

**Fiscal Commission Working Group First
Report - Annex**

Assessment of key currency options

Introduction

- 1 As highlighted in the Fiscal Commission Working Group's First Report, a key choice for an independent Scotland in designing its macroeconomic framework concerns the currency to use.
- 2 The choice of currency, by dictating both the fundamental structure of the monetary framework and the relationship with other countries, will also have implications for the overall framework for fiscal policy and financial stability.
- 3 Countries of comparable size to Scotland have adopted a range of different currency frameworks to suit their economic situation. This paper builds upon the analysis set out in chapter seven of the Working Group's Report. It provides a summary of the key options for Scotland and provides analytical assessment of their respective strengths and weaknesses¹.
- 4 There are a variety of economic factors and technical assessments which are worthy of consideration when assessing the merits of the currency options available to an independent Scotland. These can be useful in helping to inform the debate.
- 5 However, views on the relative importance of each factor and the respective trade-offs are likely to be subjective². Moreover, the best structure may change over time depending upon developments in both the Scottish economy and trade partners.
- 6 The key point is that sovereignty over the decision with respect to the currency would rest with the Scottish Parliament. Scottish Ministers have indicated a clear preference to retain Sterling as part of a formal monetary union.

¹ All data is latest available as at end January 2013. New output estimates were published by the Scottish Government on the 31st January 2013 and have been used in the analysis in this paper except where highlighted.

² Care should also be taken when extrapolating the experiences of other countries to the particular case of Scotland. Ultimately decisions over currency choice – as is the case with all macroeconomic frameworks – will be driven by key characteristics of the economy and local considerations.

Assessing the Options

- 7 There are a number of different frameworks through which the various considerations relevant for the choice of currency can be assessed.
- 8 It is common practice to begin considering currency options by referring to the work on 'Optimal Currency Areas' (OCA)³. This frames the choice as a contrast between the benefits of greater macroeconomic autonomy (in respect of independent monetary and exchange rate policy) versus the benefits to trade and competition from a common currency area (e.g. exchange rate risk, transaction costs and price transparency).
- 9 In essence, countries are believed to be better suited to currency unions when there is a high degree of trade, capital and labour mobility between them, and they share the same broad trends and structures in their macroeconomies.
- 10 The criteria typically used to make such an assessment include:
 - Trade levels, both intermediate and final goods & services;
 - Factor mobility;
 - Alignment of economic structures, both within the economy – e.g. importance of key sectors – and institutionally and structurally – e.g. wage bargaining, home ownership;
 - Wage and price flexibility;
 - Productivity;
 - Correlation of economic cycles; and
 - Prevalence and scale of asymmetric shocks.
- 11 In the economic literature, 'Optimal Currency Area' analysis provides a useful *starting point* for assessing the range of currency options. It is however, principally a theoretical and technical assessment of hypothetical scenarios. In practice, a series of important practical considerations – economic, historical and political – will also play an important role.

³ The seminal academic paper in the field was Mundell, R.A. (1961), "A Theory of Optimum Currency Areas", American Economic Review, Vol. 51(4), pp. 657 – 665.

- 12 Moreover, it is also relevant to consider microeconomic factors such as the preferences and expectations of the users of a particular currency⁴.
- 13 In analysing the currency choices for Scotland, it is helpful to view each option through five broad areas of assessment –
- Are the fundamental structures of the Scottish economy currently suited to such an arrangement?
 - Are there any benefits/implications for short-term macroeconomic stabilisation?
 - What are the potential benefits/implications for trade and investment?
 - How straightforward would the transition arrangements be? and,
 - What policy levers would be open to future Scottish Governments to address the key challenges and take advantage of new opportunities in the Scottish economy?
- 14 Retaining Sterling would be a practical option for Scotland immediately post-independence. In addition to the long-term structural benefits that are highlighted below, retaining Sterling would assist with a smooth transition to independence (e.g. practicalities of sharing assets and liabilities and establishing the necessary economic, financial and fiscal institutions). It would ensure a functioning monetary system from day one of independence.
- 15 Over the medium term it may well be in Scotland’s interests to move to an alternative arrangement, should either the performance of the Scottish economy change or the preferences of the people of Scotland change. It may also be in the interest to retain Sterling. This would be a decision for the future.
- 16 This paper assesses three currency options for Scotland according to the five areas of assessment set out above –
- Sterling;
 - the Euro; and,
 - Establish a Scottish currency.

⁴ For example, optimal currency area work assumes that if a country chooses to move to a new currency option it will immediately become the principal medium of exchange. However, with fully tradable currencies the reality can be different. The use of the dollar in many countries outside the US – including those with their own currency – is a case in point.

Sterling

- 17 As highlighted in Chapter 7 of the Working Group’s First Report, there are two likely avenues through which Sterling could remain the currency of an independent Scotland.
- 18 Formally, through a monetary union with the rest of the UK, or informally, through a process termed ‘sterlingisation’.
- 19 Chapter 7 of the Working Group’s First Report provides a description of each option, however Box 1 below provides a short summary.

Box 1: Options to retain Sterling	
Formal Monetary Union	<ul style="list-style-type: none"> • Monetary policy set for ‘Sterling Area’. (UK and Scotland) • Range of options to cover governance and oversight of monetary framework – including supranational central bank with national central banks, or joint shareholder model of one ‘Sterling Area’ Bank. • Negotiated with UK Government
Informal Arrangement (‘Sterlingisation’)	<ul style="list-style-type: none"> • Sterling currency for Scotland but without formal monetary arrangements – e.g. central bank or lender-of-last-resort. • Monetary policy set for UK only. • No input into governance or oversight of monetary framework

20. International evidence suggests that informal monetary unions tend to be adopted by transition economies or small territories with a special relationship with a larger trading partner (e.g. between the UK and Jersey, Guernsey and the Isle of Man). Advanced economies of a significant scale tend not to operate in such a monetary framework. Though an option in the short-term, it is not likely to be a long-term solution. The focus of the discussion below is therefore set within the context of a formal monetary union.

Are the fundamental structures of the Scottish economy suited to such an arrangement?

- 20 Sterling has been Scotland's currency throughout modern economic history. It underpins day-to-day economic decision making across all sectors of the Scottish economy, households, businesses and the public sector.
- 21 Scotland is an open economy with the UK as its major trading partner. Exports to the rest of the UK account for around two thirds of total exports – approximately £46 billion in 2011⁵. While robust figures on imports are not yet available, it is clear from existing data – both from Scottish Input-Output tables and new experimental data in the Scottish National Accounts Project – that imports from the UK are at least as large as the figures for Scottish exports.
- 22 It is interesting to note UK exports of services (excluding travel, transport and banking) in 2010 to Ireland were around £5.4 billion, with exports to Germany and France of around £3.9 billion and £5.2 billion respectively⁶.
- 23 In addition, while less than 2% of registered enterprises in Scotland are owned by enterprises from the UK, they account for around 20% of employment and turnover⁷. Anecdotal evidence also points to the existence of a number of significant cross border UK companies operating in Scotland and vice versa.
- 24 There is also evidence of labour mobility between Scotland and the UK – helped by strong transport links, shared culture and a common language. Historically, the vast majority of inward migration into Scotland has been from other locations in the UK. This has changed to some extent in recent years following the accession of new Member States to the EU. In 2010-11 however, around 50% of migration into and out of Scotland was still from the UK⁸.
- 25 From a macroeconomic perspective, and as highlighted in Chapter 4 of the Working Group's First Report and Box 2 below, on key indicators of economic performance Scotland currently performs close to the UK average. Scotland also shares similar institutional and economic structures and principals with the rest of the UK.

⁵ Global Connections Survey 2011

⁶ International Trade in Services Survey 2010, ONS.

⁷ Scottish Corporate Statistics 2010 - www.scotland.gov.uk/Topics/Statistics/Browse/Business/Corporate

⁸ www.scotland.gov.uk/Topics/Statistics/Browse/Population-Migration/grosorigindestmig

26 This suggests that – based upon historical data – Scotland meets many of the key structural economic criteria for a successful currency union with the rest of the UK.

Box 2: Key structural linkages; Scotland/UK vis-à-vis the Euro Area	
Competitiveness	<ul style="list-style-type: none"> • <u>Scotland and UK</u>: Scottish onshore GDP per capita in 2011 was 99% of the UK average and third highest in the UK⁹. • <u>Euro Area</u>: GDP per capita in Germany is more than 50% greater than in Greece. Even amongst the developed core economies, GDP per capita can differ by more than 20% (see Table 4)
Productivity	<ul style="list-style-type: none"> • <u>Scotland and UK</u>: Scottish productivity (GDP per hour worked) in 2011 was 97% of the UK average and third highest in the UK or 99% of the UK average in terms of GDP per filled job¹⁰. • <u>Euro Area</u>: In terms of GDP per hour worked, productivity in Germany was estimated to be around 70% more than in Greece in 2011. Even core economies can vary greatly, with productivity in France nearly 30% greater than in Italy (see Table 4)
Labour market	<ul style="list-style-type: none"> • <u>Scotland and UK</u>: Labour market trends in Scotland and UK are similar. The latest data, (Sep-Nov 2012), shows unemployment in Scotland of 7.8% compared to 7.7% in UK¹¹. • <u>Euro Area</u>: Unemployment in the Euro Area is more varied. Current rates range from 5.9% in Germany to 17.7% in Greece and 21.7% in Spain. The Euro Area average is 9.6%.¹²
Economic cycle	<ul style="list-style-type: none"> • <u>Scotland and UK</u>: Scotland’s economic cycle, while at a lower trend rate of growth, shares broadly the same shape and structure as the UK – see Box 3. The two economies share a correlation coefficient on output

⁹ December 2012 Regional Gross Value Added release, ONS

¹⁰ GVA per hour worked, ONS

¹¹ Nomis

¹² Eurostat

	<p>of 0.90 (see table 6).</p> <ul style="list-style-type: none"> • <u>Euro Area</u>: There is a variable level of synchronisation between Euro Zone members as measured by their growth correlation coefficients, ranging from 0.92 between France and Austria to 0.05 between Germany and Greece (see table 6).
Asymmetric Shocks	<ul style="list-style-type: none"> • <u>Scotland and UK</u>: At the macroeconomic level, the Scottish and UK economies share similar structures and industry compositions. Analysis of past asymmetric shocks – Box 4 – shows that they are relatively limited and temporary in nature. • <u>Euro Area</u>: The 2008/09 credit crunch shows that shocks can be asymmetric across the Euro Area. In 2009, average growth across the Euro Area was -4.4%. However, in this year Cyprus grew at a greater rate of -1.9% whilst Estonia grew at -14.1%.¹³
Openness	<ul style="list-style-type: none"> • <u>Scotland and UK</u>: Around 2/3 of Scottish exports are destined for the UK. Although not currently measured, there is likely to be a similar level of imports from the UK to Scotland. • <u>Euro Area</u>: Around 50% of German and French exports are to other member states. This falls to around 20% for Greece.¹⁴
Structural	<ul style="list-style-type: none"> • <u>Scotland and UK</u>: On most assessments, Scotland and the UK have similar degrees of labour market flexibility (e.g. regulation, skilled workforce, wage bargaining), share similar institutions and asset market structures. Scotland and the UK also have very similar housing market structures. In 2011, 63.9% of all dwellings in Scotland were owner occupied, compared to 64.7% in the UK¹⁵. • <u>Euro Area</u>: Fundamental differences in the structure of labour and

¹³ Eurostat

¹⁴ Eurostat

¹⁵ DCLG and ONS

	<p>product markets existed prior to the creation of the Euro Area. Many of these continue today¹⁶. The discussion on the Euro Area below highlights notable divergences between members in terms of industrial make-up, trend levels of employment and levels of labour productivity.</p>
<p>Fiscal Position</p>	<ul style="list-style-type: none"> • <u>Scotland and UK</u>: Scotland’s fiscal position is not dissimilar to the UK. Over the period 2006-07 to 2010-11, Scotland’s estimated net fiscal deficit (including a geographic share of North Sea Revenues) averaged 5.1% of GDP compared to 6.4% for the UK¹⁷. • <u>Euro Area</u>: There were significant divergences evident from the start of the Euro. Many countries failed to meet criteria on net debt, and divergences have since grown. In 1999, France had a gross debt to GDP ratio of 59% compared to 113% in Italy. Greece was running a fiscal deficit of 3.7% of GDP compared to 1.2% in Spain. In 2011, these discrepancies have become more extreme¹⁸.
<p>Factor Mobility</p>	<ul style="list-style-type: none"> • <u>Scotland and UK</u>: High degree of labour and capital flows (e.g. in 2010-11 around 50% of migration into and out of Scotland was from the UK). Supported, not just by economic factors, but also by social factors (e.g. common language). • <u>Euro Area</u>: While the degree of factor mobility between certain member states is high – e.g. Belgium and Luxembourg – it is much less pronounced elsewhere. Across the EU, only 2.5% of EU citizens are currently resident in a country that they are not a citizen of¹⁹, and only 0.1% of EU population have changed official residence.²⁰ Less than half of EU member state FDI is from other member states²¹.

¹⁶ <http://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1360.pdf>

¹⁷ Scottish Government: Government Expenditure and Revenues (GERs).

¹⁸ Eurostat

¹⁹ Eurostat population figures and Scottish Government calculations

²⁰ <http://www.ecb.int/pub/pdf/scpops/ecbocp52.pdf>. (Based on EU15 countries in 2001, page 7)

²¹ Eurostat

- 27 As highlighted in Chapter 8 of the Working Group’s Report, one relative difference between the Scottish and UK economies is the importance of North Sea oil and gas output and revenues.
- 28 It is estimated that an independent Scotland would be a net oil and gas exporter. Oil is a major component of the Scottish economy. As highlighted in the report, careful management of Scotland’s oil and gas reserves is likely to be a key priority for an independent Scotland. Norway for example has successfully managed its oil wealth and continued to have a strong onshore economy through careful currency management and the use of stabilisation and wealth funds.
- 29 Retaining Sterling would provide a helpful mechanism to manage the macroeconomic implications of oil and gas production, particularly on the value of the currency and the implications for the balance of payments. A practical advantage of being part of a larger currency union, such as Sterling or the Euro Area, is that one issue – commodity currency volatility – would be significantly diluted. The Balance of Payments for Sterling would continue to benefit from Scotland’s share of North Sea production²².

Are there any benefits/implications for macroeconomic stabilisation?

- 30 There are two aspects to this from the perspective of retaining Sterling. On the one-hand, as part of a monetary union with the rest of the UK, Scotland would remain part of a relatively large common economic area (compared to the size of the Scottish economy). This can provide a degree of insulation against external shocks and instability in the global economy. It would also mean retention of the existing monetary frameworks and reputation for macroeconomic management currently held by the Bank of England.
- 31 One of the advantages that some independent countries have found in the past would not however be open to Scotland – that is, the opportunity to set an independent monetary and financial stability policy. If the two economies were to diverge, then monetary policy may not be set optimally for Scotland, requiring adjustment in the real economy (e.g. through wages, prices or employment) or fiscal policy.

²² See Professor Alex Kemp – ‘Evidence to Select Committee on Economic Affairs, Enquiry on the Economic Implications for the UK of Scottish Independence’, 24th October 2012.

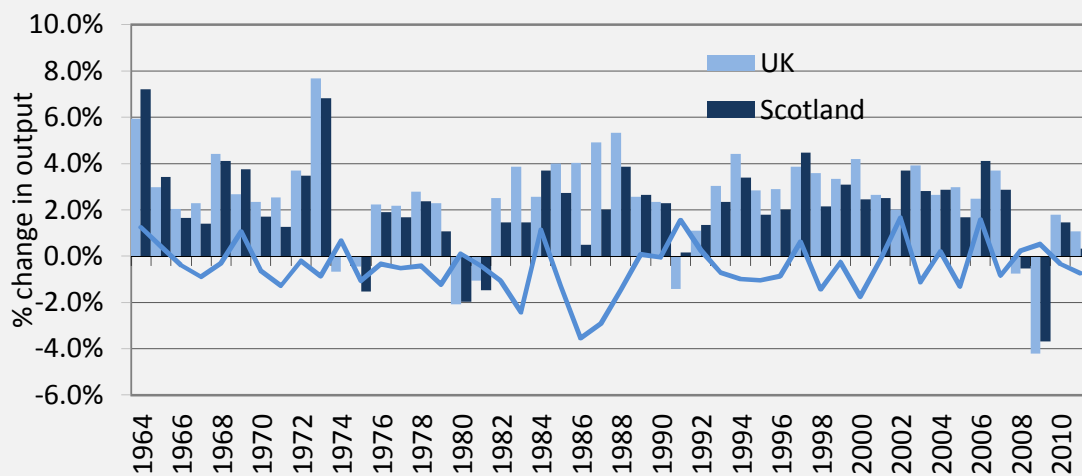
- 32 Of critical importance therefore is the degree of alignment of the Scottish and UK macroeconomies. The question of whether monetary policy decisions at the aggregate Sterling Area level are appropriate for the Scottish economy depends on what part of the business cycle the Scottish economy is operating at relative to the rest of the UK.
- 33 It is always challenging to assess future alignment, and this will clearly depend upon a number of different factors. However, history can provide a useful guide. Box 3 provides a summary of analysis which assesses the degree of convergence between the Scottish and UK economies, and therefore the likely suitability of a monetary policy set for the Sterling Zone for an independent Scotland.

Box 3: Analysis of Economic Cycles: Scotland and UK

Charts 1 and 2 present differences in year-on-year growth in output and unemployment data between the UK and Scotland. In chart 1 the solid bars show annual growth in GDP. The solid black line shows the percentage point difference in growth between the two economies. As can be observed, the difference varies around 0% and is rarely greater than 2%.

From the chart, it is clear that there have been relatively few periods when the two economies are noticeably divergent. In only 2 years has one economy grown and the other shrank (1974 and 1991), and even then, the differences were small (i.e. one grew weakly whilst the other contracted only slightly). On only 3 occasions have growth rates differed by more than 2%.

Chart 1: Year on Year change in Output, UK and Scotland

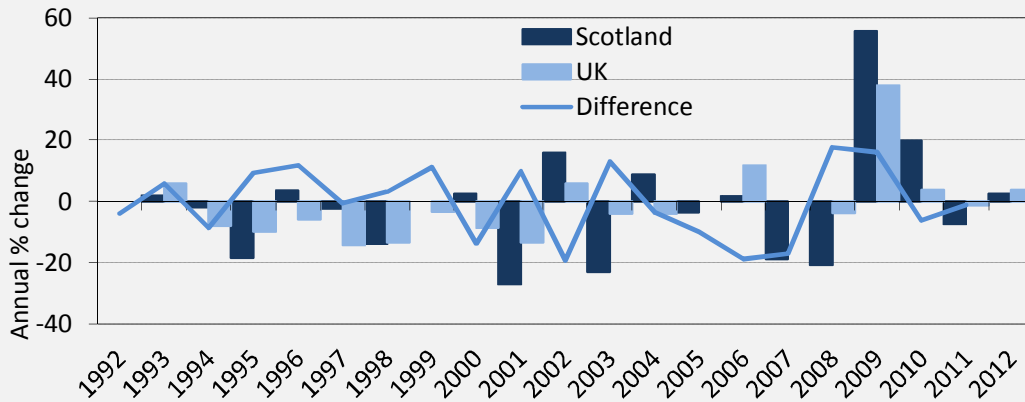


Source: UK data from ONS
 Scotland: Scottish Government GVA estimates

Chart 2 presents unemployment data for Scotland and the UK since 1992. The bars show the

percentage change in the unemployment rate from year-to-year. The black line shows percentage point differences. (NB: Scottish unemployment is more volatile than for the UK, though this is, in part, likely to reflect greater noise in the data as a result of a smaller sample size.)

Chart 2: Unemployment – Year on Year percentage change - Scotland and the UK



Source: NOMIS web: <http://www.nomisweb.co.uk/>

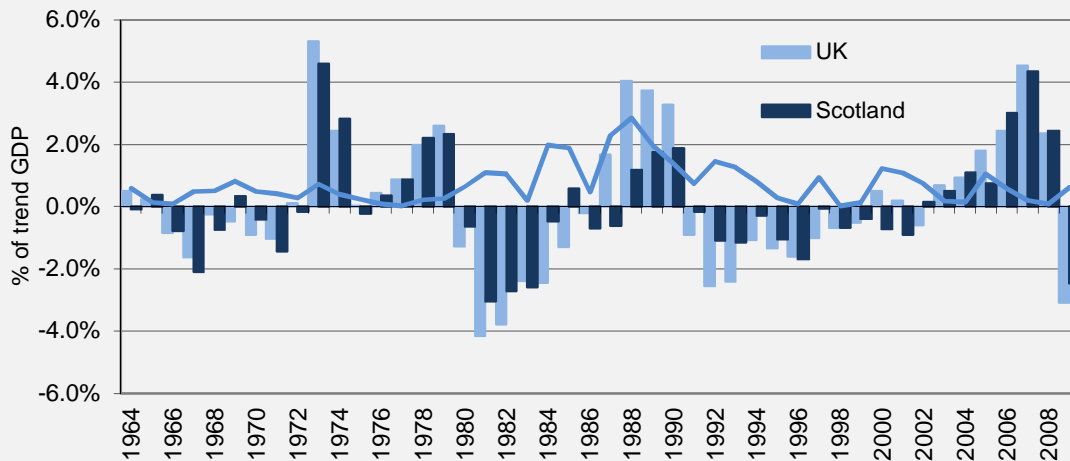
Chart 2 shows that the labour market in Scotland and the UK appear to have moved broadly in the same direction over time.

Despite greater volatility in the Scottish data, in only 3 years out of the last 21 have unemployment rates moved in a different direction between Scotland and the UK.

Average unemployment rates in the UK and Scotland have been around 7% over the period. Over this time, Scottish and UK unemployment rates have not differed by more than 2 percentage points, and have an average difference of 0.8 percentage points.

Chart 3 extends the output analysis by showing estimates of the output gap for Scotland and the UK using a statistical filters approach (H-P filter). The bars present the estimated output gap in each economy and the line shows the absolute (i.e. irrespective of direction or sign) difference between the two estimates.

Chart 3: Estimated Output Gaps – Scotland and the UK

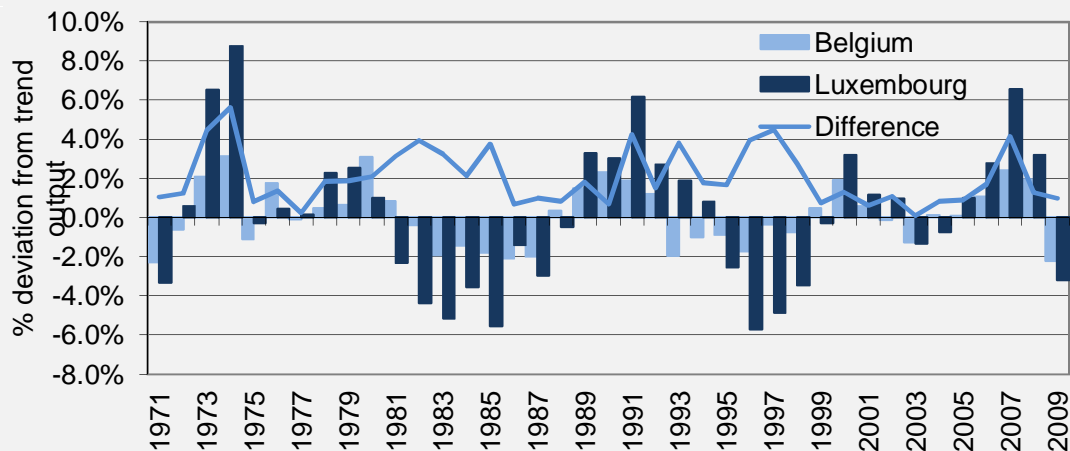


Source: Output estimates as Chart 1 plus Scottish Government calculations using HP filter

The output gap estimates differ by more than 2 percentage points on just two occasions – 1987 and 1988, a period known as the Lawson boom in the UK. Once again, this suggests relatively close movements between the two economies. The average difference in output gaps since 1964 is just 0.7 percentage points.

By way of comparison, Chart 4 looks at the output gaps in Belgium and Luxembourg – two countries in a formal monetary union since 1922.

Chart 4: Output Gaps – Belgium and Luxembourg



Source: OECD GDP stats and Scottish Government calculations using HP filter

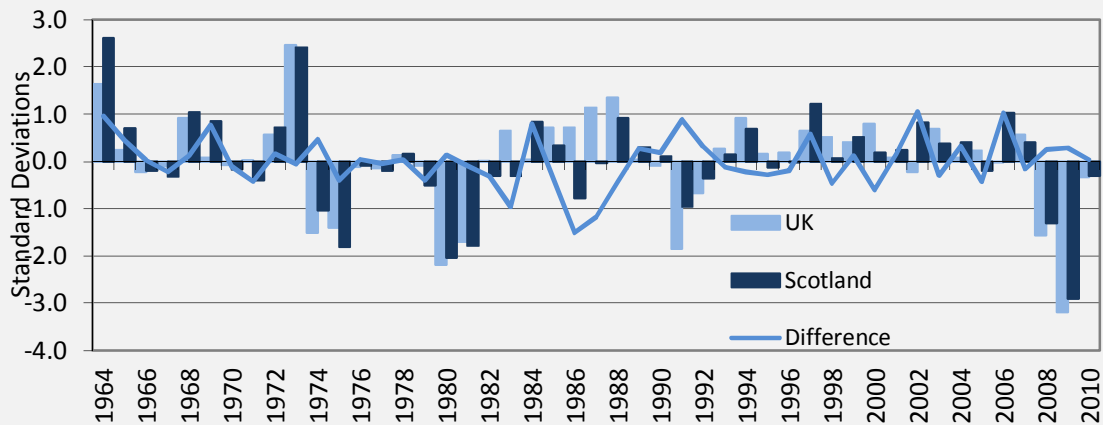
The data suggest that since 1971 there were fifteen years when the output gaps for Luxembourg and Belgium diverged by more than 2 percentage points. The output gaps have differed by an average of 2.0 percentage points over the period. Belgium and Luxembourg were in a long running and successful monetary union. The data suggest that Scotland and the UK appear relatively more

aligned than Belgium and Luxembourg.

Looking across a sample of 14 Euro Area countries, the average difference in output gaps since 2000 as estimated by the OECD is 3.0 percentage points - over three times the gap observed between Scotland and the UK. This suggests that, historically, there has been greater alignment between the Scottish and UK economic cycles than elsewhere – including countries that are considered to be relatively closely aligned.

Analysis of the output gap controls for different trend rates of growth but not for different volatilities. This may exaggerate the difference between economies that follow similar cycles but with different magnitudes of growth. It is possible to remove the longer term trends in the data *and* to express data on a standard scale to control for differing volatility. Chart 5 presents Scottish and UK growth data expressed as standard deviations from trend. The bars show annual output growth in the Scottish and UK economies expressed as standard deviations from their respective trends since 1964. The line shows the difference.

Chart 5: Year on Year Change in output growth, standard deviations from trend, UK and Scotland



Source: Data as chart 1 plus Scottish Government calculations

From looking at the chart, there are no ‘stand out’ periods when the Scottish and UK economies were notably divergent. Indeed there are only 4 years when the two series were separated by more than one standard deviation from their respective growth trends, 1986, 1987 and 2002 and 2006.

If absolute differences in deviations from trend between economies over the period are averaged, it is possible to calculate a single measure, hereafter referred to as “degree of synchronisation”. This captures how closely economic cycles have moved in two economies, where a lower value predicts more closely synchronised countries.

Table 1: Degree of Synchronisation: Scotland: UK & Euro Area Economies

	Country	Degree of Synchronisation
Top 5 <i>closest</i> EU countries by degree of synchronisation	Italy and Belgium	0.42
	(UK and Scotland)	0.42
	France and Belgium	0.43
	Italy and France	0.43
	Sweden and Finland	0.48
	Germany and Austria	0.48
EU Average		0.64
Top 5 <i>divergent</i> EU countries by degree of synchronisation	Sweden and Portugal	0.89
	Spain and Denmark	0.89
	Greece and Netherlands	0.89
	Greece and Finland	0.91
	Greece and Sweden	0.98
Source: OECD stats plus Scottish Government calculations		

Table 1 compares the closest and most divergent economies within 13 Euro Area countries to the value for the UK and Scotland. The calculated value for Scotland and the UK based on the data above is 0.42.

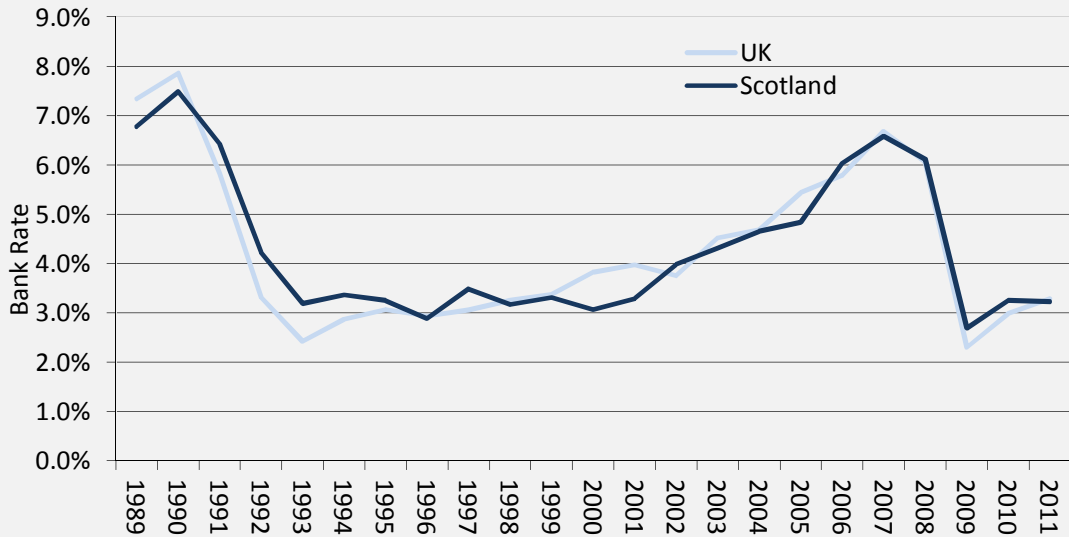
Unsurprisingly, table 1 shows that core Euro Area economies tend to be more synchronised than the peripheral economies. Once again, Scotland and the UK appear to demonstrate a relatively high degree of alignment.

A final approach to analysing the synchronisation is to test for the ‘appropriateness of monetary policy’.

There are rules of thumb that can be used to estimate appropriate interest rates. One such rule is the Taylor Rule, which weights deviations of inflation from target and output from trend to suggest a bank rate. Chart 6 presents Taylor Rule Bank Rate estimates for the UK and Scotland.

Price data are only available for the UK as a whole and are not broken down for Scotland. However, as discussed in Chapter 4 of the Working Group’s Report the data that is available does not suggest much of a historical divergence in price indicators between Scotland and the UK (with the exception of London).

Chart 6: Bank Rate implied by Taylor Rule

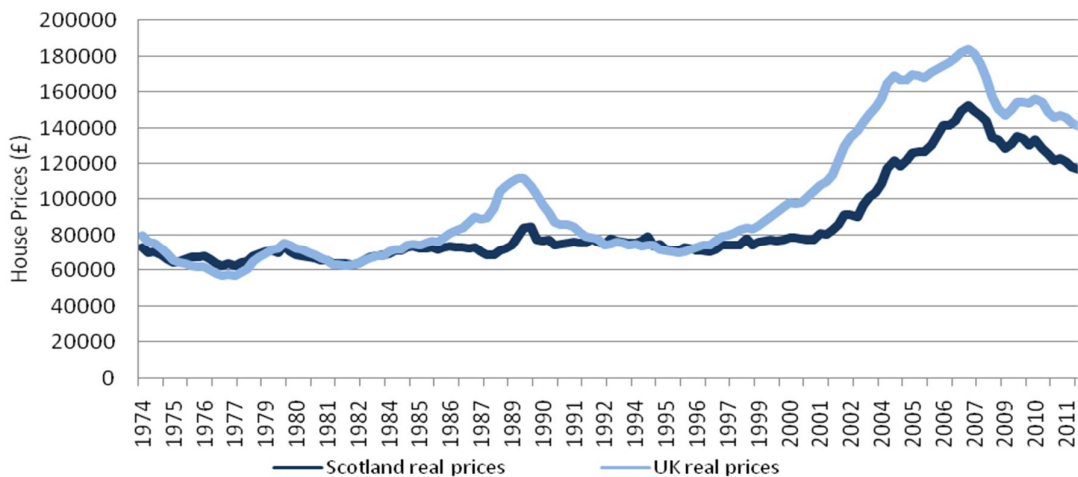


Source: Output data as chart 1, Prices data from ONS CPI All Items price index, Scottish Government calculations

The Taylor Rule analysis suggests that, over the last 2 decades, Scotland and the UK would have followed very similar paths of monetary policy, given the same monetary objectives.

34 In addition to headline output data, other key macroeconomic indicators show a degree of alignment. For example, employment levels are also broadly similar between Scotland and the UK. Over the long-term, house prices have tended to follow a similar trend in Scotland and the UK, the UK – driven primarily by developments in London and the South East – has had a greater susceptibility to house price spikes and falls – see Chart 7.

Chart 7: Average House Prices in Scotland and the UK



Source: Nationwide

- 35 Overall therefore, past evidence suggests that the Scottish and UK economies have – at a broad level – had relatively similar macroeconomic characteristics (albeit Scotland has grown more slowly). While this will partly reflect the existing constitutional arrangement and a common monetary and fiscal policy, it does lead to the conclusion that the economies of UK and Scotland are integrated with each other more so than many economies of the Euro Area.
- 36 This suggests that monetary policy set to promote price and financial stability across a Sterling Zone would, as an initial assessment, appear to be broadly consistent with the objectives of helping to deliver a stable macroeconomic system for Scotland on day one of independence.
- 37 A clear issue with monetary unions is not just the degree of synchronisation over the cycle, but also the prevalence of asymmetric shocks. Again there appears to be only limited evidence, based upon historical data, to suggest that this would be a significant issue for Scotland immediately post-independence. Box 3 above highlights that there have been few years when there has been much divergence. Box 4 below discusses in greater detail certain instances when there has been apparent divergence and assesses the overall impact on the Scottish economy.

Box 4: Past Asymmetric Shocks: Scotland and UK

Case study 1: What happened in 1986 – 1988?

As highlighted in Box 3, both growth and output gap approaches suggest a divergence in the Scottish and UK economies in the period 1986 – 1988.

During this period, UK GVA grew at 4.0%, 4.9% and 5.3% whilst Scottish GDP grew at 0.5%, 2.0% and 3.9%.

Sector breakdown

Table 2 presents a sector breakdown of Scottish GVA during these years. From the table it appears that the cause of relatively weak growth in Scotland shifts from year to year, from manufacturing in 1986, construction in 1987 and to transport, storage and communication in 1988.

Table 2: Scottish GVA growth 1986 - 1988²³

	GVA	Production and construction			Services			
		All	Manufacturing	Construction	All	Distribution, hotels and catering	Transport & comms	Business, Financial, & other services
1986	0.5%	-2.7%	-3.0%	1.5%	2.0%	2.1%	0.8%	2.3%
1987	2.0%	-0.5%	-0.3%	-1.8%	3.6%	3.8%	5.6%	3.0%
1988	3.9%	5.5%	6.3%	5.0%	3.3%	8.2%	0.6%	2.2%

Source: Scottish Government 2012 Q2 output estimates

The table suggests that there was no one sector responsible for the divergence in growth rates during this period, and an explanation should be sought from elsewhere.

UK and Scottish economic events

The period in the mid-to-late 80's in the UK was known as the 'Lawson Boom'. Overall, the UK experienced a period of rapid growth. This is attributed to expansionary fiscal and monetary policy as well as financial de-regulation (the 'big bang') in 1986.

From 1986 to 1988, house prices in England and Wales increased 52%, compared to 15%²⁴ in Scotland. While there was strong growth in the UK during this period, it eventually gave out to inflation and a recession in the early 90's. Scotland appears to have missed both the boom and subsequent bust that occurred in other parts of the UK. This could be explained by Scotland having a smaller financial sector at the time – or at least a financial sector not specialising in the areas immediately affected by de-regulation – relative to the UK as whole.

What is noticeable however is that this divergence was temporary and soon the Scottish and UK economies returned to a period of greater alignment – see Chart 3 in Box 3. The asymmetric shock to the two economies was temporary in nature.

Case study 2: Is it possible to detect Silicon Glen in Macro data?

The previous case study looked for notable movements in the data and related it to historic events. This case study takes the opposite approach, taking a well-known economic event and relating this

²³ <http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/GDP2012Q2XLS>

²⁴ ONS House price index table 14

to the macro level data. **NB** This analysis is based on the pre January 31st GDP release, and is therefore based on SIC03 sector classifications.

The Scottish electronics manufacturing boom, known as ‘Silicon Glen’, began in the 1960’s. The industry peaked in Scotland in the late 90s when 5.4% of Scottish GDP was accounted for by the sector.

The industry began to decline as manufacturers shifted production to lower cost economies. Though a similar effect occurred in the UK overall, it was keenly felt in Scotland. By 2007, the manufacture of electrical equipment in Scotland accounted for 1.7% of GDP, a relative decline of over two thirds.

Despite this, the Scottish economy grew strongly over this period. This is even taking into account of a decline between 2001 and 2003 in “Electrical and Instrument Engineering” of over 30%. Table 3 summarises the sector weightings and contributions to growth during 2003, the year of the greatest fall in output in the sector.

Table 3 shows that whilst Electrical and Instrument Engineering accounted for only 2.4% of output in 2003, the 30% decline in the sector reduced growth in the year by over 20%. This is as great a contribution to growth as the rest of the manufacturing sector combined.

Table 3: Output growth 2003

	Electrical and Instrument Engineer	Construction	Services	Mining and Quarrying Industries	Electricity & Gas Supply	Other manufacturi ng
Growth in 2003	-31%	6.6%	3.8%	-2.4%	3.7%	6.0%
Weight (2003)	2.4%	6.8%	73.2%	1.3%	2.1%	11.8%
% contribution to growth	-22%	14%	84%	-1%	2%	22%

Source: Scottish Government **2012 Q2** sector growth and weights

The analysis above shows the noticeable macroeconomic impacts that the decline in electronics manufacturing in Scotland had. However, despite the steep declines in the sector, Scottish GVA still grew strongly over the period and was closely aligned to the UK. In conclusion, while Scotland did suffer a greater shock in electronics compared to the UK, the scale of the difference between Scotland and the UK was small, and as a result the divergence at a macro level was limited.

How straightforward would the transition arrangements be?

- 38 One of the main advantages of retaining Sterling vis-à-vis other currency alternatives is the fact that there will be little in the way of arrangements needed for transition. Retaining Sterling would also give a newly independent Scottish Government time to establish credibility and new economic institutions (Scottish Treasury, Fiscal Commission, Monetary Institute etc.) an opportunity to develop effective working practices.
- 39 It would also provide a stable environment to resolve the allocation of assets and liabilities – such as the share of public sector debt and assets – and to conclude negotiations in other areas.

What are the potential implications for trade and investment?

- 40 As set out in Chapter 4 of the Working Group’s report, Scotland is an open economy. The UK is Scotland’s principal trading partner, accounting for around two thirds of Scotland’s exports²⁵. Retaining Sterling would avoid exchange rate costs and allow for transparent comparisons to be made over the cost of goods and services.
- 41 Scotland is also a key export destination for the rest of the UK. Promoting this single market will therefore have advantages to both countries. This will be particularly important in sectors which are highly integrated and for firms with complex supply chains operating across the UK.
- 42 It would also give investors certainty over the future value of returns. Retaining Sterling would continue to promote access to the City - Europe’s largest and most liquid capital market.

What policy levers would be open to future Scottish Governments?

- 43 Under such an arrangement, fiscal policy and other economic levers such as regulation would become the dominant economic policy tool open to the Scottish Government. These powers would be substantial.

²⁵ The scale of Scotland’s manufactured exports to markets outside the rest of the UK is similar (£13.7 bn) however manufacturing accounts for a more significant share of Scotland’s overseas exports (62%).

Assessment of Key Currency Options

- 44 As highlighted in the Working Group's First Report, it is common for countries in a monetary union to reach agreement on the broad parameters for managing fiscal policy (e.g. a range of values for net borrowing or net debt) and increasingly financial stability. Within this overall envelope however, there would be freedom to tailor tax and spending policies to the unique policy opportunities and challenges facing the Scottish economy.
- 45 A fiscally independent Scotland in a monetary union would also have an opportunity to vary fiscal stabilisation policies to reflect differences in the business cycle in Scotland vis-à-vis rUK.
- 46 Over the long-term, independence within a Sterling Zone would provide the Scottish Government/Parliament with access to policy levers which can have an impact on long-term productivity and economic growth such as taxation, regulation, competition policy and welfare.
- 47 Such a framework would bring a step-change in the level of economic responsibility in Scotland. Chapter 10 of the Working Group's First Report discusses these powers in greater detail.

Alternative currency options: The Euro and a Scottish Currency

- 48 Two alternatives to retaining Sterling would be for Scotland to join a currency union with another currency (e.g. adopting the Euro) or to launch its own currency.
- 49 If Scotland was to join the Euro, monetary policy would be overseen by the European Central Bank (ECB) and delivered by a Central Bank of Scotland. Scotland would have formal representation on the ECB and be able to contribute to the monetary decision making process for the Euro Area.
- 50 Chapter 7 in the Working Group's First Report summarises the steps required of EU member states before they can join the Euro. This would not be straightforward. Key convergence criteria would take time to be met, even if there was a willingness to join the Euro. There would however be no compulsion for a newly independent Scotland to join the Euro, as discussed in paragraph 7.37 of the Working Group's First Report.

51 An independent Scottish currency would have monetary and exchange rate policy set by a Scottish Central Bank. Within the option of choosing a Scottish currency, a future government may decide to peg to another currency or allow it to float. As the first is similar to a currency union – though with the much greater ease of altering the peg – the focus of discussion that follows is on the creation of a flexible exchange rate model.

Box 5: Summary of Euro and Scottish Currency	
The Euro	<ul style="list-style-type: none"> • Join the European Monetary Union (subject to meeting convergence criteria) • Euro is established as currency in Scotland • European Central Bank sets monetary policy for Euro Area (including setting of interest rates). Scottish Central Bank discharges decisions of ECB in Scotland • Banking Union to govern financial stability • Fiscal Compact
Scottish Currency	<ul style="list-style-type: none"> • New Scottish currency established • Scottish Central Bank governs monetary framework (including setting of interest rates) • Monetary policy set for conditions in Scottish economy and/or to maintain currency peg • Option to peg the currency to another (e.g. Sterling) or to float-freely • Options to manage fluctuations in currency – particularly from oil – including establishment of stabilisation fund

Are the fundamental structures of the Scottish economy suited to such an arrangement?

The Euro

52 As highlighted above, whether two areas constitute an ‘optimal currency area’ depends upon a range of factors such as the degree of trade, capital and labour mobility, wage and price flexibility and common productivity levels.

Assessment of Key Currency Options

- 53 Based upon all of these criteria, the assessment on whether Scotland would form an ‘optimal currency area’ with the Euro Area is less clear than is the case with Sterling. On many key macroeconomic indicators, Scotland is currently less aligned with the Euro Area than it is with the UK.

Macroeconomic indicators

- 54 Box 2 shows that Scotland has similar levels of output per person and productivity to the UK, with output per person in Scotland around 99% of the level in the UK. Table 4 shows that this can be quite variable across the EU and when compared to the UK (and by extension, Scotland). Germany has over 50% greater output per person and over 70% greater productivity than Greece. Even between core members, GDP per capita and productivity can vary substantially. For example, GDP per capita is nearly 30% higher in Austria than Italy whilst productivity is nearly 25% greater in France than Spain. Levels of capital investment varies substantially too. The UK has quite low levels of gross capital investment.
- 55 Substantial differences in output, productivity and capital investment might suggest divergences in underlying economic structures between these economies.

	GDP per capita in PPS (EU-27 = 100)	Labour productivity per hour worked (EU-27 = 100)	Gross Fixed Capital Formation as % GDP
Germany	121	125	18
France	108	130	20
Austria	129	116	22
Greece	79	73	15
Spain	98	106	18
Italy	100	101	19
UK	109	106	15

Source: All figures from Eurostat for 2011

Structure of the economy

- 56 Chart 8 presents a sector breakdown of selected economies. Compared to Scotland, Germany has a noticeably smaller Services and Construction sector but a larger production Industry. Greece has a very large 'Other Services' sector but small production and financial services. France is more heavily weighted towards business activities and away from Industry. By comparison, the UK and Scotland are clearly more closely aligned in terms of their economies' sector structures.
- 57 Similar industrial structures may be important to economic cohesion within a monetary union. Say for example there is a global increase in demand for manufactured goods and a fall in demand for services. Germany with a large manufacturing sector would move to operating above capacity, whilst France with a larger services sector might experience a relative slump. Differing monetary policy responses would be demanded in each case.

Chart 8: Sector breakdown of economies



Source: Eurostat for all figures except Scotland, from Scottish Government output estimates. Eurostat gives a slightly different split of financial services to non financial services in the UK to ONS, but is broadly similar.

Labour Force

	Employment Rate (%)	Long term Unemployment Rate (%)	Tertiary education attainment (% of population aged 30-34)
Germany	76	2.8	31
France	69	4.0	43
Austria	75	1.1	24
Greece	60	8.8	29
Spain	62	9.0	41
Italy	61	4.4	20
UK	74	2.7	46
<i>Scotland</i>	<i>71**</i>	<i>2.2</i>	<i>54</i>

Source: All data from Eurostat (2011) except where indicated
 **From Nomisweb for 2011Q1. UK figure for comparison is 70

- 58 Labour market structures vary across the EU. Scotland has a comparable rate of employment compared to Germany, France and Austria. These economies have much higher rates of employment than Greece, Spain and Italy. These are long term trends and a similar pattern is observed in the years leading up to the financial crisis. By contrast, the UK and Scotland have similarly shaped labour forces. The employment rate in the UK in 2011Q3 is 70% and 71% in Scotland according to ONS. Eurostat gives slightly different figures for the UK for comparison to other EU economies. The UK and Scotland also have comparable and relatively low rates of long term unemployment.
- 59 The UK and Scotland have similar highly skilled labour forces, with high levels of tertiary education attainment. Italy, Austria and Greece have noticeably lower levels of educational attainment at this level. This again suggests different structures in these countries labour forces and economies.
- 60 One system by which underlying labour market structures will affect the macroeconomy is through the natural rate of unemployment, or the Non-Accelerating Inflation Rate of Unemployment (NAIRU). Depending on an economies underlying NAIRU, it can tolerate different levels of under or over capacity in the labour market without impacting prices, implying divergent monetary policy responses to shocks across economies with different

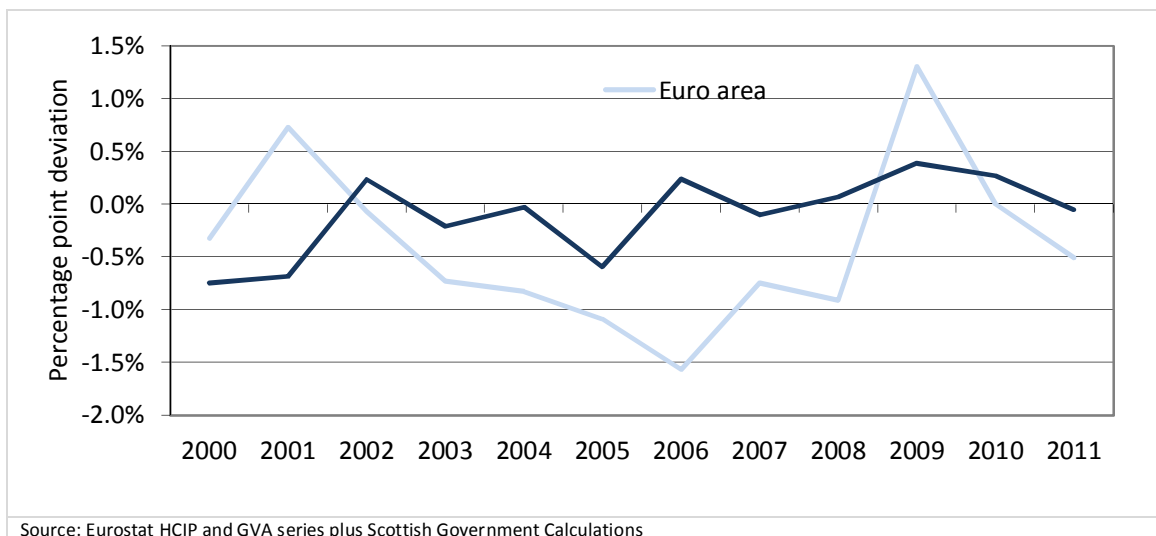
Assessment of Key Currency Options

labour markets. The above evidence again suggests that labour market structure in Scotland is closer to the UK than the EU.

Monetary Indicators

61 Chart 9 compares Taylor rule estimates for Scotland to the Euro Area and the UK. Taylor rule estimates suggest appropriate nominal bank rates for an economy based on the rate of inflation and the size of the output gap. The chart is presented as deviations from the Scottish estimated Taylor rate. Smaller deviations in Taylor Rule estimates between economies suggest a greater alignment of monetary policy. The Taylor Rule estimates assume a target rate of inflation of 2%, an equilibrium real interest rate of 2% and an equal weighting of inflation and output gaps for all economies.

Chart 9: Taylor rule bank rate estimates, deviation of UK and EU from Scotland



62 The chart shows that Taylor rule estimates for the Euro area deviate more from the estimated rate for Scotland than does the UK. The average deviation for the Euro Area is 0.7 percentage points (i.e. Taylor rule estimates suggest that interest rates in the Euro Area would be nearly 1 percentage point different to the optimal rate for Scotland). This is compared to a value of just 0.3 percentage points for the UK. This small difference may in part be expected at this level due to statistical errors in estimating output in an economy.

63 Taylor rule estimates for a sample of Euro Area economies were also estimated based on Eurostat data. The sample has an average range of over 4 percentage points (i.e. the nominal

interest rate as suggested by the Taylor rule differed by an average of 4% between the lowest and highest estimate over the period). Even in the more stable years of 2000 – 2006, Taylor rule estimates for Germany (average = 2.4%) and France (average = 2.7%) differ notably from estimates for Greece (average = 0%) and Spain (average = 1%).

- 64 These estimates suggest less cyclical synchronisation in the Euro Area when compared to the relatively close synchronisation of Scotland and the UK.

Factor Mobility

- 65 Over the longer term, a greater level of factor mobility between economies might help to lead to a greater synchronisation of economic cycles, by allowing capital and labour to move to regions of lower spare capacity, levelling out divergences.

- 66 The degree of factor mobility (both in terms of labour and capital – i.e. investment funds) between Scotland and Europe, while increasing in recent years, is also much smaller than it is with the UK (see charts 4.09 and 4.10 in chapter 4 of the Working Group’s Report).

- 67 While there have been unprecedented increases in migration both to and from Europe in recent decades, this has been from a comparatively low base. Practical differences – some of which may be perceived rather than real – in economic barriers (e.g. connectivity and skills) coupled with social barriers (e.g. language) mean that there has yet to significant cross-border flows of labour or capital between Scotland and the Euro Area.

Scottish Currency

- 68 Scotland is undoubtedly a sufficiently large economic area to have an independent currency. Denmark, New Zealand, Singapore and Norway are all roughly of the same size as Scotland and have their own currency.

- 69 From a macroeconomic policy perspective this would provide the maximum degree of flexibility. The value of a Scottish currency would reflect the fundamental structure and performance of the Scottish economy. For example, if Scotland needed a competitive advantage then a lower exchange rate relative to competitors could boost exports and relative productivity and create jobs.

Assessment of Key Currency Options

- 70 From a microeconomic perspective there would be some challenges in the setting up of a new currency, at least in the short-run. The period of monetary union as part of the UK means that there are significant and complex linkages between households, businesses and financial services companies operating across the UK. Establishing a new currency would have to manage these linkages.
- 71 Just as important in determining the optimal currency for Scotland as the overall macroeconomic environment are the preferences of the users of the currency – i.e. households, businesses and financial enterprises.
- 72 In certain instances and at least for a short-period of time, it is possible that a system of dual currency could emerge, with Sterling still used as the medium of exchange alongside the Scottish currency. This would have benefits but also pose some challenges.

Are there any benefits/implications for macroeconomic stabilisation?

The Euro

- 73 As highlighted above, the Scottish economy is relatively closely aligned to the UK economy. The degree of synchronicity with the economies of the Euro Area appears to be much less.
- 74 As a simple illustration, Table 6 estimated correlation coefficients between Scotland and EU economies. These figures indicate the relative synchronisation of different economic cycles, with a value of 1.0 indicating perfect synchronisation.
- 75 Countries are ranked by their correlation coefficient with Scotland. From this selection of countries, the UK ranks top as being most synchronised with Scotland. Scotland has much lower correlation coefficients with other large Euro Area countries such as France (0.78) and Germany (0.59).
- 76 Correlation coefficients between Euro Area members have also been calculated. These range from 0.93 between France and Italy, to 0.54 between Spain and Germany and to 0.05 between Germany and Greece.

Table 6: Correlation coefficients of annual output growth rates – Scotland to UK, and selected Euro Area countries (1996 to 2011)

Country	Correlation Coefficient with Scotland
UK	0.90
Spain	0.85
Italy	0.83
France	0.78
Austria	0.73
Greece	0.69
Germany	0.59

Source: Eurostat and Scottish Government output data and Scottish Government calculations

- 77 This analysis has two conclusions. Firstly, Scotland’s economic cycle is more in line with the UK than with other large Euro Area economies. This is important, monetary policy in the Euro Area is set with reference to conditions across the Euro Area, which would be highly influenced by its largest economies, i.e. Germany, France and Italy. Secondly, the suitability of monetary union between Scotland and the UK as measured by correlation coefficients scores more highly than between many existing Euro Area members.
- 78 Based upon the information above, there is the possibility that, without sufficient convergence, macroeconomic conditions in the Euro Area may not necessarily be in line with those in the Scottish economy. Therefore the common monetary policy stance could be unsuited to Scotland’s macroeconomic conditions. The onus on fiscal policy to iron out any such divergences would be greater.

Scottish Currency

- 79 With an independent Scottish currency, the Scottish Government would be free to set a monetary and exchange rate regime that best suited the characteristics of the Scottish economy.
- 80 This would provide the greatest freedom to set macroeconomic policy with respect to the specific conditions in the Scottish economy.

Assessment of Key Currency Options

- 81 However, a flexible exchange rate is also open to greater fluctuations from volatility in international capital markets and decisions taken to buy and/or sell currency. These can often reflect sentiment in the wider market, and not just developments in the Scottish economy. Some of stability – e.g. a ‘managed exchange rate’ – may be beneficial.
- 82 Overall, and as highlighted in Box 3, the economic cycles between Scotland and the rest of the UK have historically been relatively similar. If this was to continue in the future, the specific advantages of having a distinctly different macroeconomic stabilisation policy may not be that significant. It would however be there as an option, if needed.
- 83 In addition, even if there was to be a degree of asymmetry, some countries – particularly those that operate alongside larger monetary areas – have found it advantageous to maintain a degree of coordination to guard against sudden changes in cross-border capital flows.
- 84 At the same time, the economic impact of changes in the value of exchange rates may not necessarily conform to initial expectations. For example, while a devaluation might make Scottish exports more competitive, it would also increase import prices and have implications for capital flows. Given the openness of the Scottish economy this may undermine any boost in competitiveness. Equally, an appreciation would make imports cheaper but exports less competitive. This suggests careful management would be needed.
- 85 Finally, an independent currency would require the establishment of a clear strategy to manage Scotland’s oil and gas sector to ensure that fluctuations in commodity prices did not spill-over into the wider economy. There is a question as to how much changes in oil and gas prices would influence the day-to-day value of a Scottish currency given that output from the sector is typically traded internationally in dollars. Norway has used a variety of techniques to attempt to insulate its onshore economy and exchange rate from commodity price fluctuations, including the use of an Oil Fund.

What are the potential implications for trade and investment?

The Euro

- 86 By implication, Scotland would operate with the Euro instead of a pound exchange rate. Collectively the EU is Scotland's largest international trading partner, accounting for around 45% of international exports in 2010 (around 15% of all Scottish exports)²⁶.
- 87 A Euro currency would therefore lead to greater money-changing costs for a larger share of Scotland's trade than is currently the case, or would be the case if Scotland retained Sterling post-independence. Against this, there would be reduced costs in relation to trade with Euro Area countries.
- 88 The Euro has fluctuated with the pound since its launch, from a high of around €1.70 to the pound at the launch of the Euro currency in 2000 to a low of close to €1.00 to the pound during the recession. In time, trade relationships may change and Scotland may become more integrated with Europe.

Scottish Currency

- 89 An independent Scottish currency could – if valued more competitively than Sterling – offer a significant advantage to Scottish firms. This would make their goods more attractive in key markets (though would also increase their own import costs) both at home and outside Scotland.
- 90 Aside from the potential value of a Scottish currency however, using an independent currency would require more money-changing than either the continuation of Sterling or the adoption of the Euro.
- 91 Exchange rate risk and transaction costs in currency conversion could then be factored into trade transactions with trading partners (including transactions with the rest of the UK). This could be mitigated to some extent by the establishment of a stable and credible exchange rate with key partners.

²⁶ Global Connections Survey 2011

Assessment of Key Currency Options

- 92 Many larger enterprises already have functions in place to account for cross-border transactions and exchange rate risks. However companies who do not currently rely on international imports and exports for their business, would have to account for these in trade with other parts of the UK.
- 93 Overall therefore, in this regard, it is likely to be an advantage to try to establish some degree of relative stability in any Scottish/rUK exchange rate.

How significant are any short-term transition costs?

- 94 Moving to any new currency would involve transitional arrangements. Switching requires one-time costs of reprinting price tags, and of re-denominating financial accounts. A transition period may involve businesses pricing in two different currencies for a time.
- 95 Moreover, a change in currency regime may carry a degree of short-term adjustment until the new regime established credibility. A key task will be to ensure that this did not have a negative impact. A stable trading relationship with the UK would also to be in the interests of the UK economy and joint action to manage any short-term uncertainty is likely to be attractive to both governments (and central banks).

The Euro

- 96 The transition costs of moving to the Euro could draw on the procedures and experiences of other countries in the Euro Area.
- 97 Short-term exchange rate risk is likely to be relatively limited as any accession of Scotland to the Eurozone is unlikely to have a significant impact on the value of the Euro, and this would provide stability. There is of course the potential for on-going fluctuations between the Euro and Sterling.
- 98 As highlighted above, under existing Treaty arrangements, a formal requirement to joining the Euro is to be within the Exchange Rate Mechanism II for at least two years. Therefore, short of special dispensation, joining the Euro would require the establishment of a Scottish currency that demonstrated stability with the Euro for a period of time.

Scottish currency

- 99 There is the prospect of the need for greater transitional arrangements surrounding moving to a Scottish currency, as businesses, households and government adjusted to the new currency regime. The exact cost would depend upon a variety of factors including the speed of transition and any short-term volatility which needed to be managed.
- 100 Experience from the introduction of the Euro is that there is likely to be a period where two currencies will be legal tender until the existing currency is withdrawn from circulation.
- 101 Establishing a new currency would be a significant undertaking in the short-term. However, there have been a number of precedents in the past two decades of newly independent countries establishing new currencies.
- 102 The discussions over the past year around the Euro area have highlighted some of the mechanisms required to introduce a new currency such as establishing market confidence and the practical steps necessary to redenominate currency.
- 103 With extensive trade and integrated supply chains across the UK, there would be a number of practical issues to consider.
- 104 Firstly, Scotland would need to introduce a new currency and re-denominate all domestic wages, prices and contracts. Secondly, to maintain confidence and the credibility of the new currency, some form of mechanisms may be necessary with regard to deposits and investment in Scotland. Thirdly, as this would be a new currency, joint action between the major central banks with an interest in the stability of a new Scottish currency (i.e. the Scottish Central Bank and the Bank of England) would be likely.

What policy levers would be open to future Scottish Governments?

The Euro

- 105 Similar to the situation with retaining Sterling, fiscal policy and economic regulatory policy would become the dominant economic policy tool open to the Scottish Government.

Assessment of Key Currency Options

- 106 A fiscally independent Scotland in the Euro would have an opportunity to vary fiscal stabilisation policies to reflect any differences in the business cycle in Scotland vis-à-vis and the Euro Area.
- 107 Independence within the Euro would also provide Scottish Ministers with greater access to policy levers which can have an impact on long-term productivity and economic growth such as taxation, regulation, competition policy and key elements of welfare.
- 108 At the aggregate level, the overall envelope for fiscal policy and increasingly financial stability policy would be subject to input at the EU level.
- 109 These responsibilities are discussed in Chapter 10 of the Working Group's First Report.

Scottish Currency

- 110 Establishing an independent currency would allow the greatest policy activism and discretion for Scotland, which many countries have found to be advantageous. This includes the setting of interest rates to reflect macroeconomic conditions, such as growth, inflation and asset prices, in the Scottish economy. It would also provide the greatest opportunity to align fiscal policy with monetary policy.
- 111 The Scottish economy is an open economy in a much larger global economy. As mentioned above, typically the advantage for smaller economies of having their own currency is more limited than for larger economies. However, Denmark, Norway and Sweden all have their own currencies and have operated highly successfully for a number of decades. Each country has taken their own distinct approach to managing currency flows, alignment with larger trading partners, and in the case of Norway, managing commodity price volatility.

Summary: Currency Options for an Independent Scotland

	Join Euro	Set Up New Scottish Currency		Monetary Union with the UK	
		Enter no monetary union	Currency Board	Formal	Informal (i.e. sterlingisation)
Description	<ul style="list-style-type: none"> Join European Monetary Union Monetary policy determined by ECB Membership of ERMII for at least two years prior to joining 	<ul style="list-style-type: none"> New Scottish currency established Scotland free to choose to operate either a floating or fixed exchange rate policy 	<ul style="list-style-type: none"> A currency board issues local notes and coins anchored to a foreign currency (e.g. Sterling) The most ‘robust’ institutional setup for fixed exchange rate regime 	<ul style="list-style-type: none"> Scotland enters a formal monetary union with UK BoE sets monetary policy for Sterling Area Formal agreement with UK Government 	<ul style="list-style-type: none"> Scotland chooses to retain Sterling but does not enter a formal monetary union
Key Features	<ul style="list-style-type: none"> ECB sets monetary policy for Euro Area Implemented in Scotland by Central Bank of Scotland One of the world’s largest monetary unions Promote trade with Euro Area. Full fiscal autonomy – alongside other economic levers (e.g. regulation) 	<ul style="list-style-type: none"> Full control over monetary policy (e.g. set interest rates and manage liquidity in financial system) Buying and selling of currency to maintain any currency peg (if established) Full policy flexibility in other areas – e.g. fiscal policy 	<ul style="list-style-type: none"> Currency board arrangements tie the hands of monetary authorities Mitigate potential currency volatility Central bank has limited opportunities to provide liquidity (beyond hard reserves of currency) Interest rates determined by conditions in rUK only Full fiscal autonomy – alongside other economic levers (such as regulation) 	<ul style="list-style-type: none"> BoE undertakes monetary policy for Sterling Area (i.e. interest rates determined by conditions in Scotland and rUK) Through time opportunity to devolve certain operations to Scottish Monetary Authority Maintains currency with largest trading partner No major transitional arrangements Full fiscal autonomy – alongside other economic levers (such as regulation) 	<ul style="list-style-type: none"> Limited role for central bank No change in currency Would not require formal agreement with UK Limited opportunity to provide liquidity to financial system Full fiscal autonomy – alongside other economic levers (such as regulation)