currency areas than less-diversified economies.
 - Argument: In the presence of sector-specific or industry-specific shocks, diversification avoids that this shocks affects the overall economy significantly.
- Diversification dampens business cycles volatility and forestalls the need of stabilization policy.

Theory of Optimum Currency Areas

1. Country specific shocks should be only of small magnitude.
 - b) Sufficient degree of wage/price flexibility (Mundell, 1961):
 - Idea: Instead of adjusting the nominal exchange rate, one adjusts the real exchange rate.
 - Coming back to our two-country example: In response to a negative demand shock in the domestic country, if prices and wages are flexible, prices and wages would adjust downwards.
 - This would spur consumption and also production.
- The economic downturn is dampened without using monetary policy as stabilization tool.

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Theory of Optimum Currency Areas

2. Countries should experience similar shocks.

a) Similarity of economic structure (Mundell, 1961):

- Idea: If countries that join a monetary union have a very similar economic structure, the shocks an economy faces are similar.
- If the shocks are similar for all countries, the joint CB has no problem in setting monetary policy appropriately for all countries.
- Occurrence of asymmetric shocks is less frequent, country-specific stabilization policy not necessary.
- All countries would face upswings or downswings in the same time.

→ No conflict for a single monetary policy, monetary policy can act as stabilization tool.

Theory of Optimum Currency Areas

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Theory of Optimum Currency Areas

3. Alternative shock absorbers should be present.

a) Large degree of labor (factor) mobility (Mundell, 1961):

- Coming back to our two-country example, where the domestic country experiences a negative demand shock.
- In response, unemployment will increase domestically.
- If labor is mobile, unemployed people will migrate to the foreign country, where unemployment situation is better.
- Wages and therefore also prices in the foreign country will decrease because of excess labor supply.

→ Unemployment problem in the domestic country and inflationary pressures in the foreign country are solved, this facilitates a single monetary policy.



Theory of Optimum Currency Areas

3. Alternative shocks absorbers should be present.
 - b) National fiscal policy as stabilization tool:
 - Idea: A government should follow a counter-cyclical fiscal policy: In case of a negative demand shock, the government substitutes the drop in demand by increasing public demand and public expenditure.
 - c) Fiscal transfers/ Fiscal integration (Kenen, 1969):
 - One can smooth asymmetric shocks through fiscal transfers from low-unemployment region to a high-unemployment region, e.g. a joint unemployment insurance.

Theory of Optimum Currency Areas

4. Country characteristics suggest that benefits of a monetary union are large.
 - a) Openness and degree of trade integration (McKinnon, 1963):
 - Idea: The more open an economy is, the more difficult it is for the country to shield against price-spillovers and exchange rate fluctuations vis-à-vis its trading partners.
 - Similarly, the more integrated countries are, the more they are affected by exchange rate fluctuations.
 - Especially relatively open and (trade) integrated countries benefit from stable exchange rates. They are more suitable candidates for a monetary union.

Does EMU fulfill these criteria?

➤ Does EMU fulfill these criteria?

High degree of diversification?

- Most EMU countries have diversified production structures. However, some countries are (were) highly specialized: e.g. construction industry in Spain, Financial sector in Ireland. Whole economy was strongly effected, when negative shocks hit these industries.

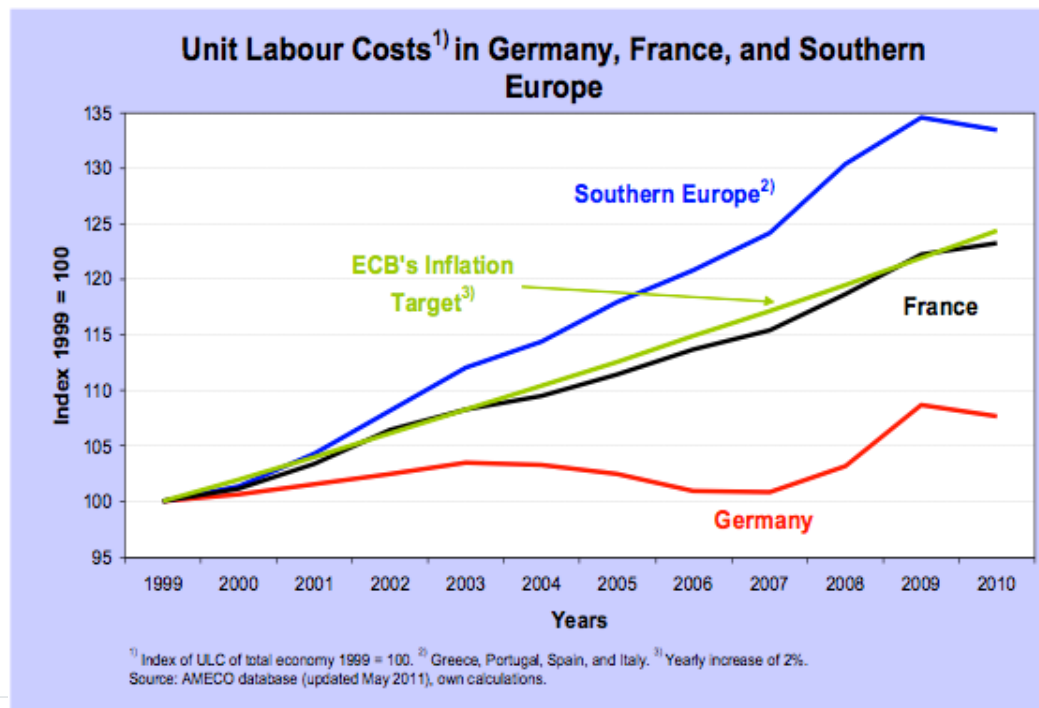
Similarity of economic structure?

- Countries differ substantially from their economic structure. As a result, business cycles show some degree of heterogeneity.

Does EMU fulfill these criteria?

High degree of wage and price flexibility?

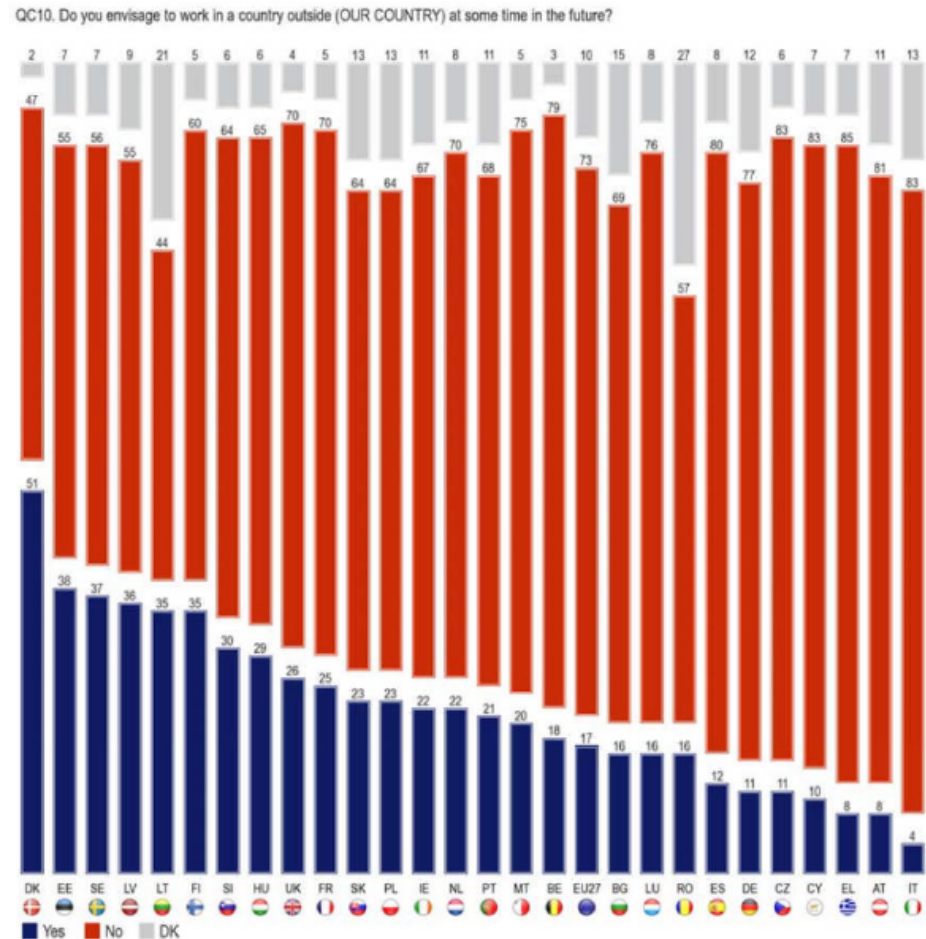
- In most countries, prices and wages are much more easily increased in times of booms than decreased in times of recessions. That was especially the case in the current crisis countries.



Does EMU fulfill these criteria?

High degree of labor mobility?

- Labor mobility much lower than e.g. in the USA. Reason: cultural differences, different languages, legislations, etc.
- Survey published in 2010 by the EC concludes that labour mobility still low in Europe.
- Only a relatively small share of 10% of respondents have lived and worked abroad (including outside the EU).
- Many countries which are currently in the EMU scored badly in terms of labour mobility.



Does EMU fulfill these criteria?

National fiscal policy as stabilizing tool (counter-cyclical fiscal policy)?

- Governments should follow a counter-cyclical fiscal policy to stabilize economic fluctuations of a country: Accrue surpluses in booms, and borrow in downturns.
 - Experience of recent years shows that national fiscal policy does not fulfill its stabilizing function sufficiently (Bernoth, Lewis, Hughes Hallett (2013)).
 - Due to lack of fiscal discipline and/or as a result of the financial crisis, governments' debt has piled up and countries have no room for (fiscal) maneuver.
- ⇒ Most countries have to pursue pro-cyclical fiscal policies that amplify rather than dampen business cycles.

Does EMU fulfill these criteria?

Fiscal transfers/fiscal union?

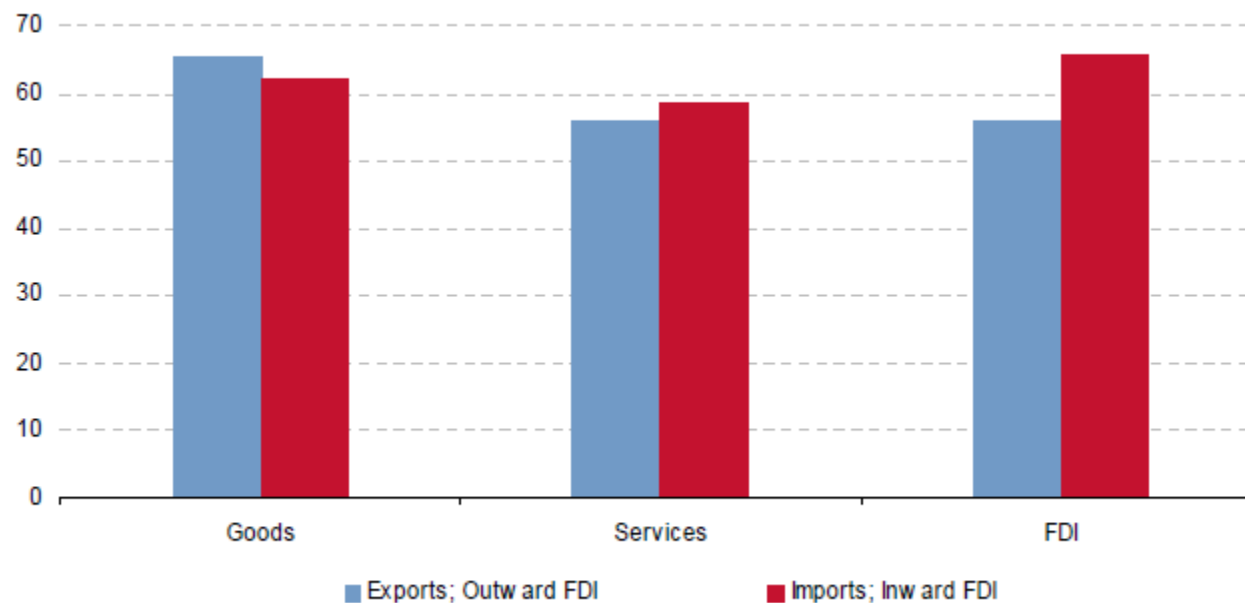
- In EU there is no such system.
- The EU budget is small, just 1% of GDP, which is spend on: Commission's operating expenses, Common Agricultural Policy and the Structural Fund's that supports the poorer regions.

Does EMU fulfill these criteria?

High degree of openness and trade integration?

- EMU countries are very open and trade is strongly integrated.

Figure 2: Intra EU-27 shares of total EU-27 trade in goods, services and FDI flows, 2010 (%)



Source: Eurostat (online data codes: [tet00037](#), [bop_its_det](#), [bop_fdi_flows](#), [bop_q_eu](#))

Theory of Optimum Currency Areas

- Is EMU an optimal currency area?
 - High degree of diversification: **mixed results.**
 - High degree of wage and price flexibility: **No.**
 - Similarity of economic structure: **No.**
 - High degree of labor mobility: **No.**
 - National fiscal policy as stabilizing tool (counter-cyclical fiscal policy): **Not yet.**
 - Fiscal transfers/fiscal union: **No.**
 - High degree of openness and trade integration: **Yes.**
- ⇒ Overall, we have to conclude that EMU was obviously never an optimal currency area along the OCA-Theory.

- Factor mobility (capital, labour, goods) alone is unlikely to achieve the desirable levels of cyclical stabilization.
- Thus, as already suggested in the literature on the 'Optimal Currency Area' (Mundell (1961), McKinnon (1963), Kenen (1969)):
 - ⇒ As long as European markets are not fully integrated, EMU needs alternative shock-absorbing instruments that dampens the effect of asymmetric business cycle shocks on an individual country level.

- Obvious candidate: National Fiscal policy.
- But within a monetary union there is an additional stabilization instrument available:
 - Introduction of a international insurance system against asymmetric cyclical income fluctuations.
- Basic idea:
 - If a country is in a favorable cyclical economic situation compared to the average of the euro area, it receives net payments from a compensations scheme.
 - If a country has an unfavorable cyclical climate compared to other member states, it is a net recipient: it receives more transfer payments than it pays into the system.

A Cyclical Transfer Mechanism as Stabilization Tool

- Goal of such compensation payments is to balance out business cycles.
- The goal is **not** to achieve a balance of income and general living standards among EMU member states.
- In a purely cyclical transfer mechanism:
 - Each country would be both recipient and donor over the entire business cycle; no permanent transfers in one direction.
 - Engler and Voigts (2013) show that the introduction of a simple transfer mechanism can be as effective as if the countries were pursuing a national monetary policy.
 - Enderlein et al. (2013) find that the average deviation from the euro area business cycle would have decreased by around 15-40% for the period 1999-2014.

- In most monetary unions embedded into a federal state, i.e. the USA or Germany, cross-country insurance scheme exists.
- In the USA, any shortfall of income in a state is compensated by transfers that amount to between 10 and 40 per cent of the loss: insurance against asymmetric shocks.
- In EMU there is no such system.
- The EU budget is small, just 1% of GDP, which is spend on: Commission's operating expenses, Common Agricultural Policy and the Structural Fund's that supports the poorer regions.

- To be effective and also implementable, the cyclical insurance scheme should fulfill the following characteristics:
 - Payments should be transferred quickly and on time to serve their stabilizing and synchronizing purposes.
 - The payment mechanism should be governed by rules to prevent arbitrary political decisions and to increase transparency.
 - The compensatory mechanism should be oriented to cyclical fluctuations.
 - The transfer mechanism should be accompanied by strong fiscal rules: such a system should not replace a sound economic and budgetary policy.
 - Participation in a compensation system should be subject to conditions such as structural reforms.

- Such a system could be implemented in different ways (von Hagen and Wyplosz (2007) for details):
 - a) A direct fiscal transfer payment:
 - Countries would pay a small fraction of their tax revenues, which is closely linked to the business cycle (i.e. VAT) into a joint European fund.
 - These payments would be redistributed to the individual member states in relation to per-capita potential growth.
- ⇒ Counter-cyclical fiscal policy without burdening national budgets.
- ⇒ The more synchronous the economic cycles of the member states, the fewer payments are made.

b) A indirect transfer mechanism: Introduction of a European unemployment insurance scheme parallel to the national insurance system:

- Employees pay a part of their wages into a European Unemployment insurance.
- In the event of unemployment, their receive compensation payments from the fund (plus national payments)
- Only short-term unemployment will be covered by limiting the duration of payments to address cyclical element of unemployment.

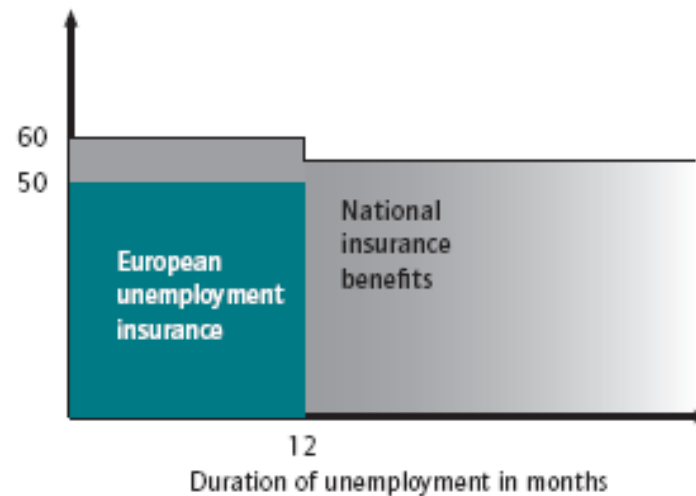
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Implementation of a compensatory payment mechanism

- Example in case of fifty-percent wage compensation over a period of one year:

Diagram of a European Unemployment Insurance System

As a percentage of previous income



Source: the authors.

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- Advantage of an European unemployment insurance compared to the direct transfer mechanism:
 - Factors determining the transfers are set quickly and automatically.
 - Less scope for arbitrary political decisions.
 - Aggregated demand is affected quickly, since not governments receive transfers, but private households.
 - Such a system could be introduced without imposing additional burden on labour market costs, since new insurance would partly replace existing national system.
 - Bureaucratic burden could be kept to a minimum by processing the European unemployment insurance via existing national security institutions.

- Compensatory payment mechanism cannot replace sound economic and budgetary policy, since they should be complementary to national counter-cyclical fiscal policy.
- To minimize risks that a cyclical compensatory scheme changes incentives for regional governments to protect their citizens against income fluctuation
 - ⇒ Participation in the Cyclical Transfer Mechanism should be made conditional on e.g. labor market reforms or compliance with fiscal policy rules.

- The introduction of a European Cyclical Transfer Mechanism could be an important instrument to facilitate the single monetary policy of the ECB.
- Cyclical Transfer system is not intended to redistribute tax revenues or debt burden across countries.
- ⇒ Fiscal discipline and sufficient level of competitiveness still of importance for stability of the euro area.
- This mechanism is not an instrument to solve to current crisis in the euro area, but it could provide more stability to EMU in the medium and long run.