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# THE CURRENCY CONUNDRUM FOR AN INDEPENDENT SCOTLAND

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## Abstract

In this paper we revisit the issue of currency regime choice for an independent Scotland using an international macroeconomic/finance framework. Specifically, we consider the main competing proposals for currency choice with an emphasis on the SNP's official policy of the informal use of sterling post-independence. We conclude that from a macroeconomic perspective this option is unlikely to be credible to international capital markets. The option that would be credible, and avoids the austerity associated with the choice of a fixed exchange rate option, would be a free float at least during the transition period of independence.

**Keywords:** Scottish independence; currency regime.

**JEL codes:** E44; E52; F31; F45.

## 1. Introduction

The 'currency issue' was one of the key issues, if not the key issue, in the 2014 Scottish independence referendum debate. The reason that 'currency' became so central is that it is about much more than simply the denomination of the notes and coins in our pockets or bank accounts. It is about whether the currency in circulation is backed by a central bank in a credible way and, critically, how an independent country's currency relates to other countries' currencies in terms of the degree of fixity—the so-called currency regime—particularly its main trading partner(s). Specifically, is the currency regime consistent with the underlying macroeconomic fundamentals, such as the balance of payments and the government's fiscal position, and if not, what does this imply about the credibility of the regime and its potential resilience with respect to a speculative attack? For any country, and particularly one with Scotland's level of development, with its close and intertwined trade and financial links with the rest of the UK, getting the exchange rate regime wrong at the start of the transition to independence could have devastating implications for the cost of borrowing, taxes and public spending and the country's competitiveness and, as a consequence, this could have crucial implications for employment, output and inflation.

In this article, we revisit the currency issue for an independent Scotland using an international macroeconomic/finance framework. Although a number of currency proposals have been given since the 2014 referendum, at the time of writing the Sustainable Growth Commission's (SGC) proposal remains the official SNP policy for an independent Scotland and is our main focus here, although other alternatives are also considered. As we shall see, the SGC proposes the informal use of sterling post-independence with an independent Scotland transitioning to a new separate currency when economic circumstances are at their most favourable for such a transition. Although such a model is at first pass an

appealing one, it unfortunately fails to recognise how international capital markets work and the discipline they will bring to currency proposals that are inappropriate.

Given that there has been much misunderstanding in discussions surrounding the appropriate currency regime for an independent Scotland, in [Section 2](#) we present what we refer to as a toolkit to understanding what the appropriate issues are with respect to currency. Our toolkit comprises some basic concepts, which will be familiar to some, from the international finance literature that we hope will be helpful in generating a better understanding of why the SGC proposal is deficient in a number of key areas. In [Section 3](#), we outline the main currency regime options for an independent Scotland whilst in [Section 4](#) we set out the costs and benefits of the various options. In [Section 5](#), we sketch the interplay between the balance of payments, foreign exchange reserves and the macroeconomics of fixed exchange rates. The SGC report's recommendations with respect to currency are outlined in [Section 6](#) and the balance of payments position of an independent Scotland is considered in [Section 7](#). In [Section 8](#), we present a critique of the SGC proposal of sterlingisation and in [Section 9](#) we consider the alternative proposal of joining the eurozone. The article concludes with a discussion of the best currency option for an independent Scotland.

## 2. An international finance toolkit

One of the interesting aspects of being involved in the Scottish currency debate is that unlike many other specialist topics, practically everyone believes that they can make pronouncements on currency with very little, if any, background knowledge of the underpinnings of the subject matter and the literature relating to currency regime choice. That is why it is important to sketch out some basic relationships and concepts which will be very familiar to some but perhaps quite challenging and unfamiliar to others but are nonetheless important in informing the debate on currency regime choice.<sup>1</sup>

The first of these relationships is what economists refer to as interest rate parity. This is a simple relationship that relates the home country's rate of interest,  $i$ , to the foreign rate of interest and is often used to illustrate the mobility and scale of capital that exists in global financial markets today. In such a comparison, the bonds on which the interest rate is calculated should be as comparable as possible in terms of their maturity and the nature of the underlying asset. A common comparison to make is to compare a UK 3-month Treasury bill (Tbill),  $i^{\text{uk}}$ , with a US 3-month Tbill,  $i^{\text{us}}$ . For countries at broadly similar levels of development, with similar risk profiles and market sizes, these rates of interest should be equalised. For example:

$$i^{\text{uk}} = i^{\text{us}}. \quad (1)$$

The mechanism that brings such equality about is interest arbitrage. In other words, if for some reason, say an expansionary monetary policy, the UK interest rate were to fall below the US rate, it would be profitable for an investor to borrow funds in the UK over 3 months and buy the US bond, thereby gaining a risk-free profit (absent exchange rate fluctuations—discussed below) from the transaction. With the vast scale of capital funds available in today's global market, often defined as perfect or infinite capital mobility, combined with the many arbitrage algorithms, such spatial arbitrage would happen automatically and result in any deviations in [equation \(1\)](#) being infinitesimally small.

However, the interest rates are unlikely to be the same, as in [equation \(1\)](#), if the two countries' debt markets are of different size, and therefore have different liquidity characteristics as would be the case of an independent Scotland against the remaining UK (rUK). Furthermore, a newly minted country has untested fiscal and monetary institutions, and the credibility of its macroeconomic policies is unknown, imparting a credibility or initial premium. In contrast to the liquidity premium, this premium could decrease relatively quickly post-independence if credibility is rapidly established. These two premia can

<sup>1</sup>All of these concepts are considered in more detail in MacDonald (2007).

be illustrated in the following way. Consider the case of the interest rate of an independent Scotland against the interest rate of the rUK.

$$i^{\text{SCO}} = i^{\text{rUK}} + \text{liq} + \text{ip}, \quad (2)$$

where  $i^{\text{SCO}}$  is the Scottish Tbill interest rate,  $i^{\text{rUK}}$  is the comparable rUK Tbill, liq is a liquidity premium and ip is an initial premium. In 2014, estimates of the liquidity premium were in the range of 0.7–1.7 per cent points above the comparable UK rate; due to the historically low interest rate environment currently in place it has been argued (see Tetlow and Soter, 2021) that an independent Scotland today would face a lower and tighter range of 0.4–0.9 per cent points. It is noteworthy though that even these lower interest rates could have important implications for spending and taxes in an independent Scotland, since high inherited debt levels comparable to that in the rest of the UK would imply significant differences to the pre-independence situation (e.g., pre-Covid total public spending in Scotland was around 50 per cent of GDP so each percentage point increase in debt implies an approximate 2 per cent cut to public spending if the deficit is to remain unchanged).

A point that is often overlooked when discussing such interest rate relationships is that they can be dramatically affected by the chosen currency regime. For example, a fixed but adjustable exchange rate, or peg, could be changed during the maturity horizon of the asset and so an investor would want to build in any expectation of a change in the currency into, say, the Scottish interest rate in order to be compensated for such expected changes. Additionally, since the expected change in an exchange rate is uncertain that would also need to be reflected with the addition of a currency risk premium. This gives a more complex relationship for the Scottish interest rate as:

$$i^{\text{SCO}} = i^{\text{rUK}} + \text{liq} + \text{ip} + \Delta s^e + \text{erp} + \text{def}, \quad (3)$$

where  $\Delta s^e$  is the expected change in the exchange rate, erp is the exchange risk premium and def is the default premium. We include the latter here, since as we shall see below, the type of currency regime that is the SNP's official policy will imply potentially very high and unsustainable borrowing rates for an independent Scotland and so there is potentially a high risk of default in such a scenario. A default premium is also a function of a country's tax base: countries with a relatively high volatility in their tax base have a relatively high default premium and again currency regime choice can have an important bearing on this volatility as we shall see below. The relationship (equation 3) would also hold in other exchange rate regimes that featured some currency flexibility, such as a flexible exchange rate regime. We see from this, so-called interest parity relationship, that the comparison of yields, and specifically the yield on newly issued Scottish debt, could deviate significantly from, say, the rest of the UK's rate or other country rates. This is a topic we discuss in more detail below.

Our discussion of interest rate parity and perfect capital mobility leads into the concept of the trilemma which will prove useful when thinking about appropriate exchange rate regimes for an independent Scotland (see, e.g., Rey, 2015). The trilemma states that in a world of perfect capital mobility an independent country cannot have a fixed exchange rate and an independent monetary policy. The reason being, and as demonstrated in the above parity relationships, any attempt by the monetary authorities to pursue an interest rate policy different to the foreign, or 'world', rate would lead to a massive capital flow that would offset the original policy change. For example, if the authorities increased the monetary base by x per cent with a fixed exchange rate and perfect capital mobility, this would lead to an offsetting fall in foreign exchange rate reserves of x per cent leaving the country's monetary base unchanged. To have an independent monetary policy in the presence of perfect capital mobility, a country would need to have some flexibility in its exchange rate with the greatest monetary autonomy occurring with a freely floating exchange rate.<sup>2</sup>

<sup>2</sup>Rey (2015) argues that there is a global financial cycle in capital flows, asset prices and credit growth and that this cycle constrains national monetary policies regardless of the exchange rate regime and this in turn transforms the concept of the trilemma into a dilemma or an 'irreconcilable duo': in this case independent monetary policies are possible if and only if the

The next part of our International Finance toolkit is to note that investors in capital markets are forward looking. This simply means that in making any investment decision which straddles the future, investors will anticipate events that are likely to affect the return on the investment over the investment horizon. As we saw in the last example, one important factor that could affect the expected return on holding a foreign bond is if the currency is expected to change. If, say, a UK investor in US bonds expects that the dollar sterling exchange rate is going to devalue by  $x$  per cent at some point during the holding/maturity period of the asset, it is in the interest of the investor to anticipate that change now and bring the event forward (by selling the asset), otherwise the investor stands to potentially incur a significant capital loss. More formally, what we are referring to here is the process of arbitrage discussed above—if interest rates do not reflect the future, there will be arbitrage opportunities for investors which will be rapidly extinguished automatically. Strictly speaking, the arbitrage referred to in our discussions of equations (1)–(3) is spatial and the arbitrage referred to here is intertemporal.

The balance of payments is the third component of our toolkit. Few proponents of independence seem to understand that as an independent country Scotland will have its own balance of payments accounts and this has crucial implications for the currency regime and the country's banking sector. As Armstrong and McCarthy (2014) note: 'An independent Scotland would require a financial border to create its own balance of payments. This would include cross border trade and capital flows to and from the rest of the world, including the rest of the UK. With dollarisation, *the balance of payments would become the key barometer of whether Scotland's economy prospers or declines*' (emphasis added).

In the context of the Scottish independence debate, most commentators equate the trade balance—the difference between exports and imports of goods and services—with the balance of payments. However, this is incorrect. For an independent country, the correct measure of the balance of payments is the current account balance which is defined as the sum of the trade account, net factor payments and foreign aid payments. The first two components are the key ones in any discussion of currency regime issues. As a set of accounts, the balance of payments has to balance and how it balances is important in the context of the currency regime debate.

With a flexible exchange rate system, the exchange rate will move to ensure that, say, a negative current account position is mirrored in a positive capital account position—a deficit on current balance being offset by a surplus on the capital account. In principle, if a country has a floating exchange rate regime, it does not need to hold foreign exchange reserves although in practice countries with free floats do hold foreign exchange reserves to, for example, smooth currency movements. Crucially, with a fixed exchange rate regime the balance of payments balances through changes in foreign exchange reserves and the nature of a fixed exchange rate regime is that it requires a central bank to, in principle, provide an unlimited commitment, in terms of foreign exchange reserves, to defend the chosen exchange rate peg.

The fourth component of our toolkit is the concept of fair value and, specifically, whether in the views of investors a currency is at a fair, or appropriate, value. For example, if a new Scottish pound was introduced in an independent Scotland and was pegged on a one-to-one basis with respect to the UK pound (which several supporters of independence have argued for) the question that arises is: does this peg represent fair value for investors? To put this another way: is the pegged rate consistent with the underlying economic fundamentals in the economy and therefore unlikely to be changed during a specific investment horizon?

To determine the fair value of a currency investors and indeed central banks constantly monitor the underlying fair values of currencies using various well-known methods such as the Behavioural Equilibrium Exchange Rate (BEER) model of Clark and MacDonald (1998, 2000) and the Fundamental Equilibrium Exchange Rate (FEER) model of Williamson (1983). Such models facilitate quantifying the underlying fair value of currencies using economic data on economic variables such as a country's current account balance, relative productivity performance and its outstanding stock of debt—the key

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capital account is managed. This transformation of the trilemma into a dilemma raises the interesting policy question of whether capital mobility should be restricted using capital controls, a topic which is beyond the purview of this article.

measure being the current account balance. This calculated fair or equilibrium value is then compared to the actual value and if there is a discrepancy, particularly a large discrepancy, investors will take a position for or against the currency, thereby leading to a change in a currency. This leads into the final part of our toolkit in terms of a so-called speculative attack.

If the gap between the actual value of a currency and its fair value is large, this can lead to what economists refer to as a speculative attack. The speculative attack literature (see Krugman, 1979 and MacDonald, 2007) was originally developed to provide an understanding of currency crises in Latin America in the 1970s and 1980s, but the basic principles developed in speculative attack models are applicable in a whole variety of circumstances, including potentially the currency regime of an independent Scotland. The basic theme in these models is how the combination of a fixed exchange rate regime and inappropriate macroeconomic fundamentals—such as monetary/fiscal/the balance of payments position—could push a country into a currency crisis with the private sector trying to profit from unravelling what they see as inconsistent policies. There are many speculative attacks and currency crises for a range of different countries documented in the literature. And it is interesting to note that such speculation-induced currency crises can occur even if the underlying fundamentals are basically sound but the chosen rate of peg for the exchange rate is inappropriate and this is cited as the reason for the speculative attack against sterling in 1992. It is noteworthy that this is the only speculative attack sterling has suffered since sterling was floated in 1973.

Finally, in this section it is useful to introduce the concept of a small open economy (SMO). An SMO is a country that is of insufficient size to influence the prices of internationally traded goods and services and interest rates and in essence takes these as parametrically given. This contrasts with that of a large open economy, such as the UK, the actions of which can affect world prices and income. Moving from being part of a relatively large open economy to that of an SMO would have several implications. First, the mindset of policy makers would need to change to recognise the shift from policy decisions made as part of a large economy to the relevant decision making in an SMO. This would perhaps be clearest in terms of the operation of monetary and fiscal policy, the scope of which will be much more limited for an SMO, and this is worth bearing in mind as we consider the currency regime choice issue. On the other hand, there would be clear benefits to being an SMO in that the implied reserve requirements would be considerably less than for the large country case and it may be feasible to free ride on BoE monetary policy, thereby reducing the cost of government.<sup>3</sup> However, the latter argument perhaps has most relevance pre-Covid since we know that even for SMOs Covid has demonstrated the importance of having a separate currency and independent monetary policy to ensure orderly markets for government borrowing.

### 3. The main currency options and the macro fundamentals

The standard textbook definition of an exchange rate regime usually makes the stark distinction between a fixed and floating, or flexible, exchange rate. However, since 1997 the IMF has fleshed out a variety of intermediate cases between the so-called corner positions of a pure float, with no central bank intervention, and a rigidly fixed exchange rate, as exists in a monetary union. The range of main exchange rate regime options open to an independent country is set out in table 1, with the two corner solutions in the upper left and lower right cells.

In terms of the floating exchange rate regimes, a managed float can be very close to a pure float if the monetary authorities only intervene occasionally and in small amounts, or it can approximate something closer to an intermediate regime if the authorities intervene in a continuous basis to, say, satisfy an inflation target. As we noted above in our discussion of the trilemma, flexibility in the exchange rate

<sup>3</sup>For example, Denmark pegs its currency to Euro and benefits from the lower interest rate costs of the ECB despite not being a member of the eurozone area. It is noteworthy that to achieve this Denmark has a conservative fiscal stance and a balance of payments surplus.

**Table 1.** Exchange rate regime classifications

Floating regimes	Intermediate regimes	Rigidly fixed regimes
Pure float	Band	Currency board
Managed/dirty float	Crawling peg	Dollarisation
	Basket peg	Commodity standard
	Adjustable peg	Monetary union

Source: MacDonald (2013a).

would enable an independent Scotland to have an independent monetary policy even in the face of perfect capital mobility, although the small open economy nature of the Scottish economy would limit the scope of that independence. So-called banded regimes are designed to capture the target zone arrangements of Bergsten and Williamson (1994) and Krugman (1991). A crawling peg system is one in which the peg changes, usually to accommodate inflation—an index crawl—or as a pre-announced crawl to maintain competitiveness. A basket peg is where a currency is fixed relative to a basket of its trading partner currencies. With an adjustable peg, the currency has a fixed central rate but can be changed to, say, accommodate disequilibria such as those occurring in the balance of payments (such as occurred in the Bretton Woods system).

In the rigidly fixed corner are options that include a currency board where domestic currency is backed at least 100 per cent by a foreign currency and this implies a rigidly fixed rate at a one-to-one peg. Dollarisation is an exchange rate regime where a country uses another country's currency, and this again is a fixed exchange rate system at a one-to-one peg against the dollar. A commodity standard is where a country fixes its exchange rate rigidly in terms of a commodity such as gold, with the best-known example of this being the classical gold standard system of 1870–1914. And finally, we have the monetary union case which is usually regarded as an irrevocable system of fixed exchange rates, although it may not be in the absence of full political union. With all these regimes, the trilemma indicates that exchange rate fixity comes with the price tag of ceding monetary policy independence, although that may not be a decisive factor for policy makers in an independent Scotland given the small open economy nature of the Scottish economy, as discussed above.

In the context of currency choices for an independent Scotland, the main options that are normally discussed represent a more limited range than that presented in table 1. The most popular proposals to date have been in the rigidly fixed column of table 1, with the continued use of sterling either formally, by staying part of the UK monetary union, or informally which is usually referred to as sterlingisation (the sterling equivalent of dollarisation). A closely related option to a particular variant of sterlingisation is that of a currency board and this has been advocated as a suitable currency option for an independent Scotland. An independent Scotland could also choose to enter a monetary union with another country, or group of countries, and adopt the currency of the country or group and the most likely candidate for the latter option given the SNP's desire to re-join the EU would be to join the eurozone. Both the currency board and eurozone options are discussed in more detail below.

By issuing a new currency, an independent Scotland would then have all of the remaining options in table 1 open to it and the two most discussed options in this regard have been an adjustable peg or a freely floating rate. It is important to note that both of the sterling options represent fixed exchange rate regimes with an implicit one-to-one peg. All of these options come with costs and benefits and in deciding which would be the optimal currency arrangement the cost and benefits of the different regimes have to be assessed relative to the underlying macroeconomic structure of Scotland.

Given that the formal currency option was ruled out during the 2014 referendum, it seems unlikely it would be on the table in any future referendum. But even if it was, this option would likely come at the price of a limit on the extent of fiscal flexibility that an independent Scotland would have which would surely not be palatable given the constraints placed on monetary policy from being part of a formal



monetary union. Given this, in this article we focus on the other currency options outlined in the last paragraph.

As Armstrong and McCarthy (2014) note the two types of informal currency unions—currency boards and dollarisation—discussed above have important differences; they also have similarities. Specifically, ‘the value of the domestic currency is tied to the foreign (anchor) currency, which for dollarization is trivial as it is the same currency. *This means that the monetary authority cannot create domestic currency beyond the extent to which the backing currency (sterling in this case) flows into the country. The system operates the same as the gold standard only with less room for flexibility.* Under a pure currency board a balance of payments surplus would show up as an increase in the backing currency and a subsequent increase in the domestic currency. With dollarization this would simply be an increase in sterling circulating in the domestic economy. Unlike countries which issue their own currency, *countries with informal currency unions cannot freely create liquidity*’ (Emphasis added).

#### 4. Costs and benefits of the different regimes

In this section, we sketch the main costs and benefits of the different exchange rate regime options outlined above.<sup>4</sup> Some of the issues raised here are considered in more detail below after we have discussed the main proposal for currency choice.

##### 4.1. Transaction costs argument

One of the key arguments in 2014 in favour of continuing to use sterling post-independence was that it would minimise the effects of transaction costs on trade with an independent Scotland’s main trading partner, the rest of the UK. The transaction costs of having a separate currency are in terms of conversion costs and the uncertainty that comes from the value of a good or service changing as the exchange rates change. Such costs are often seen to be maximised with a floating rate regime as floating rates can be volatile and impart an extra wedge into the cost of trade through the need to hedge the risk of currency movements and this is likely to be especially so for a newly minted currency. Although in 2014 the transaction cost argument was couched in terms of a formal monetary union, similar benefits could potentially be achieved from using sterling informally and from a new currency pegged on a one-to-one basis with sterling.

Muscattelli (2014), for example, argues that since Scotland and rUK would be starting from a position of being a single integrated market, introducing transactions costs through having a separate currency is likely to have a significant negative impact on both Scotland and the rUK economies if participation in the Sterling currency area is abandoned. In assessing the benefits in terms of lower transactions costs, Muscattelli takes the usual reference point as the introduction of the Euro estimates and argues that such costs might be of the order of 0.5–1 per cent of GDP and this could translate into costs of between £500 m and up to £2.5 bn for the higher cases cited above.<sup>5</sup>

In addition to such transaction costs sticking with sterling would avoid the costs of setting up a new currency which could also be considerable and there would clearly also be costs to households and businesses from setting up a new currency. A further advantage of sticking with sterling is the avoidance of the redenomination issue in the sense that the establishment of a new currency at anything other than a one-to-one peg would have implications for the value of sterling denominated assets and liabilities.

However, none of the regimes, aside from a formal monetary union, can be regarded as representing a completely rigid peg since fixed pegs can of course be adjusted and therefore that component of

<sup>4</sup>For a fuller discussion of the costs and benefits of different exchange rate regimes, see MacDonald (2007) and, in the context of the Scottish currency debate, Armstrong (2013), Armstrong and Debell (2013), MacDonald (2013b) and Tetlow and Soter (2021).

<sup>5</sup>Carney (2014) also cites the importance of transaction costs in terms of currency regime choice and cites the European Commission’s estimated size of these direct benefits for European countries of being part of a currency union to be almost 0.5 per cent of GDP every year.

transactions costs is still potentially an issue. Indeed, as we shall see, this is also the case with the fixed exchange rate systems represented by the informal use of sterling. One formal monetary union option that would presumably be attractive to the SNP, given its commitment to re-join the EU, would be to join the eurozone and this would raise interesting transaction cost and other issues for an independent Scotland (see Section 9).

#### 4.2. Macroeconomic policy restrictions and economic shocks

Clearly, adopting any form of fixed exchange implies foregoing having an independent monetary policy and that is perhaps clearest with sterlingisation. In such a set-up, the central bank must subjugate monetary policy to defending the pegged rate and the central bank has no ability to adjust the exchange rate or interest rate. Clearly, this would limit the ability of an independent Scotland to deal with the economic shocks since flexibility in the exchange rate can provide an external adjustment mechanism and act as a shock absorber although to counter that some have argued that a flexible exchange rate can be a source of shocks (Artis and Ehrmann, 2000). An advantage for a newly independent Scotland of locking into the monetary policy of the Bank of England is that it would be buying into the longstanding credibility of the Bank especially with respect to the control of inflation. However, a fixed exchange rate would also place severe limits on the degree of fiscal flexibility in an independent Scotland especially given its small open economy status and, as we shall see below, the necessity of pursuing conservative fiscal policies to generate the needed foreign exchange reserves to run a fixed exchange rate system.

In the 2014 referendum currency debate, the so-called optimal currency area (OCA) criteria were used to justify remaining as part of the sterling zone without the need for an external adjustment mechanism. The OCA approach offers two countries with close trade links a means of adjustment without the need for exchange rate flexibility if certain criteria are met. The kind of criteria focussed on in the OCA literature are: the degree of capital and labour mobility between the two countries (Mundell, 1961)—economic shocks in one country can be managed if there is a high degree of labour and capital mobility with the other participating country; diversification in trade (Kenen, 1969)—if the countries in question have a high level of diversification in their trade, then shocks in one area can be absorbed by adjustments to another component of trade; the degree of openness to trade of a country (McKinnon, 1963)—the greater the trade between two areas, the greater the advantages of having a common currency. Since Scotland versus the rUK would still seem to satisfy these and other criteria, it can be argued that monetary policy that is suitable for rUK is also well suited to Scotland (see Tetlow and Soter, 2021 for a fuller discussion of this point in terms of the synchronicity of the Scottish and rUK economies).

These OCA approaches noted above are normally referred to as the single criterion approach to assessing the optimality of a currency union; however, Masson and Taylor (1993) argue that a better way of thinking about the adjustment process for an independent country than the single criterion approach is to analyse the *shocks* affecting economies or regions, since ‘shock absorption’ is seen to combine the *net* influence of several of the traditional criteria and the economic structure of the participating countries in a common currency area. There are several different aspects to this approach, for example: are shocks symmetric or asymmetric? are the shocks temporary or permanent? what are the origins of the shocks—are they supply side or demand side shocks?

In terms of the symmetric versus asymmetric point, MacDonald (2014a) argued that because an independent Scotland would be a net exporter of hydrocarbons, and the rUK a net importer, it would face asymmetric shocks with respect to its main trading partner and this would lead to a Scottish version of the so-called Dutch disease effect, which shows up in terms of an appreciated real exchange rate which, in turn, makes the non-oil sector uncompetitive.<sup>6</sup> The significance of this

<sup>6</sup>For example, to protect the competitiveness of its non-oil sector the Norwegian central bank has skillfully managed capital flows to generate exchange rate adjustments that ensure the competitiveness of its non-oil sector.



argument has perhaps been lessened by the fall in the share of Scotland's oil sector from 10.8 per cent of GDP in 2014 to 6.8 per cent today although at the time of writing that in turn will likely be offset by the large spike in the price of oil resulting from the war in Ukraine. Additionally, of course Cop26 and the surrounding net zero debate may well have implications for further exploration and development in the North Sea basin as the controversy surrounding the Cambo field demonstrates.

Given the potential for a Scottish version of Dutch disease, it is interesting to speculate whether Scotland would have fared better or not in the 1970s and 80s from being part of the UK monetary union. Chick (2020) notes a 55 per cent appreciation of sterling from 1977 and 1981, and Bond and Knobl (1982) note that corresponded to a 70 per cent real appreciation of sterling over that period, with the largest part of the appreciation occurring between 1979 and 1980. Although the real exchange rate fell back during 1981, at the end of the year it was still 45 per cent above the level in 1977. Bond and Knobl (1982) argue that such a large and rapid shift in the competitive position of a major industrial country is without precedent, at least in recent history and resulted in a classic Dutch disease effect on the UK's tradeable sector with, on some estimates (see MacDonald, 1988) between 20 and 25 per cent of the UK industrial base wiped out in this period. Much of the Dutch disease effects were felt in the North of England and in Scotland.

However, as Bond and Knobl (1982) and MacDonald (2014b) note the North Sea Oil effect on sterling was exacerbated by the tight anti-inflationary policies pursued during this period and indeed these policies caused a classic 'Dornbusch overshoot' of the real exchange rate (see MacDonald, 1988).<sup>7</sup> It seems likely that an independent Scotland would have faced an even heftier real appreciation if it had been independent during this period. For one thing, the SMO nature of an independent Scotland would have implied a sharper appreciation of a separate currency and it would have proved difficult to avoid the anti-inflationary policies in the rest of the UK. Although the Dutch disease effect could have been mitigated had an independent Scotland been able to build up a sovereign wealth fund, along the lines of the Norwegian sovereign wealth fund,<sup>8</sup> it seems unlikely that an independent Scotland would have been able to build such a fund in the given time scale available.

## 5. Fixed exchange rates, foreign exchange reserves and macroeconomic policy

As we noted in Section 2, the key aspect of a fixed exchange rate system is that it is flows of foreign exchange reserves that clear the balance of payments. For an independent country, this is perhaps at its clearest for a separate currency pegged against its trading partners, but the need for foreign exchange reserves also exists when using sterling informally and in terms of a currency board. This follows on from the fact that an independent Scotland would have its own balance of payments account, and surpluses and deficits in the balance of payments would directly affect the money supply in the Scottish economy.

For example, in terms of sterlingisation a surplus on the current account balance would increase the quantity of sterling in the economy with the inflationary implications this would have. Conversely, a current account deficit would draw money out of the economy with the consequent deflationary implications of this. This mechanism is akin to the operation of the classical gold standard (Armstrong and McCarthy, 2014) and the classic price-specie-flow mechanism elaborated by David Hume which also underpins the so-called monetary approach to the balance of payments (Frenkel and Johnson, 1976). We consider the working of this mechanism in some detail below, but the key point here is that aside from the formal monetary union option, all of the fixed exchange rate options listed above require foreign exchange reserves.

<sup>7</sup>A Dornbusch overshoot occurs when a country pursues a tight monetary policy raising interest rates, which in turn requires a sharp currency appreciation to generate an expected depreciation of the currency consistent with interest rate parity.

<sup>8</sup>For example, the Norwegian central bank has skilfully used capital flows related to its sovereign wealth fund to generate exchange rate adjustments that mitigate the effects of Dutch disease on its non-oil sector.

**Table 2.** Currency regime and foreign exchange reserves

Country	Currency regime	Foreign exchange reserves (Bill USD)	Foreign exchange reserves %GDP 2020
New Zealand	Float	14.0	6.2
Finland	Float	14.5	5.1
Norway	Float	75.4	22.1
UK	Float	133	5
Denmark	Peg re Euro	73.5	20.9
Singapore	Peg re Basket	362.3	63.4
Hong Kong	Currency Board/dollarisation	519.7	111.5
Ireland	Currency Union	7.5	2.6
Greece	Currency Union	12.7	4.2
Independent Scotland	Sterlingisation	13	8

Source: Tetlow and Soter (2021) and author's additions.

In [table 2](#), we present some examples of the kind of currency regimes adopted by a range of developed countries and the foreign exchange reserves needed to sustain these regimes.

It is noteworthy that all the countries participating in fixed exchange rate regimes hold considerable foreign exchange reserves—21 and 63 per cent of GDP, respectively, for Denmark and Singapore—and in the case of the Hong Kong currency board, which shares a number of features with the SGC's proposal, the value of reserve holdings exceeds Hong Kong's total GDP. With the exception of Norway, all the countries noted in [table 2](#) that run a floating exchange rate have more limited foreign exchange reserves than in the fixed rate cases. In the last line of [table 2](#), we have included the approximate amount of foreign exchange reserves that an independent Scotland would inherit on a per capita basis given the Bank of England's holdings of foreign exchange reserves in 2020, and it is noteworthy that this is more consistent with a floating rate regime than a fixed rate regime.

It is worth emphasising that the countries in [table 2](#) that do run the fixed exchange rate variants do so by pursuing conservative fiscal policies in the form of fiscal surpluses. An important consequence of this is that if Scotland were to use sterling informally post-independence fiscal policy would need to be diverted from its standard macroeconomic role to ensuring a sufficient supply of foreign exchange reserves to maintain the regime and ensure its credibility to international capital markets. This would clearly be a very big challenge to a country with a starting point of a significant structural fiscal deficit and it would clearly imply draconian spending cuts or tax rises or a mix of both. Also of course with sterlingisation an independent Scotland would not be able to have an independent monetary policy, in terms of money supply and interest rate control and the inability to change the external value of its currency, and although from a macroeconomic perspective it would be expected that fiscal policy would be used to smooth economic shocks, this will be very limited indeed if fiscal policy is used to target the external objective.

The limitations on the operation of fiscal and monetary policy would be similar with a separate currency pegged to sterling, although such a regime would allow more flexibility on the monetary side with an adjustable peg. In terms of maximising macroeconomic flexibility, a floating exchange rate wins out since in principle such a regime obviates the need for foreign exchange reserves although it is noteworthy from [table 2](#) that countries which run a flexible exchange rate system—Norway and the UK—do nonetheless hold significant foreign exchange reserves.

## 6. The Sustainable Growth Commission Report

The Sustainable Growth Commission (SGC) report (2018) recommended that the currency of an independent Scotland should remain the pound sterling for ‘a possibly extended transition period’ and that: ‘A future Scottish Government should put in place the arrangements and financial infrastructure that would support a move to an independent Scottish currency at such time as this was considered appropriate for the Scottish economy’.

The report goes on to argue that: ‘What happens with respect to currency the day before an independence vote would happen the day after and continue to happen until such time as the elected Scottish Government seeks to do something differently’. This statement takes no account of the reality of how international capital markets operate, as discussed in [Section 2](#), particularly in light of the very significant current account deficit an independent Scotland is likely to have and the fact that the report concedes the use of sterling post-independence is part of a transition. We shall consider this key point in further detail below. The statement is of course intended to give assurance to voters that there will be no redenomination of existing financial contracts post-independence, which is in essence the elephant in the currency room, and this is reinforced by the following statements:

‘The existing financial assets and liabilities of Scottish residents, and the financial assets and liabilities which residents of countries outside Scotland hold with Scottish institutions, are assets and liabilities of these individuals, businesses and institutions, not assets or liabilities of the Scottish Government, before or after independence’.

‘There is thus no benefit, and a considerable downside, for a future Scottish Government to seek to legislate to change the terms of these private contracts. If Scotland were to adopt a distinctive Scottish currency in future, that currency would be incorporated in future contracts—not in past or uncompleted ones’.

According to the SGC report, the transition to a new and separate Scottish currency would occur when six tests are satisfied. These tests are fiscal sustainability in terms of a strong and credible fiscal position in terms of the budget deficit and overall debt level; the existence of a credible central bank evidenced by price stability and the stability of its debt issuance; the new currency meets the on-going needs of Scottish residents and businesses and had wide support; the need to have sufficient foreign exchange and financial reserves to facilitate currency management; the new currency would need to provide a good fit for trade and investment patterns; the economic cycle in Scotland is not significantly out of phase with that of the rest of the UK or at least is as well correlated with the cycles of other trading partners.

The SGC proposes that the conditions and rules that would determine a change of monetary policy and currency choice should be made very clear in advance and, furthermore, when the new currency is created ‘it is likely that a period of 1:1 pegging with sterling would make sense for the short and possibly medium term’.

During the transition period, the SGC envisions the establishment of a distinctive Scottish banking system, which not only holds the government’s accounts but also operates a Scottish clearing system. The governance of this system would be shared by a Scottish Central Bank (SCB) and a Scottish Financial Authority (SFA), which would be a wholly owned independent subsidiary of the SCB. The SGC envisages the SCB would assume final responsibility for the functions, in Scotland, of the FCA and the PRA in the UK through its SFA subsidiary (including both banking and insurance supervision) and it would act as banker to the Scottish Government, and hold deposits and provide liquidity support, subject to the asset and collateral requirements, for Scottish retail banks, to the extent necessary to protect retail depositors.

The SCB would operate a clearing system for these banks, and it would also establish a Scottish Financial Services Compensation Scheme similar to the UK’s FSCS. Banks operating in Scotland with Scottish headquarters or through Scottish subsidiaries (and hence regulated by the SCB) would be required to ring-fence their retail banking operations along the same lines as now exists in the UK since 2019 and the SCB would put in place a resolution regime similar to that in the UK for the orderly winding down of failed banks. The SGC anticipates that ‘a number of banks may re-domicile their registered headquarters to London. A substantial part of the executive functions of these banks is already in London and so there would be a very limited impact on operational activity’.

In sum, the upshot of the proposed banking system means that payments will clear in the Scottish system via reserve accounts held by Scottish retail banks at the SCB, but the Scottish Central Bank cannot create sterling reserves at will, like the Bank of England can. Therefore, the ability of the new central bank ability to clear payments will depend crucially on its ability to retain sterling reserves and that in turn will be dependent on the balance of payments position and the inflow or outflow of foreign exchange reserves. We consider this point in some detail below.

Support for the continued use of sterling post-independence, which we label sterlingisation, was given in King (2016) who argues that there was a solution to the currency issue in 2014: ‘The simple and straightforward solution was ‘sterlingisation’. Following a yes vote, the Scottish Government could have announced the next day that an independent Scotland had no intention of issuing its own currency and that all contracts in sterling would always be legally honoured in sterling. There would be no formal currency union. Scotland would simply go on using sterling. Nothing would change’.

King (2016) also notes that with his proposal ‘major banks in an independent Scotland would have to unscrew the brass plates at their legal headquarters in Edinburgh and move them to London’. Effectively, Scotland would only have foreign banks and as a consequence, an independent Scotland would not need the ability to act as a lender of last resort for these banks with that role continuing to be performed by the Bank of England. In sum, under King’s view of sterlingisation Scottish retail banking services would be provided exclusively by rUK-based, and perhaps other ‘foreign’ banks, through subsidiaries operating in Scotland and with no distinctive Scottish banking system, payments in Scotland will clear in the same way they do today.

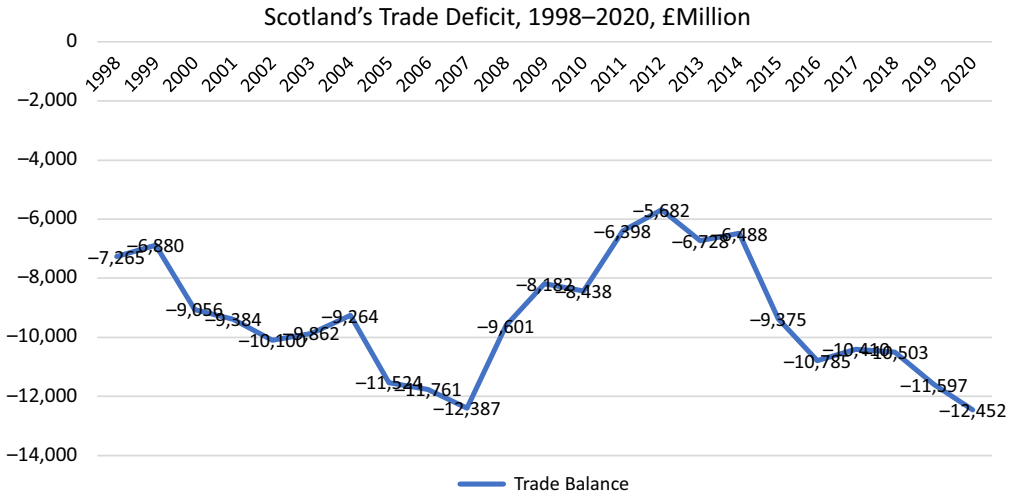
But it is noteworthy that the form of sterlingisation proposed by King is very different to that contained in the SGC report, discussed above, and at this point it is worth distinguishing between two forms of sterlingisation, which we label sterlingisation A (SA) and sterlingisation B (SB).<sup>9</sup> In the former as in King’s discussion, all commercial banks would be domiciled in the rUK, there would be no central bank and an independent Scotland would have no control over the money supply or interest rates and have no lender of last resort function. With SB there would be some or all commercial banks domiciled in Scotland, a central bank but with no control over the money supply or interest rates as proposed in the SGC report. The question that arises from this discussion is: could the variant of sterlingisation proposed in the SGC work in practice in the way that King suggests?

The answer to that question will be considered in the next section but the key to understanding whether either version of sterlingisation would work in practice is contained in the following statement of King (2016), a statement which is always conveniently overlooked by proponents of the informal use of sterling: ‘Sterlingisation is a perfectly reasonable policy for a country that is *happy to accept the economic consequences of a fixed exchange rate with sterling*’ (emphasis added). And there is the rub. Although proponents of sterlingisation may well be happy to try to run a fixed exchange rate it is abundantly clear that given the macroeconomic fundamentals facing an independent Scotland, and particularly the balance of payments position, international capital would not be prepared to lend to an independent Scotland at anything other than brutally high interest rates as this regime would not be seen as credible. We discuss this point in more detail below.

## 7. An independent Scotland’s balance of payments

Data on the net trade, including offshore, and net primary income components of the current account balance can be extracted from the Scottish National Accounts Programme (SNAP). Data on the offshore account are not available continuously and the most recent calculations for this and net primary income are for 2017. Data on the onshore account are available continuously from 1998 to 2020 and are obtained from the Quarterly National Accounts. The onshore data are illustrated in [figure 1](#) and indicate that Scotland has run a persistent onshore trade deficit over the whole period and the deficit has also risen

<sup>9</sup>See Armstrong and McCarthy (2014) for an extensive discussion of sterlingisation and its lender of last resort options.



**Figure 1.** (Colour online) Scotland's net onshore trade balance, 1998–2020

quite sharply since 2017 with an increase from 6.0 per cent of GDP to 7.8 per cent of GDP. Using these data yields a current account deficit of 7.6 per cent of GDP, in 2017 and around an average of 10 per cent in the years prior to 2017. Given macroeconomic developments post 2017, it does not seem unreasonable to infer that the current Scottish current account balance would be at least 10 per cent of GDP.

## 8. How would sterlingisation work in practice?

In thinking about how sterlingisation is likely to work as an exchange rate regime for an independent Scotland, there are two key aspects that need to be considered, the two sides of the sterlingisation coin. On the one side, there are the implications of the balance of payments for the banking sector, with associated issues relating to the lender of last resort function of the central bank, and on the other side of the coin are issues relating to the issuance of sovereign debt and particularly the interest payments on that debt. Although as we shall see there will be an interplay between what will happen in the banking sector and the market for government debt, we will initially consider the two issues separately.

### 8.1. Sovereign debt, borrowing costs and currency crisis

Although the annual GERS numbers for Scotland's fiscal deficit are always the source of a bunfight between the yes and no sides in the independence debate, there can be no doubt that an independent Scotland would have a fiscal deficit and given the magnitude of the balance of payments position it would in our view be in the region of the numbers given in the annual GERS reports. Like any independent country, however, an independent Scotland could of course finance this deficit by borrowing on international financial markets. However, with the informal use of sterling the Scottish Treasury would have to issue debt in sterling, a foreign currency, which raises a number of issues.

The first issue is the interest rate that would have to be paid on such debt. As we discussed in Section 2, absent expected exchange rate changes the baseline interest rate that an independent Scotland would have to pay would be a premium, consisting of a liquidity and initial premium relative to the rUK rate. However, as we also demonstrated in Section 2 in lending to an independent country, international investors look at whether a currency is at fair value or not—in other words is a currency regime consistent with the underlying macroeconomic fundamentals and the implicit exchange rate peg? As we have seen, and as things stand, an independent Scotland would have a large balance of payments deficit of around

10 per cent of GDP and it is a basic principle of international finance that this is not consistent with a fixed exchange rate with an implicit one to one peg and freely moving capital. With such a deficit, basic fair value models such as the BEER or FEER would require a devaluation of anything between 20 and 30 per cent (in other words international capital would be expecting the informal use of sterling to be abandoned and an independent Scotland moving to a separate currency at a sharply devalued rate).

As we noted in our discussion of [equation \(2\)](#), this expected devaluation would have to be built into the interest rate on Scottish debt which would have to at least reflect such a large, expected devaluation along with an associated risk premium. Additionally, given such large interest payments would not be sustainable, investors would have a realistic expectation that an independent Scotland would default on its debt and therefore also demand a default premium over and above the expected exchange rate change and associated risk premium. Of course, given the forward-looking nature of capital markets investors would bring forward the expected devaluation and their reasoning for doing so would be reinforced given the expected transitory nature of the sterlingisation regime as stated in the SGC. This would most likely happen through investors, such as pension funds, requiring ever large premiums on the sovereign debt with extra leverage likely gained through associated derivative assets. The size of these premiums would simply not be regarded as sustainable by international capital and would lead to ever higher premiums being required to finance the deficit. The situation would be exacerbated by capital flight on the part of households and businesses and the inevitable sovereign debt crisis would be reinforced by the untenable situation in the banking sector, to which we now turn.

### *8.2. The banking sector, reserve flows and lender of last resort*

As we have seen, the form of sterlingisation proposed in the SGC report is that of sterlingisation B. With this variant, an independent Scotland would not only face the deflationary consequences of the balance of payments deficit, its central bank would have to continually restore liquidity to the banking system but with very limited inherited reserves, noted above, it would clearly have limited leeway in this regard. As we have noted in [Section 5](#), a key way in which countries that successfully run fixed exchange currency regimes generate the necessary reserves to support their currency is to run conservative fiscal policies. However, given the size of Scotland's balance of payments deficit it is unlikely the authorities would be prepared to subvert fiscal policy to the role of clearing the balance of payments as this would require massive cuts to public spending or tax rises to achieve this which would represent nothing short of austerity on steroids. An alternative would of course be to borrow the reserves but given this could only at best be a short-term policy and it would hardly be an attractive option given that borrowing rates would need to reflect the expected rate of devaluation as noted above.

These issues would be compounded with SB if the SCB was prepared to offer deposit insurance to retail deposit accounts of Scottish domiciled banks that would add to the sum needed to support the balance of payments. For example, at the time of the 2014 referendum, [Armstrong and McCarthy \(2014\)](#) argued that £120 bn would be needed in this regard, a heavy additional requirement in addition to the reserve needs from the balance of payments position. However, the SFG notes that the SCBs exposure in this regard could be limited by introducing 'such rules on capital structure and asset quality on retail banks as are necessary to ensure that adequate collateral is available to match retail deposit in such banks'. Alternatively, or in addition to, the deposit insurance system could be financed by the private sector as is currently the case in the UK. The downside of such an arrangement, though, would occur if there were to be another financial crisis with associated bank failures. In this case, the lender of last resort facility would also likely be required for deposit insurance and this again would require sufficient reserve holdings given the SCB's inability to create sterling.

The latter point would also have implications for the ability of the SCB to bail out banks headquartered in Scotland and it is very unlikely that an independent SCB would be able to bail out banks of the scale of RBOS and HBOS in 2007 if such banks were domiciled in Scotland. However, it has been argued by [Bowman \(2014\)](#) and others that the inability of the SCB to bail out insolvent banks could be



beneficial in that it would avoid the moral hazard issue of banks acting irresponsibly when they expect that ultimately the government will bail them out, although the 2007 financial crisis suggests that it would be a very brave government indeed that did not act to attenuate the hugely disruptive consequences of another financial crisis.

In sum, and whatever the arrangements relating to bank bail outs and deposit insurance, it is nonetheless the case that reserve holdings would simply be inadequate to sustain the kind of sterlingisation model portrayed in the SGC report and this would be further exacerbated by capital flight. As Armstrong and McCarthy (2014) note regarding the SGC's proposal: 'countries that do not have their own currency can have a banking crisis soon becoming a sovereign debt crisis'. This statement is reinforced here since as we note above a sovereign debt crisis would occur in and of itself due to currency tensions in the sovereign debt market and this would clearly be greatly magnified by the crisis in the banking sector.

It may be thought that if the sterlingisation A model was adopted as proposed by King (2016), where banks had relocated their HQ south of the border,<sup>10</sup> that this would give an independent Scotland an easier ride in terms of stability since some of the key issues arising in SB would not occur. However, as we have noted there is still a fundamental tension with this variant of sterlingisation due to the implied fixity of the exchange rate and a balance of payments deficit. Absent issues relating to borrowing, this form of sterlingisation could potentially be made to work in a tranquil period if the Bank of England was prepared to effectively settle Scotland's balance of payments deficit, given all of the Scottish banks would be under its jurisdiction, by clearing their sterling balances as they do today.

However even with SA, liquidity would still be draining out of the system and substantial borrowing would still be required to sustain this model with all of the implications this would have for the sovereign debt side of the sterlingisation coin. Additionally, capital flight would exacerbate the liquidity loss and there can be little doubt that this would create a liquidity crisis. Likely, even in this scenario, the Scottish Government would be faced with seeking emergency assistance from the Bank of England which would presumably require them to provide secure assets, at a haircut, as collateral. Of course, even if stability on the banking side could be achieved through an emergency channel the issues relating to the currency regime—the fixity, implied one to one peg and the fact that it is a transitional regime—would still create the same kind of sovereign debt crisis as in the broader form of sterlingisation, sterlingisation B.

The currency regime proposed in the SGC report with its mix of an implicit one to one peg against sterling, the transitional nature of the arrangement and the underlying macro/international mix of a sizeable balance of payments deficit and insufficient foreign exchange reserves, would be the worst imaginable currency regime for an independent Scotland and it would maximise capital flight during the period when a yes vote is confirmed until independence day, or perhaps even from the announcement of a further independence referendum. Furthermore, given the forward-looking nature of financial markets it seems unlikely that the proposed regime would ever get started and even if it did it would be so short lived and chaotic creating a form of speculative attack, in terms of reserve losses and steeply rising borrowing costs, that it would be the worst possible start for an independent Scotland.<sup>11</sup>

An alternative form of sterlingisation, closely related to the SGC proposal, would be the construction of a currency board in which a domestic currency consisting of Scots pounds would be issued in a similar way to today by the commercial Scottish banks and backed at least 100 per cent by sterling which would now of course be a foreign currency. Such a system is usually run by a Monetary Authority, a lesser form of central bank, and it would ensure that the Scottish currency would be freely convertible into sterling at an exchange rate peg of a one to one with sterling. As we noted in Section 5, such a system requires a

<sup>10</sup>It is worth noting that such relocation of the banking sector would have implications for both Scotland's fiscal deficit, due to a reduction in tax payments, and its balance of payments due to the net factor payment component of the current account balance being reduced.

<sup>11</sup>Of course unlike in a classic speculative attack there would not be a currency to short in terms of this speculative attack and so the process here is more akin to a sovereign debt crisis.

considerable amount of foreign exchange reserves which, in turn, would require conservative fiscal policies to generate the necessary balance of payments surpluses which would clearly be untenable.

The Irish currency experience post-independence in 1922 through to 1979 consisted essentially of a one to one peg with sterling and this included the use of a currency board arrangement. The Irish currency board model has from time to time been proposed as a template for an independent Scotland's currency regime. For example, Kenny and McLaughlin (2022) argue that the Irish experience of that adopting a *de facto* central bank with a flexible currency board style arrangement may be a suitable approach (for an independent Scotland) and 'The benefit of flexibility in a currency board arrangement is something that has been discussed in relation to the monetary arrangements in the aftermath of the dissolution of the Soviet Union'. However, it is noteworthy that Kenny and McLaughlin also recognise 'maintaining the sterling peg placed considerable constraints on fiscal policy and effectively kept the Irish economy tied to the fate of the neighbouring isle'. Furthermore, this fiscal conservatism, along with the protectionist policies pursued by the Irish government post-independence, and with the fact that Irish commercial banks held sizeable sterling balances in funds in London meant Ireland's balance of payments position was in much better shape than is currently the case in Scotland. Finally, of course, the period up to 1979 was one of stringent capital controls and provided a very different backdrop to the current situation in capital markets and would have given the Irish Government an extra degree of freedom in dealing with the trilemma.<sup>12</sup>

Ghosh et al. (2000) take a critical perspective on the workings of the currency board model. They find from case studies that *inter alia* the successful introduction of a currency board is far from trivial and requires lengthy legal and institutional changes, as well as a broad economic and social consensus for the implied commitment. And they conclude that 'currency boards do not provide easy solutions' to the currency regime issue, 'but if introduced *in the right circumstances*, with some built-in flexibility, they can be an important tool for gaining credibility and achieving macroeconomic stabilisation'.

Given that we have argued that the right circumstances are not as yet in place it would seem that the currency board proposal shares all of the other deficiencies of the two forms of sterlingisation discussed above, in terms of insufficient foreign exchange reserves, the absence of a lender of last resort facility and the incompatibility of a fixed one to one peg with an independent Scotland's balance of payments position and the ultimate implication of these deficiencies.

## 9. An alternative formal monetary union to sterling zone: The Eurozone proposal

As noted above, an alternative form of formal monetary union that would presumably be attractive to the SNP, given its commitment to re-joining the EU, would be to join the eurozone and we sketch out some of the issues relating to this proposal in this section. The first thing to note is that any commitment to joining the euro area would require the establishment of a separate Scottish currency and this would raise the issues discussed above relating to the fixed versus floating choices including the associated costs of creating a separate currency. An independent Scotland would also need to meet a set of standard convergence criteria including the stabilisation of the new currency against the euro 2 years prior to the access to the eurozone. Additionally, since the euro would at the point of joining presumably still be floating against sterling this would introduce an important transaction cost friction into Scottish—rUK trade especially if rUK remained a significant trading partner with Scotland at that point.

The goal of joining the EU would also introduce trade barriers between Scotland and rUK as has arisen for the UK as a whole in the context of Brexit and such barriers would be intensified by the exchange rate frictions noted above. However, to set against this, the Economics of Customs unions indicates that Scottish trade would divert away from the rUK to EU members with the resulting transaction cost savings. However, this process is likely to reflect a longer term adjustment whilst the

<sup>12</sup>It is noteworthy that the use of sterlingisation, the early currency regime experience of other countries, such as Australia, was hampered by various balance of payments crises—see, for example, Debelle and Plumb (2006) and Kennedy (2018).

costs noted above would dominate the short to medium run horizons. However, given that an independent Scotland would unlikely be able to survive for long outside the EU, these kind of issues add an extra dimension of complexity into currency choices for an independent Scotland.

## 10. Concluding comments

This article has sought to argue that the key element in designing a suitable currency regime for an independent Scotland is how the regime sits in terms of the underlying macroeconomic fundamentals, and particularly the balance of payments position. We argued that the different forms of fixed exchange rates regimes that have been proposed for an independent Scotland, and particularly the informal use of sterling post-independence, are neither tenable nor credible solutions to the currency conundrum. Indeed, we have argued, given the macroeconomic backdrop of large fiscal and balance of payments deficits, that the informal use of sterling would give Scotland the worst possible macroeconomic start to its life as an independent country with a classic and very costly speculative attack or sovereign debt crisis being the only certain outcome. To avoid such an attack the informal use of sterling would need to be buttressed by fiscal discipline to bring the twin deficits into at least balance given the forward looking nature of financial markets; this would clearly need to be undertaken in any transition period to independence.

At various points in the article, we have stressed the importance of fiscal discipline to ensure any chosen exchange rate is seen as credible to international financial markets. Such fiscal discipline could become especially stringent depending on the level of debt an independent Scotland inherited post-independence. Although there were suggestions in the 2014 referendum that an independent Scotland would renege on its debt commitments with the rest of the UK if it were unable to continue to participate in a formal monetary union post-independence, this seems a highly unlikely outcome given the rUK would have the upper hand in any independence negotiations and starting life as an independent country that had reneged on its debt commitments would be a very poor signal to international capital markets about the creditworthiness of an independent Scotland.

A more realistic scenario would be that an independent Scotland would accept some share of the outstanding UK debt and the magnitude of this would be an important factor in determining the extent of fiscal discipline required. The SGC report proposes perhaps the most favourable debt settlement for an independent Scotland, in the form of an annual solidarity payment. This payment is intended to cover shared services and meet an agreed per capita (8.2 per cent) share of overall debt servicing costs fixed into perpetuity. Since such an agreement would imply an independent Scotland repaying its share of debt at an average interest rate that would be less than could be achieved by rUK, it seems unlikely that this option would fly in any post-independence negotiations. A more realistic scenario would be that Scotland would inherit the same proportion of UK debt at the time of independence and this could for example be anything up to 100 per cent of GDP. Clearly, any significant inherited debt levels would exacerbate the need for fiscal discipline post-independence, and this would be maximised under fixed exchange rate regimes, for reasons noted above. The situation is likely to be exacerbated further if the inherited debt levels are denominated in sterling and there is a risk of redenomination because of the chosen exchange rate regime. There is little doubt therefore that the interplay between regime choice, the fiscal and current balance and inherited debt levels could produce a toxic level of austerity that would be unprecedented for a country at Scotland's level of development.

Although issues of fiscal discipline will remain in the case of a floating rate regime, they are likely to be much less severe than in the fixed rate case, although they could still be considerable for reasons noted in the last paragraph. Such a regime would at least minimise the degree of fiscal discipline needed and maximise the monetary freedoms albeit within the limits available for a small open economy. Such a regime would also be credible to international capital markets and would prevent the almost inevitable speculative attack that would follow from adopting a fixed exchange rate currency regime.

In principle, a flexible exchange rate does not require any foreign exchange rate holdings although in practice as we have seen countries with a floating regime do hold such reserves in quite significant amounts. Crucially, though, a flexible exchange rate regime would be compatible with the foreign exchange reserves an independent Scotland would inherit post-independence and such a regime would provide a period of stability for the central bank and treasury of an independent Scotland to build credibility in the operation of fiscal and monetary policies. If there was a desire to move to a more fixed form of exchange rate regime in the future, a flexible regime would allow time for foreign exchange reserves to be built up by running conservative fiscal policies. It is noteworthy that aside from the short lived ERM experience, the UK since 1973 has operated a flexible exchange rate regime and this has absorbed many of the shocks hitting the UK economy along the way, from stagflation through to Brexit and the Covid pandemic.

Of course, for a newly independent Scotland with a large balance of payments deficit a move to a new currency would necessitate an initial sharp currency depreciation and this would have clear implications for the value of assets and liabilities denominated in sterling and without doubt the whole issue of redenomination would loom large as would the implications for trade in goods and services with the rest of the UK. This is the currency elephant in the room, and it is of course the reason why the SNP would prefer to use sterling informally post-independence. But until this currency conundrum, and the net costs and risks of a badly thought through transition process are set against any proposed long run net benefits, the Scottish electorate will not have access to the proper factual base on which to make an objective decision about voting yes or no in another independence referendum.

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