Oil and vinegar

A long run fiscal theory of the euro crisis

by

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Abstract:

The theory of optimal currency areas says that a currency union may succeed if the participating countries have complementary economic structures. If this is not the case a currency union does not inevitably fail because markets forces would induce an adjustment of the economic structures and eventually lead to a successful currency union. This optimism is, however, not warranted for the euro. The euro has now been in a crisis for more than three years and a self-correcting mechanism leading out of the crisis is not in sight. The reason is that the euro union does not suffer from unadjusted markets, but from unadjusted governments. While markets adjust under the command of the invisible hand this is not necessarily the case for governments. Consider an economic union of two countries with two currencies and a monetary union of two countries with one currency: the euro. In the economic union governments know that they are self-responsible for their finances. They therefore have an incentive to be financially independent and self-sufficient. The two governments of an economic union go Dutch. A currency union such as the euro union is different. It opens the possibility of a joint cash management so that each government has the temptation to live on the other's costs and to generate mutual negative externalities. The governments may be aware of this trap. They conclude a contract in order to prevent their mutually destructive behavior, the Maastricht Treaty in the case of the euro. But this Treaty lacks an enforcement mechanism and is therefore not enforced. The participant governments continue their mutually destructive externalities and deepen the crisis. Apparently the two governments went too far. The mutual externalities causing the euro crisis could be eliminated if the governments return from the monetary union to the economic union.

JEL Classification: H12; H63; H77; H87; F36

If you want to bake a good cake
You have to have seven things:
Eggs and lard, sugar and salt, milk and flour,
Saffron makes the cake go yellow
Then shove it into the oven!

But he who has an ingredient wrong
Will bake no fine cakes.
(German childrens' song)

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I. The purpose of this paper

This paper is a case study on Germany and France, the two core countries of the European Monetary Union. But its conclusions are applicable to the European monetary union as a whole. The paper aims at explaining why Germany and France can productively coexist in an economic union and why they create mutually destructive externalities and in fact the euro crisis in a monetary union. Section II explains the difference between an economic and a monetary union. Section III presents in a comparative historical analysis on why Germany and France have produced different fiscal systems which are not compatible over time, why

[1] The author is indebted to an anonymous referee, to Wolfgang Glomb, Otmar Issin, Christian Kirchner, Achim Klaiber and Christoph A. Schaltegger for helpful comments. The paper has been presented at the Swiss Economists Abroad Conference in Lucerne 2012, at the European Public Choice Conference in Zurich 2013, at the Federal Ministry of Public Finance in Berlin 2013, at the Hayek Club in Kiel 2013 where the author has greatly benefitted of the participants' comments.

France has become a “vinegar state” and Germany has remained an “oil state”. Despite of these differences the European governments started a monetary cooperation as a preparatory stage of a monetary union in about 1970 (section IV). But monetary cooperation already suffered from the tension between the vinegar aims of France and the oil perceptions of Germany. These differences were uncovered after the resolution of the Maastricht Treaty in 1992. They induced an ex post change of the rules of the Treaty. Section V explains the decline of the Maastricht Treaty from 1992 up to the transfer union in 2010. It shows how a new contract with negative externalities has been created between France and Germany and why the two countries are now in a prisoners’ dilemma in which they interact in a mutually detrimental way. Section VI concludes that the mutual externalities can be eliminated if the monetary union is replaced by an economic union.

II. An economic union and a monetary union compared

Suppose that there are two countries “oil” and “vinegar” as depicted in table 1. Oil and vinegar form an economic union in an integrated single market for goods, services, labour and capital. Oil pursues a policy of balanced budgets and price stability whereas vinegar pursues a policy permanent budget deficits and inflation. (I shall explain in section III why the two governments behave in this way.) As the vinegar government is permanently plagued with a shortage of revenues it has a temptation to go off budget, i.e. to externalize its deficits to parafiscal and other sectors of the government and to its taxpayers. Vinegar cannot, however, externalize its deficits to oil as it is assumed that the two countries have different currencies. Whenever vinegar tries to extend its money supply beyond its productive capacities its foreign exchange rate falls compared to the rate of oil. So that nothing can be gained by vinegar. The different policies of oil and vinegar do not prevent the inhabitants of the two countries to be good friends. An oil citizen may have lunch with a vinegar citizen, and each pays in his own currency at the given exchange rate. The two friends go Dutch, and this is indeed the reason why they are good friends, see upper part of table 1.

Now suppose that the two governments decide to form a currency union with the “euro” as a common currency. An important question is who has command over the central bank and the money supply.

- In case (A) both countries have monetary autonomy as under the economic union. The inflation produced in vinegar will allow the vinegar citizens to benefit from budget balancing and stable prices in the oil country. The result will be a transfer union with a rate of inflation between the united vinegar and oil regimes. Part of the inflation and of the purchasing power is exported from vinegar to oil.
- In case (B) the vinegar country commands over the money supply of both countries. Again the inflation produced in vinegar will be exported to oil resulting in a common rate of inflation and a burden sharing between oil and vinegar.

- In case (C) oil is given the authority over the central bank of the union so that the money supply is determined by oil's budget and monetary policy. Vinegar can no longer finance its budget deficit by increasing the money supply. It has to reorganize its budget in order to establish budget balancing.
- (D) is identical to order (C). But it turns out that (C) is non-enforceable. Under (D) or a non-enforceable (C) respectively both countries' governments violate the contract. One's non-compliance induces the other's non-compliance and vice versa. They mutually produce externalities and generate an inefficient outcome.

Though vinegar might prefer option (B) it is obvious that oil will agree to a currency union only if the joint contract stipulates exclusively (C) leaving vinegar the choice to agree to (C) or to stay with the status quo of an economic union under two currencies. Though treaty (C) is binding for both governments only vinegar has an adjustment cost while oil can proceed as before. Therefore there is an asymmetry in the treaty from the beginning. If the adjustment costs turn out to be politically excessive for vinegar it may have a temptation to break the contract, i.e. to stop playing oil and to return (at least partially) to its traditional vinegar policy B externalizing some of its costs to oil. Non-compliance of vinegar may induce oil to break the contract too. Now both countries mutually break the contract and generate the outcome (D) with mutual externalities. I shall show that these externalities are the very essence of the euro crisis.

Table 1: An economic and a monetary union compared

<table>
<tr><th colspan="3">Economic Union; two currencies</th></tr>
<tr><td>Oil state</td><td colspan="2">Vinegar state</td></tr>
<tr><td>Price stability regime (oil)</td><td colspan="2">Inflation regime (vinegar)</td></tr>
<tr><td colspan="3">Flexible exchange rates</td></tr>
<tr><td colspan="3">Good friends go Dutch</td></tr>
<tr><th colspan="3">Monetary Union; one currency</th></tr>
<tr><td>Oil state</td><td colspan="2">Vinegar state</td></tr>
<tr><td colspan="3">Four alternatives</td></tr>
<tr><td>Oil</td><td>Consequence</td><td>Vinegar</td></tr>
<tr><td>A. One central bank inA</td><td>Transfer Union</td><td>A. One central bank in B</td></tr>
<tr><td>B. Vinegar central bank</td><td>Transfer Union</td><td>B. Vinegar central bank</td></tr>
<tr><td>C. Oil central bank</td><td>Maastricht Union</td><td>C. Oil central bank</td></tr>
<tr><td>D. Political central bank</td><td>Euro crisis</td><td>D. Political central bank</td></tr>
<tr><td colspan="3">Option (C) is approved in the Treaty by both countries</td></tr>
<tr><td>Treaty: Oil state continues its budget policy</td><td colspan="2">Treaty: Vinegar has to adopt oil and to bear the adjustment costs</td></tr>
<tr><td colspan="3">Mutual compliance
C</td></tr>
<tr><td>Germany</td><td colspan="2">France</td></tr>
</table>

Source: Own compilation

III. The fiscal systems of Germany and France: A historical comparison

To summarize: Oil and vinegar are compatible as long as they are kept separated under two currencies. This is the case in an economic union. No government can infringe in the other's finances. No one can generate negative a fiscal externality on the other. This separation ends when the two countries mutually open their fiscal systems in order to become a monetary union. A contract can be made which avoids such mutual infringements. But as adjustment costs are greatly asymmetric for vinegar as compared to oil, compliance is not guaranteed.

Vinegar may have a temptation to break the contract and to return at least partially to vinegar which is in fact its first choice.

A situation may emerge comparable to the one between a farmer and a rancher as described by Ronald Coase (1960). Prima facie the rancher seems to be the originator of the externality as he infringes the farmer's crop with his cattle. But Coase argues correctly that both, the rancher and the farmer are responsible for the externality. For without the farmer there is no externality by the rancher. Similarly oil and vinegar are both responsible for the inefficiency of the currency union if the contract C cannot be fully enforced. This paper is about how Germany and France approached their externality problem and why they failed.

In this section (III) I shall explain why Germany's fiscal system is comparable to oil while France's fiscal system is to be associated with vinegar. Note that Germany and France did not naturally start their histories as oil and vinegar countries respectively. What emerged from the ashes of the Roman empire were not two nations with own public expenditures and taxes, but a pan-European feudal system, a network of private contracts providing local, regional and interregional security from hordes of bandits and organized enemies roaming through the lands, an insurance system to which the peasants provided labour services (instead of taxes) in exchange for protection by the local knights who provided military support for the vassals, who in turn were in a contract for mutual support by the seigneurs, the kings and the emperor (Volckart 2002). Any distinction between Germany and France, or oil and vinegar is inappropriate here. All political actors have to play oil in order to survive.

A rupture with the historically grown tradition occurred in **France** in the revolution of 1789. Interestingly the initial occasion to the revolution came from taxation. Louis XVI of France convoked the Estates General to Paris in order to convince them that the provinces had to contribute more taxes to the crown.

But the third estate took over power in the national assembly. It abolished the traditional decentralized fiscal organization of the kingdom in duchies and counties and defined the whole country as a single tax district in which the newly created départements acted as tax collection offices. As all revenues should stand for all expenditures, all revenues entered in one single budget. Though the tax base was increased and more revenues were available than before, the collective decision making on the budget was not simplified. Under the ancien régime revenues and expenditures were earmarked to particular central and subcentral purposes. They were proprietary. A path dependent structure of rights facilitated and stabilized the budgets.[2] Now, the collection of all revenues in one national pool opened the problem of how to allocate these resources. Any first-off allocation of expenditures was rejected as reactionary. Rather the representatives were supposed to decide on the amount and the allocation of all revenues by simple majority rule. But simple majority rule cannot

[2] Compare Germany more below.

generate a structured outcome given the common pool. It is rather a method to organize cycling.

A stable outcome could, however, be achieved under a qualified majority. Joseph Greenberg (1979) has shown that the required majority m* to guarantee at least one equilibrium point among all issues, must satisfy the condition $m^* \geq [n / (n + 1)]$ where n are the number of dimensions of preferences (see Mueller 2003 p. 101). If each of the 749 representatives of 1792/93 has only one distinct preference, then a majority of 749/750 or 99.9 % is required to guarantee at least one equilibrium point. Hence only unanimity would guarantee stable outcomes. The Constitution of 1792, however, requires in article 49 that the legislative body "decides by a majority of those present." So it can be taken for almost certain that the democratic decision making must fail in the French national assembly and that cycling must result.

What should the government and their representatives do? Cycling means that proposals are sequentially rejected because one alternative outvotes the other. Therefore each participant has an incentive to attract additional resources for his issue in order to increase the probability of acceptance. Vinegar reappears. Vinegar is indeed a consequence of the indecisiveness of simple majority rule. Therefore there is a strong tendency to overdraft and to expand the budget in any direction according to political opportunity. Janos Kornai (1986) who argues from his experience of a centralized socialist economy has coined the expression of a "run-away demand" for this phenomenon.[3]

Run-away demand and vinegar are complementary. Runaway demand is the cause and vinegar is politicians' response to budget shortage when the country runs out of tax revenues.

(1.) One way to finance the budget overdraft in 1789 was by money coming from the sale of confiscated ecclesiastical properties. As this money was not immediately available actual budget deficits have been financed by "assignats", a paper money "assigned" to these properties. As by 1796, 45 billion livres of paper money have been printed while the value of ecclesiastical properties was only at 2 to 3 billion livres the abundance of paper money has led first to inflation and then hyperinflation. Already in 1793 the value of the assignats dropped to 40% of their face value. Nevertheless it was possible to finance the first coalition war largely by assignats. In 1796 the assignats completely lost their purchasing power and were replaced by the "mandats territoriaux", another paper money, which disappeared in 1798 when species were re-emerged (Thiers Law[4]).

(2.) Additional revenue for the budget could also be collected from plundering defeated countries and from imposing tributes on them. So domestic tasks were effectively externalized to other governments as predicted by vinegar.

[3] "When, however, the budget constraint of many firms [or administrations] is soft, their demand for inputs becomes unconstrained … Run-away demand will appear … the system becomes a shortage economy." (Kornai, 1986 p. 11).

[4] (Bernholz 2005)

(3.) In 1800 the first consul Napoleon Bonaparte took measures to stabilize the monetary system. He founded the Banque de France, a private stock company, and granted it the right to issue bank notes in exchange for discounted commercial bills first in Paris and later in the whole country. The Bank's obligation to finance government deficits was small in normal times, but large in times of war and revolutions. So the central bank remained in a close link with the government budget over more than one hundred years. After World War II, in December 1945, the Banque de France has been nationalized. It became part of the ministry of public finances who issued all decrees including decrees to finance the government.[5] The bank became part of the budgetary process. Its task to finance the government budget has been made even more explicit in law of the Banque de France of January 3, 1973, whose article 1 states that the « Banque de France » is subject to the decisions of the nation and its budget.[6] The law of 1993 the coming euro ended this tradition (see below).

(4.) Debt from the capital market is an alternative way to finance budget overdrafts. But in times of fiscal stress the French government preferred money creation before debt. So the French national debt, especially war debt remained small as compared to other counties such as the UK. Under the euro this is different. Eurobonds allow to shift national debts on the community. Eurobonds would greatly increase the possibility to play vinegar which seems to be a favoured option of president Hollande.[7]

(5.) But for other options too, the EU budget is a welcome funnel for vinegar policy. In the Luxemburg compromise of 1966 the French agricultural expenditures have been successfully shifted to the European level.[8]

(6.) Finally the French decentralization movement from 1980 to 2010 has to be mentioned. In course of this movement many budgetary tasks which were traditionally in the national responsibility have been externalized to the subcentral levels of governments (to the regions, the départements and the local authorities). But the national government only partially granted the resources which were needed by the subcentral governments for financing these tasks. The government played vinegar. The net effect was that the national government partially externalized its financial burden to the subcentral governments who had to increase their taxes. For the average citizen therefore decentralization resulted in an increase of taxation while the incentives of business to invest locally declined. Therefore the national

[5] Art. 22 of the Law of December 22 December 1945.

[6] «La Banque de France est l'institution qui, dans le cadre de la politique économique et financière de la nation reçoit de l'Etat la mission générale de veiller sur la monnaie et le crédit. A ce titre, elle veille au bon fonctionnement du système bancaire. » Légifrance December 28, 2012 : http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000000334815&dateTexte=19931231 . compare footnote 16 below.

[7] http://www.spiegel.de/international/europe/french-president-fran-ois-hollande-to-call-for-euro-bonds-at-eu-summit-a-834180.html (May 13, 2013)

[8] Note that this happened under an economic union with separate currencies. In my view tis was only possible because its rules were not yet fully specified in these early years of the union.

government abolished the local business tax (the “taxe professionnelle”) in 2010 and so brought the decentralization movement to an end for the time being.

Budget financing by money creation was presumably the most important of the six instruments of vinegar to finance budget overdraft. For it externalized the costs of the budget anonymously on the tax payers. The Treaty of Maastricht put an end on this practice. It required all member states to play oil. What should the French government do? Money creation should be substituted by ordinary budget financing. This required enormous adjustment costs for France. Therefore the incentives to externalize runaway demand became paramount. It was of outmost importance for France to save the concept of the Banque de France though the Maastricht Treaty stated that the Bundesbank model and not the model of the Bannque de France should be applied under the euro, in fact that case (C) and not case (B) should prevail.

The essence of the French vinegar budget can be summarized in equation (1):

(1) (∑expenditures) - (∑tax revenues) = (budget externalities).

The parentheses on the left hand side of equation (1) indicate that all revenues and all expenditures are jointly balanced on the national level. All revenues stand for all expenditures. They recapitulate the nature of a common pool budget which has to be raised, distributed and allocated uno actu via the simple majority rule. But simple majority rule is too weak to generate a stable outcome. Instead a runaway budget with (∑expenditures) > (∑tax revenues) results whose excess has to be externalized within or outside the state.[9]

Now I have to explain why the **German institutions** generate a budget which is so much different from the French budget. When France introduced its national budget in 1789 Germany was a pure confederation under the German Emperor consisting of 327 sovereign territories which resulted from the Treaty of Westphalia of 1648. Each prince had his power which rested on his territoriality, sovereignty and legitimacy. The idea of national revenues which had to be allocated to common goals as in France had just no substance in Germany;

[9] It is true that the French government tries to channel the allocation of means to ends by subdividing the means in so-called “dotations”.
Some examples are: The « dotations de fonctionnement » according to population and surface, « dotations d’équipement » for selected investments, « dotations de compensation » for regional planning, “dotations de solidarité” for poor cities, “dotations de solidarité locale” for local and regional cohesion, “dotation minimale de soin» mininmal public service level esp. for health to enumerate but a few. Interest groups and politicians of subcentral governments therefore strive to obtain entitlements within the existing dotations or to establish new dotations. The “dotations globales d'équipement” e.g. depend on the size of the population of the locality, on whether it is a joint public work of several localities and on the size of the population of the respective département either in metropolitan France or overseas.
Channeling in dotations as such does therefore not change the nature of the French budgetary process. The dotations are not constitutional, but part of the rent-seeking process within common pool financing.

for there was no nation. Nor could paper money sustain in German territories which were too small for such aberrations. The governments played oil and not vinegar. Budgets were fractioned, proprietary and exempt from any interterritorial subsidization. Crossborder picking of resources was out of question. Proprietary taxes represented a fixed endowment of each sovereign. This system was stable though not necessarily efficient. For efficiency it would have been necessary to add interjurisdictional competition.

It is true that the revolutionary wars which were exported from France to the rest of continental Europe have also changed the political structure of the German territories. The 327 sovereign territories merged to 39 sovereign states by 1815. The roofs have become larger, but budgets remained separated. The later Kaiserreich remained decentralized. Only defense and social security became federal. Even today's Federal Republic of Germany is far from a unitary state. Though the German tax system is under federal regulation it is not a unitary tax system. It consists of rights which are shared by the Länder and the Federation. Germany has not a national, but only an aggregated budget whose existence is justified mainly by statistical reasons.[10] The actual aggregated budget consists of a Federal budget, 16 state budgets and about 8.800 local budgets plus the parafiscal budgets. The aggregated budget of Germany is balanced if all subcentral budgets are balanced in expenditures = revenues + own debt.

(2) Federal budget $+\sum_{1}^{16}\ state\ budgets + \sum_{1}^{8.800} local\ budgets + \sum_{k=1}^{n} parafiscal\ budgets$

= aggregated budget

No government can tap on another government's budget nor can it attract resources from the central bank. Following a decision of the German federal constitutional court the federal redistribution of resources must not change the rank order of the fiscal endowments of the subcentral states, the "Länder". Therefore eventually all subcentral states end up with about the same fiscal endowment per capita (Blankart 2011, ch. 29). These assigned endowments create property rights which limit rent-seeking in other governments' purse. Recently enacted German debt brakes reinforce this principle.

Up to today fractioned rights are a core constitutional principle. The Federal Republic of Germany cannot be transformed even by constitutional amendment in a unitary state. Art. 20 of the Basic Law (the Grundgesetz) irrevocably states that "The Federal Republic of Germany is a … federal state".

Table 2 below summarizes the comparative budget institutions in Germany and in France.

[10] The aggregate budget has an important indirect relevance. Commission and Council of the European Union treat all member states as if they were unitary states. EU and euro negotiations take place for Germany and the other federal member states as entities though they are not unitary states. This implies a permanent implicit violation of their constitutions.

Table 2: The Institutional organization of the public budgets in Germany and in France

Germany 1648 - 2013	France 1789 – 2013
327 / 39 / 16 Territories	1 Territory
327 / 39 /16 Budgets	1 Budget
Fractioned proprietary rights in taxes	1 National tax authority
Fractioned proprietary tax bases	1 National tax base
Fractioned debt bases	1 National debt base
No money creation for budgets	National money creation up to 1993
Fractioned budgets	1 common pool, simple majority, budget shortage
Path dependent budget balancing: oil	Runaway demand, deficit, pressure to externalize fiscal burdens: vinegar
Art. 20 para. 1 Basic Law: „The Federal Republic of Germany is a … federal state."	Constitution Art. 2 « La France est une République indivisible… »
Favouring oil	Favouring vinegar

Source: Own computation[11]

IV. The euro negotiation period from 1970 to 1992

The European Monetary Union has been a dream of the EU governments since Jacques Rueff pronounced his famous adage in 1949: « L'Europe se fera par la monnaie ou ne se fera pas. »[12] Well, "par la monnaie", but under what conditions? Table 1 shows that an oil government will accept a monetary union only if solution (C) is enforced and oil can bring in its monetary constitution. For the vinegar country, however, the monetary order (C) may

[11] I want to emphasize that German and French budgets do not differ because Germans and Frenchmen are different or because they have different tastes. This paper is not in any sense pro- or anti-German or –French. The paper follows the paradigm of Garry S. Becker and George Stigler (1977) who say: "De gustibus non est disputandum!" In an economic analysis, whatever are human tastes, individuals are constrained to behave differently under different institutions. Their budgetary choices differ because their institutions differ and not because their tastes are different. Given the institutions, Germans and Frenchmen could be exchanged, and the same budgetary problems would result.

[12] Van Raepenbusch (2005).

also be acceptable compared to an economic union, but (C) is second best compared to (B) for vinegar. Vinegar's first best is (B) which allows it to shift part of its costs to oil.

Therefore negotiations will be difficult. Indeed negotiations on the monetary union lasted more than four decades from 1970 up to the present. These forty years can be divided in two periods: *A negotiation period from 1970 until the Treaty of Maastricht of 1992* to be analysed in this section IV and a *post-negotiation period from 1992 to 2010* to be treated in section V.

IV.I The French dilemma

During the negotiation period of 1970 to 1992 the designated monetary union states should approach each other in a "monetary cooperation" before they do eventually enter a "monetary union". During the period of monetary cooperation the foreign exchange rates should be narrowed but not yet irrevocably fixed. During this period it became already evident that Germany aimed at solution (C) while France aimed at solution (B).

The French dilemma can be described in the following figure 1. Outside a monetary cooperation or outside a monetary union France cannot increase its own welfare by playing vinegar instead of oil. This is the bitter truth for France. Consider figure 1 below. A relatively small GDP such as GDP_1 is feasible under a budget deficit (G – T) in the upper right hand quadrant. But it requires capital imports [Cap. Import (G-T)] in the upper left quadrant which are feasible under a relatively high rate of interest (below left) which is again compatible with GDP_1 in the upper right hand quadrant.

When the country plays vinegar its deficit (G – T) is larger promising a larger GNP_2. But GNP_2 requires more capital imports (dotted line): If capital imports are not generated by the market, the country falls back to GNP_1. Hence there is no positive welfare effect for the country to play vinegar. The markets dictate the reality of GDP_1. The French government would argue that there is a capital import gap. If only someone imported capital the country's situation could look much sunnier.

What could the French government do to attract more capital imports? Economists of the European Commission such as Robert Triffin (1960) have pled for a European common currency whose central bank acts as a reserve pool that compensates deficits and surpluses of national capital imports and exports as indicated in figure 1. The advantage of the Triffin plan was that France could continue to play vinegar with large budget deficits (G – T), reach the larger GNP_2 and overcome GNP_1. Therefore the Triffin plan (which later became the Werner Plan of an European Monetary Union) was highly welcomed in France. The burden previously carried by the Banque de France could now be shifted to a European central bank. Flourishing vinegar.

But the Bundesbank who had to carry the burden said no. It argued that according to German law the Bundesbank is not permitted to transfer German property to an

international organization (s. Maes 2002). The German federal government under Helmut Schmidt followed the Bundesbank to avoid a conflict.

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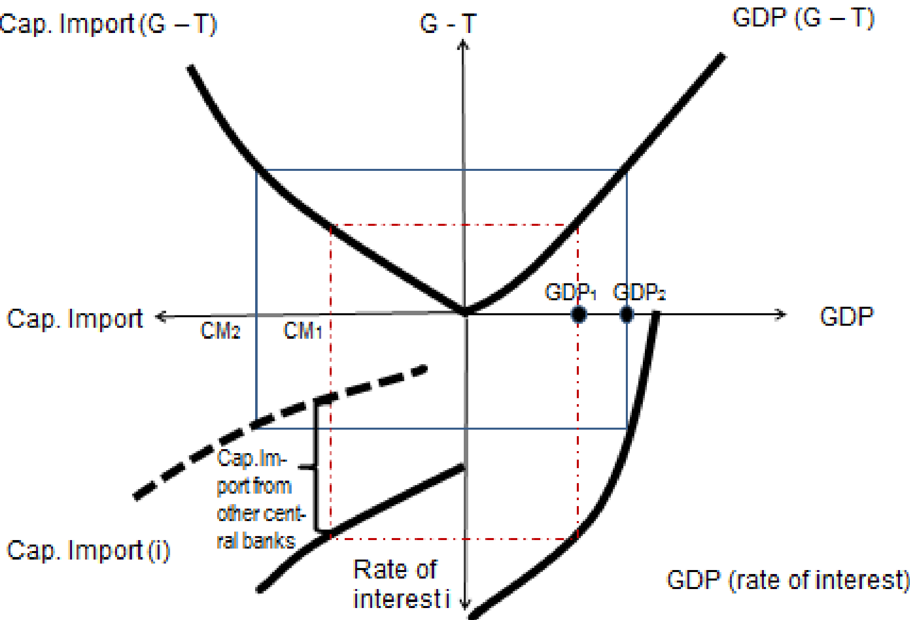

Figure 1: The French dilemma of capital import shortage

Source: Own design

IV.2. Bretton Woods

That an international reserve pool is vulnerable to misuse has also been documented by the example of the World Monetary system of Bretton Woods of 1944. Though it was never intended that Bretton Woods should be complemented by a common reserve pool, an initial weakness in the contract opened this loophole.

According to the rules of Bretton Woods every participant country had to maintain a fixed exchange rate of its currency to the US Dollar while the US sell or buy 1 ounce of gold for every 35 US Dollars presented by a national bank belonging to the system. Therefore Bretton Woods is often called a gold-Dollar-standard. In order not to lose Dollars or gold, all Bretton Wood states have an incentive to balance their fiscal accounts without the money printing press, in short to play oil. But Bretton Woods had a leak. The United States could print as many Dollars they wanted, however at the risk to lose their gold reserves if too many paper dollars are presented by the other central banks. This was indeed the Achilles heel of Bretton Woods.

Under the pressure of the public expenditures for the Vietnam War the United States decided first to postpone and later to stop the conversion of Dollars into gold. So the US created its own Dollar reserve pool. In effect, the US played vinegar, while the partner

governments continued to play oil. Some years later the partner governments made up their minds and decided to no longer comply with the rules of Bretton Woods which thereafter collapsed on March 11-14, 1973.

IV.3. The snake inside and outside the tunnel

Exchange rate stability has also been a goal of the European Economic Community since the Treaty of Rome (1957). As, however, the German government refused to accept a common reserve pool, stable exchange rates within the Community required that all its member states observed a policy of strict balance of payments equilibrium.

A first version of such a currency cooperation was the "snake in the tunnel" of December 1971 in which the EU states agreed to narrow their exchange rate fluctuations within the exchange rate band of Bretton Woods (the tunnel) to a band not exceeding +/- 2,25% to the Dollar. When Bretton Woods eventually collapsed in March 1973, the members of the snake decided to pursue the goal of exchange rate stabilization alone "outside the tunnel" of Bretton Woods.

The regime dictated by the snake was quite rigorous. A participant state who was not able to keep its exchange rate within the agreed band could receive a 3 months repayable monetary assistance up to 1,4 bn. ECU to recover.[13] It dropped out automatically when it failed to comply with the standard of the snake within this delay. There was no option to become a permanent participant of the snake without strict compliance to the exchange rate requirements. Only a few countries were able to abide sustainably by these rules. France was among the first who dropped out. In the end only Germany, the Benelux and Denmark succeeded to stay in the snake. The snake was a very exclusive club, but too small to be of economic relevance.

IV.4. The European Monetary System EMS

The snake has proven that a country cannot abide by the rules and remain a member if it plays vinegar. Its balance of payments would become negative and the exchange rate would transgress the allowed band with the consequence that the country has to leave the snake. President Valéry Giscard d'Estaing of France who was finance minister during the years of the snake was aware of this. He visited Chancellor Helmut Schmidt in Hamburg in 1978 in order to convince him to extend the currency assistance of the snake open-endedly. He meant that this had to be seen in anticipation of a future European monetary union whose central bank should be equipped with enough money to maintain fixed exchange rates. So the idea of a currency pool reappeared through the backdoor. It was rejected immediately by the Bundesbank and somewhat later by the German Federal government (Bernholz 1998, p. 797-815). The French side could hardly understand the German position. For them a central bank that does not act as a reserve pool is useless. The German side disagreed. But

[13] Actually 1,4 bn. European Currency Accounting Units (later ECU) (s. Bernholz 1998 p. 792).

after some back and forth both sides agreed to a four stage support program for countries which had problems of maintaining their exchange rates:

- *First:* A short run frictional repayable financial support program inherited from the European Currency Snake at 11 bn. ECU.
- *Second*: A medium term repayable financial support program of another 11 bn. ECU.
- Third: A realignment of the exchange rates should take place given a fundamental exchange rate disequilibrium.
- Fourth: An automatic exit occurs if the first three remedies do not succeed.

The EMS was a good compromise to unite oil and vinegar countries. France was not constrained to completely abandon its fiscal system inherited from the past, but was warned not to overdraw it. It could count on monetary support, but it was made clear that support was limited and repayable. It is often argued that the EMS failed in the currency crisis of 1992/93. In fact that the EMS was deficient. But this is not correct. A closer look reveals that the crisis occurred because the UK and Italy who were hit by balance of payment deficits resisted to a realignment of their exchange rates according to the third stage of the above mechanism and therefore had to leave the EMS according to stage four. France was in a similar situation, but it enforced a widening of the exchange rate bands to +/- 15% and therefore escaped a realignment.

That the EMS was a success can be seen from figure 2 which represents the decline of exchange rate volatility over the 20 years of its existence.[14] It is true that other factors such as the expectation of the euro and the eneavour to fulfill the Maastricht criteria contributed to the favourable performance of the EMS. Nevertheless it can be seen from figure 2 that good rules can contribute to monetary stability. Helmut Schlesinger who was president of the Deutsche Bundesbank from 1991 to 1993 comments in 2012: „This system could have been continued without any problems" (Schlesinger 2012, translated by the author).

[14] The standard deviation dropped from 6% (1980) to 11,8% (1983 and 1986) to 7,5% (1993) to 2,4 (1998) (own calculations).

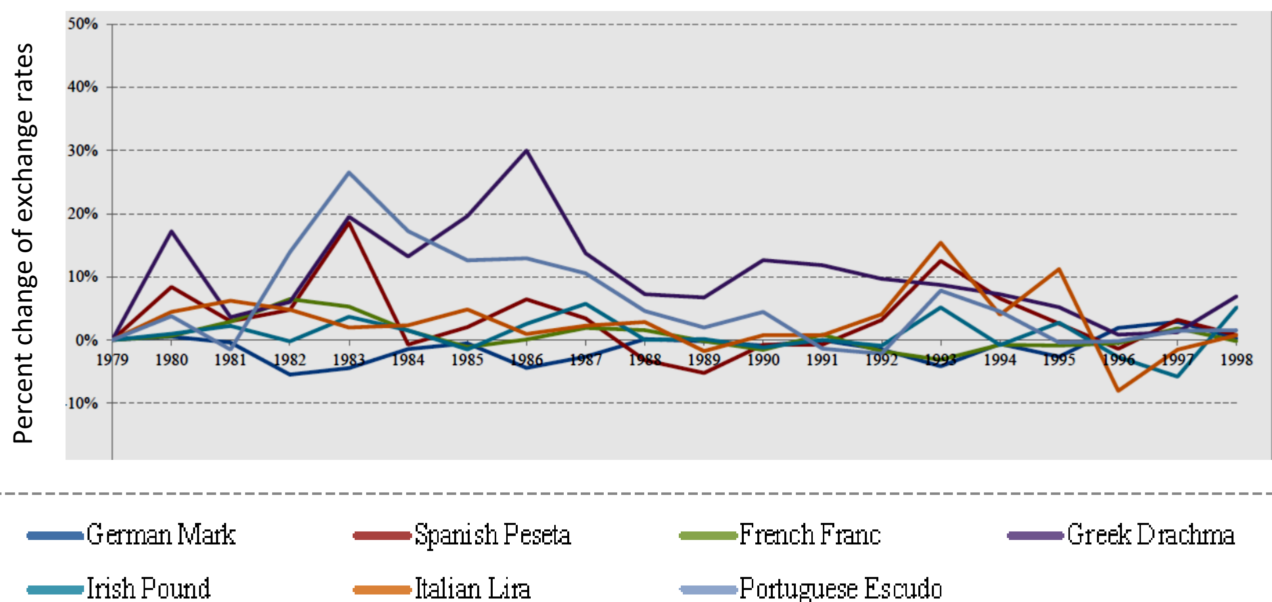

Figure 2: Exchange rate fluctuations under EMS 1979 - 1998

Source: Own calculations from OECD data

IV.5. Hanover, the turning point to the euro

Though the EMS generated stability among the European currencies it was disliked in the French public opinion and in the French government. For it turned out that the D-Mark was its anchor currency at which all other EMS currencies were attached. This comes from the logic of the EMS:

- If n-1 countries of n participant countries of a fixed exchange rate union intervene to maintain their exchange rates at the agreed level, the exchange rate of the n-th country is also fixed whatever its monetary policy.
- The n-th currency will be the reserve currency.
- Which country will be the n-th country whose currency becomes the reserve currency depends on its reputation. In order to be on the safe side the EMS member states attached themselves at the country with the highest reputation for price stability. This was the D-Mark.
- So the D-Mark has become the n-th and the anchor currency for all other EMS participants.

In practice it turned out that what has been decided Monday by the Bundesbank in Frankfurt was reproduced Tuesday in Amsterdam, Brussels, Luxemburg, Vienna and last not least in Paris. Whenever the Bundesbank increased the rate of interest, France had to follow though this was exactly what the French authorities disliked. So German “oil” domesticated French “vinegar”. But the French government felt uneasy. It wanted to have the Bundesbank out of

the EMS and instead pleaded for a joint pluralistic monetary policy of all EU countries reducing the pressure on its budget policy (recall the capital import gap in figure 1 and see Lindenlaub 2009).

At the coming summit of Hanover in 1988 the French president Edouard Balladur seized the opportunity to propose the French concerns on the EMS to the Council who however remembering its decision on a European monetary union taken in the Single European Act of 1986 gave the French issue a new much farther reaching momentum.[15] It entrusted a committee of "technocrats" consisting of the President of the European Commission, Jacques Delors, and the presidents of the national central banks to elaborate a plan towards a European Monetary Union. The Delors Commission proposed a normative model on how they thought a European monetary constitution should look like and how it should be attained. It should have a politically independent European Central bank based on the principles of non-monetization of public debt (Art 123, 124 TFEU), of no-bailout of public finances (Art 125 TFEU), national budget balancing (Art 126 TFEU) and price stability (Art 127 TFEU) to be implemented in three progressive steps. The Delors Commission's output was a monetary order which was consistent. But the Commission did not discuss the question whether and how all these principles could be enforced. The consistency of their conclusions (not their compliance) has been discussed and approved at the following summit of Madrid, on 26 and 27 June 1989, and then prepared by the Monetary Committee, accepted by ECOFIN during 1990 and finally approved at the Intergovernmental Conference in Rome 14/15 December 1990.[16]

[15] Delors Report (1989) p. 1, and see Marsh (2009, ch. 5)

[16] I disagree at this point with two of my highly esteemed colleagues Roland Vaubel (2010) and Hans Werner Sinn (2012) who argue that Germany's yes to the euro was the price Germany had to pay to France for its yes to the German reunification. This hypothesis has some economic attractiveness. For who as an economist can reject a hypothesis suggesting that politics result from exchange? I agree. But in my view the market for the euro was held before the fall of the Berlin Wall and the upcoming issue of German reunification. In my view the euro originated out of the perennial French balance of payments problems as described at length earlier in this section and the compromise of the EMS. The French malaise with the EMS led to the summit of Hanover (1988) and the decision to set up a plan how to achieve a European Monetary Union, the Delors report with the tacit expectation that a European Monetary Union will also solve the French balance of payments problems. In spring 1989 the Delors report has been published. As Delors and his group omitted all compliance problems of a European Monetary Union their report was acceptable for Germany from a conceptual point of view and by France from a wait-and-see position. Under these assumptions the report was finally approved by Council at the summit of Madrid on 26 and 27 June 1989. This was well before the fall of the Berlin Wall and the issue of the German re-unification.

I cannot therefore follow the opinion of my colleagues of a political bargain between president Mitterrand of France and chancellor Kohl of Germany at the summit of Strasbourg in December 1989, just after the fall of the Wall of Berlin, and in particular that France agreed to the German re-unification only after Germany said yes to the monetary union. The decision on the monetary union has already been taken in Madrid before the fall of the wall (according to my documents). It is true that the reunification was an issue at the summit of Strasbourg because Chancellor shortly before issued his ten point plan of reunification. But a link to the monetary union was not in the debate because the issue on the monetary union was already resolved. Even President Mitterrand was realistic enough to see that the German reunification is unconditional as he has made the following statement in January 1990 a few weeks after the Strasbourg summit: "Whether I like it or not, unification is for me a historic reality which it would be unfair and foolish to oppose", and he emphasized that "if he were German, he would be in favour of as quick a reunification as possible" (literally, Bozo (2007) p. 463).

The Delors report and the ensuing Maastricht Treaty were too French and too little British. They were too Cartesian and too little Hume'ian. A discussion on how to arrive from here to there was avoided. Compliance was assumed and not explained. In fact a violation of the core principles (Artt. 123-125 and 127 TFEU) remained without any sanction. Sanctions were only discussed for violations of the budget deficit criterion (Art. 126 TFEU). But even there, sanctions were thought only after a Council decision which in reality were never taken. A further democratic element that entered the Treaty was the ECB Governing Council which consists of the Members of the ECB Board and the Presidents of the national central banks. The Council is primarily responsible for price stability but can without prejudice also pursue other aims of "general economic policy" (Art. 282 para. 2 TFEU). Nobody has asked the question what will happen when the Council postponed its core principles in favour of the "general economic policy". Hence monetary and fiscal policy were not clearly separated.

To summarize: The Maastricht Treaty is a perfect exercise on paper. Logically constructed it is based on the assumption that all member states comply with the rules, that all play oil and stand for their own costs. The problem of compliance is disregarded. Therefore the Treaty is destined to fail.

In the following section V I shall show that as France was not able or willing to comply with the Treaty. Its government enforced ex post changes of the Treaty in such a way that national fiscal burdens could be shifted to the union. This was a signal for moral hazard, state bankruptcies and unfortunate rescue programs disseminating depression, unemployment and hate in many member states.

V. The euro post-negotiation period from 1992 to 2010

V.1 Dismantling the Maastricht Treaty

Eventually the Treaty of Maastricht has been solemnly signed by the Heads of State and of Government including President François Mitterrand of France February 7, 1992. It seems to me that in this very moment, it must have become clear to president Mitterrand that France is unable to comply with the rules of Maastricht which were in full contradiction with the tenets of French public policy: (1.) No deficit financing by the Banque de France, (2.) instead a fear of excessive deficits and debt on the capital market, (3.) which ought to be limited by the Maastricht criteria, and (4.) last not least a bankruptcy without a bailout. Should France really comply with Maastricht it would have had to give up the centralized tax and budget system, the core of achievements of the French revolution and to return to subcentral self-responsibility, in fact to become a federal state similar to Germany. Therefore president Mitterrand decided that France will not adjust its rules, but that the rules should be adjusted

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The scholarly debate on the role of Strasbourg is nevertheless important because if Vaubel and Sinn were right, the whole bill of the euro bailout could be shifted to Germany as a late price for its reunification (for the euro-reunification debate see Blankart, 2012. A more extensive exposition by the author is forthcoming.) The early intervention of particular personalities such as Hand-Dietrich Genscher in this debate is documented in Bernholz (1998, 815-828).

to France. Four important adjustments of the (already signed) Treaty were on Mitterrand's agenda:

1. Making the ECB instrumental (V.2)
2. Political staffing of the ECB (V.3)
3. Eliminating the no-bailout clause (V.4)
4. Making Germany a partner in this endeavor (V.5).

V.2 Making the ECB instrumental

The Maastricht Treaty could become law in France only, only if it passed the referendum proposed to the French voters 20 September 1992. The voters were very skeptical on the Treaty, and the referendum was about to fail for the president. Therefore Mitterrand thought that he had to make a special effort. He launched a television broadcast for 3 September 1992 in which he explained the Treaty to his citizens. In order to calm the situation he injected some of his old reservations. He put not only the principle of central bank independence into question. He even reversed it. He said :

« [J'‎]entends dire partout … que cette Banque Centrale Européenne sera maîtrise [indépendante] de ses décisions! Ce n'est pas vrai! La politique monétaire appartient au Conseil Européen et l'application de la politique monétaire appartient à la Banque Centrale, dans le cadre des décisions du Conseil Européen. »[17]

In other words: "There is much arguing that the ECB will be independent. This is simply not true!" he said. The monetary policy shall be formulated by the European Council and will be executed by the ECB. It cannot be overlooked and it is certainly not accidental that the president has chosen the wording of the law on the Banque de France of 1973 (see footnote 5). He only inserted "le Conseil Européen" in lieu of "la nation".[18] This shows that he was willing replace the Maastricht Treaty of type C by a Treaty of type B. An incredible affront against all euro partners.

Though the referendum passed with a majority of 51 % it was not clear whether the French voters voted for Mitterrand's version of the Treaty or for the official version. In summary: The referendum was good for generating an ambiguity and to put into question the independence of the European Central Bank.

V.3 Political staffing of the ECB

But the president pronounced only words. Deeds had to follow and did follow. In order to make the ECB really political the right persons had to be placed in the relevant positions of the ECB.

[17] Quoted from Issing (2008, p. 53).
[18] See footnote 5 above for the law of 1973.

A key position is the president of the ECB. In May 1996 the governors of the national central banks (NCB) selected Wim Duisenberg (the governor of the Bank of the Netherlands) with approval of the heads of state or government into this position.[19] In opposition to this decision already taken President Chirac of France insisted in a second vote in December 1997. In this second vote the European Council failed unanimity because President Chirac insisted on Claude Trichet as president of the ECB though Duisenberg has already been elected. After a distressing discussion between President Chirac and the other heads of government it was agreed in May 1998 that Duisenberg will step down of his office (at most) after four years and that Trichet will enter thereafter for eight years. This swap resulting from French blackmail was illegal because an existing decision has been cancelled with less than unanimity and because the Treaty requires that the office of the President of the ECB lasts eight and not only four years (art. 109a (2) (b) EC or art. 283 TFEU) (Warleigh 2002).

Trichet once in office became independent of the French president, and also independent of the European Council (insofar president Mitterrand was not able to fully enforce his position) but Trichet remained loyal to the French conception of a central bank which eventually could also rescue national governments in deficit. During the first half of his office Trichet was restricted in his discretion by the regulations of the Maastricht Treaty and the still law-abiding majority of the ECB governing council. With the banking crisis of 2007/2008, however, the majority of the ECB governing council changed its opinion. The members of the council became hungry for credits for their countries whatever were the legal regulations. The political demand for money encouraged Trichet to use his power as an agenda setter, to put the issue on the agenda of the ECB governing council and to let approve and to start his securities markets programme (SMP) monetizing public debt for some states at the costs of all states.

On the one hand Trichet's purchasing program clearly violates art. 123 TFEU which says:

"*Overdraft facilities or any other type of credit facility with the European Central Bank or with ... public undertakings of Member States shall be prohibited, as shall the purchase directly from them by the European Central Bank or national central banks of debt instruments.* "

In addition the European Council clarified in 1993: *"purchases made on the secondary market must not be used to circumvent the objective of that Article"*[20]

which means that purchases of euro government bonds by the ECB are clearly prohibited, irrespectively of whether they come from a member state directly or indirectly through an intermediary. Without prejudice the bank may, however, purchase non-euro securities without limit for the pure of monetary policy (Homburg 2012). On the other hand Trichet's purchases of euro government bonds under the SMP programme have been approved by a majority of the ECB governing council (under opposition of the German members Axel Weber and Jürgen Stark who withdrew under protest).

[19] 17 May 1995 Jacques Chirac has become president of France.
[20] Council Regulation (EC) No 3603/93.

These purchases open an interesting problem of pubic choice theory. What happens if the Treaty says “no” and the ECB governing council comes to a “yes”, i.e. if the purchases were illegal, but nevertheless made? Apparently the purchases were in the national interest of the majority of the ECB governing council, but not in the interest of the enforcement of the Treaty. What should be done? In order to cancel an illegal majority decision, someone has to bring a charge before the European Court of Justice. Given the high costs of such a charge and the small interest of the judges to defend the Treaty, the probability of a success of a charge opposing a violation of the Treaty is very small. Often therefore the “yes” of a majority of a committee such as the ECB governing council is stronger than the “no” of a regulation. The “yes” creates a new status quo whereas the court decision can at best reinstall a former status quo.

The German negotiators of Maastricht apparently disregarded this asymmetry of collective decisions. They thought that the ECB regulations are part of the Treaty which will be self-enforcing. They thought that as the regulations cannot be changed so that the German tenets in the European monetary union are not in danger. It has been argued that regulations in the Treaty are even stronger than the regulations of the former Bundesbank (Scharrer 1992, p. 212). But nobody asked how these strong regulations should be enforced. The German negotiators could not imagine that the regulations could simply be disregarded and overthrown by a simple majority of the ECB governing council, and nobody commands a halt. As the German government disregarded this point when they negotiated Maastricht and hence accepted an enormous asymmetry in the Treaty in favour of vinegar countries such as France.

Though Germany contributed 40% of the working capital to the ECB (Sinn and Feist 2000) it missed to secure a relative majority in the governing Council of the ECB. Had it enforced a vote of 40% in the ECB governing council or a respective veto right, the SMP programme would have barely been possible. Apparently the decisive vote for the SMP programme ended with 11 : 11 in May 2010 with Trichet casting the final ballot, and 12 : 11 in the vote of September 2010.[21]

V.4 Abolishing the no-bailout clause

Up to 2008 only the first two points of Mitterrrand’s agenda of adjusting the Treaty were implemented (IV.1). But the dangers of France’s over-indebtedness and state bankruptcy were still impending. Trichet became aware that the ECB alone could not rescue a large nation such as France.

The ecofin council has decided 7 october 2008 that in case of a new banking crisis, for the time being, the nation states are responsible for their system relevant banks.[22] But could

[21] Following estimates by Vaubel (2012)

[22] Economic and Financial Affairs Council, Luxembourg, 7 October 2008 http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ecofin/103250.pdf (17 mai 2013)

France carry such a burden without going bankrupt? Was this principle sustainable? Vinegar commands that such risks must be shifted to other states.

The Greek crisis of April made this issue apparent. As Greece has become insolvent end of April 2010 the European Council decided that the no-bailout clause of art. 125 TFEU shall neither be directly applied nor directly violated, but that the Greek budget deficit shall be distributed on all EU-member states.

But the Greek program was only the first step. One week later a bailout scheme encompassing all euro states was established by the heads of state and government in their summit of May 7/8, 2010. The nobailout principle of art. 125 TFEU, a core principle of the European Monetary Union has been put aside if not eliminated. How was this possible? How could a Treaty which has been negotiated for over 15 years be eliminated in one night?

Following a detailed report of the summit by Peter Ludlow (2010), Claude Trichet was again the driving force. Trichet was not a member of the summit. But he participated as a guest[23] and took the opportunity to start the session by explaining the situation of the European government bond markets with help of PP slides. He scared the participants by describing a drastic picture of the market especially for the peripheral euro countries. Indeed government bond rates declined during the first half of the week. Apparently the Greek bailout did not provide market confidence in these days. But rates recovered again when the German Bundestag formally approved the Greek bailout program Friday 6 May 2010. Nevertheless Trichet warned before a disaster which might happen when next Monday 10 May 2010 the Tokyo stock exchange opens. Trichet disseminated fear, and fear is a very effective instrument for which he had not to take responsibility. For who knew how the Tokyo bond market will react? So Trichet brought the Council to the decision that the ECB should be disburdened from the problem of rescuing EU member states, that a pan-euro bailout umbrella should be established and that the no-bailout clause shall not be applied any more. In fact he convinced chancellor Merkel to design a common rescue plan and to assume the lion’s share of the costs.

President Sarkozy of France warned that France will leave the euro zone if Germany does not agree. Indeed France was the winner. For the French commercial banks were heavily engaged in Greek government bonds as well as in government bonds of other peripheral euro member states. So the guaranteed bailout of these countries helped the French commercial banks to survive. To put it differently: Without the European bailout the French national government would have been responsible for France’ systemic banks according to the ecofin decision of 7 October 2008 mentioned above. But now, after the summit of 7/8 Mai 2010 the French burden was socialized on the euro level. Vinegar triumphed over oil.

[23] Art. 284, para. 2 TFEU.

Finally it has been agreed that 60 bn. euro for of this scheme come from the Commission,[24] a second tranche of 440 bn. euro from the euro member states, a last but not least a tranche of 250 bn. euro should come from the IMF, in total 440 bn. euro.

What is most remarkable (though predictable) is that the first bailout for Greece has triggered a bunch of further bailout programs: The provisional EFSF and EFSM packages of 7/8 mai 2010 of 500 bn. € were supplemented by the provisional EFSF of 780 bn. € in 2011 and by the permanent ESM of 800 bn. € in 2012. This latter's volume exceeds the annual EU budget by about factor 6,5 without counting the Target2 loans to peripheral countries and to France of about 820 bn. euro (Sinn and Wollmershäuser 2012). This spiral documents how under vinegar national problems are shifted to the euro level were they are enclosed in a larger budget etc. The fact that some participants play oil while others play vinegar unleashes an enormous potential of moral hazard. As the donor governments, first of all Germany's, were accountable for these expenditures before their parliaments, they prescribed strong austerity programs on the bailouted governments causing there unemployment, depression and hate. As euro common pool financing makes such actions feasible it prevents that the governments in financial distress exit out of the euro. It precludes devaluation and imposes pain without a perspective of improvement on these countries. This is the tragedy of the euro crisis as described lucidly by Sinn (2012) and others.

V.5 Germany and France in a prisoners' dilemma

When France breaks the contract, why should Germany abide by the rules? An example to illustrate this mutual temptation to break commonly agreed rules is the Stability and Growth Pact of 1997 which has been integrated in the Maastricht Treaty and later in art 126 of the Treaty of Lisbon.

Germany and France both violated the deficit criterion of the Stability and Growth Pact in the years 2002 and 2003 and hence triggered the excessive deficit procedure of the European Commission. But chancellor Schröder of Germany together with president Chirac of France launched a Council decision to reinterpret the pact in a more flexible way. The deficit and debt limits remained unchanged, but 15 exemptions have been approved defining what the word "excessive" means. As a result the pact lacks any limits. De facto this was an ex post change of the Treaty outside the rules.

It is easy to see the calculus of rule breaking in a simple prisoners' dilemma game, see figure 3

[24] whose financing was far from evident; for there was no funding for such payments (see Blankart, Koester 2012).

euro with	France oil	France vinegar
Germany oil	C 40/40	B 30/45
Germany vinegar	(E 45/30)	(D 32/35)

Figure 3: Oil and vinegar as a prisoners' dilemma

Source: Own compilation

Under the Treaty C (see section II), both, Germany and France, comply with the rules of Maastricht and receive a payoff of 40 each. But France has a temptation to remain with its traditional vinegar rules of solution B which yields payoff of 30 and 45 to Germany and France respectively. Once the rules are broken and field B is reached it becomes rational for Germany to violate the rules too so that both countries end in cell D which is the equilibrium. Mutual violation of the Treaty encourages moral hazard and bailout programs with all their consequences.[25]

VI. Conclusions

Oil and vinegar are two countries. Oil pursues a policy of stable prices, vinegar prefers an inflationary policy. Both can friendly coexist in an economic union in which the governments go Dutch, and each individual pays its bill with its own currency at the given exchange rate. In a currency union, however, oil and vinegar enter in a common cash management allowing vinegar to exploit oil (solution B) unless oil enforces its own rules on vinegar (solution C). The experience with the Maastricht Treaty has shown that solution C is not viable if vinegar shies away from the high cost of converting its state into an oil state. If solution C fails a hybrid system D situated between C and B will emerge which generates fiscal externalities in that governments mutually shift their fiscal burdens on each other's shoulders and hence promote moral hazard, government bankruptcies, bailouts, rescue and austerity programs generating depression, unemployment and hate as largely described in the ongoing literature of the euro crisis: in fact the euro at its worst.

[25] Cell E (45/30) is inserted only for completeness. It has no practical meaning because Germany is bound by its constitution to be a federal state and prohibited to become a unitary state which can play vinegar. Note that both countries could return to constitution C the Maastricht Treaty. But this would not be a stable equilibrium as there is no external enforcer of the Treaty.

Ronald Coase shows that externalities are not a blow of fate (Coase 1960). They can be overcome. A better life is feasible if the resources which generate the externalities are made proprietary. The rights can be given either to the rancher or to the farmer providing them an incentive to trade and to leave the resource to the one who can make better use of it.

Such a trade is, however, not feasible in the case of fiscal systems (if we exclude the case of proprietary feudal systems of the Middle Ages). We have therefore to ask: What would the rancher and the farmer do if trade is impossible or prohibited? The answer is. They would withdraw and go West so far that the externalities vanish.

This is in fact the core of a solution for a monetary union. If the fiscal systems of the two states are so closely interwoven that they generate mutually detrimental externalities in a monetary union, if it turns out that the joint cash management of the monetary union does not work because each is picking in the other's purse, it is better to keep the two fiscs separated and to go Dutch.

The lesson is that we went apparently too far with the monetary union and that an economic union is preferable. Suppose that there are two identical economies as described which differ only in that the one is an economic union without externalities and the other monetary union with externalities then it preferable to go from the latter into the former whose present value is larger whatever the transition costs. Economists and politicians should not surrender before size of the transition costs and stay magnetized at the status quo. They should do their job and search for the least cost way to get out of the currency union.

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