Chapter 6
Advantages and Disadvantages of the Sovereign Money System

This chapter considers the advantages and disadvantages of the sovereign money system. It is structured following the four goals of any well-functioning financial monetary system that we identified in Chap. 4: its contribution to the economy (Sect. 6.1); stability (Sect. 6.2); fairness in the distribution of costs, benefits and risks (Sect. 6.3); and legitimacy (Sect. 6.4). Section 6.5 addresses the international dimension, the transition, and system dynamics and innovation. Section 6.6 provides a summary of the chapter.

Caution is required when discussing the advantages and disadvantages of the sovereign money system, as it has never fully operated in practice. This means that there is no direct empirical evidence of its advantages and disadvantages. Macroeconomic models analysing its expected effects should likewise be treated with a grain of salt.[1] We also need to remember that uncertainty surrounds many economic relationships in our existing system; definitive statements about the operation of a yet-to-be-implemented system are thus even more problematic. Finally, there are different variants of the sovereign money system, in particular concerning how lending is organized. The various proposals thus harbour different potential advantages and disadvantages.

6.1 Economic Contribution

The first question is whether a sovereign money system would better contribute to society. In Chap. 4 we outlined the financial monetary system's two key functions: organizing payments and finance. Although there are concerns about the security of payments during crises, our current system handles payments efficiently. But the

[1]For example: Benes and Kumhof (2013); Flaschel et al. (2010); Chiarella et al. (2011); Yamaguchi (2011); Van Egmond and De Vries (2016).

B. Stellinga et al., *Money and Debt: The Public Role of Banks*, Research for Policy,
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volatility of lending and high levels of indebtedness are problematic in our current system. How might this change in the sovereign money system? This section addresses: (1) the operation of the payment system; (2) the financial system's procyclicality; (3) the availability and price of credit; and (4) the possibility of a one-off debt reduction.

6.1.1 The Operation of the Payment System

A sovereign money system would not likely lead to any immediate improvement or deterioration in the payment system's functioning. Although some authors worry that centralizing payments at the central bank could stifle innovation,[2] this would not apply if independent payment banks are competing for customers. Moreover, there is no reason to believe that public institutions would be less innovative than private ones. In the Netherlands, the main innovations in payments up to the 1970s, including ATMs and electronic payments, were introduced by public institutions. In most cases, private banks followed their lead (see Sect. 6.3).

There is no immediate reason to expect the total cost of payments to rise or fall in a sovereign money system; what is unclear is *who* will pay the costs. Banks currently use income from their assets and the benefits they derive from cheap financing to fund the payment system, which would no longer be possible in the sovereign money system.[3] As the only assets payment banks would have on their balance sheets are central bank reserves, they will have little or no interest income. If the interest on central bank reserves does not cover banks' costs, this will likely lead to higher costs for consumers.[4] If the government decides to subsidize the payment system, the allocation of costs would also differ from our current system. In sum, no major changes in the payment system are expected under normal circumstances.

An important difference would be that in the sovereign money system, payment accounts would theoretically no longer be exposed to financial risks: a financial crisis would not directly affect the payment system. The emergence of shadow money in the financial part of the sovereign money system could undo this benefit; we will return to this in Sect. 6.2. In addition, cyber risks could, just as in our current system, threaten the payment system's integrity.

[2]See e.g. Van Dixhoorn (2013: 33); Swiss National Bank [SNB] (2018).

[3]This cross-subsidy may mean that while payment accounts become more expensive, other products will become cheaper.

[4]KPMG (2016: 14).

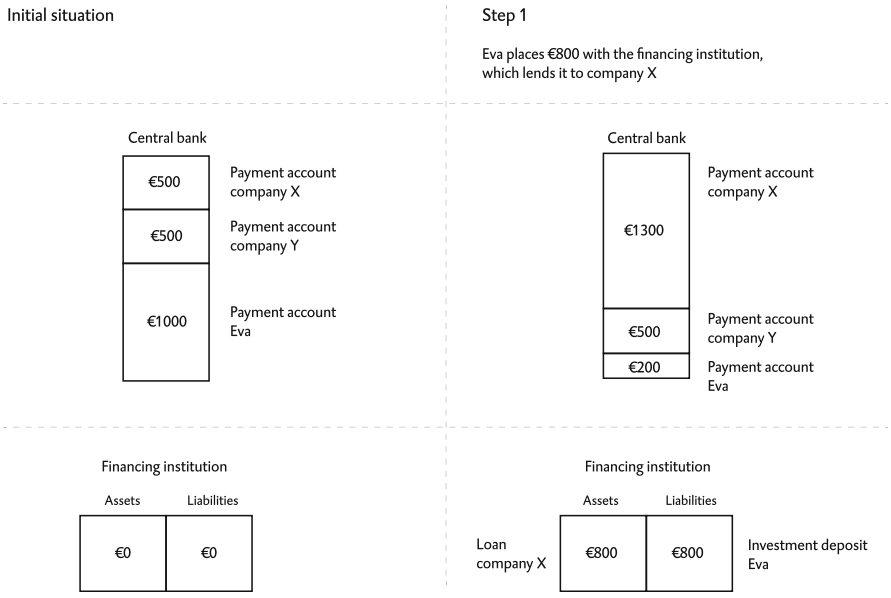

Fig. 6.1 Structure of debts in a sovereign money system part I

6.1.2 The Financial System's Procyclicality

Proponents of the sovereign money system argue that periods of collective optimism and pessimism will no longer be reinforced due to stronger curbs on lending.[5] This requires some explanation. In our current system, rising demand for credit can be met relatively easily. Banks create new money when they grant loans, and although there are some constraints, there are no hard limits. Lending therefore mushrooms in good times. In times of crisis, banks will see a decline in the value of their assets and will scale back lending to maintain a sound balance sheet.

In a sovereign money system, financing institutions must raise money before they can lend. They cannot increase the money supply; only the central bank can do so. This means lending is unlikely to rise and fall as rapidly as in our current system. Nevertheless, limits on lending are less rigid than may appear at first sight; credit can grow without the money supply growing as well. Consider an example: Eva places €800 with a financing institution operating on the basis of investment deposits, which then lends this amount to company X (see Fig. 6.1).

Company X purchases goods from company Y. Company Y then makes the money (€800) available to the financing institution, which in turn lends it to company X (see Fig. 6.2). Hence a fixed amount of money can result in an increased amount of credit. In our example credits have risen by €1600.

[5] Benes and Kumhof (2013); Dyson et al. (2016); Ons Geld (2016).

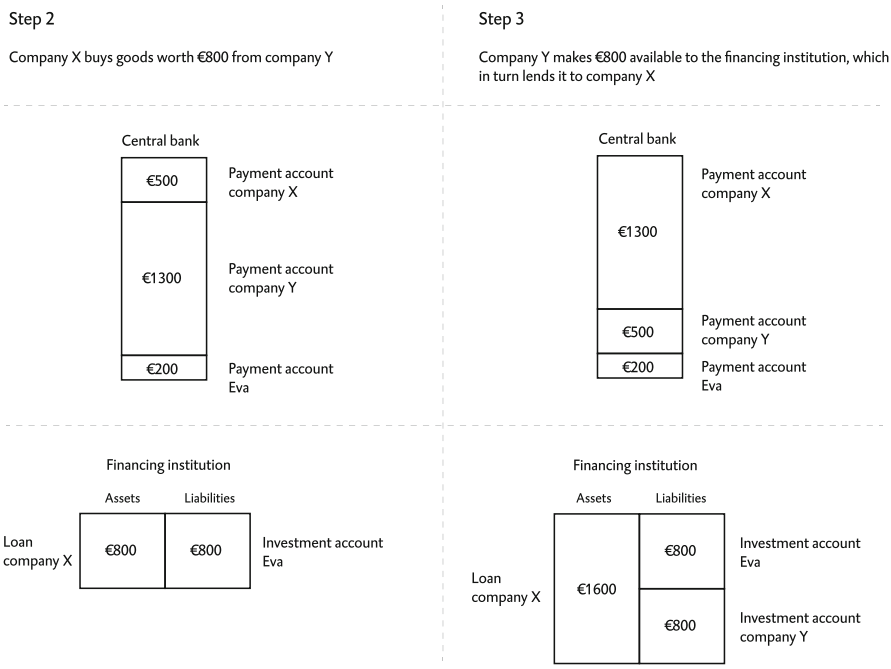

Fig. 6.2 Structure of debt in a sovereign money system part II

Although limiting the money supply does not mean the volume of credit is fixed, we can realistically expect that lending is more constrained in a sovereign money system. The speed of net credit growth (new lending minus repaid debts) will be limited by people's readiness to turn their money into investment deposits. Financing institutions will try to entice people who have their money in secure payment accounts to make it available for financing, meaning people will incur risks. Financing institutions will only be able to do this by offering higher returns, which will ultimately affect the interest charged on loans. More expensive credit may then dampen demand. Proponents claim this is an effective way to prevent credit bubbles.[6]

Still, the link between lending and money creation is by no means the only factor that contributes to procyclicality. For example, the demand for credit largely follows market sentiment (collective optimism or pessimism), while the price of financial assets depends on supply and demand, again informed by future expectations and the behaviour of other market players. These procyclical effects will also be present in the sovereign money system.[7]

[6]For example Benes and Kumhof (2013). See Van Dixhoorn (2013); Sustainable Finance Lab (2015); Dommerholt and Van Tilburg (2016).

[7]Dow et al. (2015).

6.1.3 *Price and Availability of Credit*

The availability of credit is crucial for economic development. In Chap. 4 we encountered the inverted U phenomenon where both too little and too much credit can have adverse consequences. How much credit will be available and at what price in the sovereign money system largely depends on how the financial part of the system is organized. There is a trade-off between the stability of financing and the availability of credit.

When financing institutions operate on the basis of equity (as in the Kotlikoff proposal), the value of shares will fluctuate and may even collapse if they are sold *en masse*, but there is no risk of bank runs. The question is whether enough people will be prepared to invest sufficient money to enable financing institutions to lend. Although there is greater risk of instability, a financial system in which maturity transformation is permitted and in which financing institutions operate on the basis of debt may be more attractive to investors (see Box 6.1).

Box 6.1 The Advantages and Disadvantages of Maturity Transformation

Variants of the sovereign money system differ in whether they allow maturity transformation – differences between the maturity of deposits and the maturity of granted loans. For example, deposits may have a maturity of 1 month while loans have a maturity of 10 years.

Maturity transformation has an important economic function. The availability of long-term financing provides businesses and households the certainty that enables them to take economic risks, thereby contributing to economic development. But for individual financiers, providing long-term finance is risky: they lose access to their money for long periods without knowing whether they will need it in the intervening period. If every financier must make an individual assessment, the availability of long-term finance will suffer.

If maturity transformation is permitted, financial institutions can offer a solution: they can provide long-term loans based on short-term funding. This relies on the 'law of large numbers' where, under normal circumstances, the inflow and outflow of financing is almost the same. Maturity transformation therefore has major economic advantages, but at the same time it poses stability risks: when people want to withdraw their money *en masse*, the financial institution might fail.

(continued)

Box 6.1 (continued)

If maturity transformation is not permitted, the availability of long-term finance will suffer. According to Boonstra, "the possibility that consumers or businesses will want to tie up their savings for a number of years, let alone decades, is (...) zero".[8] If financing institutions are financed with negotiable bonds or shares, part of the problem is eliminated as these can be sold at any time. There will nevertheless be greater uncertainty about the proceeds, which may reduce readiness to provide money for financing.

The proposals differ on how to organize financing to such an extent that it is impossible to say whether sufficient affordable credit will be available in the sovereign money system. It is nevertheless likely that less credit will be available than in the current system. In the sovereign money system, the risks of lending shift from banks towards individuals who place their money with the financing institution. This may mean that they will be less inclined to make money available for financing, or are prepared to do so only in exchange for higher remuneration.

Whereas proponents see this as a positive development, others do not. Critics argue that it will lead to a permanent rise in the price of credit and a permanent reduction in its availability, thereby harming economic development.[9] New promising initiatives may receive no financing.[10] Tighter access to credit could also have major social consequences. As stated earlier, the relationship between lending and economic development has an inverted U shape, with both insufficient and excessive lending having negative effects. It is difficult to predict with any precision where the scale of lending in the sovereign money system would figure in the inverted U. Alongside its longer-term effects, the declining availability and higher price of credit may pose more immediate problems, which we will address in the context of the transition (Sect. 6.5.2).

Proponents of the sovereign money system argue that the fear of insufficient, overly expensive credit is exaggerated.[11] First, it is unlikely that a readjustment of financial risks would lead to an exponential rise in interest rates given the current global glut in capital. Positive Money points out: "the economic context at the moment is one of large pools of capital and a 'search for yield', implying that rather than there being a shortage of credit, there is a shortage of useful projects to invest

[8] Boonstra (2015: 30). Our translation.

[9] Pettifor (2017); Fontana and Sawyer (2016); Goodhart and Jensen (2015); SNB (2018).

[10] Pettifor (2017).

[11] Laina (2015); Dyson et al. (2016). Proponents of the sovereign money system claim it is misleading to state that lending will become too expensive because the price of credit better reflects actual financing costs. Credit is currently artificially cheap because the government covers part of the risk. Ons Geld (2016: 28) claims it will be different in the new system: "Interest rates will be market-driven and will hence be a pure reflection of the risk, demand and supply of the lending concerned." Our translation.

in".[12] Second, the central bank could always intervene if interest rates were considered too high: "the central bank would always be able to create money and inject it into key markets to bring interest rates down".[13] As detailed in Chap. 5, the new organization of financing could include a facility for financing institutions to borrow money from the central bank. If the central bank believes credit is too scarce and expensive, it could intervene, although this would require accurately assessing the need for credit. While Pettifor believes this is expecting too much foresight, Positive Money argues it is not very different from the central bank's current role in forecasting inflation (we return to this in Sect. 6.3).[14]

Thus far, we have examined the availability of credit based on the decisions people make to store or invest their money. Advocates of the sovereign money system have another reason to believe there will be less debt in the alternative system.[15] In the current system, the creation of money implies the creation of debt. In the sovereign money system, so its proponents argue, the government can create new money without creating debt.[16] This means the money supply can expand without the concomitant rise in debt. This reasoning seems to assume that the expanding money supply drives debt rather than vice-versa. But Fig. 3.6 shows that credit has risen more rapidly than the money supply. It is therefore difficult to argue on this basis that the decoupling of money and debt necessarily leads to less debt.

How would a sovereign money system affect other financial products such as options and derivatives? Although banks are not the only providers of loans and financial products, they play key roles here. We therefore expect that a shift towards the sovereign money system consequences will affect these markets as well, although it is difficult to assess in what ways and what effects it will have on the economy. Most proposals for a sovereign money system do not answer this question.

6.1.4 One-Off Debt Reduction

According to its proponents, transitioning to a sovereign money system will allow a large, one-off reduction in public and private debt.[17] The previous chapter (Sect. 5.4) detailed how the transition would entail large loans from the central bank to the commercial banking system. These loans on the balance sheets of newly formed financing institutions would replace the payment accounts that have moved

[12]Dyson et al. (2016: 47).

[13]Dyson et al. (2016: 47).

[14]Pettifor (2017); Dyson et al. (2016).

[15]See e.g. Dyson et al. (2016: 14).

[16]See Box 1.3 for a discussion of whether public money is debt.

[17]Benes and Kumhof (2013); Dyson et al. (2016); Sustainable Finance Lab (2015); Wortmann (2017).

elsewhere. Proponents see this as a chance to reduce both private and public debt, with positive consequences for financial stability and economic development.

To the extent that government debt is held by commercial banks, the central bank can offset its loans against government bonds on banks' balance sheets.[18] Government debt, however, is normally spread among numerous national and international institutions.[19] This limits the scope of offsetting public debt against loans issued by the central bank. All this also assumes that public debt *should* be reduced as much as possible. However, Visser points to the importance of government bonds for the allocation of risk in investment portfolios.[20]

Benes and Kumhof go a step further and propose that during the transition citizens should be given a dividend with which to repay their private debts.[21] Commercial banks could then use this money to repay their loans from the central bank. If this citizens' dividend were paid only to people with debts, it would have major redistributive consequences. If everyone received the same amount, citizens with no or lower debts would be free to spend it. If the dividend is small, the decline in private debt would be limited; if large, the risk of inflation would grow.

6.1.5 Summary

This section considered the possible advantages and disadvantages of the sovereign money system as it bears on its contributions to the economy. We examined both payments and financing. There is no reason to believe that the payment system will improve or deteriorate in the new system. The allocation of costs, however, would change. In the current system, banks fund the payment system partly with income from their assets; in the new system, this would either be impossible or difficult (depending on the interest rate on central bank reserves). Account holders could thus face higher direct costs. If payment accounts are held at the central bank, an option is that costs are met by the public purse.

Much would likely change in the area of lending. Volatility in lending will likely decrease as rising demand for credit will more quickly feed into interest rates, thereby dampening demand. Curbs on lending in the sovereign money system will be less severe than they may seem as decoupling the money supply from the credit

[18]The reality is more complex. The central bank grants loans to commercial banks, which can then repay these loans by transferring government bonds to the central bank. This could be made a requirement for granting the loan. The central bank can then write off the government debt. While the central bank's balance sheet will grow in the transition, its debt is for accounting purposes and not a debt in economic terms, thus differing from current government debt.

[19]Even under the current system, the central bank can always try to use newly created money to buy up outstanding government debt. Incidentally, it is difficult to state precisely who holds Dutch government debt (Tokmetzis 2013).

[20]Visser (2015).

[21]Benes and Kumhof (2013).

supply will not imply an absolute ceiling on credit. The economic cycle will not be a thing of the past. Factors that fuel volatility in our current system, such as the fact that financial assets cannot be objectively priced, will remain. Market sentiment will continue to affect the financial system.

It is difficult to predict how much credit will be available and at what price; this will largely depend on how the financial part of the system is regulated and organized. There will be a trade-off between financing institution stability and credit availability: the more risks the financiers of these institutions bear, the more stable the institutions will be. But people will be less inclined to make their money available for financing or expect higher returns. If the government demands that financing institutions operate entirely on the basis of equity, or if they are required to align the maturities of their debts and assets, individual institutions will be more stable but citizens and businesses may be more reluctant to enter into credit transactions. The negotiability of debts or shares will only alleviate part of this problem.

Less lending is not necessarily harmful in the long term: after all, it is possible to have too much credit. Both excessive and insufficient lending will have negative consequences for economic development and it is difficult to predict with any precision where the sovereign money system will fall on this axis. A sharp decline in the availability of credit may have severe short-term consequences, quite apart from any long-term effects.

The transition to the new system could lead to a one-off reduction in debt through the offsetting of the central bank's loans to financial institutions against debts on these institutions' balance sheets. While this is conceivable for public debt, for private debt there would be thorny political issues concerning implementation, winners and losers in redistribution, and heightened risks of inflation. Although it is easy to offset these debts in a model, it will be much more complex in practice.

6.2 Stability

The problem of financial instability concerns both individual institutions and the financial system as a whole – and the interplay between them. To what extent would a sovereign money system reduce instability? We first discuss the stability of individual institutions before considering systemic stability.

6.2.1 The Stability of Individual Institutions

Will a sovereign money system lead to more stable institutions? This question needs to be answered separately for payment and financing institutions. Payment institutions will be stable as they operate on the basis of full reserves; it is no longer

possible for them to fail as a result of a bank run.[22] However, if shadow money were to arise in the financial part of the system – with the debts of financing institutions used as a means of payment – this would still mean that not all money is secure. We will return to this in Sect. 6.5.

A more complex question is whether financing institutions will be more stable. This will largely depend on the laws and regulations specifying what they are and are not permitted to do. If these institutions operate entirely on the basis of equity (as in the Kotlikoff plan), there is no risk of a bank run and much lower risks of bankruptcy, although investors may still suffer major losses (as in our existing stock markets). Stability risks are greater if financing institutions can operate on the basis of debt and if there remain differences between the maturity of their assets and liabilities. In the event of declining asset values, refinancing may become problematic and there may yet be runs on the financing institution. This in turn may lead to instability among other institutions. Capital regulations – requirements concerning equity levels – could provide a partial solution to this problem.

According to its proponents, a sovereign money system will lead to more stable financing institutions as their financiers exert a strong disciplining effect. Proponents expect that this market discipline results from the absence of government guarantees that distort the current system. This requires some explanation. In a sovereign money system, payments are insulated from credit risks. As financing institutions will no longer have to be rescued to protect the payment system, a key market-distorting factor – implicit and explicit government support for private institutions and account holders encouraging riskier behaviour – would disappear. According to its proponents, the absence of government guarantees is a key requirement for the sovereign money system. Ons Geld states that "it must be established beyond doubt that the authorities will provide no guarantee or compensation for losses on self-selected risk positions".[23]

With investors now actually bearing risk, proponents argue, they will exercise better control over financing institutions and demand that they are adequately capitalized. This will have a disciplining effect on institutions: "Transparency and good risk assessment is then rewarded. Banks can excel in the way in which they make risks transparent and handle the resources entrusted to them. Banks that are insufficiently competent or competitive in that regard will disappear from the scene due to market forces".[24] In short, financing institutions will become more stable by being exposed to genuine market discipline.

The first question is whether it is realistic to expect that government guarantees will truly disappear; we will address this in Sect. 6.3. Another question is what can realistically be expected from market discipline. Will it be strengthened and will this contribute to financial stability? Will investors be able to exert effective discipline on financing institutions? Experience in the years before the financial crisis gives no

[22]Certain risks such as cyber risk will continue to exist.

[23]Ons Geld (2016: 30). Our translation.

[24]Ons Geld (2016: 27). Our translation.

cause for optimism. Professional investors purchased financial products such as securitized mortgage packages but barely understood their risks. The credit rating agencies responsible for assessing financial products often issued much more positive ratings than were justified.[25] If it is difficult for professionals to assess risks accurately, can the average citizen be expected to do so?

In his proposal for Limited Purpose Banking, Kotlikoff therefore advocates a single national rating agency – a Federal Financial Authority – that would publish all ratings.[26] Some of the perverse incentives in the current design of the credit rating sector would then disappear, with financial institutions no longer shopping around among various credit rating agencies.[27] But it remains inherently difficult to give objective financial ratings, partly because the ratings themselves affect the value of financial assets.[28]

Finally, we need to bear in mind that – as in the current system – the stability of individual institutions does not automatically lead to the stability of the wider system. Comparisons of individual institutions cannot prevent financial assets from being wrongly priced throughout the market. It is difficult for individual market participants not to share in the general sentiment, encapsulated in the famous statement by Citibank's CEO Charles Prince: "*As long as the music is playing, you've got to get up and dance.*" Strengthening the stability of individual institutions by strengthening market mechanisms will not necessarily deliver system stability at the macro level.[29]

6.2.2 Systemic Risks

According to its proponents, the sovereign money system will lead not only to more stable institutions but to a more stable system. Stronger curbs on lending will constrain credit bubbles, a major source of instability. And *even if* instability occurs, it will remain limited to the financial part of the system, as the payment system is secure. There will be no bank runs in the payment system: all money is held directly at the central bank or fully backed by central bank reserves. If a large number of people simultaneously wish to withdraw their money in cash or transfer it to another payment bank, no problems will ensue. The essence of the sovereign money system is that money is secure and incurs no risk.[30]

The existence of secure payment institutions and risky financing institutions without public guarantees may prompt worried citizens to seek refuge in the former –

[25] FSA (2009).

[26] Kotlikoff and Goodman (2009).

[27] This could also occur in the current system.

[28] Stellinga and Mügge (2017); Stellinga (2018, 2019).

[29] White (2008); Turner (2015); King (2016); Warwick Commission (2009); Goodhart (2016).

[30] Benes and Kumhof (2013); Kotlikoff (2010).

a development which critics believe could contribute to instability. The extent to which this scenario is possible largely depends on how the financial part of the system is organized. If it operates on the basis of equity or bonds, these instruments will sharply decline in value, making it difficult for financing institutions to raise new money and grant new loans. If financing institutions are financed on the basis of term deposits with a notice period, a slow-motion systemic bank run is still possible.[31]

The stability of financing may also be threatened by new or existing financial products – for example CDS (credit default swaps) products that insure bondholders against the risk of bond defaults – that are not used to invest in the real economy. During the credit crisis, the insurer AIG sold off so many of these products that it had to be bailed out just 3 days after the fall of Lehman Brothers. These types of instability may also continue to exist in the sovereign money system.

6.2.3 Summary

Will a sovereign money system contribute to financial stability? Its major advantage is that payment institutions will be stable. But how about financing institutions? This will largely depend on the statutory requirements governing how they are financed. They will be more stable if they have to operate entirely (or largely) on the basis of equity, or if they have to observe strict maturity matching between the loans they grant and the debts they owe. But this may reduce the availability of credit and thus the new system's contribution to economic growth.

According to its proponents, stronger market discipline in the sovereign money system will render financing institutions more stable than the current commercial banks; since governments will no longer bail them out, investors will require them to be more cautious. But this is by no means a given. First, it is questionable whether governments will actually cease to provide support. Second, the ability of investors to monitor and discipline should not be overstated. Furthermore, market discipline will only partially be able to counter the build-up of systemic risks. The financial crisis of 2007–2009 showed that investors and banks can collectively misprice assets. Banks did their utmost to rival or outperform their peers, ratcheting up systemic risks as all joined in the hype. Investors may negatively judge underperforming financial institutions, but this will not necessarily prevent the build-up of systemic risks and may even increase it.

On the other hand, systemic risks will arguably develop less easily in a sovereign money system. Stronger curbs on lending would dampen procyclical pressures, while instability would be less problematic as the payment system is secured. Nevertheless, critics argue that it is precisely the strict separation between payments and financing that contributes to systemic risk: in good times people are enticed to

[31] Goodhart and Jensen (2015).

invest their money, but if prospects deteriorate, they will seek refuge in secure payment institutions. This in turn may disrupt the financial part of the system.

6.3 Fairness

Chapter 4 addressed problems related to the fair distribution of costs, benefits and risks in our current financial monetary system. How would things differ in a sovereign money system? We address in turn: (1) the abolition of implicit and explicit government support; (2) the benefits of money creation; and (3) the benefits and costs of debt.

6.3.1 Abolition of Implicit and Explicit Public Support

Explicit and implicit government guarantees to the financial sector create two sets of problems: (1) profits are private while the costs of crisis are largely public; and (2) banks – especially large banks – enjoy major advantages over smaller banks and ordinary companies. Proponents argue that in a sovereign money system, the separation of payments and financing will end the need for public guarantees.

Even if national arrangements differ, deposit guarantee schemes are ultimately backed by the government. In the event of a systemic crisis or the collapse of one of the major banks, people turn to the government for a bail-out. In the new system, payments would be secure and the government would no longer have to provide this guarantee, according to proponents. As failures in the financial part of the system no longer threaten the payment system, the problem of 'private profits, public losses' would no longer exist; from now on it would be 'private profits, private losses'. The financing advantages enjoyed by systemically important institutions – which benefit from cheaper finance as investors know the government will rescue them – would end. In the new system, the government would simply no longer bail out individual financing institutions.[32]

Although the downside of public support for banks is widely recognized, the question is whether the absence of government guarantees can be set in stone in any new system. For a number of reasons, this cannot be assumed.

First of all, politicians take the fate of their voters seriously; if a large number of people are affected by collapsing financing institutions, the government will come under extreme pressure to help them. Although we cannot apply the experiences of the current system directly to the new system, the bail-in problem illustrates how difficult it is for politicians to refuse support when problems arise. The debate surrounding the rescue of the Italian banks *Popolare di Vicenza* and *Veneto Banca*

[32]Benes and Kumhof (2013); Kotlikoff (2010); Dyson et al. (2016); Ons Geld (2016).

in 2017 shows how difficult it is to force a bank's creditors to meet the full costs of a rescue. Out of fear of undermining broader trust, the Italian government decided to shoulder a large part of the rescue costs itself.

A second reason is that a well-functioning financial system is in the public interest, that can be undermined by bankruptcies. Even if the payment system is secured, a financial crisis can cause massive economic and social harm. An isolated bankruptcy will not necessarily threaten lending, but a systemic crisis certainly may, making state intervention desirable.[33] If a large number of citizens see their investments evaporate and companies lose access to revolving credit, the damage may be severe. The loss of prosperity and increasing uncertainty will cause households to rein in spending. This could trigger a negative spiral of corporate insolvency, failures of financing institutions and personal bankruptcies as assets evaporate.

A third reason is the possibility that 'shadow money' emerges in the financial sector. It is possible that over time the investment deposits and financial instruments issued by financing institutions will be used to make payments and will hence serve as money.[34] As we saw in Chap. 3, deposit money grew in importance after the nationalization of banknotes in the United Kingdom, Switzerland and the United States. If this shadow money plays a major role in the economy, the government will likely provide guarantees in the event of a crisis.[35]

Apart from its realism, one may reasonably ask whether it desirable to assume that no implicit or explicit public guarantees will exist in the financial sector. Guarantees can eliminate uncertainty, prompting people to take risks and bolstering stability. Guarantees can be private, such as collateral requirements and insurances from third parties. But public guarantees may prove necessary to create the trust needed for people to invest their money and to avert that minor doubts about institutions trigger major panics.

6.3.2 Seigniorage

According to its advocates, a key advantage of the sovereign money system is that the financial benefits of money creation accrue to the government, while in the current system it is the commercial banks that reap the benefits. But banks themselves do not spend the money created when they grant loans; they therefore receive no conventional seigniorage – the difference between the production cost of money and its value to society. They nevertheless have a financing advantage as they can create a part of their funding themselves on which they generally pay relatively low

[33]Bachetta (2017).

[34]Goodhart and Jensen (2015); Laina (2015); Dow et al. (2015).

[35]See also Murau (2017)

interest. On the other hand, they bear the costs of maintaining the payment system (see also Box 4.3).[36]

Advocates argue that seigniorage should in principle accrue not to private companies but to the government.[37] Since the central bank can create and spend money almost free of charge, the new system would allow conventional seigniorage and it would be public.[38] According to Dommerholt and Van Tilburg, the additional sum created in the Netherlands would amount to around €20 billion annually.[39] Used for government spending, it would contribute around 7% of the Netherlands' current budget. This entails monetary financing; the government would not have to incur additional debt or raise taxes, it can simply spend the money created by the central bank. What the government spends the money on is then a political choice.

Critics see a system that enables the government to create money 'out of thin air' and then to spend it as fraught with danger.[40] Additional new money cannot be created without consequences; it increases the claim against current and future production. To the extent that money creation leads to inflation, it can be seen as an indirect tax.

Critics argue that the government's ability to create money can lead to abuse. Political pressure could lead the central bank to create so much money that it fuels excessive inflation. The creation of new money and rising prices could reinforce each other in such a way that it gets out of control and triggers hyperinflation. Critics often point to the dangers of public money creation by referring to hyperinflation in the Weimar Republic in the early 1920s, Hungary after the Second World War, and Zimbabwe from the mid-2000s. In these situations, the 'gains' for government were mirrored by 'losses' for society in the form of a high inflation tax.[41]

But advocates of sovereign money believe this is cherry-picking from history. Hyperinflation occurs primarily in exceptional situations, i.e. immediately following a war or under a dysfunctional dictatorship. Many properly functioning states (including the Netherlands) have used monetary financing in the past without triggering hyperinflation. Dyson points out that monetary financing is technically possible in our current system but the government has deliberately restricted its own

[36]Huber (2017).

[37]Ons Geld (2016); Dyson et al. (2016); Huber (2017).

[38]As discussed in Box 4.3, the costs of generating the social trust required for any monetary system to function extend far beyond the production costs of money. The functioning of money requires numerous institutions. This holds for both the current system and the sovereign money system.

[39]Dommerholt and Van Tilburg (2016). They state: "This €20 billion is an estimate of the annual seigniorage with 2% inflation, 2% growth and a money supply of €500 billion. This estimate assumes that the circulation speed of money remains unchanged, even with possibly higher interest rates in the future" (Dommerholt and Van Tilburg 2016: 680 [our translation]). The estimate suggests a direct relationship between money supply and economic growth and inflation and does not include the cost of money creation.

[40]See e.g. Boonstra (2018).

[41]Boonstra (2015); Ryan-Collins (2015).

freedom to use it. In Europe this would require an amendment to the Treaty on the Functioning of the European Union.

For proponents, it is a question of ensuring that public money creation proceeds in a responsible manner. To a certain extent, the government must 'lash itself to the mast', for example by having an independent central bank determine how much new money can be created. The right checks and balances must be in place.[42]

6.3.3 *The Benefits and Costs of Debt*

Advocates of the sovereign money system believe it will lead to less debt and less inequality. Less debt implies lower net interest expenses; according to Positive Money, "less income is transferred upwards to the top 10% of the population".[43] Note, however, that lower debt levels do not automatically lead to lower interest payments. If the interest rate rises because less credit is available, interest payments may still increase.

Pettifor believes that the sovereign money system will disadvantage people with lower incomes or fewer assets, as they will find it more difficult to obtain loans, reducing their financial independence. What matters is not the *average* interest rate that debtors pay: people with low incomes and few assets already pay higher rates than others and this effect would be reinforced in the new system when less credit is available.[44] It is difficult to make meaningful statements about the sovereign money system's impact on inequality. Too many different factors are involved.

6.3.4 *Summary*

Will costs, benefits and risks be better distributed in the sovereign money system? We have addressed three issues: (1) the extent to which public guarantees can be dismantled; (2) seigniorage; and (3) the benefits and costs of debt.

Proponents expect the new system to lead to greater fairness because private losses will at last be genuinely 'private' and financing institutions will no longer have to be rescued with taxpayers' money. The question is whether this will be so under all circumstances. Public interests remain at stake in the financial sector, which may be jeopardized if private financing institutions perform poorly or go bankrupt. If a systemic crisis hits the sector, there will be major consequences even if the payment system is not compromised. In that case the government may still be expected to intervene. This is not only because politicians want to protect their

[42]Dyson et al. (2016).
[43]Dyson et al. (2016: 16).
[44]Pettifor (2017).

constituencies, but because government guarantees and interventions also have positive effects. After all, efficient financing is essential for the functioning of society. Although it is unlikely that private institutions would be bailed out as readily, it is questionable that losses in the new system would always remain 'private'.

In the sovereign money system seigniorage accrues to the government. Where excessive additional money creation may lead to inflation, this can be viewed as an indirect form of taxation (however, to the extent that money creation leads to inflation, this applies to our current system as well). Monetary financing harbours the danger that the government will abuse its ability to create money, in the worst case leading to hyperinflation. Adequate checks and balances are therefore essential.

It is difficult to make definitive statements about the benefits and costs of debt. Advocates expect lower debt to lead to less inequality while opponents expect more expensive credit to lead to more inequality.

6.4 Legitimacy

How does the sovereign money system fare in terms of legitimacy? Here we address three issues: (1) the separation of public and private activities; (2) public control and democratic oversight; (3) the position of citizens.

6.4.1 The Separation of Public and Private Activities

Advocates claim that the transition to a sovereign money system will result in a clearer division of the financial monetary system into a public part (the payment part) and a private part (the financing part). This would clarify the status of financial institutions as private institutions that can go bankrupt and will receive no support whatsoever from the government. Proponents believe the advantages extend beyond the aspect of costs and benefits; it would also lead to an improvement in public control and legitimacy. Since the proper functioning of banks and payments is crucial for the economy, politicians and policymakers are inclined to equate the interests of banks with those of the public. But if the public interest of the payment system is secured, the government may no longer feel responsible for the viability of financing institutions. The influence of private institutions on public decision-making would then be reduced.

The main objection to this line of reasoning is that the financial part of the system will continue to harbour public interests. Although the bankruptcy of a small institution is not necessarily a problem, that of a systemically important one – or many institutions at the same time – may well jeopardize the public interest in a well-functioning credit system. It seems unrealistic to expect that financing can ever be entirely 'private' as it will always remain vital to society.

6.4.2 *Public Control and Democratic Oversight*

Proponents expect the government to be better able to achieve inflation targets and other macroeconomic outcomes in a sovereign money system. Benes and Kumhof, who advocate a strict target for inflation, argue that the government could keep inflation at zero.[45] Ons Geld is likewise optimistic about the government's ability to influence the value of the currency: "Such a monetary target [constant purchasing power of the currency] is also conceivable in a sovereign money system. After all, the state monetary authority could steer the public money supply in any required direction. Both inflation and deflation could be effectively targeted and combated."[46]

Other proponents are more cautious about the government's ability to control macroeconomic outcomes. The transmission mechanism from money creation to price stability is complex and to a certain extent unpredictable. Inflation, like every other macroeconomic objective, is influenced by countless factors. Huber writes: "the higher degree of exposure to foreign influences, including exposure to foreign monetary influences, [...] the lower the degree of national 'autonomy'" – which certainly holds for countries like the Netherlands.[47] For Huber and Positive Money, the issue is not so much about perfect control over policy outcomes as having greater influence than in the current system.

The assumption that inflation can simply be controlled by adjusting the money supply is incorrect. First, it overestimates the power of predictive models used by the central bank; the economy contains fundamental uncertainties and real-time data is unavailable.[48] Second, it assumes that there is a clear, direct link between the money supply and inflation, while in fact many more factors play a role.[49] Monetary transmission is a complex issue in *every* system, frustrating any attempt to achieve precise targets. It is possible, however, that the option of monetary financing will make it easier to tackle deflation in the alternative system than in the current system.

National macroeconomic outcomes are also informed by international developments. Particularly in open economies such as the Netherlands, international trends heavily influence national outcomes. Central banks in a sovereign money system will still have to take account of international developments – as the Dutch central bank always had to do.

For the proponents of sovereign money, greater public control over money creation also represents a gain in *democratic* legitimacy. Ons Geld argues that money creation must take place within a framework of democratic oversight;[50] Positive Money believes that decisions on how to allocate new money should be

[45]Benes and Kumhof (2013: 56).
[46]Ons Geld (2016: 23). Our translation.
[47]Huber (2017: 190–192).
[48]Dow et al. (2015: 10).
[49]See e.g. Borio (2017).
[50]Ons Geld (2016: 10).

entrusted to the government.[51] Hence they believe that a crucial political decision – where new money should be spent – will also become a matter of democratic oversight.

In the proposals, decisions about the money supply rest with an independent public institution. To prevent political abuse, this independence must be safeguarded.[52] Pettifor, however, warns of the possible antidemocratic consequences of such safeguarding: "it would place great financial and economic power in the hands of a few technocrats".[53] Many other critics point to the likelihood of political pressure being exerted on the central bank.[54]

6.4.3 The Position of Citizens

Advocates argue that the position of citizens vis-à-vis financing institutions will improve in the new system, with the abolition of implicit government guarantees making it more important for financing institutions to secure consumer loyalty. Alongside switching to a different financing institution, citizens have another option, namely the use of payment accounts. If a financing institution underperforms or incurs excessive risk, citizens will not invest in it and leave their money in payment accounts. This would have a disciplining effect on financing institutions.[55]

A sovereign money system would indeed give citizens another option. But this does not mean that all factors that in our current system weaken citizens' positions vis-à-vis banks will be immediately resolved. Financing institutions will retain considerable informational advantages. The question is whether consumers can bridge the information gap when even professionals struggle to do so. Moreover, a quick exit option is not guaranteed. How far citizens can punish financing institutions in the short term for poor performance will largely depend on the permitted maturity transformation and the negotiability of financial instruments in the new system.

6.4.4 Summary

Proponents of the sovereign money system expect the transition to the new system will provide greater clarity about public and private interests. Although the entanglement of 'the public' and 'the private' in our current system clearly has

[51] Dyson et al. (2016).

[52] Ons Geld (2016: 18).

[53] Pettifor (2017: 107).

[54] Dow et al. (2015); Visser (2015); SNB (2018); Dommerholt and Van Tilburg (2016).

[55] Ons Geld (2016).

problematic aspects, the strict separation of the two is not as easy as it sounds. Public interests are at stake in financing. If private financing institutions perform poorly or go bankrupt, public interests may yet be threatened. The financial part of the system will continue to have a public dimension, even if in formal terms the institutions are entirely private.

Advocates expect the sovereign money system to result in greater public control over inflation and different macroeconomic outcomes. Some even argue that it will open the way to constant zero-percent inflation. Economies, however, are too complex for central banks to have such control, in part because they must always contend with developments in other countries. How far a sovereign money system would lead to *greater* control over inflation remains unclear. The central bank would change its primary policy instrument from adjusting interest rates to adjusting the money supply. If the exclusive focus is on the money supply, interest rates will most likely become more volatile. Nor has it been proven that managing the money supply is more effective than influencing market interest rates, as in both cases the transmission mechanism is uncertain. What monetary financing does offer in the sovereign money system is a more direct means of combating deflation.

If the government gains the power to create new money, checks and balances will be required to manage it effectively. The immediate question is whether the system will then lead to an improvement in terms of democratic influence.

Similar reservations apply to assessments of the position of citizens in the new system. The position of investors vis-à-vis financing institutions may improve as households have another option, namely storing their money in payment accounts. Asymmetries will still exist, however, as citizens will continue to be at an informational disadvantage. The position of citizens will also depend on the extent to which maturity transformation is permitted and the financing institution's debts are negotiable, as this affects to what extent investors can 'vote with their feet'.

6.5 Other Issues

This section addresses issues that, strictly speaking, fall outside of the criteria of economic contribution, stability, fairness and legitimacy but which are nonetheless crucial for assessing the feasibility and thus desirability of the sovereign money system. These are: (1) how the new system could be integrated in the international context; (2) prospects for a smooth transition; and (3) the extent to which system dynamics and innovation may undermine the new system over time.

6.5.1 The International Dimension

An initial question is how any *national* introduction of a sovereign money system would relate to the *international* context. The proposals mostly argue on the basis of a 'closed system' and pay scant attention to this international dimension.

The international dimension, however, is crucial. As we saw in Chap. 3, countries are far from autonomous in their financial monetary policies; developments in other countries heavily influence national macroeconomic objectives and countries must respond accordingly. Between the end of the Bretton Woods system and the introduction of the euro, the Dutch central bank in fact took its cues from its German counterpart. Another important question, particularly for open economies, is what the introduction of a sovereign money system would do to the exchange rate. Will the currency rise or fall in value? Will it be possible to achieve exchange rate stability? These matters are difficult to predict and have major economic consequences. Moreover, financial services are currently so international that there are countless interdependencies with foreign countries that would influence how plans from the drawing board turn out in practice.

Practically speaking, would the Netherlands be able to introduce a sovereign money system in the current international context? The Netherlands is part of the euro area, so it could not be introduced without the Netherlands withdrawing from the euro or persuading other euro area member states that a joint transition would be desirable. Quite apart from the likelihood of all euro area countries opting to do so, this would make any transition and its implementation much more complex. Many other questions arise. Who would be authorized to issue the newly created money? Who would make this decision? Would it happen at the European level or at the level of individual states? And based on what allocation? Plans for a sovereign money system, however, envision the system being introduced in individual countries. They therefore provide no answers to these questions.[56]

6.5.2 The Transition

A second question concerns the transition to a sovereign money system. Although the various proposals discuss the transition in terms of the effects on commercial and central bank balance sheets, they pay less attention to uncertainties in the dynamics

[56]Wortmanns' (2017) argument for a 'virtual euro' is an exception and briefly discusses how a 'citizens' dividend' should be distributed among EU states: "Member States are entitled to dividends on equal footing, irrespective of their debt with the banking system. For that, an appropriate allocation key must be applied. For Citizens, an equal share per capita seems most suitable, irrespective of individual debt with the banking system" (ibid.: 4). To allocate the new money, Wortmann simply writes that it should be made available to "the European Union and the Eurozone Member States combined" (ibid.: 8). The argument pays scant attention to the complications that could arise.

that a transition would create. Positive Money presents the option of a *gradual* transition which would allow people to grow accustomed to the new situation (see Sect. 5.4).[57] A more rapid transition may require public guarantees for the financial sector to forestall panic, even if this contradicts the idea that the government will no longer support private financing institutions. Proponents, however, focus primarily on the more technical aspects of the transition, discussing the transition mostly in terms of balance sheet changes.

Kroll believes this largely underestimates the complexity of the transition and the risk of systemic failure.[58] The monetary financial system is also a social system built on trust where people do not always act predictably or rationally. In the financial sector, market participants' expectations about the behaviour of other participants crucially inform their own choices. Precisely for this reason, self-reinforcing effects can easily emerge. These are important considerations for a transition to a sovereign money system since they imply that it is not a technical exercise in which everyone acts exactly in the way that is envisaged. If people believe a transition entails major risks – or if they believe other people believe so – this can become the reality. The government is unable to control such expectations.

One of the risks is a crisis in the banking system. As noted earlier, bank deposits (payment accounts only or both payment and savings accounts) would be converted into payment accounts that are declared 100% secure. The downside is that all bank debts that fall *outside* of this definition will thereafter incur risk. Lenders may fear that banks will encounter difficulties due to the transition and decide to move their assets to a bank in another country, leading to capital flight. If the government opts to switch to the new system overnight after a preparatory period, there is a real likelihood of panic, with people wanting to move *en masse* out of the financial part of the system.[59] In such an eventuality, the financial sector could cease to operate or require rescuing by the government. Of course it is impossible to say with any certainty whether this will happen. The point is that the trust required for the sovereign money system to function cannot be taken for granted.

6.5.3 Dynamics and Innovation

A third question is whether system dynamics and innovation will ultimately cause the sovereign money system to evolve into a system that resembles the set-up we currently have. The most important question here is whether the government can prevent the emergence of shadow money: private liabilities that serve as money but

[57] Dyson et al. (2016).

[58] Kroll (2015).

[59] This relates to whether savings accounts are also transferred to the new payment banks alongside current bank deposits. The proposals are often unclear on this point. If yes, the transition would be much larger. If not, savings accounts could change overnight from 'secure' to risk-bearing deposits.

are not *public* money.[60] It is possible that investment deposits or other financial instruments will come to be used as money, as has often happened in history (see Chap. 3). Bank deposits that are now widely used as money also started out as 'shadow money'. Shadow money most likely arises if financing institutions allow it to be used for payments between them. If this parallel payment system grows important enough, it will be even more problematic if the government decides to allow the financial part of the system to collapse in a crisis. As such, it increases the likelihood of government guarantees for financing institutions.

The advocates argue that this will not happen. The government can enforce rules and supervision to prevent the creation of shadow money. This can be done, for example, by banning the immediate repayability of debts or requiring financing institutions to disclose information on the associated risks.[61] Furthermore, the development of a *full-fledged* parallel monetary system is no simple feat. According to Positive Money, it took many decades for bank deposits to become a full-fledged alternative to cash, and did so only because the government issued all kinds of guarantees to intervene in the event of problems. As such, the development of a parallel system would be 'easier said than done'.[62] Ons Geld argues that the creation of shadow money would not be an entirely negative phenomenon: its popularity could be seen as an "indicator of the quality and operation of the sovereign money system".[63] Nor would shadow money necessarily pose a threat to the operation of the monetary system: "It would be sufficient for the government to focus on its own public money supply and dismantle all its support for private funds".[64] As long as this remains the case, it does not matter so much whether private operators introduce new means of payment; these will bear risks and the government will not have to rescue the system if it fails.[65] The question is whether such a policy is feasible and desirable in the case of a generally accepted means of payment.

Here both proponents and opponents offer important insights. The proponents rightly argue that something can only serve as 'money' if it enjoys broad trust. Such trust is not automatic: it has to be built up over time and must be supported by numerous formal and informal institutions.[66] On the other hand, this is precisely what has happened repeatedly in the past. Banknotes, bank deposits and, more recently, shares in money market funds in the United States all gradually began to serve as money, illustrating the dynamics and innovation in the financial monetary system. The fact that we now pay with bank deposits is not the result of a deliberate plan, but of numerous interacting developments over time (see Chap. 3). The idea that the organization of the financial monetary system remains stable over time is

[60] Goodhart and Jensen (2015); Laina (2015); Dow et al. (2015).

[61] Dyson et al. (2016: 24); Musgrave (2014).

[62] Dyson et al. (2016: 48).

[63] Ons Geld (2016: 29). Our translation.

[64] Ons Geld (2016: 29). Our translation.

[65] Ons Geld (2016).

[66] Mitchell-Innes (1913).

flawed. System dynamics, innovation and arbitrage are inherent to the system and make it unlikely that a strict separation between public payment institutions and private financing institutions can be maintained over the longer term.[67]

6.6 Conclusion

Trust is essential in every financial system. Trust is ultimately something that must be earned, and it is impossible to determine in advance whether it will arise in the sovereign money system. We previously pointed to key characteristics of the financial system that can generate trust: its economic contribution, stability, fairness and legitimacy. This chapter discussed the advantages and disadvantages of the sovereign money system on the basis of these four goals.

We started with the alternative system's contribution to the economy. There is no *prima facie* reason to expect that a sovereign money system will result in a more or less efficient payment system. A key advantage is that the payment system is in principle no longer susceptible to financial instability and the instability of financing institutions. Citizens would probably have to pay more for services as payment banks would have no other income. Lending would be more tightly regulated and possibly be less procyclical, with positive economic consequences. However, if lending fell sharply and credit became too expensive, this could negatively impact economic development. The transition would entail large loans from the central bank to commercial banks. The possibility of offsetting outstanding public debt against these loans could lead to a one-off reduction in public debt.[68]

Contribution to the economy	• The payment system is secure during a financial crisis. • The volume of lending will probably be lower, but possibly more stable. The effect on economic development is unspecified. • Possible one-off partial reduction in public debt.

For stability, we distinguished between that of individual institutions and that of the system as a whole. A sovereign money system will mean stable payment banks against which bank runs will either be impossible or will not lead to bankruptcy, even if there is residual operational risk. But financing institutions will still face the risks of instability. Although proponents argue that they will become more stable as they are genuinely exposed to market discipline, the question is whether shareholders, bondholders and holders of investment accounts will actually be able to discipline financial institutions more effectively. Furthermore, stronger market discipline for individual institutions does not preclude the build-up of systemic risks. Advocates believe, however, that systemic risks will arise less quickly due to better

[67] Visser (2015).

[68] The central bank's balance sheet will increase during the transition. Government debt (with interest payments and a repayment obligation) differs from the accounting debt of the central bank.

constraints on lending. Crises will also not directly jeopardize the payment system. Nevertheless, some authors believe the strict separation between financing and payment will *increase* the risk of a systemic crisis, because in case of doubt people will seek refuge *en masse* in secure payment institutions.

Stability	*Stability of individual institutions* • A bank run on a payment bank is not problematic. • Risk of instability in financing institutions will not disappear, but will diminish. The size of this risk depends on the organization of the system. How are financing institutions permitted to finance themselves? There may be a trade-off against the volume of lending: measures necessary for more stable institutions could constrain lending. *Stability of the system* • To the extent that the new system leads to less volatility in lending, it contributes to financial stability. • For the stability of the system as a whole, the means by which financing institutions are financed is crucial. For financing that can be withdrawn in the short term, systemic risks can arise because in a crisis people will seek refuge e*n masse* in public payment institutions. But financing institutions could take account of this risk and implement measures that would contribute to systemic stability.

Third, we considered fairness in the distribution of benefits, costs and risks. Advocates expect the current problems associated with implicit and explicit government guarantees will not arise in the new system, and see the withdrawal of government guarantees as a crucial precondition for its proper functioning. The question is whether this will always be tenable as the public interest in lending may require the government to step in during a systemic crisis to prevent further deterioration. In a sovereign money system the government collects seigniorage; whether this will benefit society as a whole depends on whether money creation remains under control. Finally, how the new system will affect the allocation of debt income and expenses remains unclear.

Fairness	*Allocation of profits and losses* • For the public cost of financial instability, much depends on how financing is organized. Private financing institutions will no longer have to be rescued to keep the payment system secure, but they may need to be rescued to sustain lending. • The benefits of money creation accrue to the government. Whether this benefits society as a whole will largely depend on how much money is created and how it is spent.

As for its legitimacy, the sovereign money system will more clearly demarcate private from public interests. Splitting payments from financing may mean that the private interests of financing institutions will be less readily equated with public interests. But lending is so crucial for the functioning of society that public interests will continue to be harboured in the financial part of the sovereign money system. It is impossible to predict whether the sovereign money system will be seen as more legitimate. While both the current and envisioned systems shield the central bank from political influence, this may become more challenging in the sovereign money

system as efforts will be made to exert political influence, particularly when much is at stake. Citizens may have greater direct influence on financing institutions, particularly as they now have a clear alternative in the payment institutions. At the same time, information asymmetries in the new system should not be underestimated.

Legitimacy	• Public interests will be less dependent on the viability of private institutions. The payment system will no longer be interwoven with private activities. But efficient financing is also in the public interest; private financing institutions will thus also have a public dimension. • It is difficult to predict whether the sovereign money system will be seen as more legitimate. A central bank that takes decisions on the money supply may invite attempts to exert political influence. Distance from politics will be crucial.

All of this suggests that no conclusive answer can be given as to whether the sovereign money system is preferable to our current system. We can nevertheless make explicit all the assumptions we have to make to conclude that the sovereign money system as a whole is preferable:

- the central bank is able to properly manage the growth of the money supply, while the government will at all times remain committed to balanced money creation;
- the liabilities of financing institutions will not serve as money so that they become money-creating institutions and begin to resemble today's banks;
- financing institutions no longer need to be bailed out by the government because they can fail without disrupting the economy, thereby eliminating the problem of perverse incentives and 'private profits, public costs';
- sufficient and appropriate financing will be available in the new system through lending by the financing institutions or through market financing;
- institutions (central banks, payment banks, financing institutions) will be able to generate trust among citizens, businesses and investors necessary for the system to function properly;
- the system can operate in an international context with strong financial interdependencies without all countries switching to the sovereign money system.

In addition, there is the question of feasibility, in particular concerning the transition and international interdependencies. The complications that would accompany a transition should not be underestimated. If all players are uncertain about the new situation, there is a significant risk of a crisis during the transition. When policies and systems change, there are often unexpected, unintended and usually also undesirable side-effects. The choice to transition to a sovereign money system amounts to a large-scale experiment with the backbone of the economy. International interdependencies cannot be overlooked in the assessment of feasibility. The Netherlands is part of the euro area; for this reason alone, the system change has to take place at the European level unless the Netherlands leaves the euro area. Aside from the euro, many other international interdependencies constrain the Netherlands to pursue an unconventional monetary and financial policy and would turn such a transition into an unprecedented experiment. These international interdependencies feature scarcely, if at all, in the plans for a sovereign money system.

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