How to abandon the common currency in exchange for a new national currency[1]

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Abstract

The question of how to leave a monetary union has become an important economic issue during the last few years. Uncertainty relating to its costs tends to discourage political leaders from taking decisive steps towards an exit. This article provides thoughts on what the necessary steps are, what are the associated pitfalls, how they can be overcome, and how can an exit from a currency union be effectively managed to control associated risks and costs. Uninterrupted functioning of the payments system, political response and the solvency of the private and public institutions are shown to be the major determinants of the costs of an exit. Issues of public governance, such as legality of the exit, can become an issue only if political and public support for the exit is lacking.

Keywords: Monetary union, domestic currency, exchange rate

JEL codes: E61, F45, H12

1. Introduction

How can an exit from a modern monetary union be managed? This question has risen as one of the big essentially undiscussed topics in economics after the financial crash of 2007-2008 transformed into a sovereign debt crisis in the eurozone during the Spring of 2010. The closest we have gotten to finding an answer was during the Summer of 2015, when Greece was threatened with expulsion from the eurozone.[3]

During those summer weeks it became clear that pushing Greece out of the eurozone, or *Grexit*, would be a highly disruptive event. The decision of the European Central Bank (ECB) to

[3] This idea was mostly advocated by Wolfgang Schäuble (Spiegel 2015).

freeze the Emergency Liquidity Assistance, or ELA, led to cash withdrawal restrictions and extended bank holidays as the commercial banks of Greece experienced bank runs. Within few days, a modern financial system ceased to exist being replaced by cash transactions. The real economy plummeted,[4] but mostly due to the resilient and amicable ethos of the Greeks, social order prevailed. Eventually, the "renegade" government of Greece succumbed under the demands of the Troika,[5] ELA limits were raised and the Greek financial system began its slow recovery.[6] Capital controls put in place remained in force well over a year with only gradual reductions to the restrictions. Formal unity of the Eurozone was maintained, but the Greek crisis showed that the euro membership is not irreversible, even though The Maastricht Treaty contains no clause for an exit from the single currency. However, the crucial question remained: Can exit be achieved without major financial and economic disruptions induced by markets and/or euro area institutions?

The eurozone was initiated in 1999 under the Maastricht Treaty.[7] The common currency was not preceded by an agreement on fiscal or political union to underpin it. Nevertheless, many though that political union would naturally follow the currency one.. The euro was, however, not adopted by all countries who signed the Maastricht Treaty. Great Britain and Denmark decided not to join, relying on their opt-out. In addition, seven EU countries, most notably Sweden, Poland, Hungary and the Czech Republic have delayed their entry by postponing their entry into the preceding ERM II phase.[8] Particularly after the financial crisis, institutional reform and crisis management have increased centralized decision making in the euro area, with some commentators stressing the need

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[4] During the month of July 2015, the GDP of Greece fell by -1.7 percent, while it was still growing in June.
[5] Troika refers to the loan providing institutions, the ECB, the Eurozone countries and the International Monetary Fund (IMF).
[6] However, the situation in Greece continues to be far from normal (The Economist, March 12, 2016, Galbraith 2016a).
[7] Maastricht Treaty was signed in February 1992. It came in to effect in November 1993. Since then, several members have signed the Treaty.
[8] In ERM II or Exchange Rate Mechanism II, the exchange rate between currency of an EU country and euro is allowed to fluctuate only within a narrowly set limits.

for a fiscal and a political union.[9] The "Brexit" outcome of the June 2016 referendum in the UK cancelled a number of privileges negotiated by David Cameron for the non-euro EU members, making a political or transfer union involving also non-euro countries a more realistic outcome and a more realistic alternative to the eurozone-only union.

Historically, the existence of a political union has determined the success of monetary unions (Nordvig 2014 and King 2016).[10] When political unity has dissolved, the monetary union has been very likely to follow (Bordo and Jonung 1999, Einaudi 2000).[11] The circumstances that change the political will in a country can have many causes and, in general, there seems to be no clear *ex ante* economic motive for a country to exit from a MU (Rose 2007). For example, the economic consequences of the joint currency may prove less attractive than initially expected.[12] Domestic cost adjustment may prove slow or politically contentious, forcing unemployment to rise. The monetary union (MU) itself may conduct monetary and other policies which hurt sound economic growth at least in a portion of member countries. Such concerns could either manifest themselves as acute economic difficulties or as indications that future growth is threatened. This could cause the confidence and trust in the joint currency to decline among the population and its parliamentary representatives, even precipitously, requiring any country wishing for a stable economic future to exit. Commitment to eventual political union may weaken, either as a consequence of domestic or foreign developments.[13] This may happen as a consequence of weak economic prospects, or could

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[9] See, e.g., http://www.bloombergview.com/articles/2015-07-27/europe-s-growing-desire-for-political-union.
[10] Except the break-ups of the historical currency unions and that of Czech and Slovakia, one should mention the break-up of the peso from the currency board with the US dollar in 2002.
[11] For the euro area, see the analysis by EuroThinkTank (2014).
[12] The trade creation effect argument offered by Rose (2000, 2001) and Frankel and Rose (2002) for encouraging small European economies to initially join the euro has by now been discredited by the evidence (Havránek 2010). On the contrary, a study by the Centre for European Reform 2015 has argued that the euro was pointless. Neighboring countries outside the Eurozone have, in fact, been the subject of more trade and cross-border investment creation than the Eurozone member countries.
[13] In this respect it may be interesting to see how the treatment of Ireland and particularly Greece by euro area authorities might affect the commitment of these countries to submit to stronger union powers over domestic issues, like taxation and employment benefits

arise from a lack of interest in appointing new political decision makers. Furthermore, existing political or monetary unions may break up, forcing countries to consider reverting once more to domestic fiscal and monetary policies.

The break-up of the Czechoslovakian currency union in early 1993 is a recent example. Because of the political disunity that followed the breakup of the Soviet bloc, Czechoslovakia was first divided into two independent countries: the Czech and Slovakian Republics, but they retained a common currency, a custom union and a common labor market (Fidrmuc et al. 1999). However, only a little over month after the political breakup, the monetary union fell apart. Despite the sudden dismantling of the single currency, the break-up of the Czechoslovakian monetary union was smooth with no major setbacks for the real economy, its companies or citizens in either countries.

The breakup of the Habsburg Empire in the 1910s is an example of a not-so-successful disintegration of a currency union. The Habsburg crown had been the legal tender of the empire and Vienna's banks had provided financial services through a network of local branches (Gross and Gummer 2014). The collapse of the empire led to the collapse of one of the continents largest banks, Vienna's Creditanstalt, causing a European-wide financial crisis. The empire had accumulated high levels of war debt, which was distributed among the member states based on the physical location of the certificates following the breakup. Countries dealt with the debt through inflation and austerity. New currencies were stamped in haste and without international coordination, which led to increased circulation of illegal notes and inflationary contagion as newly formed governments exported their inflation over new borders with illicit currencies.[14] The uncoordinated breakup of the Habsburg currency union is a prime example of how not to conduct exits from a common currency.

[14] Currency stamping was uncoordinated, which opened a possibility for a form of an *inverted* carry-trade. Because countries stamped their currencies in different times (starting from Yugoslavia in January 1919 and ending to Hungary in March 1920), governments were able to export the domestic inflation created by extensive money printing to other countries of the empire by providing illicit currency of the former empire (Gross and Gummers 2014).

In this paper we seek to answer the question: How can a country exit from a modern currency union without major economic, financial and political disruptions? Since some disruptions can be caused by unforeseen MU political or market reactions to the exit, foolproof methods do not exist. Nevertheless, we believe that general rules for a smooth and stable exit can be found.

The exiting country faces several economic and political challenges. The most important of them are: maintaining the functioning of the payments system, re-establishing an independent central bank with a credible monetary policy, providing domestic financial institutions with sufficient capital and liquidity in the new currency and managing relations with the rest of the bloc. We argue that with careful planning most challenges can be controlled and associated risks minimized. In addition, we show which aspects of the exit remain uncertain as their risks cannot be entirely mitigated even by a proactive strategy, and require specific attention and leadership. A country planning to exit from a currency union needs to be prepared to tackle unforeseen issues as (if) they arise. We contribute to the literature by drawing out a blueprint spelling out the major challenges, threats and alternatives available.

The article is structured as follows: In Section 2 the economic advantages of flexible exchange rates are briefly reiterated. Section 3 presents an analysis the blueprint of an exit from a currency union, and Section 4 concludes.

2. Why the benefits of an exit (and flexible exchange rates) may outweigh the costs

The benefits of an exit arise predominantly from short and long term adjustment speeds that monetary independence allows for. In the case of currency overvaluation, the major short term benefit arises from the immediate depreciation of the foreign exchange rate, and subsequent increase in exports. Imports decline as their price rises, while exports increase. The demand for local produce and services will rise, raising employment. In the case of currency undervaluation, an appreciation will reduce imported inflation, helping to restore macroeconomic balance.

The restoration of monetary policy enables rapid responses to adverse exogenous shocks. A flexible exchange rate provides an effective adjustment mechanism, which by far exceeds that of domestic prices. Milton Friedman (1953) has stated, “If internal prices were as flexible as exchange rates, it would make little economic difference whether adjustments were brought about by changes in exchange rates or equivalent changes in internal prices.” It is widely acknowledged, however, that this condition is rarely fulfilled. In imperfect markets with unsustainable policies, the results of an inappropriate, but fixed exchange rate can be devastating.

In a fixed exchange rate regime, any major idiosyncratic economic shock to the production of a country has to be met by explicit domestic policy and adjustment. Such corrective policies are inevitably slow relative to the immediate adjustment a flexible exchange rate mechanism offers. The two main policy alternatives to respond to exogenous shocks in a fixed exchange rate regime are internal re- or devaluation (adjustments in internal production costs), or fiscal re- or devaluation (changes in taxes and subsidies). Decisions to reduce costs on factors of production are typically politically hazardous. Reducing wages or indirect wage costs, such as pension or other social security payments, as typically necessary in internal devaluation, affect income distribution and public finances. Internal devaluation can often be achieved only through a lengthy and painful process of wage adjustment through unemployment.[15] Even when finally reached, the improvement in external competitiveness may be transitory as wages and other production costs rise again. Moreover, the

[15] Despite the high capital intensity of most advanced country exports, the share of wages in the costs of exports is not small when one takes account of the labor costs in all the various stages of the production process. To restore competitiveness by means of wage reductions could necessitate wage cuts in the magnitude of tens of percentage points. Such reductions cannot be expected to be reached rapidly or easily outside theoretical models.

length of the process has raised long-term unemployment. Due to hysteresis effects,[16] it will have permanently reduced the supply of labor, not to mention its other adverse consequences (see, e.g., Machin and Manning 1999). Furthermore, in the absence of debt restructuring or default, internal devaluation does not reduce the nominal value of long-term financial debt, causing debt deflation. In contrast in external devaluation, the value of local currency denominated debts will decline, except for the external debt. Value of exports will also increase as will the money value of imports in domestic currency meaning that some spending that would have gone to imports will flow into the domestic sector (Galbraith 2016b).

A floating exchange rate regime offers the best alternative to a currency union. Its main benefit to a specialized small open economy is the rapid adjustment to external shocks with a number of adverse side effects minimized. Herrmann and Jochem (2013), for example, found that the current account imbalances were restored more rapidly in non-euro-zone member countries in 1994-2011 than in the euro-member countries.[17] To maximize welfare and to control the effects of economic shocks to output and unemployment, rapid and credible adjustment is paramount. Similarly to other price mechanisms, a floating exchange rate acts as an invisible hand. While the impact of the floating exchange rate does not extend to all prices, it ensures that external balance is maintained and the allocation of resources follows a sustainable and competitive structural change. This is particularly important for small open economies which tend to be specialized in few export industries, which makes them particularly vulnerable to external shocks. The less diversified their production is, the more vulnerable they are.

[16] In general terms, hysteresis describes a system that is dependent on its history. In economics, hysteresis effect generally refers to a situation where prolonged unemployment rises the natural rate of unemployment, that is, the proportion of workforce that is available for working at any current time.

[17] The study by Herrmann and Jochem (2014) concluded that in non-Eurozone countries, half of the potential current account imbalances were recovered within a year. The Eurozone countries recovered only 24% of their imbalances during the same time frame.

Floating exchange rate is of course not a totally riskless system. There is, for example, the possibility of overshooting of the exchange rate, where the nominal exchange rate abruptly appreciates usually due to increase in the interest rate (Dornbusch 1976). This may be a problem especially in small open economies. There are various degrees to which floating regimes are managed to reduce daily volatility. In general flexible exchange rate is likely to bring undisguisable and imminent macroeconomic benefits. Separation from the MU enables independent monetary policy and the full control of central bank profits, or *seigniorage* (Meyer 2012).

The benefits of a MU include the abolishment of exchange rate risk within the monetary union. This is prized by tourists and small businesses trading within the MU,[18] but while palpable at the firm level, such *microeconomic* benefits can be trivial at the national level. The exchange rate regime needs to be dictated by competitiveness and speed of adjustment properties for the domestic economy to be able to rapidly recover from idiosyncratic economic and financial shocks. Both of these aspects are crucial for sustained long-run economic growth potential and associated debt-sustainability. In the absence of perfect markets, where prices of all inputs and outputs would stabilize without delays, such *macroeconomic sustainability issues* out-weigh microeconomic benefits if they become threatened by the MU membership.

3. How to leave the common currency

A sovereign state can always decide to adopt its own currency. Formally this happens, when a government stipulates a domestic currency the only *legal tender* within a country, prompting local businesses and citizens to settle transactions and taxes in the domestic currency. In practice, exit

[18] Larger firms can easily use different hedging methods against exchange rate risks and they may also seek funding from the international financial markets with relative ease.

occurs when the national central bank announces that it will no longer exchange MU currency to the new national currency (NC) at a rate of 1:1, but will continue to settle domestic bank deposit transfers at the 1:1 ratio. Implicit in this announcement is that MU banknotes will cease to perform as a domestic legal tender. Markets will immediately start pricing domestic bank deposits differently from (unaffected) MU currency deposits, just like what happened when the ruble union and the Czechoslovakian monetary unions fell apart in 1993 (Pomfret 2002; Nordvig 2014b).

This instantaneous and potentially drastic price shift creates the possibility of rapid and sizable capital movements. The instantaneous nature of the change also runs the risk of the failure of the payment and domestic financial transactions systems. These potential problems, in turn, create a need for careful and confidential planning in advance of any exit decision. While any exit requires that domestic decision-makers assert that the value of further MU membership has become negative (due e.g. to the lack of political will), this does not by itself guarantee low exit costs. Those civil servants and experts the current government listens to will, before any exit decision is taken, have to assure their masters that the requirements for a successful exit can be fulfilled. These requirements eventually determine the costs of an exit.

When assessing the costs, three questions rise above others:

1. Can the exiting country guarantee the functioning of the payment system during the transition and can it re-establish an independent central bank?
2. Is economic and political retaliation on the part of the remaining MU countries and/or authorities likely?
3. Can banks (financial sector), companies and government entities in the exiting country remain liquid and solvent during the adjustment period?

We discuss each of these in turn. Some technical issues related to assessing and addressing these questions are discussed in section 3.4 and statistical analyzes on the effects of breakups and exits are presented in section 3.5.

3.1 Payment system and the central bank

Uninterrupted functioning of the payment system is crucial for successful exit. The payment system supports domestic and foreign trade, as well as enables efficient wage and pension payments, etc. The ideal situation with new payments systems and currency notes being available at the time of exit may not be a plausible scenario. Payments systems need to be tweaked or even reconstructed to handle the new national currency. It may not be possible to legally order the new cash before parliament has decided on the change. As long as the cash MU currency notes held locally and abroad are indistinguishable from those held abroad, they will be similarly priced. As a general principle, capital and currency controls need always to be implemented whenever there is a threat of large scale speculative outflows threating the functioning of the banking and/or payment systems.

A basic prerequisite for a smooth and low-cost exit is that the country has its own domestic payment system including a retail payment system and a real time gross settlement system (RTGS).[19] Whether in a currency union or not, it is important to maintain a domestic payment system, because it enhances sovereignty especially during international financial crises and/or during severe political, economic or financial crises within the MU. In the absence of a domestic electronic payment/clearing system, the switch to a new currency would lead to a situation where payments

[19] Also securities and settlement systems would need to be operated domestically instead of through MU systems and would therefore need to be revised.

between banks or customers or both could not be made efficiently or conveniently. In this case, the country planning to exit would face two primary options: it could either accept temporarily handling domestic payments in an inefficient and costly manner while banks construct a new settlement system or it could create a parallel currency system that includes the MU currency and the new currency to be created. The latter option, however, is problematic since it would require active planning with possibly quite uncooperative MU authorities and (very likely) very extensive capital controls (see section 3.4.2 for secrecy requirements of the negotiations).

The seriousness of the domestic payments issue depends on the extent of needed interbank clearing. To the extent that payments between customers take place within one and the same bank, no payments problems will arise. This offers a potential remedy for countries with relatively few and large banks. If customers maintain accounts in several banks, payments between customers may be agreed to take place in banks where they both have accounts. Any customer transfer between accounts surpluses and deficits in different banks would nevertheless require transfer of funds in forms and ways accepted by both banks, e.g. a working settlement system.

There are a few historical examples of countries that have managed without a functioning payment/clearing system for an extended period of time. A fairly recent example of a developed economy banking dispute is Ireland in 1970, when the Irish economy operated without commercial banks for a period of six and a half months (Murphy 1978, Martin 2014). Commerce and financial transactions were conducted using cash and (primarily) checks. Local publicans and retailers assessed client creditworthiness. The Bank of Ireland provided direct credit lines to importers and exporters. Although some disputes arouse, especially among insurers and pension funds, surprisingly the bankless period did not lead to any major disruptions. In fact, the Irish economy managed to grow during that time (Murphy 1978). Tough financial conditions following the break-up of the Soviet Union in the early 1990's, led to a creation of an inter-company monetary network. This network allowed companies to settle trade credits, used to offset debts, while workers were paid with tokens and vouchers (Martin 2014).[20] The examples of Ireland and former Soviet Union show that it is possible to operate a modern economy without a functioning banking system, at least at the very basic level and for a limited period of time. This extreme option should, however, be a last resort, as it poses several threats to the operation of any national economy.

Relying on cash and/or scrip during exit requires them to be in hand or at least rapidly printed after the decision to exit. As mentioned above, it may be legally impossible to procure new currency notes before a formal decision to exit had been taken. If the government wishes to use domestically held MU cash as (the temporary) domestic cash, the cash needs to be immediately stamped to ensure its re-pricing to the national currency rate. However, stamping may present three problems:

1. Notes are likely to be property of the central bank of the MU implying possible legal challenges and cooperation problems later on;
2. Stamps need to be clear and recognizable, and at the same time difficult to forge, especially if new (stamped) scrip is issued or the new currency is expected to appreciate against the MU currency; and
3. Stamped MU notes may continue to be priced at face value within the rest of the MU.

The first condition can be relaxed to the extent that MU notes have been allocated to the exiting country through its central bank. This portion of MU notes can be argued to be under the sovereignty of the country, and hence can be converted by stamping to the new currency. Still, there is no guarantees that MU authorities will view stamping as a mean to convert legal tenders of the

[20] The inter-company trade was estimated to account around 40 % of all trade in Russia in the year 1997 (Martin 2014).

MU of legal tenders of other countries (condition 3). If they do, MU authorities may demand a reimbursement of the nominal value of the stamped notes or the printing costs. Of course, these issues will not prevent a politically strong and determined leadership from using this alternative.

The second condition requires stamps to be designed and ordered beforehand. If temporary new scrip is issued as a medium of exchange, it needs to be shielded against forgery by stamping or other means.[21] Stamping may create various logistical problems. Because modern cash dispensers need to recognize the bills to function, they need to be reprogrammed. This is a task that may require some weeks. In the meantime, other forms of disbursing cash to the public can be resorted to. In addition to commercial banks, retailers, post offices, or other agents can be used to disperse the newly printed scrip against IOU:s of citizens and firms.[22] In any case, providing sufficient numbers of physical currency to consumers and companies right after the exit will be a monumental task, which needs to be planned carefully. The scrip needs to be backed by the central bank (allowing for example a withdrawal of a prefixed amount of scrip per person per month) to ensure that distributors do not suffer losses from uncovered scrip. The third problem means that capital and currency controls need to be implemented immediately. The problem is reduced, if the central bank of the exiting country is able to buy the MU notes in circulation within exiting country jurisdiction from the MU central bank (Sinn 2014). Prices would be quoted in the new currency at a rate of one to one, although the notes would be the same as those in circulation by the MU. Practical implementation would naturally require strict capital and currency controls to contain currency flight.

One option is to let institutions issue their own scrip, while the new domestic currency is in print. After Argentina dismantled its currency board and defaulted in 2001, cash withdrawal

[21] If temporary notes are, for example, government bond notes, they are likely to include anti-forgery features. If, on the other hand, notes are just "pieces of paper", they should be stamped.
[22] IOU = I-owe-you.

restrictions were put in place to prevent full scale bank runs. To settle transactions, provincial governments, cities and even supermarket chains issued IOU's, that is, effectively new currencies (Martin 2014). By March of 2002, such alternative means of payment constituted almost a third of money in circulation. By mid July 2002, around 7 percent of the adult population were using *Crédito,* a mutual credit money issued by local exchange clubs with an independent standard (and clearing) from the Peso (Colacelli and Blackburn 2009). During the Great Depression, similar clubs sprang up in the US. Currently there are thousands of private monies and cryptocurrencies in circulation across the world, such as the Bitcoin (Martin 2014). With mobile pay apps, etc., setting up an alternative currency with independent clearing could, probably, be done a lot faster than the issuance of private notes or IOU's. Using private created currencies during the transition should, however, be a secondary option with preference always on the state issued currency through the banking system.

The urgency of the cash predicament in an exit or in setting up a private currency will vary between countries depending on the extent to which cash is used in retail payments and on the ability of the banks and financial authorities to operate a payment system under the new currency. In an increasing number of countries even retail payments are made with cards or other means of electronic payment. In any case, notes denominated in the new currency need to be ordered at the latest immediately after the exit decision by the parliament. This process can be shortened, if the notes of the new currency can be planned beforehand.

Exit requires that banks are legally forced to redenominate, with immediate effect, at least part of their balance sheet from the MU currency into the new national currency. If the exit is not combined with an official exchange rate adjustment, the redenomination will take place at a rate of one to one, i.e., one MU currency unit for one new national currency unit or 1:1.[23] This revalues bank balance sheet items (such as total deposits) and creates a new currency within the banking system of the exiting country (Stiglitz 2016b). The structure of the IBAN (International Bank Account Number) is irrespective of the currency used, so the account numbers of citizens and firms of the exiting MU member could be used after the exit. However, a swift redenomination of domestic deposits and assets held in electronic form to a newly invented currency could prove to be time consuming. How easy the redenomination is, depends on how idiosyncratic the software banks use is. There may not be a system in place that could do the redenomination automatically, in which case the value of each deposit would need to be changed manually. This would be likely to take some weeks or months and would require extended bank holidays.

In the worst case when even manual redenomination is not possible exit requires a systemic change, which could take several months to over a year. If so, the exiting country could consider temporary adoption of an existing currency of another sovereign state. Best candidate currencies in this case would likely be currencies issued by a country or a group of countries whose economic and institutional features are closer to those of the exiting country. Given that this realistically requires agreement with the authorities of the adopted currency, this alternative is not necessarily easy to adopt temporarily. Indeed, it could be seen as joining another MU after exiting the previous one.

The new currency needs to be backed by an independent central bank that is independent from the system of central banks of the MU. Re-establishment of the independency of the domestic central bank requires at a minimum changes in legislation and the leadership of the central bank. If the national central bank is deeply integrated into the system of MU central banks, separating it quickly from the system of MU central banks may be impossible. In this case a new central bank is

[23] Since any other ratio would imply public commitment and legal backup for either a devalued or revalued NC.

needed. It may include a majority of the staff from the old central bank as long as this does not cause problems for it to function independently from the MU system.

Regardless of the extent of institutional changes necessary, inter-central bank cooperation links, that is, between the departing national central bank and the remaining central banks in the currency union as well as with the hub central bank of the MU, such as the ECB or the FED, should be maintained to the extent possible. When the motive for MU membership is primarily economic rather than political, such cooperation may be in the best interest of all parties concerned. In the Eurozone and in the USA, the system has been built on a hub and spoke structure (see Figure 1), where local central banks are responsible for settling bank transfers, currency circulation and monetary operations with banks, companies and citizens of their own hub area (member country in the Eurozone, local FED area in the USA). The monetary union hub central bank is, in turn, responsible for monetary transactions from one spoke to another via systems such as TARGET2 in the Eurozone and Fedwire in the USA.

In any case, central bank settlement through any joint MU system, such as the euro TARGET2 system, will need to be renegotiated by the exiting country and its central bank. The domestic central bank will have to adopt or carve out a new (actually pre-MU) realtime gross settlement system (RTGS) system, most likely based on mutually agreed balances with other central banks (both MU and outside ones).

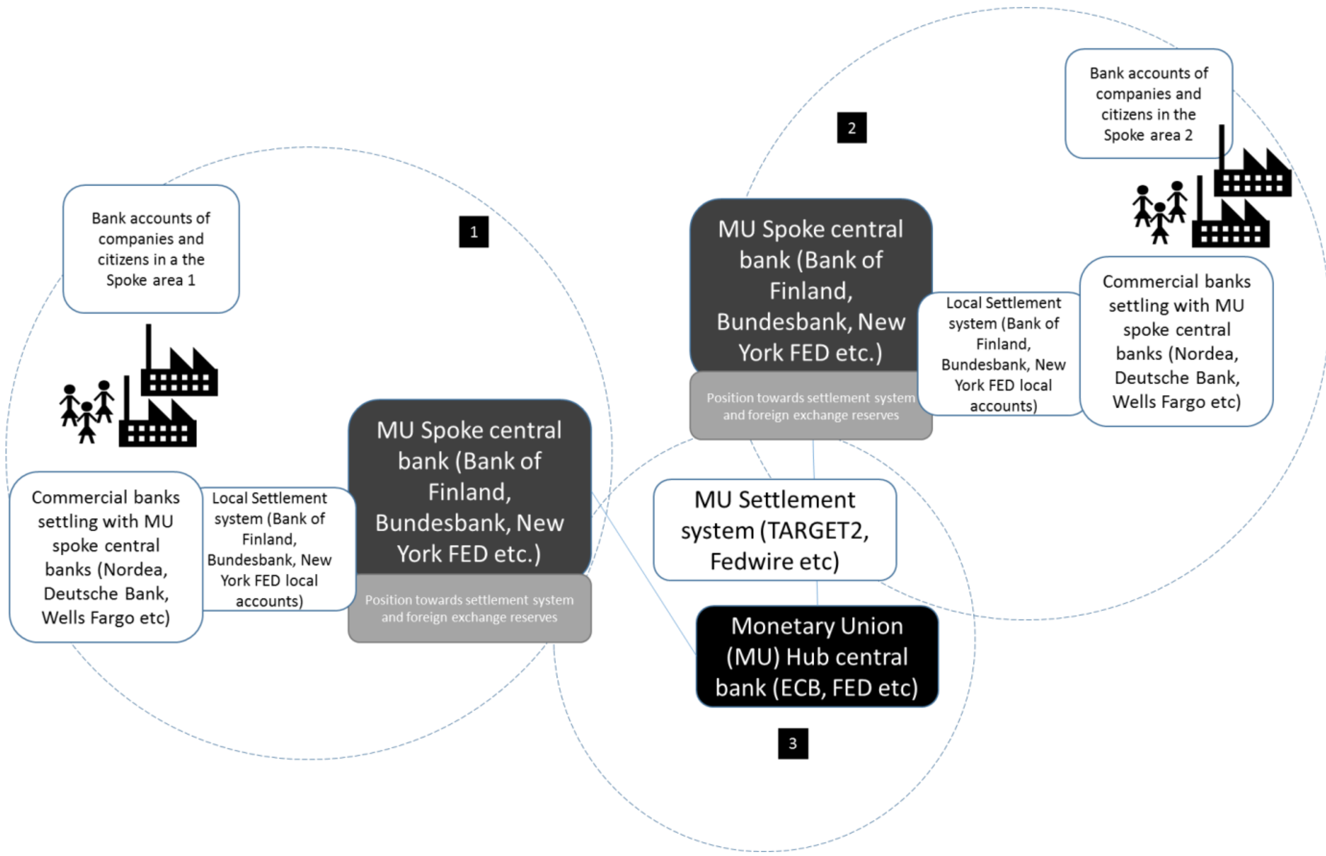

Figure 1: The settlement systems of monetary unions

Central bank settlement of banks' domestic transactions will continue as before with the central deposit accounts, if a domestic clearing system has been retained in parallel with the MU one. In contrast, if the domestic clearing system has been dismantled, banks should be given the task of creating a new one as soon as possible.[24] Banks' transactions clearing with non-MU counterparts should proceed relatively unchanged, as long as transactions can be priced on market terms, with the reference rate being based e.g. on a floating exchange rate and not on an artificially dictated fixed

[24] Interbank clearing difficulties may be at least partly circumvented by customers using agreed intra-bank payments in conjunction with accounts at several banks. Thus, parties to a payment may agree to settle in a mutually agreed bank where they both have accounts. As long as the accounts are provided with sufficient funds, the payment will remain internal to the bank and therefore unproblematic from a settlement point of view.

ratio. Clearing with MU counterparts will, after exit, proceed in the same manner as presently clearing with other banks not belonging to the MU, e.g., using other mutually agreed clearing arrangements than the joint MU one.

The new local currency will be technically recorded and transferred either as balances in domestic commercial banks' deposit accounts or, in the case of the commercial banks themselves, in the central bank deposits (reserves) and, alternatively, in the form of physical coins and notes (new banknotes or stamped old monetary union banknotes). The domestic banks will need to either redenominate the currency union entries to local currency at 1:1 ratio, or alternatively, establish a parallel registry for domestic units independently from the existing ones. However, the first alternative is the most likely one, as countries leaving a monetary union are likely to lose their right to locally create and transfer monetary union currency, such as euros. This does not, however, hinder the ability of domestic banks to create money (Stiglitz 2016a).

3.2 The risk of economic or political retaliation

If exiting is perceived to create a dangerous precedent that could increase the risk of further disintegration of a wider politically agreed monetary union, the exiting country may face political and/or economic retaliation.[25] In an extreme case, this could take the form of military pressure from the behalf of remaining MU members. While such extreme measures are unlikely, at least in modern democracies, less extreme measures are possible. Such measures include trade blockades or other barriers, expulsion from international agreements and/or institutions of the MU.

Retaliation is costly also to the MU. Hence, the mere threat of retaliation is the primary instrument of the MU authorities to keep members in line. It lies in the interest of MU authorities to

[25] For an extensive analysis on the consequences of a single country leaving the Eurozone see Meyer (2012).

stress the technical and the political difficulties encountered by those leaving the MU, if not resort to active measures to discourage leaving.[26] Before and after an exit, the primary MU strategy is likely to stress the resilience of the (remaining) union, as well as the advantages of remaining relative to leaving. Consequently, MU authorities may prove to be uncooperative partners to the exiting country, at least for a while, and especially in regard to small countries. They may try to obstruct or hinder the convertibility of the new currency. They may require that political contracts with the remaining MU will be renegotiated on less favorable terms or terminated altogether. If it is within the limits of the MU treaties, the exiting country may even lose free access to the common market.

MU authorities' concern over potential *contagion* effects related to reputation effects, credibility, accountability, adherence to democratic principles, perceptions of MU membership costs and benefits, and the risk of banking crisis may reduce the scope of sanctions. The resolution of associated technical and legal issues will crucially depend on respective political will and resulting guidelines given to professional staff dealing with the transition.

Limits on MU sanctions will be determined both by the economic situation of the exiting country and by consequent reputational effects on MU authorities. This has three implications:

1. Sanctions will not in practice be arbitrarily large and lengthy since MU reputation and the perceived advantages of MU membership may be negatively affected by overly severe sanctions.

[26] The Greek crisis during the summer of 2015 provides a recent example of this. During the crisis, ECB froze the emergency liquidity assistance (ELA) program that provided liquidity for the Greece's banking sector under a run. This led to extended bank holidays and social instability thus putting pressure on the Greek government to accept the terms of the creditors (see Wyplosz 2015). The Brexit debate, while concerning an exit from the EU and not the MU, also shows the willingness to at least consider strong pressure (abandoning cooperation on migration issues, reducing the scope of free trade with a non-EU member, etc.).

2. The exiting country can reduce the likelihood of sanctions by active communication among remaining MU members of the reasons for the exit decision.
3. If the exiting country can gain support from like-minded countries, for instance other Nordic countries in the case of Finland, reactions of the MU may be mild and muted.

One can expect substantial differences between the exit process of a large and a small country. Large countries may trigger major indirect systemic exit effects, which have to be taken into account by the MU. Their exit is therefore likely to result in more cooperative solutions and balanced agreements than those of small countries. On the other hand, whilst small countries in the MU may not enjoy the same political leverage as large ones, many key issues (bank liquidity and solvency, sustainable economic and foreign exchange policy) could prove easier to handle even without MU cooperation.

An exiting country should consider negotiating with the remaining MU prior to an exit decision, although such a strategy does bear substantial risks. If there is no exit clause in the treaty of the MU, other members of the MU may try to block the exit. Even if there is an exit clause, member states displeased with the decision to leave may leak information about the exit plan, which can upset markets and force an early onset of capital controls. If MU officials are not informed beforehand, the officials of the exiting country should make a serious effort, immediately after the public exit announcement, to explain the reasons for their decision and offer to cooperate to deal with any particular problems arising with the MU. In the case of cooperation breakdown, the exiting country will be forced to introduce stricter capital and market controls than otherwise. This would be costly.

3.3 Can banks, companies and government entities in the country remain solvent and liquid during an adjustment period?

Exit will inflict major economic costs, if it leads to insolvency or illiquidity in the banking, corporate or government sectors. This will naturally become an issue only if the new currency is expected to depreciate against major currencies, like that of the MU. In this case the foreign debts owed by domestic companies, banks and local government could increase in value leading to insolvencies and bankruptcies pushing the country into a *balance sheet* recession. In the case of expected depreciation during an exit process, the major question regarding the insolvency and illiquidity issues is, do banks, government entities or the corporate sector hold a large proportion of contracts which stipulate that disagreements are handled in foreign courts subject to foreign law.

The law of money, or *lex monetae,* establishes that, because a sovereign state has the right to regulate her currency under international law, the creation and substitution of the national unit of payment are entitled to recognition by other countries including their courts and official bodies (Proctor 2010). In practice this means that sovereign nations have the right to redenominate financial contracts they are party of into the currency, which is the legal tender in a country in question. However, when a country exits from a currency union, there are two lex monetaes: the one of the departing country and the one of the MU (Proctor 2010, Nordvig 2014a). This creates a situation, where both the local law and jurisdiction are likely to determine the ability of country leaving the currency bloc to redenominate her liabilities. Nordvig (2014a, p 13-14) summarizes the extensive legal discussion around this issue to two clear-cut options:

1. If an obligation is governed by local law and under the jurisdiction of a country that is leaving the MU, then that sovereign state is likely to be able to convert the currency of her obligations from MU currency to the new local currency through a new currency law.
2. If an obligation is governed by foreign law and jurisdiction, then a country that is leaving the MU cannot change the foreign law, which makes the redenomination more problematic and considerably less likely.

Therefore, both the law and the jurisdiction of a financial contract will determine the likelihood of redenomination (for detailed analysis about controversial situations see, e.g., Proctor 2010 and Nordvig 2014a).[27] Still, even in cases where the obligation is under both foreign law and jurisdiction it can still be redenominated depending on the decision of a foreign court or through voluntary multiparty settlement. This is especially so in cases where the solvency of the other party of the contract would become questionable without redenomination. In these cases, it can be more profitable for the respondent (holder of the asset) that the obligation will be redenominated, if failing to do so could lead to major or even 100% loss of the principal. With lex monetae the first court ruling will be crucial as it will be used as the precedent for following rulings.

What the lex monetae implies is that on the liabilities side of the local banks, all deposits held at domestic banks as well as bonds emitted under the country's own law could be legally redenominated. Bonds or other liabilities emitted under foreign law would remain denominated in the original currency, requiring, however, a new settlement country to be chosen. On the asset side, all loans granted by domestic banks and other domestic investments under the country's own law will be redenominated. Investments and contracts agreed under foreign law would remain

[27] For further evidence on how markets are pricing sovereign bond risks according to the governing law of the contract see Nordvig (2015).

denominated in the original currency. Since banks finance their assets with a combination of equity, bonds, covered bonds, hybrid instruments such as CoCo bonds and deposits,[28] the net impact on bank currency mismatch is not obvious. There may be disagreement on whether redenomination in particular cases is allowed, implying that the final impact may be known only after lengthy negotiations between the parties concerned.[29]

The best way to avert the legal scuffles around the redenomination is to conduct strict structural and growth-oriented fiscal policies before the exit. If the economy of the exiting country is growing and if it is in excellent fiscal condition with good international reputation (no defaults, etc.), the odds of large depreciation after an exit are small. In addition, if a country is able to re-establish a credible monetary and fiscal policy after an exit, the foreign value of its newly created currency could even appreciate against the MU currency improving its external funding position.

3.3.1 Solvency and liquidity of the banking sector

The distribution of new cash to the population, as well as the setting up of the national currency (NC) denominated financial structure, requires that the financial system remains operational (solvent and liquid) during and after the exit. If it breaks down, the economy is likely to encounter large banking crisis costs. Thus, when exiting, authorities will wish to involve domestic banks in the preparations as soon as possible, at the latest when the exit decision is formally taken and markets

[28] A **contingent convertible bond (CoCo)** is a fixed-income instrument that is convertible into equity if a pre-specified trigger event occurs. The conversion improves the solvency of the bank in a crisis situation without a government bail-out, and is therefore a form of bail in bank restructuring framework.

[29] The bond and derivative classes are somewhat problematic, as they can include contracts based on foreign jurisdictions such as English law. Private parties will therefore, over time, have to agree on how they will be handled in each individual case. The settlement of the cash flows can therefore be a question to juridical system outside the country, which can either agree to settle the contracts in the new local currency or demand another local central bank monetary system as the place of the settlement. For example, in the case of a Puerto Rico currency union exit, a New York law contract payoff could be deemed to be settled under NY Fed dollars rather than in the local new currency. Getting a final decision on the places and levels of settlement can take several years. However, in most cases, the investors and lenders could and would have incentives to agree on how to settle their contracts in much quicker fashion.

are closed. Ideally, banks should be involved already during the preparations phase, though this has obvious dangers. As we explain below, preliminary preparations may need to be carried out in secret (see section 3.4.3). Leakages can compromise the entire exit process and force the early enactment of capital controls. Regardless of the timing, it is unlikely that exiting country banks will, in all cases, be able to transform their internal automated systems in perfect synchronization with the change of the currency regime (see Section 3.1 above). Banks may, for a time, have to manage their internal issues in any way they see fit, including temporarily reverting to manual processing where possible. Indeed, they have very strong economic incentives to rapidly adjust to the changed environment.[30]

Exit creates challenges for the banking system on at least three fronts:

1. Bank capital and thus solvency changes, as parts of banks' balance sheets are redenominated in the new national currency (undisputed domestic law financial agreements), while other parts remain denominated in foreign currency, (for instance, some foreign law correspondent account and bonds).
2. Liquidity is affected, as banks initially have only limited amounts of national currency, and may be temporarily constrained in acquiring foreign currency (re)funding.
3. Technically, payments' clearing and settlement systems have to be adapted to the new national currency and possible automatic transfers from domestic to foreign accounts becomes impossible for some time (transition period).

It is therefore crucial that the national central bank ensures the liquidity of the banking system, and some form of audition of the banking sector to cope with the transformation is made

[30] Since bank-specific non-MU clearing arrangements already exist (see Section 3.1), the issues themselves should not prove conceptually difficult to overcome. Nevertheless, in case the exiting country has chosen to terminate all strictly domestic payments systems, adjustment to a new currency is likely to be costlier than otherwise. Replicating the systems in place in countries with major trade flows with MU countries is possibly a practical temporary solution.

before the decision to exit. The exact definition of a foreign account may also become unclear. For example, since as of 2016, there are 19 possible Eurozone countries where euro payments can be made. After the exit, banks of some of the countries are clearly less desirable as a destination for settlement of the MU payments (in the Eurozone: Southern Europe vs. Northern Europe). A typical contract does not specify a fixed country, as under MU all MU payments are generally assumed to be equally acceptable for full and final settlement. If there would be a complete MU break up, the increased *redenomination risk* would make stronger member countries clearly preferable spokes for settling MU currency payments, as opposed to the weaker MU members.

At the moment of the exit, domestic banks will have assets and liabilities to foreign entities denominated either in the MU currency or in a third country currency. To the extent they are not subject to redenomination, they will create a positive or negative currency position in the banks, with an immediate impact on their solvency. To offset this, capital should instantly be available for banks in need of it. At the same time, national and MU funding are no more interchangeable, but must be sourced in different markets. Domestic markets may, however, not be fully functional immediately after the exit decision.

Thus, authorities need to act pre-emptively to contain any solvency problem in the banking sector. The domestic central bank should provide temporary NC funding (emergency liquidity assistance, ELA) as needed. Sufficient, but limited time should be provided for banks to access additional capital, preferably from old or new private owners but, conditionally, from the public sector if necessary. In the latter case, collateralized lending or even partial state ownership could ensure that costs can be later recovered through resale of the government stake in the bank(s). If this proves difficult, closure or public control of the weakest banks should be considered. A temporary political commitment to ensure bank external funding may be necessary. Any economic policy measure, which increases investor confidence in the future health of the economy, will help banks as well. If these measures prove to be either insufficient or unsuccessful, capital and currency controls need to be implemented for an extended period to stem an outflow of deposits and capital.

Any problems with short-term new currency funding should relatively easily be handled by temporary central bank funding facilities at market rates and against collateral. The government should nevertheless stand ready to provide domestic banks access to sufficient longer term capital, for a time. Potential emergency capital should be granted against either collateral or ownership claims. Whether existing owners will first have to cover capital losses in adverse situations before the government steps in, is partly a political issue. Yet, investor responsibility is a cornerstone of the market economy. The solvency requirements of the domestic banking sector can also be temporarily relaxed to enable banks to access private capital

The quality of domestic commercial banks and their clients in the departing monetary union member is of particular importance. A high quality banking system, with a low level of nonperforming loans, high solvency and strong capitalization, is able to function after the exit with minimum support from the local central bank. Liquidity may further be strengthened through speculative capital imports, if such are forthcoming. In contrast, a low quality banking system would need to be hedged to a much greater extent by the relevant public authorities, which may even have to prepare for recapitalizations and other unpopular support measures. The quality of the banking system and the health of the economy are positively related, which means that a low-growth, low-activity economy is most likely to have a low-quality banking system.[31]

3.3.2 Solvency and currency mismatch issues in the private sector

[31] Finland at the moment shows that such a combination is by no means necessary, only probable.

Private non-bank currency mismatch issues will have to be handled by the relevant private parties themselves. However, to the extent contracts are between domestic banks and domestic customers under domestic legislation, no problems are likely to arise for the bank or for the customer, since both can be legislated to be redenominated and settled in the new currency. The largest domestic lending classes are mortgage loans for private citizens, and term loans and overdrafts for corporations. These are typically agreed under local law, with local jurisdiction dispute mechanisms. The cash flows have in the past been paid under the local central bank settlement area. As above, these can, as a general rule, in the future be settled with the local currency. When the above conditions do not exist, the settlement is less straightforward, and may require separate ruling by, e.g., a foreign jurisdiction, potentially under foreign law interpretations. This may lead to private agreements on how and where the contracts will be settled.

Many private entities, including banks and export firms, may have hedged external financial positions with derivate instruments. Generally, flows from derivatives tend to be substantially smaller than flows in debt, equity and other categories, and their assets and liabilities also tend to net out at the national or even at the sectoral level (Nordvig 2014a). As a precautionary measure, regulators and policymakers should take the possibility of substantial firm- or sector-related derivative losses into account, when planning for the exit.[32] This will require the setting up of domestic versions of the MU clearing and benchmark interest reference rates.

3.3.3 Solvency of government entities

[32] There are no detailed database of derivate transactions and contracts as most of them are made over-the-counter (Nordvig 2014a).

Central and local government entities may have external liabilities in the form of bonds and derivatives. Before any exit decision, these needs to be audited to see under which law and jurisdiction they are, so that the ability to redenominate them is known beforehand.

3.4 Issues of public governance

The preconditions of a low cost exit depend on the exiting country's legal characteristics as well as on its prevailing economic and political situation. These preconditions are:

1. Government needs to have and retain sufficient political backing for the exit in the parliament.
2. Exit preparations (preliminary planning) need to be conducted in secrecy within the government and the parliament.
3. Government needs to be able to rapidly prepare and implement any required changes in laws and regulations.

3.4.1 Political backing

If the government lacks parliamentary support to the exit, its ability to push through the currency switch is deficient. If parliamentary support weakens during exit preparations, the result is the same. While this says little about how to get there, it does indicate that there is widespread and serious concern among decision makers about the domestic economic or political implications of the exit from the MU. It also indicates that decision makers consider it unlikely that MU measures and developments will considerably improve the economic situation. There also needs to be sufficient public support for a national currency and against the MU.

3.4.2 Secrecy

Since the value of a new currency will depart from its nominal value at the exit decision, secrecy is crucial at the initial planning stages. The new national currency may initially depreciate for various reasons related to the decision to exit. The domestic economic problems may translate into distrust in the domestic banking system. An overall lack of competitiveness may persist. The government may be unable to stop debt from mounting. Under such circumstances, any hint of exit planning, will prompt capital flight to safe havens abroad, draining the banking systems from liquidity.

Capital flight is rapid, since transferring money in electronic form is easy to an existing foreign bank account, which is standard practice for all companies with foreign activities. The sums corporations can transfer abroad are also typically relatively large. Foreign bank accounts are common also among individuals, who may live abroad, own property abroad, do business abroad, deposit in foreign banks (using, e.g., the forex accounts) or buy gold. Priviledged, wealthy individuals are more likely to be able to anticipate an exit and transfer their funds abroad . The large majority may try to withdraw their deposits and maintain the value of their assets in physical MU currency. Contrary to large electronic transfers, hidden from popular view, highly visible bank runs tend to involve modest amounts.[33]

Because of the risk of anticipated depreciation and capital/deposit flight, it is particularly important that the preliminary planning process is kept strictly secret. This may be difficult, but

[33] This was painfully visible during the Greek crisis in Summer of 2015 (Hope 2015). However, it should be noted that Greece is unusually underdeveloped in phasing out bank notes in favor of electronic transactions, but also that the process was well underway as banks started to issue their own debit cards after the closing of the ELA (Galbraith 2016b). Nordic countries, in contrast, have the highest proportion of electronic payments in relation to banknotes in the world and can therefore less vulnerable to bank runs. The possible plans to phase out high denomination bank notes, such as the eventual withdrawal of 500 EUR banknotes initiated in the Eurozone in 2016, will also reduce the likelihood and severity of bank note withdrawal based bank runs.

confidential preparation is a stock in trade of governments. For example, Finland's banking crisis of the early 1990's, as well as Greece's contingency preparations, indicate that this is, indeed, possible at least in a situation that imposes imminent and serious economic threat.[34] If secret preliminary planning is impossible, preventive capital controls may be the only way to keep the banking system afloat.[35] Capital controls raise the costs of the exit. Controls may be necessary during the entire planning process, raising exit costs and keeping speculation alive. Bank support measures, to ensure the continued functioning of the banking system, may also be needed. Market reactions to an exit are difficult to predict and may change over time. Secrecy should thus be preferred throughout the planning process to contain the uncertainty, but if impossible, capital and currency controls need to be implemented.

An open planning of an exit contains several other risks, especially if there is no legally accepted way to exit within the MU treaty. Non-confidential preparations would provide the authorities of the MU with ample opportunity to influence, complicate and eventually prevent an exit . For instance, the central bank of the MU could easily issue liquidity restrictions on the banking sector of the exiting country, well in advance of an exit.[36] There could also be strong domestic and foreign, political and public pressure against any government even considering such an option.

Exit may also lead to anticipated appreciation of the national currency, if the exiting country has a strong and competitive economy with a current account surplus, a solvent and liquid banking system and good growth prospects. In this case, the lack of secrecy could lead to large capital

[34] The group working on the contingency plan of Greece, i.e. *Grexit*, also remained a secret for five months until the former Finance Minister (Janis Varoufakis) disclosed the existence of the group (Galbraith 2016b).
[35] Capital outflows can also trigger a sovereign debt crisis, if the country has a high initial level of public debt (Kriwoluzky *et al.* 2015)
[36] During the recent Greek crisis, ECB froze the emergency liquidity assistance (ELA) program that provided liquidity for the Greece’s banking sector under a run. This led to extended bank holidays and social instability thus putting pressure on the Greek government to accept the terms of the creditors (see Wyplosz 2015). Even long after the renegotiated bail-out III in the Fall of 2015, the cash withdrawal and foreign bank transfer restrictions remained in place.

inflows, further increasing bank liquidity, pressing interest rates down and overheating the economy. Funds could be withdrawn from other member countries of the MU, increasing political pressure.

Regardless of whether the consequences of speculation arising from markets and/or from other MU members are seen as problematic or unproblematic, secrecy of the planning process should be viewed as the primary or first option in special cases, especially if the exiting country's economy is close to bankruptcy (as Greece in summer of 2015). If there is an exit clause in the MU treaty that does not ensure a secret planning process enforced by rigorous and heavy sanctions, the country would be better off by preparing a unilateral exit. Open negotiation of exit terms with the MU members would be possible, but would require implementation of capital and currency controls when the negotiations are initiated. In the absence of an imminent threat of capital outflows, market reactions are not constant and may change over time for unforeseeable reasons. While economic problems may not emerge, political ones may surprise investors, and lead to changes in perceptions.

3.4.3 Legal preparation

The timetable and feasibility of a monetary regime change depends crucially on the enormity of the necessary change in laws. If the return to a national currency requires constitutional procedure, it may require a larger majority in parliament than the government can master independently. In this case, broad political support is necessary. If, in contrast, the regime change requires only a change in regular laws, it is more easily manageable.

The parliament must also be able to adhere to constitutional rules to pass the legislation. If the political situation is adept, the government may be able to produce in secrecy the required background material and proposals for parliamentary approval.

The legal proposals are drafted by civil servants following general and, in normal cases, public governmental political guidelines. The preparation work is likely to take substantial time, but could, if necessary, be accelerated, if politically so guided. Given the need for confidentiality, the preparation is likely to be concentrated to a small team of senior civil servants working within the shortest deadlines possible. For parliamentary approval of government proposals to be swift and unproblematic, legal proposals have to be both timely, well drafted and technically adequate. This, as well as the speed and confidentiality requirement, puts great demands on those few high-level civil servants who are likely to be charged with the project. Probably the most decisive factor between smooth and trouble-ridden exit from an MU lies with speed that the parliament can approve the necessary laws.

Nevertheless, preparations may need to be under way at least several weeks before the parliament is provided with the proposal. The better the quality and loyalty of civil servants, the better preparations will run. The larger the majority supporting an exit among politicians, the more likely it is that decisions will be rapid and confidential. Optimally this last phase of the preparations will be done over a week-end. If a week-end is not long enough, bank holidays or capital controls may be extended to buy the time required for parliamentary proceedings. Capital controls may be needed in any case, during the first phase of the adjustment.

It is likely that the exit will break some or several treaties of the MU, which may become a larger problem. This can create a challenge to the exiting country, especially if there is no exit-clause (no exit-clause in euro) in the treaties, and if the country chooses to negotiate an exit agreement with the MU. However, as long as the country has dominant jurisdictional power over its own legislation, there is no way that the MU can prevent a country from leaving, at least by legal technicalities. After a unilateral withdrawal from the MU, sanctions and legality of the exit would be handled in the MU courts, if such exist (Proctor 2010, Galbraith 2016b). This would pose no obstacle for the exit.

3.5 International experiences

Rose (2007) analyzed the macroeconomic performance of 69 countries or territorial entities that exited from a currency union between 1946 and 2005. He found that there is very little macroeconomic volatility before and after countries exit from a currency union. This shows that currency union exits have tended to incur low economic costs, at least in the short-run. In the light of this study on currency exits, the only one we could find, “massive economic costs” arguments against an exit seem completely over-blown. If there are no statistically measurable macroeconomic fluctuations around the time of an exit, there cannot be massive costs. Exits may nevertheless incur political costs, which may have long-term economic repercussions.

4. **Conclusions**

The protracted crises haunting the Eurozone have raised exit of one or several countries from the monetary union into discussion. In this article, we have outlined the challenges that a country considering of leaving the Eurozone or some other modern currency union, would face. While the challenges are large, they certainly are not insurmountable. Monetary unions are not irreversible, contrary to claims made on behalf of the euro.

The main concern in an exit would be to ensure the functioning of the payment system. Potential retaliation from remaining members of the MU are likely to be temporary. Potential liquidity problems of domestic banks and corporations can be handled, if the system for transferring funds and money can be maintained. If the new currency is expected to depreciate, the ability of the nation to convert loans to the new currency under lex monetae should be checked beforehand. In many cases, the need for secrecy surrounding exit is paramount. This is not to say that exit from a

MU could not be done with open discussion and long-term open planning before the exit decision, but this would require implementation of capital and currency controls for extended periods of time, raising the costs of an exit.[37] It is nonetheless likely that capital and currency controls need to be implemented sometime during and after the exit to control speculative fluctuations and related capital flight.

We have not provided any estimates on the costs of an exit, as they are highly case dependent, uncertain and should be calculated on a country-by-country basis. However, there are many ways to contain the costs, both within the MU and the exiting country, as we have described.

In a modern financial system, exit of a country from a MU should not be done lightly. Economic, financial and political interactions between nations are tight. Exits risk causing large economic disruptions during and immediately after. These uncertainties can only be reduced, not completely removed, through careful planning as outlined in this paper. Despite the uncertainty related to costs of an exit from a MU, there is no point in staying in a dysfunctional currency union, especially if it threatens the macroeconomic development of a country. In the words of Joseph Stiglitz (2016b): “Good currency arrangements cannot ensure prosperity; flawed ones lead to recessions and depressions”. When considering the long-run well-being of citizens of a country, a currency arrangement where a country cannot be prosperous should be abandoned, at virtually whatever the cost.

[37] . If the monetary union is developing rapidly into a full political and economic union some countries may wish to leave the monetary union. If the economy of an exiting country is in good shape the exit process may succeed smoothly and markets react to the exit positively. The MU may also be economically in a weak situation and future prospects are pessimistic.

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