

# Struggling with Constraints

## 3.1 THE CURRENT EMU IS INCOMPLETE AND UNSTABLE

Chapter 2 documents a significant dispersion in the performance of EU economies in the past couple of decades. In part, the performance differential is the result of shocks originating outside of the European Union. Namely, while some industries (and countries that specialise in them) benefited from the advent of East Asian and formerly communist-ruled Eastern European economies, other industries (and countries) suffered from the same process. In addition, countries respond to shocks using different policies, equipped with different institutional setups and having differing levels of ability to undertake necessary reforms in a timely fashion. Many economic, political and institutional factors play a role in determining whether reforms are undertaken or not.

Thus, the differences observed in economic performance are not a result of economic integration per se. In fact, the European integration process is both a response to various crises in the past and an opportunity to gain from new opportunities. On the other hand, being part of the European Union imposes certain constraints on member states. These constraints are even tighter for countries that have adopted the euro as a common currency. While this provides them with additional opportunities, the incomplete nature of the Economic and Monetary Union (EMU) also imposes serious constraints on countries facing asymmetric shocks, making it difficult for them to stimulate their economies and regain growth. In this chapter we discuss these constraints and consider ways in which EMU member states can potentially deal with them, cooperatively or otherwise.

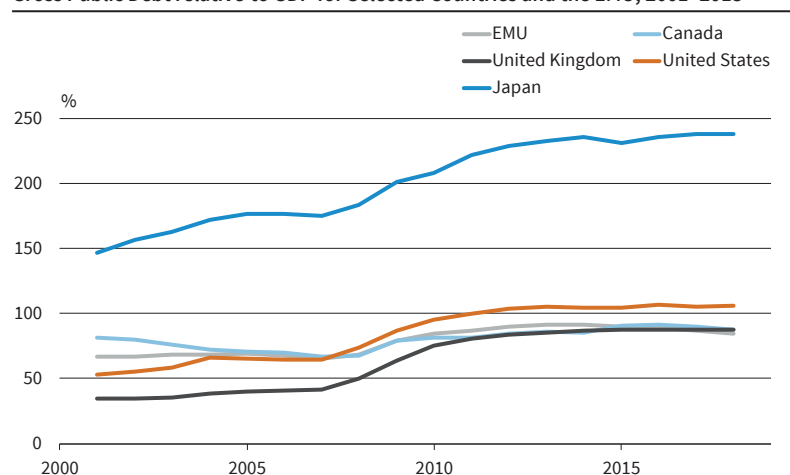
In addition to the Schengen Treaty, the creation of the common European currency, the euro, is one of the main symbols of the European integration process. The common currency helps facilitate movement of goods, people and businesses, and creates a common unit of account and common store of value across countries of the monetary union. The euro is also the principal store of value in

regions adjacent to the eurozone such as the Western Balkans. The common currency encourages the creation of multinational banking groups and laid the foundation for European financial market integration (both processes are still under way). The hope was that a larger market would create more dynamic performance.

The eurozone represents a unique experiment. While most monetary unions such as the United States are federal states, the EMU is a monetary union without political or fiscal union, without union-wide unemployment insurance or, at least until recently, without a banking union. Recent crisis demonstrated that such a minimalist institutional framework does not provide sufficient mechanisms to cope with severe asymmetric shocks. In an influential discussion paper, Illing et al. (2012) point out that the indebtedness of the EMU as a whole (as a fraction of GDP), both before and after the crisis, has been quite similar to other major industrial countries except for the far more indebted Japan (see Figure 3.1). They argue that it is insufficient risk sharing and in particular, the absence of fiscal coordination/fiscal union and not the excessive overall amount of debt in the eurozone that makes problems arising in individual member countries grow into problems that threaten the union as a whole.

In the absence of trust, however, it is practically impossible for the member states to agree on fiscal union. While it may be optimal ex-post to provide fiscal transfers in case of sufficiently strong, but temporary asymmetric shocks, knowing that such trans-

Figure 3.1  
Gross Public Debt relative to GDP for Selected Countries and the EMU, 2001–2018



Source: IMF, World Economic Outlook.

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fers would be made in times of trouble can induce ex-ante opportunistic behaviour on behalf of the recipient(s). Worse yet, under some circumstances transfers could become permanent. This, in turn, would not necessarily benefit even the recipient regions in the long run (e.g. Southern Italy has not been catching up to the Italian North in recent decades, despite large transfers). To reduce the moral hazard problem, a sufficiently strong union-wide fiscal authority would need to be established which, in turn, reduces the scope for independent decision-making by member countries. For these reasons, fiscal union is unlikely to be created any time soon.

The structural incompleteness of EMU is the result of various compromises reached between the countries and, above all, between German and French policymakers. An implicit assumption made at the time of the creation of the currency union was that the constraints imposed by the adoption of the common currency would eventually force weaker performers to reform and liberalise their labour markets. This would provide them with the flexibility needed to cope with potential adverse shocks and deal with high structural unemployment in many cases. However, in a democratic political process, potentially painful social adjustments are more easily imagined than implemented and sustained.

One currently available adjustment mechanism to asymmetric shocks is the free movement of labour across the Union. People naturally tend to move from a country with high unemployment and low job prospects to a country that needs their skills and labour. This can have a strong stabilising effect on the sender country and contributes to the growth of the recipient economy. On the other hand, when highly productive people move from poorer to richer EU countries, this can have a destabilising effect on sender countries through the loss of tax revenues and hard-to-train skilled people (doctors, engineers). Thus, labour movements across the Union do not always lead to Pareto improvements. This mobility is somewhat hindered by the language barrier and is coming under pressure from populist/nationalist forces.

While eurozone member states do not have monetary policy or exchange rate tools at their disposal – responsibility for monetary policy is transferred to the European Central Bank (ECB), which has the primary mandate to preserve the low level of inflation within the eurozone as a whole – member states still have the ability to take on debt (the fiscal channel). This, however, is debt issued in a foreign currency, i.e. in the currency that the country does not control and that cannot be inflated away. This sets a de-facto limitation on how much debt a eurozone country can take on without, potentially, getting into trouble. In order to prevent ex-ante excessive risk-taking by member countries, the Maastricht Treaty stipulates that no country should be bailed out. In addition, a set of quantitative criteria are set to further limit coun-

tries' ability to borrow. For a heavily indebted country, adherence to these rules implies little or no space for an expansionary fiscal response in case of an adverse shock.

Thus, the eurozone currently lacks some of the standard economic policy mechanisms for coping with temporary asymmetric shocks. Under such circumstances, problems in some countries may not only persist for a long time, but can also cascade through the system, eventually causing problems for the eurozone as a whole.

### 3.2 IMPROVING RISK SHARING WITHIN THE EMU

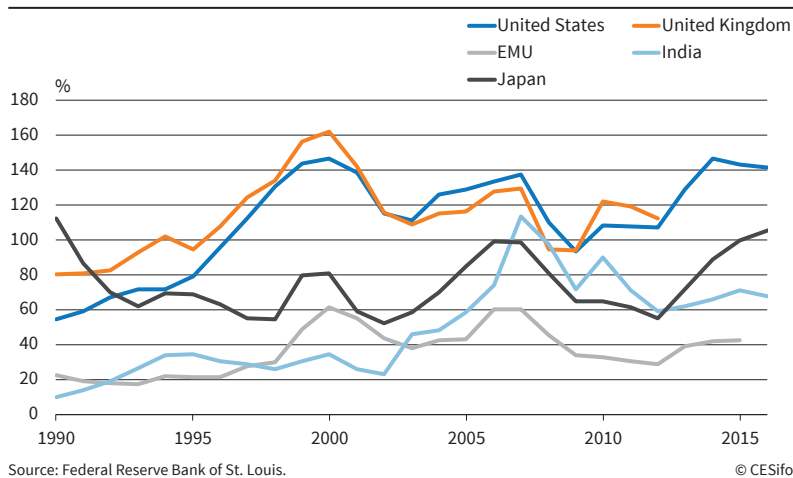
The key rationale for the existence of a modern state or a state-like structure is to provide an effective mechanism for sharing certain types of risks across different generations in a particular territory. Such structures evolve over time, adding or losing some of their original functions. The same should hold true for the monetary union. What additional mechanisms should the EMU develop in order to significantly improve risk sharing within the system without, at the same time, causing undue strains between member states? In search of hints, let us consider a well-functioning monetary union, namely the United States.

Asdrubali et al. (1996) study risk sharing among states in the United States in the period 1963–1990. They find that 39 percent of shocks to gross state product is smoothed via capital markets (through cross holdings of capital across state lines), 23 percent of smoothing is achieved via credit markets (by adjusting lending and borrowing of banks on national credit markets)<sup>1</sup>, while 13 percent is achieved through the federal government. Decomposing US federal government smoothing, federal tax system smooths 4.3 percent of changes in gross state product, the transfer system smooths 6.3 percent, federal unemployment benefits smooth 1.9 percent while federal grants to states smooth 2.5 percent. In total, 75 percent of the shock are smoothed via capital market, credit market, and federal government channels. Additional adjustment is achieved through interstate migration.

Crucially, much of the risk sharing between states in the United States is done automatically via private markets, i.e. without direct involvement of the government(s). This is part of the reason why people in the United States, unlike Europeans, do not discuss which states are, over time, gaining or losing from being part of the union. Also, in the United States practically nobody raises a prospect of 'undoing' the union. This issue was settled, in a very bloody way, during the Civil War. This allows for smooth risk sharing across different generations. In contrast, many Europeans impli-

<sup>1</sup> Demyanyk et al. (2007) demonstrate that US banking deregulation had a positive effect on interstate personal income risk sharing for the period 1970–2001, with a larger effect in states where small bank-dependent businesses were more important.

Figure 3.2  
Stock Market Capitalization relative to GDP for Selected Countries and the EMU,  
1990–2016



city assume that the undoing of the monetary union (and, perhaps, even of the European Union itself) may be possible or even desirable. Since the EMU is a currency union of sovereign democratic states, to ensure its long-term viability, its risk sharing features should be attractive enough to a sufficient number of people. This could, in turn, encourage other EU members that are currently not eurozone members to eventually join the union. Below we summarise some ideas for improving risk sharing within the eurozone.

As we have seen above, capital market integration is potentially a very efficient way of risk sharing between various parts of a monetary union. It is also politically less controversial than some of the other major risk-sharing mechanisms. Two important aspects here are the reduction of market incompleteness (and deepening of the market), as well as the improvement of capital mobility across the union. Unfortunately, capital markets in continental Europe are not very developed. Figure 3.2 demonstrates this in the case of the stock market, but the situation in the corporate bond market is very similar.<sup>2</sup> This is partly the result of the bank-centric financing that is prevalent in continental Europe.<sup>3</sup>

Part of the problem are differences and inadequacies in legal systems, rules, and regulations across member states. Consider the stock market. Countries with a strong tradition of small shareholder protection tend to have more widespread stock ownership and more developed financial markets. In addition, with different rules, regulation, and business practices investors often prefer to invest in their own country (the so-called home bias in international finance).

<sup>2</sup> Despite significant growth in the European corporate bond market in recent years fueled by the low interest rate environment and the ECB's Corporate Sector Purchase Programme (CSPP), the value of the European corporate bond market was just 10 percent of GDP in 2017. In the US, the corresponding number was 31 percent (see European Commission, 2017).

<sup>3</sup> In Europe, around 80 percent of companies, and especially small-to-medium size enterprises, are financed via bank lending (see Brunnermeier et al., 2018, chapter 11, p. 221).

For smaller, capital-strapped countries, attracting capital from other member states is essential to develop viable stock markets (the same is true for other asset classes). Thus, market depth and completeness and the ability of investment capital to easily flow across member states are closely interrelated. Another important aspect of equity financing is venture capital. Having well-functioning pan-European venture capital funding mechanisms would be essential if Europe is to compete in the New Economy with the United States and China.

The European Commission is currently working on the Capital Market Union. The aim is to create for various classes of financial products something equivalent to Single Market harmonisation for the goods market. One aspect under intense scrutiny is the European corporate bonds market. In a European Commission (2017) report on this topic a set of recommendations is made pursuing six objectives: making the issuance of corporate bonds easier for companies; increasing access and options for investors; ensuring the efficiency of intermediation and trading activities; fostering the development of new forms of trading and improving the post-trade environment; ensuring an appropriate level of information and transparency; and improving the supervisory and policy framework. Harmonising corporate default criteria across the union, for example, would help spread the risk across countries. In the report, mechanisms are proposed to encourage the use of corporate bonds by small and medium enterprises in order to reduce their reliance on bank lending. Retail investors' exposure to corporate bond markets could be facilitated through a Pan-European Personal Pension Product (PEPP), for instance, as well as Exchange Traded Funds (ETFs).

As the Capital Market Union project is run by the European Commission, it pertains to all EU country members, not just the EMU. However, the integration of capital markets within the eurozone should be further facilitated by the fact that assets are denominated in the same currency. Provided that an integrated and deep European capital market were to exist, it is through cross-holdings of equity, bonds, and other instruments that much of the necessary risk sharing in EMU could be achieved.

Another very important process currently under way is the creation of the Banking Union (see Brunnermeier et al. (2018), Chapter 11 for a detailed discussion). It is politically more controversial than the Capital Markets Union. Given the importance of the banking system for European economies, however,

and the fact that the eurozone crisis arose as a result of the global financial/banking crisis, it is quite crucial that this is done right. The goal is to resolve two interlinked problems. On one hand, not providing timely liquidity support in times of crisis to illiquid but otherwise sound banks could lead to their insolvency. On the other hand, knowing that such support is going to be unconditionally provided would create serious moral hazard problems and unnecessary risk taking. Optimally, one should not save the few worst performers and erect a firewall protecting the rest (this is the idea behind the Single Resolution Mechanism). Moreover, in order to limit the potential financial and political costs and to improve the accountability of market participants, the bail-in principle is adopted whereby, in a rescue of a financial institution, creditors and depositors would need to take a loss on their holdings before tax payers money is used. The euro area banking union also envisions a Single Supervisory Authority. It is in charge of supervising all banks chartered within the EMU. This role was given to the ECB, with national supervisors relegated to a supporting role. The so-called third leg of the banking union is union-wide deposit insurance. However, given that some EMU member countries do not have their own national deposit insurance scheme to date, the adoption of this third leg is currently uncertain.

One significant step forward would be to establish an EMU banking charter, so that the eurozone would appear like a single country with respect to banks. In that case, regulatory, supervisory, and fiscal aspects of banking would be moved to the EMU level. In good times, tax revenue from banks would accrue to an EMU budget, while in bad times, these funds would be used to restructure troubled institutions without adverse spill-over or contagion effects. The EMU charter would significantly improve EMU-wide risk sharing through the banking channel. Clear benefits from the overall improvement of functioning of the EMU (with some ‘incentives’ scheme for potential holdouts) may make this important idea possible to implement in practice.

German government bonds currently serve de-facto (albeit imperfectly) as a safe asset in Europe. At a time of crisis, this puts pressure on all other countries contributing to its spread and amplification. It is therefore highly desirable (but not easy) to introduce a European safe bond. One possibility is to create a Eurobond that would mutualise the debt of European countries (see De Grauwe, 2011). However, debt mutualisation, favoured by France, is politically unacceptable to Germany and some other creditor countries because it can cause moral hazard problems. In order to avoid a politically contentious full debt mutualisation, the Euronomics group proposed European safe bonds based on securitisation in 2011 (see Brunnermeier et al., 2018, chapter 11). According to that proposal, the first step would be to have an agency (public or private) purchase a portfolio of government bonds from eurozone countries. The portfolio would

be balanced in proportion to the size of the governments’ debt up to a certain ceiling (say, 60 percent of GDP). The agency would then tranche the pool into senior and junior bonds, using standard securitisation methods. If a government were to default on its debt, losses would first hit the junior bond. Thus the junior bond would protect the senior bond. If banks were to switch from holding national government bonds to holding European senior bonds, no vicious circle would be formed between sovereign and banking risk. Flight to safety would no longer occur across borders, but from the European junior to the European safe bond instead. While senior bonds would serve as a safe asset in the financial sector, junior bonds could potentially be an attractive investment vehicle for institutional investors, firms, and households. Unfortunately, while theoretically appealing, this concept has not taken off in practice to date, primarily due to fears that the junior tranche would be subject to self-fulfilling runs.<sup>4</sup>

Another possible way to improve risk sharing in the EMU would be the creation of a EMU-wide unemployment insurance as a complement to national insurance schemes. In a recent paper, Jung et al. (2017) consider a theoretical model of a federal unemployment insurance in a group of small economies. In each economy, the labour market is characterised by search and matching frictions, risk-averse workers, endogenous hiring and separation, and unobservable search effort. Countries are subject to persistent business cycle shocks, while international financial markets are incomplete. Federal unemployment insurance serves to automatically redistribute income internationally, thus completing international markets. The authors first calibrate the model to the EMU using as given labour-market policies at the country level. They find that there are notable welfare gains from introducing federal insurance. However, allowing countries to adjust their labour-market policies in response to the scheme significantly reduces the scope of a federal unemployment insurance programme. Moral hazard problems would further reduce the benefits. They conclude that a federal unemployment insurance scheme should provide insurance only under very severe adverse shocks.

### **3.3 ATTEMPTING TO RESTORE GROWTH AND REDUCE UNEMPLOYMENT IN A FISCALLY CONSTRAINED EMU MEMBER STATE**

As explained above, the current EMU setup provides for highly incomplete risk sharing and imposes hard constraints on the member states, especially those facing a high public debt burden. In Section 3.2 we

<sup>4</sup> Another concern is that there would be political pressures to intervene in the junior bond markets in difficult times and ensure that countries with financial difficulties will be able to sell their junior bonds. As a result, the system could degenerate into one with the mutualisation of public debt, see Advisory Board of the German Ministry of Finance (2017).

discussed possible cooperative measures to improve risk sharing within the monetary union. Whether these measures are going to be implemented or, indeed, whether they would be effective in digging areas in trouble out of prolonged economic difficulty is, of course, uncertain.

What can a country facing such severe constraints do on its own to encourage growth and reduce unemployment? One orthodox answer would be to liberalise its labour market and, more broadly, to reform. But, as we have seen in Chapter 2, the ability to reform and experience of it varies widely across the member states. Since reforms take time and can be costly in terms of political capital, it is not surprising that in countries where the cost of implementing such reforms is particularly high, politicians and economists are looking for different, ex-ante less painful ways to stimulate the economy.

### 3.3.1 Playing with the Fiscal Rules: The Case of Italy

A widespread critique of the European Union's crisis management focuses on the effects of fiscal 'austerity'. There is now a large body of literature devoted to demonstrating the allegedly destructive character of 'austerity' (Blyth, 2013). The argument is apparently supported by the IMF's self-criticism of its mis-assessment of the multiplier in the early stages of the debt crisis (Blanchard and Leigh, 2013). Fiscal retrenchment brought a much sharper contraction than anticipated, and as a result, deficit and debt levels measured as a share of GDP were much higher than forecast, and subsequently demanded further contractionary measures. The critique then attempts to put an alternative case, in which deficit spending and/or tax reductions stimulate growth, and thus make deficits and debt more sustainable.

The focus of the current dispute revolves around the Italian coalition government's budget proposal that envisions a 2.4 percent deficit. At first glance, the dispute is puzzling given the simple (and rather arbitrary) rules that shaped the Maastricht criteria for accession to the single currency, and then became embodied in the Stability and Growth Pact: a 3 percent maximum for the size of the government deficit to GDP and a 60 percent debt ratio (2.4 is less than 3!). But those ratios obviously did not correspond to what markets may be prepared to finance; and they do not really correspond to economic logic either. Consequently, the rules have been adjusted, and refined, so that they are now quite complex and aim to adjust the fiscal position over the business cycle. In the 2011 reforms, popularly known as the Six Pack and the Two Pack, the member states agreed to adjust toward a Medium-Term Budgetary Objective (MTO), designed to preserve a safety margin with respect to the 3 percent of GDP reference value for the government deficit. That is the superficial reason why the Italian

proposal of a 2.4 percent deficit has become a challenge. The MTO, however, was specifically designed so as to be able to accommodate a measure of flexibility, particularly with regard to investment objectives.

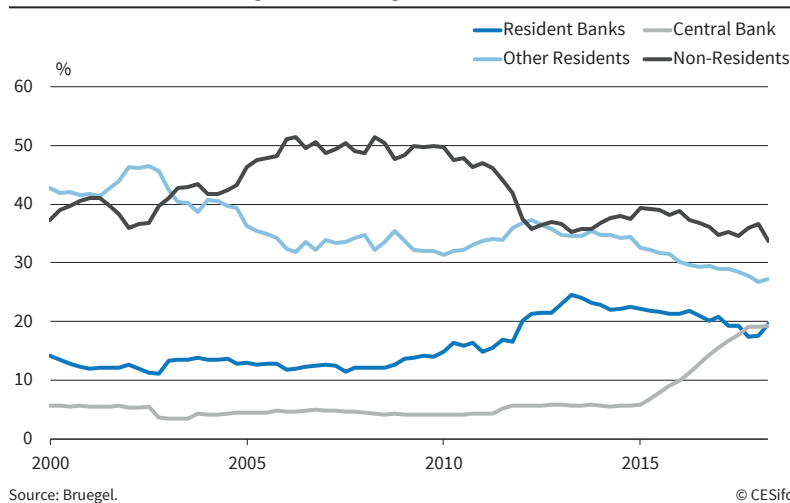
The broader and more significant challenge behind the Italian stance is that the budget proposal treats the 2.4 percent as viable on the grounds that it will lead to higher growth, which will then increase the denominator in the GDP ratio calculations and thus ensure viability and success. Over the past years, after decades of low growth and then a fierce double-dip recession, Italy has staged a modest recovery, with 1.5 percent GDP growth in 2017. But the growth rate is slipping again, the 2018 projection of the IMF is 1.2 percent, and the Banca d'Italia and the IMF are projecting 1.0 percent for 2019 (the European Commission at 1.2 percent is more optimistic). Italy's new proposal is designed to give a needed temporary boost to growth. By contrast, the Italian government argues that its measures will trigger consumer spending and push growth up to 1.5 percent. It is an attempt to pull the country up by the bootstraps, with echoes of the famous claim of Arthur Laffer in the 1980s about the self-financing character of tax cuts.

Most importantly, the budget goes far beyond numbers: its basic point is political. It is designed to show that an act of national will can achieve results. The fiscal package represents not only an overall stimulus, but it also attempts to tie together the two quite disparate parties in the government coalition. The right wing coalition party, the Lega, wanted a simplification (and reduction) of tax rates, and ultimately a standard rate, hoping that this would reduce the problem of tax evasion and avoidance. It got a low 15 percent basic tax for artisans and the self-employed, and a tax amnesty. The left party, Cinque Stelle (5 Stars), got a basic minimum income – means-tested, as opposed to the sometimes rather utopian suggestions of a universal income as a way of responding to unemployment generated by technology and globalisation. Both sides wanted to boost consumption, and so cancelled a planned rise in VAT. In addition, both wanted to reduce the pensionable age – a move which has no immediate fiscal consequences, but which will impose a longer-term burden on young people.

There is also a very obvious national, not to say nationalist, element. This is a budget designed to defy Europe, and to make the point that, in a democracy, people should and can vote for their government and their tax rates and their fiscal regime. There are also some savings envisioned, including administrative simplifications and reduced spending on housing and migrants.

Both the growth element and the national and anti-EU rhetoric appeal to external critics of the European Union, Trump and Putin. Sometimes both leaders have referred to the possibility of fiscal as well as political support, buying Italian government bonds. Legally, it is of course possible for the US Treasury

Figure 3.3  
Evolution of Italian Sovereign Bank Holdings



Source: Bruegel.

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to buy foreign assets, and it has done that as part of cooperatively designed rescue packages in the past. But the thought of the United States taking a deliberate action to prop up one European government that is challenging the European Union would not only look like very aggressive diplomacy. It would also look as if Trump is trying to construct a new internationalism – a nationalist internationalism – in place of the ‘globalism’ he attacks, and which he thinks the European Union embodies.

The discussion of Italy’s budget, and responses to it, has become a blame game. The expansionary effect of the budget deficit will be counteracted by a contractionary impulse following from the effects of higher borrowing costs for the government and banks (Blanchard and Zettelmeyer, 2018).

Italians can draw sobering thoughts from observing crises in Argentina, Turkey, and Venezuela (countries that do not have to abide by European Union and euro area policy constraints, but do not seem to be doing so well as a result). In autumn 2018, the interest rate on 2-year Italian public bonds stands at 1.27 percent, but was 0.64 percent in July and -0.20 percent in April. The government announced its intention not to heed European Commission recommendations, yet admitted that markets could force its hand: fiscal policy would have to be tightened should the spread reach 400. If this was a credible promise, the spread would not reach that boundary. But keeping the spread at or just below 400 basis points is not a solution: when the debt is 130 percent of a stagnating GDP, one would need to trans-

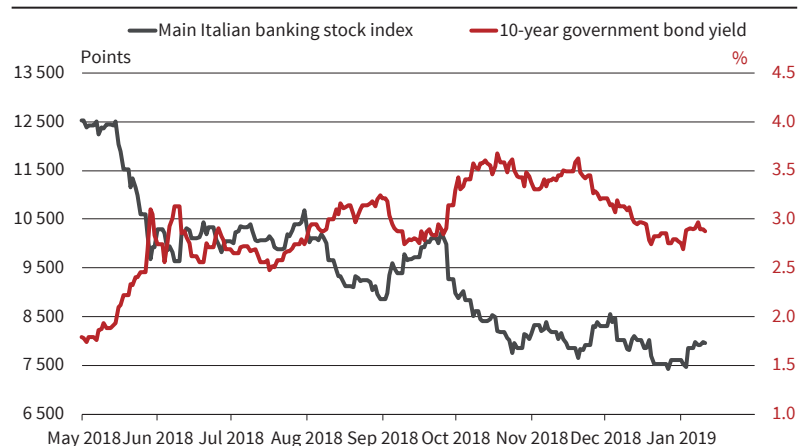
fer a primary surplus of about 5 percent of income to holders of debt who are compensated for a default that does not happen. This is neither politically feasible nor economically sensible, just like the more recent idea of decreasing the deficit if the deficit/output ratio grows more than expected. Presumably, this would be due to a decline in the denominator, and it is hard to see how an automatic stabiliser would be appropriate.

The most obvious immediate financial problem affects Italy’s banks rather than its government. The perception

of an increased risk to Italian government debt pushes yields up, and brings down the price of the government bonds – a considerable proportion of which are held on the books of the banks (Figure 3.3). The banks themselves need funding, and have a large quantity of bonds that need refinancing soon. The consequences of the increased cost of government funding thus has a direct impact on bank equity valuations (see Figure 3.4). Falling asset values reduce bank capitalisation. This is, in turn, reflected in an increase of systemic risk in Italian banks, while their capacity to absorb shocks has decreased (see e.g. the Systemic Risk Documentation for Italy by the NYU V-Lab). New capitalisation could become necessary, perhaps even from the government. However, that would run up against another set of EU rules, this time on state rescues. As banks increasingly come under pressure, they increase the cost of borrowing for corporations and individuals, thus hindering the recovery.

The Italian government is signalling its opposition to the European Union on a range of mea-

Figure 3.4  
10-year Italian Bond Yields and Main Italian Banking Stock Index, May 2018–January 2019



Source: Reuters.

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tures – from fiscal arrangements to the treatment of migrants. It is appealing to ideological affinities with Trump and Putin in a struggle against the European Union. It is also signalling solidarity with other anti-EU movements in other countries. Politically, neither side can afford to be seen to flinch. The Italian government would discredit itself in the eyes of its voters; the Europeans would have to give up on the painful process of rethinking fiscal rules so that they are mutually consistent.

Are Europeans accustomed to the art of finagling impossibilities? Indeed, Italy is not the only European country facing difficulties. The next crisis spot could be France, which is currently witnessing a popular backlash after attempting to raise taxes and, thus, reduce its public deficit closer to the safe zone. Italy today can be viewed as a testing ground for both the constrained countries and the rest of Europe. It shows that, contrary to populists' claims, there is rarely an easy way out of a prolonged stagnation.

### 3.3.2 Parallel (Para-fiscal) Currencies

The introduction of a parallel currency is an additional topic of controversy. It is mostly intended as a threat if negotiations over fiscal accommodation fail. Most of the proposals combine the introduction of a parallel currency or fiscal currencies with the idea of providing a way to improve liquidity in the system without formally violating the eurozone's legal restrictions (but sometimes verging close). Before we discuss some recent proposals, let us take a historical view on parallel currencies. As we shall see, they have a mixed track record.

#### A Historical Perspective on Multiple and Parallel Currencies

Over a long historical timespan, multiple currencies were the rule rather than the exception. The commercial centres of early modern Europe, the Italian city states, and the Netherlands, maintained a double standard over long periods of time, in which large payments were contracted in a gold linked currency (in Florence, the florin fiorino), while smaller payments, including wages, were made in a silver currency (piccioli). Since the gold and silver ratio was not fixed, an adjustment in the ratio gave a measure of wage flexibility for enterprises whose major liabilities were fixed in gold. Over the course of the fifteenth and sixteenth century, there was a substantial fall in the silver price relative to gold (Goldthwaite, 2009). Many historians believe that the monetary flexibility that made for an absence of nominal wage rigidity was a source of resilience and strength in early modern Europe (Neal, 2000). In the first half of the nineteenth century, most states (including the United States) did business in a variety of bizarrely confusing currencies, and in addition some (like the United States) suffered

from banknotes whose traded value varied due to differing estimations of the solvency of the issuing bank. Moving towards single national currencies was heralded as an achievement of the modern world, and formed a building block for national identity in post-unification Italy and Germany, and in the post-Civil War United States (Helleiner, 2002).

There is also a long history of states (and sometimes sub-sovereign bodies and corporations) issuing quasi-money that is not quite identical to legal tender. States constrained by budgetary rules aimed at limiting fiscal activity have regularly and often experimented with forms of quasi-currency issue aimed at circumventing legal or constitutional restraints. The most notorious early experiments with paper currency started in this way. John Law in France introduced a note-issuing bank in 1716, whose bills were intended to be convertible into legal tender coins; but in the spring of 1720 gold and silver was demonetised, and the paper became inconvertible. During the French Revolution, high denomination assignats secured against *biens nationaux*, property (mostly real estate) seized from the clergy, the nobility, and the government was used to make payments to the government's creditors; the paper could be used to purchase the *biens nationaux*, but rapidly traded at a substantial discount (Velde, 2007). The experiment amounted to a government anticipating its revenue from privatisations.

In post-World War I German inflation, many local governments and corporations issued emergency currency (*Notgeld*) when they did not have access to central bank money. After the stabilisation of the German currency on a gold basis in the Weimar Republic in 1924, the ability to borrow from the central bank was limited, which in turn limited the government's room for manoeuvre during the Great Depression. As an anti-depression measure, the government introduced tax certificates (*Steuer Gutscheine*) in 1932 to be used for work creation measures, which could be used to make tax payments in future years.

The Great Depression also produced some experiments in local currencies. One of the most famous was in the small Tyrolean town of Wörgl, where local 'labour certificates' were issued that could be used to pay local labourers' wages and exchanged for local goods in local stores. Each note needed to have a stamp attached each month to preserve its value. This feature is referred to as vanishing currency or *Schwundgeld* and was intended to defeat the hoarding and deflationary mind-set of the Depression. The experiment lasted in 1932 and 1933 and is sometimes credited with a successful mitigation of a catastrophic impact of the great depression on the town of Wörgl and its vicinity (Litaer, 2002). The 'Wörgl Experiment' addressed the shortage of liquidity in the local economy in the gold standard regime. The experiment was concluded when the gold standard in Austria was abandoned and the liquidity in the 'official' paper cur-

rency was restored. A less dramatic experiment with a local alternative currency in Switzerland (*WIR Geld*) survives to the present day in a limited form.

In Argentina, with a currency (the peso) tied to dollar holdings in the central bank in a strict currency board arrangement in 2001, provincial and local governments started to issue ‘treasury letters in cancellation of obligations’, (*Letra de Tesorería para Cancelación de Obligaciones de la Provincia de Buenos Aires*), bonds redeemable at 7 percent interest in one year’s time, and widely called ‘patacóns’, after a slang term for fake money used in a popular Argentine comic book. Some public sector providers (like electricity companies) accepted them, others took them only in partial payment. The national treasury issued its own ‘Lecops’, which constituted a breach of the limits on monetary expansion imposed by the currency board. As long as the dollar convertibility of the peso remained, and there was a shortage of means of payments, the instruments fulfilled a genuine and quite useful purpose, but that purpose disappeared with the suspension of the peso-dollar peg in January 2002, which fuelled widespread cynicism about their use. That cynicism was also fed by the poor production of the alternative currencies, which made counterfeiting (as in the case of nineteenth century US banknotes) easy.

In the late 1990s, skilled, but increasingly disenfranchised people in Argentina also created a parallel economic ecosystem called *Redes de Trueque* (RT), or *Barter Networks*. The means of payment were in the physical form of scrip called *créditos*. These were created by the organisers and voluntarily accepted by participants. The RT networks reached, at their peak, 20 percent of the economically active population in twenty-two of Argentina’s twenty-three provinces with an annual turnover equivalent of 1 billion US dollar. Organisers claimed that individual members’ consumption increased by, on average, 600 US dollar a month, or double the amount of the minimal wage. The movement then started to crumble, and shrank in 2003 to a tenth of its former size (Gomez, 2016). For the system to work, the key element is trust. Namely, participants need to trust both the organisers and other participants that the system shall not be abused, i.e. that the transaction ledgers are legitimate. Trust is easier to establish in smaller, tightly knit communities where everybody knows each other and where punishment for cheating can be extracted directly. After a while, once its reputation is built locally, the network can be, under some circumstances, spread to larger distances.

These recent and older precedents were widely discussed in the aftermath of the 2008 financial crisis. In July 2009, in the middle of the financial crisis and faced with a budgetary crisis intensified by a balanced budget requirement, the state of California issued ‘registered warrants’ otherwise known as IOUs that it promised to redeem at face value plus 3.75 percent

interest, and that could be used for future California tax liabilities.

Some commentators urged over-indebted European countries to take a holiday from the euro and introduce a parallel currency, with many citing positively the Argentine example (Goodhart and Tsomokos, 2010). Greece developed many local self-help organisations along the lines of the Argentine *Redes de Trueque*, known as *Local Alternative Units* (Greek acronym: TEM).

A characteristic of almost all the episodes of the introduction of an alternative currency is uncertainty about the exchange rate at which the obligations might be converted into regular money or legal tender. Even the quite limited California IOU issue traded at a discount. There is a dilemma for the government: either the promise of convertibility is maintained, in which case it is hard to see any long-term advantage in the proceeding; or the alternative instrument is used as a way of reducing debt, in which case substantial disruption and uncertainty about the credibility of the state as a debtor ensues. The creation of new fiscal promises in the form of IOUs either augments the stock of state debt (with a convertibility promise); or it reduces the likelihood that future debt will be serviced because tax certificates create a de facto seniority, reducing future tax revenue and hence the means to service government debt.

If the underlying problem is held to be competitiveness, or deflationary expectations, non-government local currencies may provide a better answer. But they suffer from problems of credibility when they move beyond a very narrow circle of users (as in the case of Swiss *WIR Geld*).

### Mini-BOTs<sup>5</sup> and Tax Credit Certificates (TCCs)

Before we begin the discussion of these proposals (which is largely based on Papadia, 2018), it is instructive to recall some of the main characteristics of money. Conventional money has a zero nominal return (some advocates of e-money argue that ending this constraint would make monetary policy more adaptable to extreme circumstances, such as a threat of deflation), and no expiry/redemption date associated with it. It is the medium of exchange, i.e. used for the provision of liquidity services. It is also the unit of account in which prices of all goods and services are denominated.

The concept of mini-BOT was advocated by Claudio Borghi Aquilini of the Lega. In the agreement between the Lega and the Cinque Stelle movement, mini-BOTs are referred to as ‘government bonds of small cut’: they replicate the structure of the French Revolution assignat, originally a high denomination security but then split into smaller denominations to encourage its use. Mini-BOTs are

<sup>5</sup> The name BOT stems from *Buoni Ordinari del Tesoro*, or *Ordinary Treasury Bonds*.



IOUs issued in paper form and in small denominations (€1 to €500). Like money, they would not pay interest and have no maturity. The government would accept mini-BOT for future tax payments and for the payment of goods and services supplied by state-run companies. Thus, they would have value to a holder. Proponents also hope that mini-BOTs would be used for payments between private agents but the government would not oblige private agents to accept them. Thus, at least in this incarnation, they would not be a legal tender.

Due to their character (paper form, small denominations) their proponents believe that they would probably be spent locally, and would thus stimulate growth in the Italian economy. Borghi Aquilini sees mini-BOTs as a tool of fiscal expansion without relying on the euro as well as a necessary first step towards the abandonment of the euro by Italy. The quote found in Papadia (2018) argues this point explicitly: “It’s true that mini-BOTs are in euro but once they will be widespread they will form a sort of ‘spare wheel’ that will make the transition to our currency much easier. [...] the day of the passage [to the new currency] it will suffice to declare the mini-BOT the new money.”<sup>6</sup>

Bossone and Cattaneo (2016) proposed Tax Credit Certificates (TCCs). Their proposal combines the idea of using fiscal policy as a cure to the ‘liquidity trap’ with ‘helicopter money’ to inject new purchasing power into the economy. TCCs would be assigned free of charge to households and enterprises. They would entitle holders to receive, at redemption, rebates at face value on taxes and all other financial obligations payable to the public sector. This is similar to mini-BOT. On the other hand, holders may only exercise their right after two years from TCC issuance and the programme would stop after four years. Thus, in contrast to mini BOTs, TCCs have maturity. Again, the historical precedent to TCCs can be found in the *Steurgutscheine* issued in the last year of the Weimar Republic, for example, which came in both large and small denomination issues.

For the purposes of social equity and to encourage consumption, households would receive TCCs in inverse proportion to their income. Companies would receive them proportional to their labour costs. Private agents would be allowed to trade TCCs prior to maturity, probably at a discount. Buyers, according to the proponents, would be households, enterprises, and other entities that want to use them for deferred tax savings. Financial intermediaries could buy TCCs at a discount from those who want to sell them, and either use them for future fiscal rebates or sell them at a lower discount and make a profit.

By issuing TCCs the government would grant the private sector immediate spending power while facing deferred revenue shortfalls that are supposed to be recovered prior to redemption through an increase in revenues generated by the expected output growth. According to the proponents, this is supposed to work in a depressed economy provided that the fiscal multiplier is high enough. It is worth noting that TCCs are not traditional debt instruments since the government makes no commitment to repay them in euros. It only promises to accept redeemable TCCs in exchange for fiscal rebates. Moreover, unlike government bonds, government cannot be forced to default on TCCs.

The authors of the proposal argue that even although there will be no legal obligations for private parties to accept payments in TCCs in exchange for goods and services, this may happen if payment infrastructure allows for their circulation as electronic securities. The motivation behind the idea of using electronic form for TCCs is not explained. One possibility is that in this way they would be less likely to be treated as a parallel currency by the ECB than if they were in paper form (like mini-BOTs). However, they would also be more readily used for criminal activities (see the next subsection).

Despite some differences, mini-BOTs and TCCs are essentially similar. Both are, in effect, hybrid securities (money and debt). However, they would be inferior to euros as money and to the standard BOTs as securities.

Indeed, mini-BOT has two characteristics of money: it has no maturity and pays no interest. In that sense, TCC is less like money since it has maturity. But neither are going to be units of account or the medium of exchange accepted by all. Thus, as money, they would be less valuable than euro cash. Like bonds, both mini-BOTs and TCCs have limited liquidity before redemption by means of exchanges in the market. While the issuer is committed to redeem these securities, the redemption is not against the money (euro) and is, therefore, of lower value than standard BOTs. The transaction costs for mini-BOTs and TCCs are likely to be higher than the very low transactions costs prevailing for traditional BOTs. As a result, these securities would be, in several respects, inferior to the standard BOTs.

In the case of TCCs, which one can think of as mini-BOT with finite maturity, their holders would either be forced to trade them prior to maturity in case of financial need (provided that private parties would accept them, a prospect uncertain at best), hold them until they could be used for tax payment, or sell them for euros. If these securities were to be devalued against the euro, their holders would hold them to lower their future tax burden or sell them at a discount to risk-loving traders. In the first case, TCCs would merely be a delayed debt repayment by the government. In the second case, the TCCs would shift wealth from

<sup>6</sup> This prompted immediate worries about the exit of Italy from the eurozone. Bertacche et al. (2018) report the opinions of financial analysts with respect to mini-BOTs. According to them, analysts view them as an attempt to introduce a de facto parallel currency. They express concerns that this would make investors worry about Italy’s fiscal sustainability and create serious redenomination risk, since the idea reminds investors of similar discussions in Greece in 2015.

budget-constrained tax-payers towards agents able to speculate on the value of these securities. On the other hand, if the value of the mini-BOT stayed close to the euro its potential economic benefits would not materialise. Local consumption might expand in the short-run as a one-time effect but there would be no competitiveness gain as the wage level would remain unchanged.

It seems clear that these proposals would not provide anything – from the purely technical point of view – that euro-cash and standard government bonds cannot already provide.

A second important point is whether mini-BOT and TCC are tools for increasing the government deficit. The current government fiscal stance clearly points in that direction. Moreover, from the accounting point of view, this is obvious since these IOUs would be distributed without any counter-payment from their receivers. In the interpretation of the Lega supporters, by contrast, a liability of the state in the form of unpaid invoices would be substituted by another liability in the form of mini-BOTs. The advantage would be, in the view of its proponents, the higher liquidity of mini-BOTs with respect to non-securitised claims towards the government. However, this is not very convincing. The government could pay its unpaid invoices by issuing more BOTs, with the advantage that these would be bought by willing investors and not forced upon creditors who would prefer to be paid in cash.

The impact of the mini-BOT on public deficit and debt will depend on whether the market will give more importance to accounting treatment, whereby the deficit and the debt will increase or to economic considerations, whereby one form of public debt – like commercial debt – will be substituted for another form with no change in the overall debt level. The same uncertainty would arise if commercial debt was paid by issuing standard government bonds, so there would be no difference between the two forms of funding in this respect. In our view, no matter the legalese, if mini-BOTs would make it possible to increase the budget deficit they should be evaluated as fiscal expansions not just as a technical change in the funding of a given deficit.

One proposed advantage of TCCs is that since the government supposedly cannot default on them, they can serve as safe assets for the local banks instead of the traditional government bonds. However, given potentially high and variable discount at which such securities would be traded banks could be facing serious difficulty in meeting their capital requirements.

The introduction of mini-BOTs can be consistent with European or Italian law provided that they were just a security, and not consistent with them if they become a parallel legal tender. Overall, it is highly uncertain that the economic benefits of introducing these new fiscal currencies would offset the risks that they would engender. If they trade at a discount

(which is very likely), they would amount to a de-facto tax imposed on those entities that are forced to accept them in lieu of payments. More ominously, mini-BOTs would be seen as a first step in the exit of Italy from the euro, reinforcing redenomination risk and increasing the yields of Italian bonds even if a potential Ital-exit and its huge negative effects were avoided.

### 3.3.3 Peer-to-Peer Currencies

As we have seen above, government issued parallel currencies or fiscal currencies can be very problematic in an EMU setup. Even if they are treated as securities and not as currencies, they lead to a de-facto increase in government debt and deficit. However, apart from governments, people (especially in times of trouble) can start creating their own mediums of exchange. Thus, peer-to-peer mediums of exchange can emerge. Such instruments would neither violate international treaties nor add to the public deficit. On the other hand, the issue of trust looms large in such schemes. Cryptocurrencies provide a new technological take on the problem of establishing trust in peer-to-peer currencies.

#### Cryptocurrencies

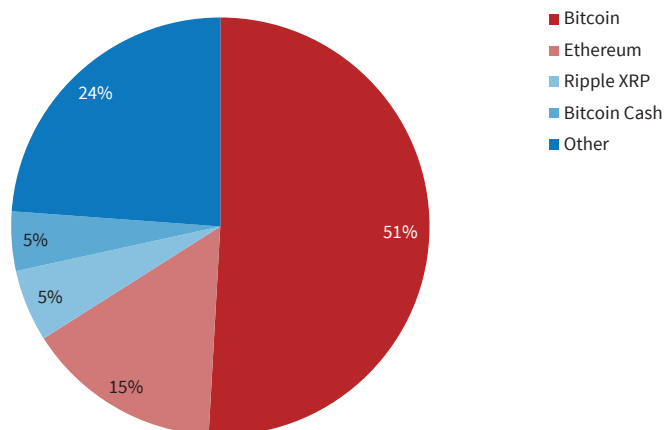
Cryptocurrencies provide a way to build the peer-to-peer exchange of goods and services in a society without using government issued money. The first and the most famous cryptocurrency is Bitcoin, introduced in 2009. Bitcoin has become the subject of intense interest, not least because it has achieved, together with its different variants like Ethereum, large albeit highly variable market value (see Figure 3.5).

Cryptocurrencies are decentralised, anonymous means of transferring ownership and augmenting the supply of digital ‘coins’. The system is based on open-source software and relies on the concept of blockchain. Blockchain keeps an electronic record of the entire history of ownership of the digital ‘coins’ (see Andolfatto, 2018, and Berentsen and Schär, 2018, for more details). In contrast to the privately-owned bank ledgers that record all financial transactions, blockchain is the ledger distributed among the entire community of users. ‘Miners’ compete to form the next block of transactions in the chain. They have a role analogous to the clearing and settlement process in a centralised monetary system with interbank payments.

Pichler et al. (2018) provide an excellent discussion of the economics of cryptocurrencies. Since participants in these markets are anonymous, for the system to work it has to be costlier to cheat than to add correct information to the new block. Thus, the system adjusts the costs of mining over time to keep up with the available technology. If the costs are too low, then cheating might occur. In a competitive Nash

Figure 3.5

**Market Capitalization for some Cryptocurrencies Relative to Total Market Capitalization**  
Total Capitalization: 207.9 billion US Dollar



Source: www.coinmarketcap.com.

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equilibrium, behaving honestly is the optimal strategy for any miner who believes that most other miners behave honestly. Thus, if over half of the computing power employed in mining is controlled by honest nodes, then the longest chain (the one added to the blockchain) will contain only legitimate transactions. Illegitimate transactions are only sustainable if dishonest nodes control the majority of mining power. This incentive structure, referred to as Bitcoin's 'proof-of-work' concept, is the key innovation that allows for a fully decentralised verification of transactions in the Bitcoin network.

There are some serious limitations on the use of the system. Firstly, to check the transactions in the system, it has to be slow. It takes approximately 10 minutes from when a transaction is posted to when it enters into the blockchain. In addition, the mining process requires a lot of computing capacity and leads to large volume of electricity consumption. A Bitcoin transaction currently requires 80,000 times more energy than a Visa transaction (see Williamson, 2018). These features put a natural limitation on the growth of the system.

Can cryptocurrencies, nevertheless, serve as money? Like cash (fiat money) cryptocurrency transactions are anonymous. On the other hand, unlike money which the central authority can supply elastically, the supply of Bitcoins is fixed, while demand varies greatly. As a result, the value of cryptocurrencies is extremely volatile. In addition, transaction costs are currently very high and transactions are slow by design. Thus, despite the fact that some smaller retail operations accept them (many for marketing purposes), the acceptance of cryptocurrencies as a means of payment in legal activities, in their current incarnation, is likely to be limited. Moreover, there is a good reason to believe that legal payments involving cryptocurrencies would mostly be for relatively small ticket items (Budish, 2018). The purchase of a very large ticket item (like a yacht or a villa, for instance)

may make it worthwhile for a miner to cheat, even if the value of the cryptocurrency used in the transaction effectively drops to zero as a result of this cheating. Indeed, the buyer would gain possession of an item of large real value that would be hard for the seller to repossess, given the anonymity factor involved in Bitcoin.

Thus, the most likely legal use of cryptocurrencies would be as a highly volatile speculative investment. They are especially attractive in societies with a weak rule of law (e.g. Venezuela and Belarus).

Some people like to compare Bitcoin with gold (because of its limited supply, by design). But, unlike gold, Bitcoin is based on open-source software. At any point in time somebody can introduce a mutation to the system (of which there are already many) which would appear more attractive to investors. In that case, its value can plummet in a very short period of time and not recover.

### 3.4 ON EXIT

We have seen before that the EMU in its current incarnation does not provide sufficient risk sharing mechanisms needed to overcome a crisis in case of large asymmetric shocks. Cooperative solutions in conjunction with reforms are highly desirable. Given the current political climate, however, they are not easy to implement. Politicians who find reforms politically too costly may be tempted to look for other ways of coping with constraints. In the previous section we have seen that one possibility – the introduction of parallel or fiscal currencies – may be of limited use. Another more extreme option is the outright exit from the monetary union.

A desire to leave the union would be stronger, *ceteris paribus*, the more potential benefits the government is perceived to incur as a result of this move and the less costly such a move appears to be *ex-ante*. The key argument for a euro-exit typically goes as follows: if a country introduces its own currency and this currency devalues with respect to the euro, its production would become cheaper and, thus, more competitive. This would lead to higher exports over time, and to higher growth and lower unemployment as a result. This only makes sense only if the main problem faced by the country is the nominal rigidity of exchange rates. If the problem lies deeper in its economic structure and the quality of its institutions, this argument no longer holds (see Illing et al., 2012). In that case, with or without an exit from the currency

## Box 3.1

**Savona's Plan B**

In October 2015, the distinguished but then relatively unknown economist Paolo Savona presented a 'Plan B' whereby Italy would use its sovereign power (*lex monetae*) to determine its currency and issue a new money, abandoning the eurozone. The central features would be a depreciation of about 15-25 percent with the intention of establishing competitiveness vis-à-vis Germany; and a haircut on public debt so as to bring the debt/GDP ratio to 60-80 percent. The plan explicitly includes Italy's (and the Banca d'Italia's) obligations to the ECB, including TARGET2 liabilities, and echoes Hans-Werner Sinn's claim that the legal basis for the enforcement of TARGET2 balances is weak. It is a logical response from the perspective of Italian national interest to Sinn's interpretation, a point also made in the analysis of Gros (2018). The plan achieved a new prominence in 2018, when Savona was proposed as Finance Minister in the new populist coalition government of the Lega and Cinque Stelle; the appointment was blocked by the President of the Republic, and Savona became Minister for European Affairs instead. Recently, it became increasingly clear that the current government in Italy used this plan primarily as scare tactics in negotiations with the European Union regarding fiscal constraints.

union, the country would at some point still need to embark on reforms. Moreover, the reforms may be easier if it stayed within the union, especially if the other member states played cooperatively.

A second potential benefit from having its own currency would be to collect seigniorage. However, a problem country leaving the union is likely to face high inflation pressures together with the devaluation of its currency. While seigniorage initially grows with respect to the inflation rate, its benefit vanishes when that rate is sufficiently high. In extreme cases, as in the hyperinflation seen in Germany in the 1920s, Serbia in the 1990s, or in Venezuela today, inflation can lead to total economic and social breakdown.

Another argument in favour of leaving the EMU could be to attempt to redenominate debt from the euro into the new domestic currency and then inflate it away (see Box 3.1). This would effectively introduce a debt haircut. However, this game is hard to play with investors repeatedly and is likely to result in a significant future increase in interest rates.

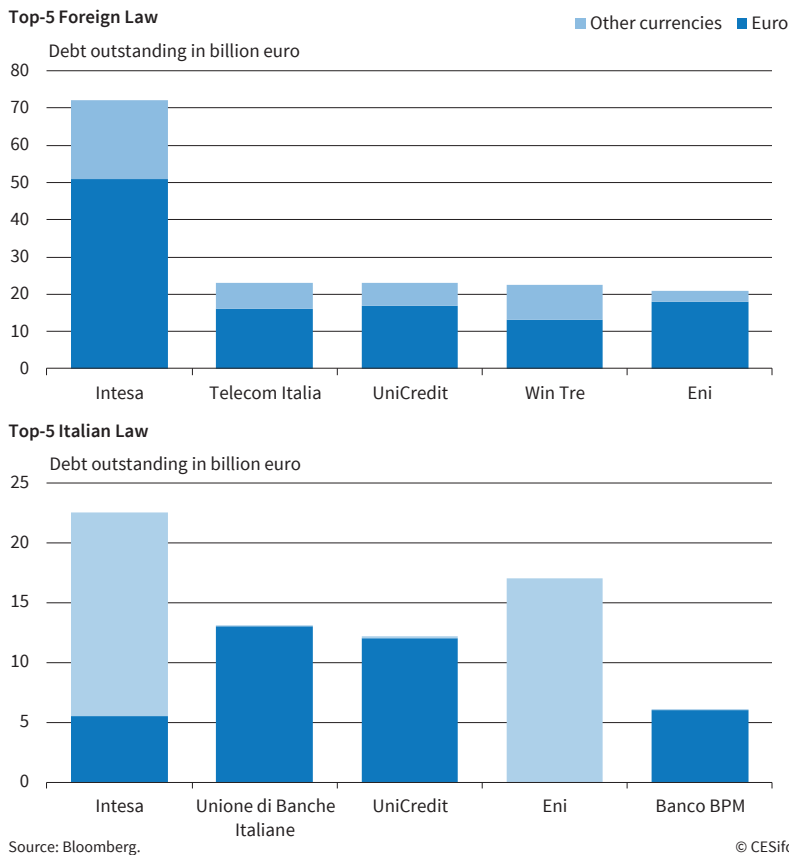
From the legal point of view, redenomination into new local currency is much more easily done, *ceteris paribus*, if debt is issued under domestic rather than foreign jurisdiction.<sup>7</sup> Namely, in case of domestic law assets the local sovereign can use *lex monetae* to redenominate all contracts into the new local currency. The situation is much more complicated in case of debt issued under foreign law. The outcome then depends on the nature of the exit (see Nomura, 2012). In case of a unilateral withdrawal, with the euro still remaining as a currency of the core EU countries, redenomination of foreign law issues is highly unli-

kely (except in cases of bankruptcy where local courts decide on awards). Another possibility is a cooperative exit made in multilateral agreement with other EU/EMU partners (again we assume no implosion of the eurozone, just a small-scale exit). In that case, there would be again no automatic use of *lex monetae*. A partial conversion would be a more likely outcome, especially if an EU directive existed that would set specific criteria regarding the redenomination of foreign-law assets into the new local currency. Finally, in case of the exit of a large country such as Italy, a full blown break-up of the eurozone cannot be excluded. In that case, the euro would cease to exist as a currency. Under that scenario, full redenomination into new local currency is much more likely if a breakup without multilateral agreement occurs. In the ensuing chaos, each country would probably apply the conversion of all foreign-law debt into new local currencies. In case of a more orderly breakup of the eurozone there are several possibilities. One is to have redenomination of each foreign law asset into the currency of the country whose law is applicable (the British pound or US dollar, for example). This would, of course, create additional currency risk. Another scenario discussed and preferred by Nomura (2012) would be the creation of an ECU-2, a weighting scheme of new national currencies. If an appropriate EU directive is passed in that regard, the courts of member states could automatically assume that all euro obligations issued under foreign law would be converted to obligations in ECU-2.

Thus, except under the extreme scenario of a total (uncooperative) meltdown of the eurozone, only part of the foreign law debt is likely to be redenominated into the new local currency. In the case of financial institutions, partial redenomination could lead to dangerous outcomes. Galpern (2017) discusses the balance sheet effects for financial institutions in Italy in case of a hypothetical switch to the new local currency. In contrast to the Italian government, which issued mostly bonds under the domestic law, Italian finan-

<sup>7</sup> Investors may pay a premium for foreign-law issuances, especially in times of crisis. Chamon et al. (2018) show that, for the government bonds in the eurozone in the period 2006-2013, foreign-law bonds did indeed carry significantly lower yields in distress periods than their comparable domestic-law counterparts, and this effect rises as the risk of a sovereign default increases. These results indicate that, in times of crisis, governments can borrow at lower rates under foreign law. Nevertheless, the vast majority of Italy's outstanding tradeable debt is currently issued under the domestic law, making it easy to convert such issues into new local currency in case of Italy's exit from the eurozone (see Chamon et al., 2018).

**Figure 3.6**  
**Top-5 Non-Governmental Debt Issuers**



Source: Bloomberg.

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cial and non-financial firms have issued a lot more tradeable bonds under foreign than under domestic law. Based on data available in Bloomberg on December 7, 2018, we find that Italian financial and non-financial firms had at least 335 billion euros of tradeable debt outstanding issued under foreign law (and around 77 billion euros of tradeable debt outstanding issued under domestic law).<sup>8</sup> Figure 3.6 presents the top 5 non-government entities by the amount of outstanding debt under foreign and Italian law.

Banca Intesa has by far the largest amount of outstanding tradeable debt (around 93 billion euros), and the majority of it is issued under foreign law. Moreover, of the domestic-law debt issued by Intesa, the majority is issued in currencies other than the euro (predominantly in US dollars). Another interesting example

<sup>8</sup> Given that the data found in Bloomberg are unlikely to fully cover the outstanding tradeable debt of Italian firms, this amount (i.e. 335 billion euros) is just the lower boundary of debt that would be hard to redenominate under the *lex monetae*.

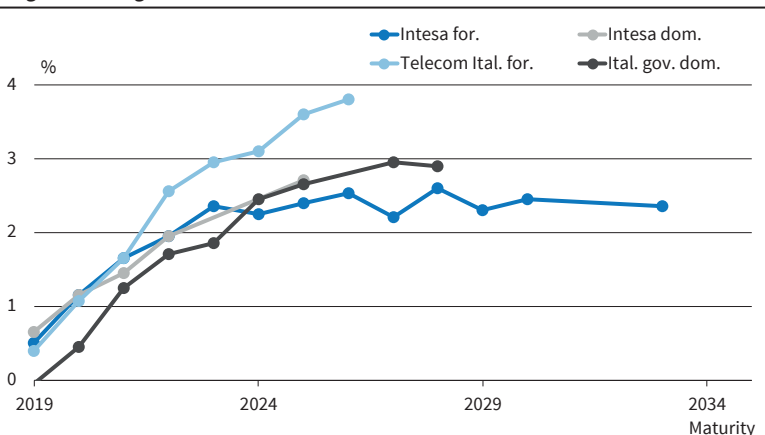
is Eni. Under foreign law it has issued debt primarily in euros. On the other hand, under the Italian law, it has issued only in foreign currency. The numbers present the average of bid and ask yields for bonds maturing in a particular year weighed by the amount of debt outstanding. To construct this figure, we use only option-free bonds issued in euros.

As a rule, domestic-law issuances are of shorter maturity. Moreover, while the domestic-law Italian government debt has lower average yields for shorter maturities than Intesa, this is no longer the case for Intesa foreign-law bonds of similar maturity (see Figure 3.7).

On the asset side, Italian banks have a heavy concentration of Italian sovereign bonds and other domestic law assets, which are subject to easy redenomination. This leads to a contingent currency mismatch. In the case of unilateral redenomination

to lira, this could become a capital hole and a contingent sovereign liability. Financial derivatives and loans (non-tradeable debt) would probably add to the potential mismatch in the financial sector. Thus, the mere threat of redenomination, let alone actual redenomination, can lead to serious problems for Italian banks (see the discussion in Section 3.3). This may force the government to recapitalise banks and, thus, issue more debt, most likely under foreign law

**Figure 3.7**  
**Weighted Average Yield of Selected Italian Bonds**



Note: The figures present the average of bid and ask yields for bonds maturing in a particular year weighed by the amount of debt outstanding. To construct the figure, we use only option-free bonds issued in euros.

Source: Bloomberg.

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and in foreign currency. As a result, exiting from the eurozone may increase government debt, instead of reducing it.

Another potential outcome under partial redenomination deserves a mention, namely the one whereby, after the introduction of the new currency, the bulk of the assets and liabilities on bank balance sheets remains in euros. This can happen if the authorities, frightened by the prospect of the collapse of financial institutions, allow them to keep deposits and other assets and liabilities denominated in euros on their books. In that case, no direct currency mismatch occurs, but a risk of another sort develops. Namely, if wages are paid in the new currency, but mortgages, for example, are denominated in euros, a large devaluation would be potentially devastating to people's ability to repay the loans. Knowing this seriously constrains the government with respect to the type of monetary policy it can pursue. This is currently observed in the highly euroised economies of the Western Balkans such as Croatia and Serbia. Due to financial stability considerations, these countries do not allow any serious depreciation of their domestic currency. Introducing their own currency would be of limited benefit under these circumstances.

The costs and risks considered to date are not the only ones. It stands to reason that if a country were to decide to leave the monetary union uncooperatively, i.e. without a previous agreement with its partners (including the ECB), the other parties involved would do whatever they can to protect themselves from the negative externalities that such a move would impose on them. This would probably result in an immediate termination of any support measures available to financial institutions in the exiting country, as well as in the introduction of various protective risk-fencing measures. Capital could massively fly out of the country and/or strict capital controls would have to be introduced. This would further impact both the exiting country and its more exposed partners. This effect would be stronger the more financially interconnected the country in question is with respect to the rest of the union. This can trigger pressures that would eventually lead to a meltdown of the EMU, and possibly even of the European Union, especially if a country of the size and importance of Italy were to leave the monetary union (see the discussion in Nomura, 2012). Let us now consider the potential consequences of a breakup of the EMU and the European Union itself.

In the sovereigntist camp a common misconception exists (even if it is not always explicitly stated) that the breaking up of the monetary union is likely to have similar consequences as the abandonment of the fixed exchange rate regime in the 1980s. This is a dangerous fallacy. Maybe an analogy would help. One can think of a steady relationship between two people without full commitment as the equivalent of pur-

suing a particular exchange rate regime.<sup>9</sup> On the other hand, creation of the monetary union is like entering into a marriage. In a marriage involved parties do not always have identical interests and can argue with each other. But, a successful marriage requires an ability to understand the other side, as well as to find workable compromises in all situations of life. An alternative is a divorce, which can be very messy with unpredictable costs and consequences.

In the past very few monetary unions have broken up peacefully or without major social, political, and/or economic turmoil. One such example was the dissolution of Czechoslovakia. Other examples of the breakup of the monetary union (e.g. Austro-Hungary, Soviet Union) caused serious economic and social upheaval, while the breakup of Yugoslavia also led into a bloody civil war.

In order to reduce the ex-post costs of a breakup, Fuest (2018) argues for the introduction of an exit clause that would regulate under what circumstances and how a country could leave the eurozone. Currently the only clearly legal way for a country to do so would be to invoke the Article 50 of the Lisbon Treaty. However, this would force it to leave the European Union as well. In addition, there is presently no mechanism to expel a country that, through gross misconduct, endangers the functioning of the currency zone. According to Fuest (2018), the optimal exit clause should allow a country to exit the eurozone without automatically exiting the European Union, as well as explaining under which circumstances, and how a member country could be expelled from the monetary union. The hurdles to both the voluntary exit and the expulsion should be set quite high. In addition, in contrast to Article 50, the delay between the announcement to leave and the actual leaving date from the eurozone has to be much shorter than the two-year time frame envisioned in Article 50. Moreover, the announcement to leave should be immediately followed by the introduction of capital controls to prevent capital flight. The exit clause should also include provisions that would safeguard the European financial system.<sup>10</sup>

Adopting ex-ante guidelines for an orderly exit from the eurozone, and ultimately its break-up involves a difficult trade-off. On the one hand, this would be a signal that the break-up is indeed a possibility, something akin to signing a pre-nuptial agreement 20 years into the marriage.<sup>11</sup> This can become a self-fulfilling prophecy. Formalising the possibility of a break-up may lead to short-term thinking and

<sup>9</sup> Both the Treaty of Maastricht and ECB Chairman Mario Draghi talked about the irrevocable nature of the eurozone's creation (see Fuest, 2018).

<sup>10</sup> We have already touched upon the issue of redenomination of securities and the proposal to introduce ECU-2 as a tool for smoothing the process of eurozone break-up in case of foreign law securities. There are, of course, several other important issues to consider (see Fuest (2018) and references therein).

<sup>11</sup> The adoption of Article 50 of the Lisbon Treaty many years after the creation of the European Union is analogous.

provide incentives to try to exploit the system where it is still possible. Let us recall that in a prisoner's dilemma problem a finitely repeated game does not have a cooperative solution. It is only when players play forever that a cooperative equilibrium can be reached. Using this analogy, thinking that EMU and/or the European Union are, perhaps, of a finite lifespan pushes for non-cooperative outcomes in dealings between member states and increases the probability of the system's demise. On the other hand, if a break-up becomes a reality, having ex-ante break-up rules for the eurozone could potentially lower the ex-post costs.

Roger Bootle developed a guide aimed at informing the decisions of countries interested in leaving the eurozone (Bootle, 2012). Apart from the issues of redenomination he also considers management of the announcement of the decision to leave (arguing for secrecy until the very last minute), managing devaluation to regain competitiveness and, at the same time, trying to prevent the meltdown of the banking system, and proposing advice on how to deal with the remaining eurozone members.

Implicit in his approach is the assumption that each country should try to secure the most benefits for itself in making the decision to leave and in managing that process. This is potentially dangerous as it can lead to non-cooperative behaviour of member states. In the absence of cooperation, it is not clear whether even having ex-ante rules would help reduce the frictions, just like a pre-nuptial agreement does not guarantee a peaceful divorce. For example, the Yugoslavian Constitution adopted in 1974 explicitly allowed the republics of the Socialist Federal Republic of Yugoslavia the right to self-determination, including the right of secession. While one could argue that the bloody demise of the country could have been avoided if the Constitution had also included an explicit agreement on how to split the country if it came to that, such an agreement would have been very difficult to conclude ex-ante. Moreover, it would not have been necessarily followed up ex-post. The key ingredient missing in case of Yugoslavia was cooperation between the constituents of the federation. In contrast, in the case of Czechoslovakia, there was nothing in the Constitution that discussed the possibility of a break-up. However, all of the parties involved behaved cooperatively and rationally when it came to the break-up initiated by Slovakia. As a result, no major turmoil occurred due to the separation.

In times of a momentous transformation emotions tend to run high, meaning that there is little chance of a rational discourse. The result could be a situation in which cooperation in Europe all but ended, with serious consequences for the entire continent and beyond. The Western Balkans region, bordering the European Union, is still recuperating from the bloody demise of Yugoslavia. Many unresolved national conflicts lurk in the background there.

The key stabilising factors in that region are the prospect of eventually entering the European Union and economic growth through close cooperation with the European Union. The disintegration of the EMU and, possibly, of the European Union could trigger serious political instability in the Western Balkans and would leave it vulnerable to the predatory behaviour of the major players outside the region. In addition, a disunited Europe of small quarrelling nations would be a relatively easy economic and political prey, too. Even if outright wars are avoided, the global relevance of Europe would be all but gone. Yet, there is a possibility that the fragmentation would not stop at the national boundaries of member states. In the absence of a pacifying mechanism provided by the European Union, some current EU members may themselves break-up (Spain, Belgium, perhaps even Italy). Old national wounds could reopen (in South Tyrol, for example). Meanwhile, the countries of the European East would be squeezed between a newly assertive Russia and an increasingly unpredictable United States, with China actively entering into the fray.

In this chapter we have seen that there are measures that can and should be undertaken (such as completing the financial markets and banking union) that would significantly improve risk sharing across the EMU and beyond. On the other hand, there are no easy solutions for countries facing financing constraints. In particular, trying to circumvent fiscal rules (including the introduction of para-fiscal parallel currencies) is likely to be counterproductive. In making seemingly expedient political decisions, populist leaders in a position of power can end up imposing not only massive hidden costs on their own society, but on the entire continent and the world, too. It is imperative that contemporary and future European leaders and their voters are mindful of these dangerous externalities.

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