Three EU-Related Impacts of Scotland Leaving the UK

Brian Biggs
Andrew Lilico
January 2014
This report was commissioned and published by *New Direction – The Foundation for European Reform*.

**Brian Biggs** is an Analyst with Europe Economics. He holds a BA in economics from Bradley University and an MPhil from the University of Cambridge. Prior to joining Europe Economics, Brian Biggs worked in the macroeconomic research and data department at Bloomberg LP. He has authored research reports on macroeconomic trends and policy, including price level movements and the effects of policy on inflation.

**Andrew Lilico** is the Chairman of Europe Economics and a member of the IEA/Sunday Times Shadow Monetary Policy Committee. He is an authority on financial regulation (having led many consultancy projects in this area for the European Commission, European Parliament, FSA and private sector clients), on cost of capital analysis, and on the macroeconomic impacts of fiscal consolidation programmes.

**Europe Economics**, established in 1997, has around 25 full-time economist staff — almost all of whom have at least a master’s degree in economics and a number of whom have doctorates and technical peer reviewed journal publication records. The firm’s clients include European Commission directorates, the European Parliament, government departments and regulators, firms subject to economic and other regulation, law firms and trade associations.

**New Direction** aims to help shift the EU onto a different course – away from the current orthodoxy of ‘ever closer union’ and centralised bureaucratic governance onto a path that promotes the freedom, prosperity and security of our nations: encouraging free markets, free enterprise, lower taxes and smaller government. The views expressed in New Direction’s reports are those of the authors and do not necessary reflect the views of all members of New Direction.

*New Direction receives funding from the European Parliament and is also required to raise a proportion of its funds from additional sources. The views expressed in this publication do not necessarily reflect those of the European Parliament.*

January 2014

Printed in Belgium

ISBN: 978-2-87555-091-0

Publisher and copyright holder:
New Direction Foundation
Rue d’Arlon 40, 1000 Brussels, Belgium
Phone: +32 2 808 7847
Email: contact@newdirectionfoundation.org
www.newdirectionfoundation.org
# Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Brief</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>1.</td>
<td>Introduction</td>
<td>7</td>
</tr>
<tr>
<td>2.</td>
<td>Scotland and the UK Rebate</td>
<td>8</td>
</tr>
<tr>
<td>2.1.</td>
<td>Introduction to the Rebate</td>
<td>9</td>
</tr>
<tr>
<td>2.2.</td>
<td>Perspectives on the Rebate Debate</td>
<td>11</td>
</tr>
<tr>
<td>2.3.</td>
<td>Costs</td>
<td>12</td>
</tr>
<tr>
<td>2.3.1.</td>
<td>Scotland losing the rebate</td>
<td>12</td>
</tr>
<tr>
<td>2.3.2.</td>
<td>Cost to Scotland of Financing the UK’s Rebate</td>
<td>13</td>
</tr>
<tr>
<td>2.4.</td>
<td>Other factors</td>
<td>14</td>
</tr>
<tr>
<td>2.5.</td>
<td>Combined Direct, Indirect and Induced Effects</td>
<td>15</td>
</tr>
<tr>
<td>2.6.</td>
<td>Summary</td>
<td>17</td>
</tr>
<tr>
<td>3.</td>
<td>Scotland and the Euro</td>
<td>17</td>
</tr>
<tr>
<td>3.1.</td>
<td>Perspectives on the Euro Debate</td>
<td>18</td>
</tr>
<tr>
<td>3.2.</td>
<td>Costs and Benefits of Joining a Currency Union</td>
<td>18</td>
</tr>
<tr>
<td>3.3.</td>
<td>Five Classes of Impact</td>
<td>19</td>
</tr>
<tr>
<td>3.3.1.</td>
<td>Changeover Costs</td>
<td>20</td>
</tr>
<tr>
<td>3.3.2.</td>
<td>Trade effects</td>
<td>22</td>
</tr>
<tr>
<td>3.3.2.1.</td>
<td>Transaction Costs</td>
<td>22</td>
</tr>
<tr>
<td>3.3.2.2.</td>
<td>Trade-related effects</td>
<td>23</td>
</tr>
<tr>
<td>3.3.3.</td>
<td>Macroeconomic policy response impacts</td>
<td>26</td>
</tr>
<tr>
<td>3.3.3.1.</td>
<td>Business Cycle Co-Movement</td>
<td>27</td>
</tr>
<tr>
<td>3.3.3.2.</td>
<td>Relative size within the monetary union</td>
<td>29</td>
</tr>
<tr>
<td>3.3.3.3.</td>
<td>Convergence, divergence, and macroeconomic stability</td>
<td>30</td>
</tr>
<tr>
<td>3.3.4.</td>
<td>Quality of management</td>
<td>31</td>
</tr>
<tr>
<td>3.3.5.</td>
<td>Lender of last resort</td>
<td>32</td>
</tr>
<tr>
<td>3.3.5.1.</td>
<td>Problems with lending to the Scottish government</td>
<td>32</td>
</tr>
<tr>
<td>3.3.5.2.</td>
<td>Differences with lending to Scottish banks</td>
<td>33</td>
</tr>
<tr>
<td>3.4.</td>
<td>Summary</td>
<td>34</td>
</tr>
<tr>
<td>4.</td>
<td>Scotland and the Schengen Area</td>
<td>36</td>
</tr>
<tr>
<td>4.1.</td>
<td>The Schengen Acquis</td>
<td>36</td>
</tr>
<tr>
<td>4.2.</td>
<td>Perspectives on the Schengen Area Debate</td>
<td>37</td>
</tr>
<tr>
<td>4.3.</td>
<td>Implications of Schengen Membership</td>
<td>38</td>
</tr>
</tbody>
</table>
4.4. Assessing the Financial Implications of Schengen Membership

4.4.1. The costs of establishing and maintaining a border

4.4.1.1. Costs associated with establishing a Schengen-compliant land border

4.4.1.2. Costs associated with remaining Schengen compliant

4.4.1.3. Total costs of Schengen border infrastructure

4.4.2. Delays at the border

4.4.2.1. Commuting patterns between Scotland and the rest of the UK

4.4.2.2. How long could potential delays be?

4.4.2.3. The cost of delays

4.4.3. Tourism

4.4.4. Policing operations

4.5. Summary

5. Conclusions

6. Tables
In Brief

- This report examines the economic benefit to Scotland of three special arrangements that have been negotiated by the UK in its relationship with the European Union: the budget rebate, the opt-out from the single currency, and the opt-out from the Schengen border arrangements.
- The report does not assess whether or not these arrangements could be retained by an independent Scotland. Expert opinion is divided on each, so the purpose of this report is to establish what may be at stake, in terms of output and jobs, for an independent Scotland in its dealings with the EU.
- The value of the EU budget rebate to Scotland was c. €354m in 2012.
- If Scotland lost the rebate, it would also have to contribute to funding the rest of the UK’s continuing rebate, an additional €55m in 2012.
- The combined total of €409m would result in reduced government expenditure in Scotland and reduced demand across the economy. Scottish Government economic models suggest that output would fall by €736m, with 6,680 jobs foregone.
- If Scotland were to give up Sterling and join the Euro, there would be one-off changeover costs from introducing the new currency of between 0.3 per cent and 0.8 per cent of GDP.
- Transaction costs of trade with the rest of the UK would increase, while those with the Eurozone would decline. The net cost would be c. €94m per annum.
- The volume of trade, and the associated benefits from trade, would increase with the Eurozone and decrease with the Sterling area. The costs associated with a decrease in net exports can be estimated as around €468m.
- There would also be changes in the nature and effectiveness of macro-economic policy, including different fiscal constraints on Scotland, a different monetary regime, and different policy responses along the economic cycle.
- The approach of the central banking authorities to inflation and financial stability would change.
- The role of the central bank as a lender of last resort would shift, with the European Central Bank having a less flexible mandate to intervene to rescue Scottish banks.
- The transaction and trade related costs alone would reduce output in the Scottish economy by c. €1 bn, with c. 9,600 jobs foregone.
- If Scotland joined the Schengen area, it would need to establish border controls with the rest of the UK while relaxing them with other Schengen jurisdictions.
- The annual costs of maintaining a Schengen border would be €11.8m with EU assistance or €45m without.
• There would also be increased delays at the crossing points with the rest of the UK, the costs of which can be estimated as around €54m.

• There would also be an impact on tourism, with potentially fewer visitors from the rest of the UK, but more from tourists visiting other parts of the Schengen area. Delays to tourists could impact the economy by up to c. €26m.

• The following table summarises the benefits of the UK’s three special arrangements to Scotland and the costs in output and jobs if these were lost.

**Estimated impacts of select EU-related costs for an independent Scotland**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Ongoing annual costs (€m)</th>
<th>Output effect (€m)</th>
<th>Foregone jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rebate</td>
<td>409</td>
<td>736</td>
<td>6,680</td>
</tr>
<tr>
<td>Euro</td>
<td>562</td>
<td>1,011</td>
<td>9,637</td>
</tr>
<tr>
<td>Schengen</td>
<td>92.5–125.7</td>
<td>46.8</td>
<td>433</td>
</tr>
<tr>
<td><strong>Total Identified Costs</strong></td>
<td><strong>1,063.5 – 1,097.7</strong></td>
<td><strong>1,794</strong></td>
<td><strong>16,750</strong></td>
</tr>
</tbody>
</table>

In addition:

• Fiscal policy would be constrained by Eurozone-wide rules.

• Monetary policy that is appropriate for the Eurozone may be inappropriate for Scotland.

• Scotland would have to adjust to a new central banking model.

• A managed border could bifurcate the labour market for Scotland and the rest of the UK.

• Different visa rules and security policies may imply a break with current arrangements within the UK.
1. Introduction

On 18th September 2014, Scotland’s voters will decide whether or not to leave the UK and establish an independent state. Scotland’s place on the international stage in the event of independence is a matter of fierce debate.

In particular its likely relationship with the European Union is unclear. We do not know for sure whether Scotland would “inherit” automatic membership of the EU (the assumption of First Minister Alex Salmond\(^1\)) or whether it would have to apply as a new candidate country (the opinion of Manuel Barroso, the President of the European Commission, and the Spanish Government\(^2\) among others).

Various legal and political experts have weighed in on either side. The truth is that, either way, Scotland’s position in (or out) of the EU will have to be negotiated according to a whole range of considerations. These are likely to be as much political as legal.

There are various interests at stake. An independent Scotland would, of course, seek the best terms available. But other factors would come into play. Some members may wish to deter their own secessionist movements by making it visibly difficult and expensive for Scotland to separate from the rest of the UK. Others may view UK splitting up as an opportunity to challenge what they see as the special privileges that the UK has acquired for itself.

This paper concentrates on evaluating some economic impacts for Scotland of changes in three prominent special arrangements that the UK has negotiated for itself over the years: the EU budget rebate, the opt-out from the single currency, and the opt-out from the Schengen agreement. The report does not comment on whether, in the event of a “yes” vote on Scottish independence, Scotland would inherit these opt-outs or not. Instead, this report considers the impacts if these three special arrangements ceased, so that the potential risks associated with independence are understood.\(^3\)

---

\(^1\) *Scotland’s Future*, the SNP Scottish Government White Paper on independence, launched on 26th November 2013, asserts that an independent Scotland would start from within the EU, negotiating its position while still part of the UK, with its exact status agreed under Article 48 of the Treaty of European Union. However, this would still require unanimous agreement from member states. See: Scottish Government (2013) “Scotland’s future: your guide to an independent Scotland”.

\(^2\) The Spanish Prime Minister asserted that Scotland would have to apply as a new member in the aftermath of the launch of *Scotland’s Future* (see footnote 1).

\(^3\) Or in the event of independence, Scottish negotiators have a better understanding of their priorities.
The report proceeds as follows:

- First, we examine the net effect of Scotland losing its portion of the UK’s rebate on EU budget contributions.
- Second, we investigate the economic effects of Scotland leaving the sterling area and adopting the euro.
- Third, we analyse some cost implications of Scotland joining the Schengen Area.
- Finally, we conclude by presenting the total effect of the select impacts identified in this paper.

2. Scotland and the UK Rebate

This section will explore the impact of Scottish independence in the context of the UK’s rebate. The baseline scenario will consider the case of Scotland not having any rebate of the form currently received by the UK on its EU contribution.

Under this scenario, Scotland will not receive a transfer from the European Union which as part of the UK it would be allocated. The size of the UK’s rebate would also be reduced. In addition, Scotland would have to partially fund the UK’s rebate.\(^4\)

The following section will provide some background information on the rebate, including its history, other EU transfer mechanisms similar to the rebate and how the rebate is funded. Perspectives on the rebate debate are offered in the next section. The subsequent section will discuss the direct costs to and issues surrounding Scotland and the rebate. Finally, an overall assessment of the cost to Scotland of the loss of the rebate is provided.

\(^4\) Approximately one-third of EU expenditure is not abatable and thus could have an effect on the value of a hypothetical independent Scotland’s rebate or loss of rebate. However, our assumption is simply that Scotland would lose its current share of the rebate and have to contribute to the rest of the UK’s rebate. Also, we have avoided discussions surrounding other distinct budgetary implications of independence such as those relating to the Common Agricultural Policy (CAP).
2.1. Introduction to the Rebate

The UK rebate was negotiated by Margaret Thatcher in 1984 at the Fontainebleau Summit. Since 1985, the rebate has returned approximately 66 per cent of the UK’s net contribution to the budget of the European Community and later European Union. In 2012, the size of the UK’s rebate totalled £3.2bn. Table 1 shows how the rebate has evolved since 2008.

The rebate was introduced as a redistributive mechanism reflecting the imbalance between the UK’s economic output and its contributions to the European Community around the time of its introduction. In the early 1980s, the UK’s GDP per capita was the third lowest in the European Community, ahead of only Ireland and Greece. Meanwhile, it was one of the largest net contributors to the European Community budget. This imbalance was largely driven by CAP expenditure, which accounted for almost 75 per cent of overall European Commission expenditure in 1985. The share of EU expenditure which is allocated to the CAP has greatly decreased since the 1980s from almost 75 per cent to less than 44 per cent in 2011.

Although the UK rebate is the only permanent budgetary correction mechanism in the EU, budgetary adjustments also exist to benefit Germany, the Netherlands, Austria and Sweden. These are not permanent adjustments and must be renegotiated with every EU MFF. Currently, the Netherlands and Sweden receive lump-sum payments from the EU, while the Netherlands, Sweden, Germany and Austria all have reduced VAT call rates. There is also the so called ‘rebate on the rebate,’ whereby contributions by Germany, the Netherlands, Austria and Sweden have all been capped at one quarter of what they would alternatively have been since 2002 (between 1985 and 2001 Germany paid two-thirds of what it would do with no adjustment). The purpose of these adjustments is to benefit countries which have previously argued that they pay too much towards the budget.

Certain UK contributions to the EU budget are excluded from the rebate. Over time, the size and scope of what is excluded has gradually increased. For example, non-agricultural spending in Member States which have acceded since 2004 has been completely excluded since 2011; 20 per cent was excluded in 2009 and 70 per cent excluded in 2010. This was

---

5 The UK’s rebate is also called the abatement; rebate is used here since it is the more commonly used term.
negotiated by Tony Blair in 2005 and was estimated to be equivalent to the UK giving up approximately 20 per cent of the rebate.\textsuperscript{12} In addition, the rebate is only paid on the share of UK expenditure allocated to Member States and so does not include overseas aid.\textsuperscript{13}

To appreciate the full implications regarding the rebate in the scenario of Scottish independence outlined here, it is necessary to understand how the rebate is funded. The rebate is funded independently of the EU budget by all EU Member States, other than the UK.\textsuperscript{14} Each country’s contribution is largely determined by its share of EU GNI. However, the UK does not fund its own rebate and as previously mentioned there is a ‘rebate on the rebate’ for the Netherlands, Sweden, Germany and Austria. The shortfall from this ‘rebate on the rebate’ is made up by the other EU Member States according to their GNI.\textsuperscript{15} Since contributions are allocated as a share of GNI, even the EU’s newest (and typically poorest) Member States must fund the UK’s rebate.

The rebate is allocated to the UK Treasury as a lump sum. As a result, Scotland does not receive its own rebate. Instead, Scotland receives a ‘share’ of the UK rebate. The share of the rebate allocated to Scotland is largely determined by the Barnett Formula.\textsuperscript{16}

<table>
<thead>
<tr>
<th></th>
<th>Year</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK Contribution to EU budget Before Rebate (£m)</td>
<td></td>
<td>12,653</td>
<td>14,129</td>
<td>15,197</td>
<td>15,357</td>
<td>15,021</td>
</tr>
<tr>
<td>Total UK Rebate (£m)</td>
<td></td>
<td>4,862</td>
<td>5,392</td>
<td>3,047</td>
<td>3,143</td>
<td>3,172</td>
</tr>
<tr>
<td>Rebate Attributed to Scotland (£m)</td>
<td></td>
<td>334</td>
<td>471</td>
<td>355</td>
<td>225</td>
<td>295</td>
</tr>
</tbody>
</table>

Source: House of Commons Library\textsuperscript{17} and The Scottish Government\textsuperscript{18}

\textsuperscript{12} BBC (2005), “Key points of the EU budget deal.”


\textsuperscript{14} The rebate is strictly by EU Member States and not other states, such as Norway, which contribute to the EU budget.


\textsuperscript{16} The Barnett Formula allocates marginal changes in public expenditure between England, Wales, Scotland and Northern Ireland based upon that country’s share of the total population.


2.2. Perspectives on the Rebate Debate

If Scotland were to continue to benefit from the rebate, we take it as given that this would have to be negotiated between Scotland and the other European Member States.\(^{19}\) There is debate concerning whether any such deal could be reached.

On the one hand, when SNP Deputy First Minister Nicola Sturgeon was asked, in December 2012, whether the negotiation process for Scotland’s entry to the EU would involve discussion of the rebate, her response was simply that “[she] would be confident of an independent Scottish government negotiating a good deal for Scotland”.\(^ {20}\) In February 2013, Nicola Sturgeon stated that Scotland would “[seek] to apply the principle of continuity in effect: in other words, on issues like the euro, Schengen and the rebate, [Scotland’s] aim would be to retain the prevailing terms of Scotland’s membership.”\(^ {21}\)

On the other hand, such continuity is in contrast to the following comment by José Manuel Barroso, President of the European Commission:

“The EU is founded on the Treaties which apply only to the Member States who have agreed and ratified them. If part of the territory of a Member State would cease to be a part of that state because it were to become a new independent state, the Treaties would no longer apply to that territory. In other words, a new independent state would, by the fact of its independence, become a third country with respect to the EU and the Treaties would no longer apply on its territory.” Jose Manuel Barroso, “Letter to Lord Tugendhat.” 10 December 2012

This comment implies that Scotland would have to start afresh as a Member State of the EU and so be unlikely to continue to receive a rebate. The UK rebate is widely opposed in other EU member states. All of them would gain financially from Scotland losing the rebate, with the biggest winners being France (€110m) and Italy (€85m).\(^ {22}\)

Scottland’s Future assumes Scotland will inherit the rebate, but admits that in the long term (after the current EU funding round) that it will be open for negotiations with other member states, and that even in the short term its share of the rebate would have to be negotiated with the UK.

---

\(^ {19}\) There are also additional scenarios, which are not considered in detail here, such as the rebate being split between the rest of the UK and an independent Scotland and Scotland negotiating its own deal on the rebate.

\(^ {20}\) http://www.theguardian.com/politics/2012/dec/13/scotland-independence-eu-sturgeon


\(^ {22}\) Figures based on current contributions and calculation of Scottish share below.
2.3. Costs

This section will consider costs to Scotland of losing the rebate. These include both the direct cost of losing the rebate and the cost of financing the UK’s rebate.

2.3.1. Scotland losing the rebate

The clearest direct cost of Scotland losing the rebate is the foregone income it would otherwise receive. This would be associated with higher net contributions to the EU budget than would be the case if Scotland were to receive the rebate.

Thorp and Thompson (2011) estimate the cost per capita of Scotland’s contributions to the EU at €19 per person with the rebate and €110 without the rebate. That estimate uses 2008/09 data, which Table 1 shows is likely to overstate the benefit from the rebate today. In addition, this is a self-proclaimed “back-of-the-envelope calculation” and so can only be taken as a rough indication.

The Scottish Government provides estimates of how much of the rebate is attributable to Scotland. This estimate is based upon Scotland’s share of the total UK population. Insofar as the UK Treasury uses the Barnett Formula to allocate funding to devolved administrations this provides a fair estimate of how much Scotland could expect to forego if it were to leave the UK. In particular, since the Barnett Formula determines how to allocate marginal spending changes this is the correct methodology to use, since it represents how much Scotland would lose in the hypothetical situation that it were to remain a member of the UK but the UK were to lose its rebate in full. Table 1 shows the extent of the rebate attributable to Scotland according the Scottish Government’s 2013 estimates; these figures are based upon Scotland’s share of the UK population.

These figures may not directly represent the benefit of the UK’s rebate on the allocation of funds to Scotland since the Barnett Formula does not cover all government expenditure. In addition, while the Barnett Formula predates the Rebate, having been introduced in 1979, it is possible that changes in the proportion of funds allocated through the Barnett Formula over the years may limit the accuracy of this estimate.

Despite this criticism, we believe that the figures in Table 1 these Scottish estimates provide a good indication of the direct cost to Scotland of losing the rebate. Hence, using the 2013 estimates for 2012, an independent Scottish Government could lose around £295m (€354m) per annum. Table 1 also shows the extent to which the allocation of the rebate to Scotland

---


has varied in recent years; the lowest attribution in 2011, of £225m (€270m), is less than half the attribution seen in 2009, £471m (€565m). A cost of €354m is equivalent to €67 per person using mid-2011 Scottish population estimates.26

The general downward trend in the rebate shown in Table 1 reflects the exclusion of non-agricultural funding for EU Member States which have acceded after April 2004. The rebate should only be further affected in this context going forward as new states accede to the EU.27 The transition to the 2014 – 2020 EU Multiannual Financial Framework (MFF) may also have implications for this estimate. However, any implications are likely limited due to the fact that the 2014 – 2020 EU MFF is broadly in line with the 2007 – 2013 MFF.28

2.3.2. Cost to Scotland of Financing the UK’s Rebate
The UK’s rebate is financed explicitly by every other EU Member State, as opposed to the UK’s contribution simply being lower. The extent to which a Member State finances the rebate is typically determined by that Member State’s share of EU GNI, though Germany, the Netherlands, Austria and Sweden only currently pay 25 per cent of what their GNI allocated share should be.

We assume that, likewise, Scotland would also have to contribute towards the UK’s rebate.

---

27 We note the Accession of Croatia to the European Union on 1 July 2013.
28 The draft EU MFF adopted by the European Council sees EU expenditure over 2014 – 2020 will be reduced by 3.4 per cent (see: http://www.europarl.europa.eu/oeil/popups/thematicnote.do?id=2050002&l=en)
Table 2: Estimates of the Scotland’s Contributions to the UK’s Rebate

<table>
<thead>
<tr>
<th></th>
<th>2012 Figures (£m) including extra-regio offshore from Scotland</th>
<th>2012 Figures (£m) excluding extra-regio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall UK Rebate</td>
<td>3200</td>
<td></td>
</tr>
<tr>
<td>Scottish Portion</td>
<td>295</td>
<td></td>
</tr>
<tr>
<td>UK ex-Scotland Rebate</td>
<td>2,905</td>
<td></td>
</tr>
<tr>
<td>UK GDP(^{29})</td>
<td>1,565,000</td>
<td></td>
</tr>
<tr>
<td>Scottish GDP(^{30})</td>
<td>150,000</td>
<td>127,000</td>
</tr>
<tr>
<td>European GDP (minus non-Scotland UK)(^{31})(^{32})</td>
<td>9,392,000</td>
<td>9,372,000</td>
</tr>
<tr>
<td>Share of Scottish GDP to overall EU GDP</td>
<td>1.60%</td>
<td>1.39%</td>
</tr>
<tr>
<td>Potential Scottish Contribution to UK rebate</td>
<td>46</td>
<td>39</td>
</tr>
</tbody>
</table>

Using 2012 figures, Table 2 shows that Scotland is likely to be required to pay between £39m (£47m) and £46m (£55m) per year to fund the UK’s rebate. Since GNI figures are unavailable for Scotland, these figures are calculated using GDP as a proxy for GNI. The lower estimate ignores all offshore output which could be attributable to Scotland, while the upper estimate uses the Scottish Government’s definition of offshore Scottish output. Refining this range by using a population share of offshore UK output, the lower bound moves up slightly to €48m.

This payment towards the UK rebate constitutes an additional cost of between 13 per cent and 16 per cent on top of the foregone rebate currently attributed to Scotland. In addition, the total 2012 rebate was low compared with other recent levels. As such, Scotland could be required to pay significantly more (up to €95m in 2012 if the rebate were to return to its 2009 level).

As with the direct cost associated with losing the rebate, the costs associated with an independent Scotland funding the UK’s rebate are on-going and would not cease unless the current form of the UK’s rebate were to be restructured.

### 2.4. Other factors

There are other factors that could be taken into account when calculating the impact of independence on the rebate. One possible cost of the rebate is that it might reduce the incentive for the UK to participate in certain EU initiatives. This may affect the UK’s attitude towards certain projects and the EU as a whole. Cuthbert and Cuthbert (2006) highlight that

---


\(^{32}\) Converted to sterling using an exchange rate of 1.2 EUR per GBP
the rebate can result in the UK being indifferent between EU policy choices.\textsuperscript{33} An independent Scotland, with no rebate would have this distortion removed and so might seek greater benefit from EU projects.

### 2.5. Combined Direct, Indirect and Induced Effects

#### Table 3: Select costs associated with Scotland receiving no rebate

<table>
<thead>
<tr>
<th></th>
<th>2012 Estimates (€ m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct cost of losing the rebate</td>
<td>354</td>
</tr>
<tr>
<td>Cost of funding the UK’s rebate</td>
<td>55</td>
</tr>
<tr>
<td>Total cost</td>
<td>409</td>
</tr>
</tbody>
</table>

The above analysis suggests that Scotland could directly lose approximately €409m: €354m as a result of a reduction in the rebate and around €55m as a result of a new requirement to fund the UK’s rebate. These are the direct costs, which would result in reduced funds available for government expenditure, or higher taxes, in Scotland.

In addition to these direct effects, any changes in final demand as a result of government expenditure, or any other sector changes, have indirect and induced effects. These will affect macroeconomic variables, such as gross domestic output and employment. These three effects are defined as follows:

- **Direct effects** in the context of government expenditure changes in final demand as a result of any changes in government expenditure;

- **Indirect effects** are a result of the changed intermediate demand as a result of the initial change in final demand. The initial change in demand changes demand down the supply chain and so changing output in additional sectors. This knock-on effect is felt all the way down the supply chain, with the total indirect effect being the sum total of all of the knock-on effects;

- **Induced effects** result from changes in income, which lead to changes in demand across other sectors. These do not necessarily need to be related to the initial supply chain which has been affected by the change in final expenditure.

The Scottish Government provides estimates of multipliers\textsuperscript{34} for expenditure in various sectors of the economy.\textsuperscript{35} The analysis here will use multipliers for public administration

\textsuperscript{33} They show that even the EU policies that are the most favourable to the UK will be 86 per cent funded by the UK. Hence, the UK largely funds its own marginal expenditure in such examples. Without a rebate, Scotland could be more inclined to participate in such projects, were the marginal expenditure levels lower.

\textsuperscript{34} Multipliers are divided into Type I and Type II multipliers. Type I multipliers take direct and indirect effects into account. Since the direct effect must always be equal to one, the difference between the Type I multiplier and one represents the indirect effect. Type II multipliers include the induced effects
and defence expenditure (input-output classification 92), since any rebate will be associated with government expenditure. Such multiplier estimates do not consider how the change in final demand is funded and so treat the change in final demand as an exogenous shock. Multipliers which assume that government expenditure is funded through taxation will provide significantly reduced figures from what these tables present. These multipliers are therefore accurate in so far as a fall in the rebate results in a drop in government expenditure, as opposed to constant government expenditure funded through increased taxes or to a lesser extent borrowing.

The latest tables provided by the Scottish Government are for the year 2009. Despite their age, the relevant multipliers for public administration and defence most likely remain an accurate portrayal of the relevant multiplier in 2013 since these multipliers have been largely static between 1998, the oldest Scottish Government multipliers, and 2009.

The relevant Type I output multiplier for public administration and defence in 2009, and all years prior since 1998 is 1.4. This multiplier translates into a reduction in output of €573m when using €409m as the estimate of the direct effect of losing the rebate. The relevant Type II output multiplier for public administration and defence in 2009, and once again all previous years since 1998, has a value of 1.8. This translates into a combined direct, indirect and induced reduction in output of €736m.

Estimates for changes in employment for a given change in output are also given in the Type I and Type II multiplier tables. These figures estimate the change in employment per €1.2m change in output. The Type I employment effect in 2009 was 15.5, which translates to around 5,300 jobs being lost for a €409m change in public administration and defence expenditure. The Type II employment effect in 2009 was 19.6, translating into about 6,700 jobs being lost as a result of reduced government expenditure. The 2009 employment effect multipliers must be treated with a greater degree of caution than the output multipliers. This is because they have demonstrated a downward trend since 1998, most probably the result of a combination of improved efficiency over this period, resulting in increased wages, and inflation decreasing the real value of €1.2m of government expenditure. While inflation will have continued to erode the value of every €1.2m of government expenditure since 2009, there has been a general fall in UK median hourly wages over this period, indicating a decline in productivity.

in addition to the direct effects and indirect effects. The difference between the Type I and Type II multiplier will be representative of any induced effects.


2.6. Summary

This section began with the assumption that an independent Scotland does not receive a rebate and has to contribute to the rest of the UK’s ongoing rebate. The sum costs of €409m would result in a fall in output of €736m and 6,680 jobs foregone.

3. Scotland and the Euro

This section considers impacts arising from Scotland adopting the euro. We focus upon comparing the current sterling area with a hypothetical immediate introduction of the euro.

In our assumed scenario Scotland loses the opt-out negotiated by the UK, adopts the euro and becomes a formal Eurozone member directly upon transition from sterling.

Most of the economic literature on currency switches focuses upon cases in which a country switches from one currency to another, or enters a currency union having previously had its own currency, or adopts its own currency having previously been in a currency union. It is much less common to analyse the case of a country leaving one currency union (of which it is a formal member) to join another currency union.

---

37 There are at least three less direct scenarios that we do not consider in any depth:

Scotland leaving the pound, then adopting its own Scottish currency and Scottish central bank for a period, before adopting the euro.

Scotland leaving the formal sterling area but remaining a “sterling-ised area” in which the pound is used but Scotland has no voting influence at the Monetary Policy Committee or Financial Policy Committee whilst Scottish banks have no access to last resort lending from the Bank of England. Scotland’s position would then be analogous to the various “dollarised” countries around the world — notably in Latin America and in Eastern Europe in the early 1990s — or to the “euro-ised” economy of Montenegro.

Scotland leaving the sterling area and adopting the euro, but only as a “euro-ised” economy.

Each of these cases would create its own complexities in a period of transition — for instance, if Scotland had its own independent currency, it would need to establish its own national independent agencies (such as an independent central bank, revenues and customs office, debt management agency, financial regulator, etc.), satisfy the convergence criteria for entering the Eurozone (governed by the Maastricht Treaty of February 1992), and determine an appropriate exchange rate.

We do not consider these scenarios not because we think they are more or less likely to happen, but because they are outside of the scope of an analysis of a Scotland that has already joined the Eurozone.
3.1. Perspectives on the Euro Debate

The question of whether or not an independent, EU-member Scotland would join the euro is a source of debate.

Alex Salmond, the head of the Scottish National Party is cited as claiming that “there’s no prospect of [the UK] being members of the euro and currently and for the foreseeable future there’s no prospect of Scotland, an independent Scotland, being a member of the euro”.38 This claim is supported by the Scottish Finance Secretary John Swinney who remarked that “a sterling zone is also in the overwhelming interests of the rest of the UK every bit as much as it is in the interests of Scotland”.39

This sentiment was reinforced by the November White Paper, which explicitly envisages not joining the euro.40

On the other hand, research by HM Government supports the view that new EU Member States tend to adopt the euro:

“The Maastricht Treaty obliges EU Member States to adopt the euro upon meeting certain monetary and budgetary convergence criteria... under EU enlargement criteria, membership of the single currency is obligatory for all accession states. And all countries that have joined the EU since 1993 have committed to adopt the euro in due course.” HM Government (2013) “Scotland analysis: currency and monetary policy”, p. 78.

There is a risk that, whatever the wishes of an independent Scotland, a continued currency union with the rest of the UK is not feasible and joining the euro becomes a preferable or necessary alternative.

For our purposes here, we take as given that an independent Scotland has already adopted the euro, without taking a view on the likelihood of or the process involved in it doing so.

3.2. Costs and Benefits of Joining a Currency Union

A country entering a currency union is usually regarded as facing a set of costs common to most examined cases. Among the most straightforward of these would be currency changeover costs. For all other cost considerations the case of Scotland is more complex since we are considering a country that moves from one currency union (UK) to another

(Eurozone). This implies that some of the traditional costs of joining a monetary union need to be examined in a different way.

In December 2002, after an invitation from HM Treasury, Mundell answered a few questions regarding his seminal 1961 paper “A Theory of Optimum Currency Areas”.\(^{41}\) When asked about the major costs of joining a Single Currency Area (SCA) he identified the loss of independent exchange rate determination, interest rate policy and fiscal control as the most important “economic points”.

Goodhart, in his 2007\(^{42}\) paper, identified the following potential benefits of joining the Eurozone:

- Reduction in transaction costs;
- Increased scale, competitiveness and liquidity of markets;
- Less externally sourced disturbances to the larger, more closed economy and hence greater price stability;
- Enhanced tendencies of political/fiscal unity, leading to greater internal risk sharing.

Since Scotland would have left a currency union to join the EU we need to examine these benefits not as an individual country joining a monetary union, but rather, as a comparative exercise analysing the costs of forfeiting such benefits relative to the UK versus those relative to the Eurozone.

### 3.3. Five Classes of Impact

We identify five classes of impact upon Scotland of exiting formal membership of the sterling area to obtain formal membership of the euro area, as follows.

Firstly, there will be **changeover costs** in adopting a new currency; this is the most straightforward and objective area of analysis. There exists significant literature, and a number of case studies, that can inform our analysis since the transition to the euro has been experienced by a number of countries.

Second, there will be significant **effects on trade**, affecting not only its magnitude but its composition as well. Transaction costs between Scotland and the UK will now be present, while they will be abolished for Scotland and the rest of the Eurozone. There will also now be exchange rate risk present when conducting transactions with the rest of the UK, while this will not be the case with the rest of the Eurozone. Additionally, the exchange rate risk


will now shift with regards to third currencies as well — e.g. the foreign exchange dynamics with the US dollar will change thus resulting in a different trade pattern from the one we currently observe.

Thirdly, there will be an impact on macroeconomic policy responses. Macroeconomic policy in the sterling area was not determined solely by Scotland, but was rather “one size fits all” within the UK. That would be the case in the euro area as well. The difference depends upon the following factors:

- The alignment of Scottish, UK and Eurozone macroeconomic cycles. (We note the complication here that it could be naïve to assume that past degrees of correlation would be kept at the same level in the future, as macroeconomic cycles could be connected partly to currency fluctuations or to expected policy responses, so a change of currency and central bank may well change economic cycles.)
- The extent to which asymmetric shocks are offset by labour and capital flows within the sterling area and within the Eurozone.
- The extent to which asymmetric shocks are offset by the differential effects of currency movements.
- The ability and effectiveness of fiscal and monetary policy in offsetting residual (after labour, capital and currency movements) effects of economic shocks. Such assessment would be based on constraints arising from limitations implied by the Maastricht criteria or the European Fiscal Compact that impose restrictive guidelines on EU Member States.
- The significance of Scotland in influencing the “one size fits all” policy of the respective unions. Scotland is a significantly larger part of the UK than it would be of the Eurozone.

The quality and the nature of macroeconomic policy responses will also play an important role. There are conflicting views as to which institutions provide higher quality of macroeconomic management and also it is debatable which style of management will be more appropriate for Scotland. Whether better or worse, the criteria for policy response appear to be materially different between the Bank of England (BoE) and European Central Bank (ECB). For example, the ECB has not engaged in any direct quantitative easing and it does not target inflation directly as the BoE does.

Finally, there is the issue of the central bank being a lender of last resort, providing liquidity to banks or to governments. Traditionally, central banks provided lending to banks and governments; the ECB however may differ substantially both in its capacity and its appetite for acting in that manner relative to the BoE.

### 3.3.1. Changeover Costs

Changeover costs include a number of direct costs such as printing new currency, changing prices and contracts and adjusting the country’s infrastructure. A hybrid of direct and
indirect costs will also be incurred during the process of familiarising the public and official sectors with the new currency. Goodhart and Pappa (2002) found that there were pure indirect welfare costs incurred in the form of increased transaction times and occasionally queuing that resulted in losses of a more significant value than those provided by “most estimated studies of shoe-leather costs”.43 Their analysis suggested that, on average, the extra time incurred in order to visit a grocery store in Q1 2002, just after euro notes and coin were introduced, was some 15.6-20.8 minutes versus times taken just before changeover — a highly material impact.

A number of studies have been undertaken by authorities in Member States that were about to make the changeover from their national currency to the common currency. The National Bank of Slovakia (NBS) undertook a study in 2006 assessing the effects of euro adoption for their economy prior to their target 2009 accession.44 Slovakia could be a particularly relevant example since its population in 2013 was estimated to be around 5.4 million45, a value rather close to Scotland’s estimated 5.3 million.46 The euro changeover in Slovakia occurred with no transitional period preceding it — it was a “big-bang” scenario — and the NBS estimated the one-off costs to amount to 0.3 per cent of GDP; this is the lowest value in a range of 0.3 per cent to 0.8 per cent in estimates provided by individual central banks.47

The NBS report reviews quantitative estimates provided for other countries in a variety of studies. De Nederlandsche Bank (Central Bank of Netherlands) last estimated the costs to the Netherlands in 2001 to be 0.7 per cent of GDP48, as did Wirtschaftskammer Österreich (WKO) in Austria.49 A slightly lower value of 0.6 per cent of GDP was offered by the Institut für Mittelstandforschung (IFM) when estimating costs for the German economy.50 Taking the above points into account, the range of estimated costs associated with the introduction of the common European currency appears to be 0.3 per cent to 0.8 per cent of GDP, with the higher estimate assigned to the UK being considered as an outlier due to the particularities of the UK economy (such as the size of the financial sector). The German, Austrian and Dutch estimates all relate to early introduction of the currency, which could imply higher relative costs due to inexperience. We would expect that the experiences of a

44 Slovakia actually joined the Euro on 1 January 2009, replacing the Slovak koruna.
46 Source: General Register Office for Scotland
50 Ibid
number of Member States in the past years will aid Scotland to achieve a one-off transition cost in the lower parts of the range. Clearly, the cost will be associated with the length of the transition period, a factor which is currently unknown for Scotland.

3.3.2. Trade effects

3.3.2.1. Transaction Costs
By adopting the euro as a currency, Scotland would experience material reductions in a number of transaction costs with respect to Eurozone members, but corresponding increases in those costs when interacting with the rest of the UK. Bank commissions and fees for foreign exchange transactions are among the prime examples. Additionally, domestic firms that interact with counterparties that operate with the Euro currency are subject to risk management considerations as well as administrative/bureaucratic concerns.

The National Bank of Hungary (NBH) in their 2002 study of the costs of adopting the euro, estimated that:

“...the reduction in transaction costs would increase the level of domestic GDP permanently by 0.11%–0.22%, and the fall in firms’ ‘in-house’ costs by another 0.07%–0.08%. Accordingly, transaction costs that could be saved annually by adopting the euro are estimated to be 0.18%–0.30% of GDP. Similar estimates for euro area member states showed gains from the reduction in transaction costs reaching 0.3%–0.9% of euro area GDP.”

51

Furthermore, the National Bank of Slovakia assumed that savings of 0.3 per cent of GDP (related to financial transaction costs) would occur after adopting the euro. Their estimate is based on an allocated 0.15 per cent of GDP of savings sourcing from spot and forward exchange trades in euro and an additional 0.15 per cent of GDP from “exchange operations with enterprises and citizens” (even though of smaller magnitude, such transactions occur with higher spreads).

52

Ernst and Young (1990) undertook a study on the levels of administrative and accounting transaction costs that could be saved upon introduction of the new currency. They concluded that such costs accounted for approximately 0.1 per cent of exports in the EU countries.

53

While there are straightforward gains to be considered regarding transactions that involve the euro, similar considerations apply, in reverse, to transactions involving sterling. Transaction costs will be incurred when companies or individuals require foreign exchange for their transactions with the rest of the UK. Given that exports from Scotland to the rest of

51 Magyar Nemzeti Bank Occasional Paper, 2002, pg.111


53 Ernst and Young (1990) “A strategy for the ECU.”
the UK in 2011 were four times greater than exports to the EU and almost two thirds of aggregate exports, the potential impact of increased transaction costs with the UK could be highly significant.

Assuming that the benefits of lower transaction costs are realised on Scottish imports from and exports to the Eurozone, and costs incurred on imports and exports to the rest of the UK, Table 4 presents the net transaction effect of Scotland joining the euro based on 2011 trade figures. In trade with the Eurozone, Scotland would save around €32m. On the other hand, Scotland would lose approximately €126m in trading with the rest of the UK. Taken in the round, Scotland would incur around €94m in trade-related transaction costs if it were a member of the Eurozone.

Table 4: Impacts on annual transaction costs (€ m)

<table>
<thead>
<tr>
<th>Exports to Eurozone</th>
<th>Imports from Eurozone</th>
<th>Benefits</th>
<th>Exports to rUK</th>
<th>Imports from rUK</th>
<th>Costs</th>
<th>Net</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>19</td>
<td>32</td>
<td>(55)</td>
<td>(72)</td>
<td>(126)</td>
<td>-94</td>
</tr>
</tbody>
</table>

Note: rUK stands for rest of the UK

Source: HM Government; Eurostat; Scottish Government

3.3.2.2. Trade-related effects

Considering the degree of synchronisation, contiguity, common language, labour mobility and strong presence of business interests between Scotland and the rest of the UK, a certain level of rigidity is expected to be present in their bilateral trade relationship, especially in the shorter run. On the one hand, trade can be expected to continue being significant while on the other hand, transaction costs due to such high levels of different currency trade will be considerable.

Here we examine how changes in transaction costs arising from the change in currency regime might impact trade levels between Scotland, the rest of the UK, the rest of the Eurozone and the rest of the world.

Table 5 presents a breakdown of Scottish, international, and rest of UK exports by region. In aggregate, Scottish exports in 2011 amount to £69.4 billion, of which approximately 2/3 are directed to the rest of the UK. Of the approximately £24 billion that are directed towards international destinations, £11 billion is to the European Union, making the EU the largest trading partner to Scotland after the rest of the UK. S4

---

Table 5: Total International Exports by geographic Region (£m), 2007-2011

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rest of UK</td>
<td>41,455</td>
<td>40,795</td>
<td>41,540</td>
<td>43,635</td>
<td>45,500</td>
</tr>
<tr>
<td>European Union</td>
<td>8,935</td>
<td>9,640</td>
<td>9,770</td>
<td>9,615</td>
<td>11,030</td>
</tr>
<tr>
<td>Rest of Europe</td>
<td>1,880</td>
<td>1,820</td>
<td>1,895</td>
<td>2,250</td>
<td>2,115</td>
</tr>
<tr>
<td>North America</td>
<td>2,705</td>
<td>3,165</td>
<td>3,275</td>
<td>3,780</td>
<td>3,845</td>
</tr>
<tr>
<td>Central and South America</td>
<td>685</td>
<td>850</td>
<td>765</td>
<td>920</td>
<td>1,065</td>
</tr>
<tr>
<td>Middle East</td>
<td>865</td>
<td>1,090</td>
<td>970</td>
<td>1,040</td>
<td>1,005</td>
</tr>
<tr>
<td>Asia</td>
<td>2,340</td>
<td>2,465</td>
<td>2,390</td>
<td>2,080</td>
<td>2,260</td>
</tr>
<tr>
<td>Africa</td>
<td>930</td>
<td>1,005</td>
<td>1,040</td>
<td>1,195</td>
<td>1,130</td>
</tr>
<tr>
<td>Australasia</td>
<td>265</td>
<td>330</td>
<td>355</td>
<td>345</td>
<td>360</td>
</tr>
<tr>
<td>Unallocatable</td>
<td>845</td>
<td>885</td>
<td>1,110</td>
<td>1,095</td>
<td>1,105</td>
</tr>
<tr>
<td>Total non-UK</td>
<td>19,450</td>
<td>21,250</td>
<td>21,570</td>
<td>22,350</td>
<td>23,915</td>
</tr>
<tr>
<td>Total</td>
<td>60,905</td>
<td>62,045</td>
<td>63,110</td>
<td>65,985</td>
<td>69,415</td>
</tr>
</tbody>
</table>

Source: Scottish Government

Academic evidence on the impact of being in a currency union upon trade has produced extremely varied results. For example, Frankel and Rose (2002) found that being part of a currency union can as much as triple trade with the rest of the currency area, with no corresponding trade diversion. Additionally, their estimates “suggest that every one per cent increase in a country’s overall trade (relative to GDP) raises income per capita by at least one third of a per cent.” over the first twenty-year period, with the authors expecting even more significant increases in the long run.

Impacts on this scale are larger than those estimated by other analysts. The most authoritative academic attempt to correct for the empirical weaknesses that produce the extreme Frankel and Rose result has been that of Micco et al (2003) who conclude that:

“...the impact of shared membership 5 to 10 per cent, when compared to all other country pairs, and from 9 to 20 per cent, when compared to trade between two non-EMU countries. Consistent with these results, we find no evidence of trade diversion. On the contrary, some of our results suggest that EMU leads to higher trade not just with other EMU members, but also with the rest of the world.”

Micco et al (2003), controlling for endogeneity, find that trade between two EMU countries in the EU sample increased by 7.3 per cent “above and beyond the increase in trade among other country pairs”.

In a different, pre-crisis study, in 1999, Dell’Ariccia (1999) predicted that the elimination of exchange rate volatility between 15 EU Member States and Switzerland would have resulted


in a 12 per cent increase in trade.\textsuperscript{57} Opposing these results, a 2010 review of currency unions by Santos-Silva and Tenreyro, compare the increase in trade for the countries which adopted the euro compared to other EU and EEA countries which did not, finding no evidence that adaptation of the euro had any effect.\textsuperscript{58}

Scotland would, in our scenario, not be joining the Eurozone in abandonment of its own currency but, instead, departing from another currency union with the rest of the UK. A useful guide to this case is provided by Thom and Walsh (2002) who examined the case of Ireland leaving an effective sterling area in order to join the ERM in 1978-1979. They argue that this is a useful example as the decision was an exogenous, political event. The results of their methodological examination are quoted below\textsuperscript{59}:

\begin{quote}
"None of these tests provided any firm evidence that the break-up of the long-standing currency union between the Irish pound and sterling significantly lowered the volume of Anglo-Irish trade below what it would have been in the absence of a change in the exchange rate regime."
\end{quote}

Academic evidence thus suggests a range of 0 per cent to 30 per cent is plausible for the effect of a currency union on trade. We take the lowest part of the range as 5 per cent in order to take into account the observed upward trend in export numbers for Scotland. We use this range to analyse the trade impacts for three separate cases — trade between Scotland and: the rest of the UK, the Eurozone and the rest of the world.

Statistics for Scotland’s imports are not available. Hence, we take UK trade data for 2011 from HM Government\textsuperscript{60} and construct a multiple of imports/exports. We then apply this multiple to Scottish exports in order to obtain a Scottish import figure. This multiple is applied to all three trading partner export figures for consistency.

We take the mid-point of the range as our point estimate for the increase in trade between Scotland and the Eurozone, implying a 17.5 per cent increase. For the trade relationship between Scotland and the rest of the UK, we take into account Thom and Walsh’s findings for the case of Ireland\textsuperscript{61} and consider there to be some rigidity which would result in weaker trade impacts from leaving a currency union than from joining one; hence we choose 10 per cent as our point estimate. Finally, taking into account evidence from the ECB working


\textsuperscript{60} HM Government (2013) “Scotland analysis: Macroeconomic and fiscal performance”.

\textsuperscript{61} Ibid.
paper, we consider the best point estimate for trade with the rest of the world to be 27 per cent.\textsuperscript{62}

The table below summarizes the impact of adopting the euro on Scottish exports and imports to the rest of the UK, the Eurozone and the rest of the world. We provide estimates of impacts on the net balance of trade for the lowest and highest parts of our suggested range and most importantly for our point estimates for each region.

<table>
<thead>
<tr>
<th>Table 6: Annual impact on Scottish trade (€ m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
</tr>
<tr>
<td>Exports to Eurozone</td>
</tr>
<tr>
<td>Exports to rWorld</td>
</tr>
<tr>
<td>Exports to rUK</td>
</tr>
<tr>
<td>Total Exports</td>
</tr>
<tr>
<td>Imports from Eurozone</td>
</tr>
<tr>
<td>Imports from rWorld</td>
</tr>
<tr>
<td>Imports from rUK</td>
</tr>
<tr>
<td>Total Imports</td>
</tr>
<tr>
<td>Net Exports</td>
</tr>
</tbody>
</table>

Note: rWorld stands for rest of the world, rUK stands for rest of the UK. Changes in the UK refer to decrease in trade, while for the Eurozone and the rest of the world they refer to increases. For our point estimates we used: 17.5\% for Eurozone; 27\% for rest of World and 10\% for the rest of the UK.

Source: FCWG First Report Annex

Our results depend on UK trade assumptions as it currently forms approximately 2/3 of aggregate Scottish trade. Under our point estimates, the balance of trade will deteriorate by a further €474m. In terms of GDP that translates to approximately a 0.26 per cent of GDP decrease in net exports. With Scottish GDP at around €180bn, trade impacts of joining the Eurozone could cost Scotland around €468m as a trade related outflow.\textsuperscript{63}

3.3.3. Macroeconomic policy response impacts

Monetary policy at the national or currency-union level is, by its very nature, “one size fits all”. That is to say, policy is set on the basis of the aggregate situation, not that of any one region. For example, a currency area as a whole could be booming, and so require a higher interest rate at the same time that a particular region in the currency area is in a slump, and so would prefer a lower interest rate.

\textsuperscript{62} ECB Working Paper No.446, 2005

\textsuperscript{63} Calculated as €180bn * 0.26 per cent (the difference with €474m is due to rounding effects). Outflow due to a decrease in net exports is considered as a cost to the economy and gross of changes in the capital account (which would be affected by several variables outside of the scope of this study such as future exchange rates and interest rates).
As a member of the Eurozone, control over monetary policy would shift from the BoE to the ECB. Monetary policy responses to the Scottish business cycle would then be taken into account in the context of a larger geographic and economic area (the 17-member Eurozone) than is currently the case (where the BoE sets monetary policy for Scotland along with the rest of the UK).

Furthermore, membership of the Eurozone implies certain fiscal constraints, such as maximums on a country’s annual deficit and debt-to-GDP ratio. In other words, in addition to being a member of a larger monetary policy area, Scotland would also be subject to limits on fiscal policy.

Table 7: Past and current EU legislation on fiscal policy

<table>
<thead>
<tr>
<th>EU measures constraining fiscal policy</th>
<th>Year</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convergence Criteria (Maastricht)</td>
<td>1993</td>
<td>These are the criteria that need to be fulfilled by potential EMU members. They include: price stability (restricting inflation), government budgetary position (restrictions on debt/GDP and deficit/GDP), exchange rate (respecting fluctuation margins of ERM and no severe tensions for at least two years), long-term interest rates (restriction on level of interest rate)</td>
</tr>
<tr>
<td>Stability and Growth Pact (SGP)</td>
<td>1997</td>
<td>Rule-based framework for national fiscal policy coordination in the EU. It contains a preventive and a corrective arm. The corrective arm is engaged when deficits exceed 3% of GDP or public debt exceeds 60%. Non-compliance with either arm can result in sanctions.</td>
</tr>
<tr>
<td>Six Pack</td>
<td>2011</td>
<td>The reforms strengthened fiscal surveillance and added expenditure benchmark reviewing countries’ fiscal positions; introduced an early gradual system of financial sanctions and required new minimum standards for national budgetary frameworks.</td>
</tr>
<tr>
<td>European Fiscal Compact</td>
<td>2013</td>
<td>Contained within the inter-governmental Treaty on Stability, Coordination and Governance, it is seen as complementing, or in some cases enhancing the SGP. Requires Member States to enshrine in national law a lower limit of 0.5% structural deficit/GDP. Also increases the role of independent bodies which monitor compliance.</td>
</tr>
<tr>
<td>Two Pack</td>
<td>2013</td>
<td>Additional reforms applied on the SGP and the Six Pack. Established comprehensive surveillance regime for troubled Member States. Introduced system of graduated monitoring with requirements placed on vulnerable countries.</td>
</tr>
</tbody>
</table>

Source: European Commission

Given the constrains on monetary and fiscal policy on a Eurozone Scotland, a key question is how similar the Scottish business cycle is to the Eurozone business cycle versus to the business cycle in the rest of the UK.

3.3.3.1. Business Cycle Co-Movement

One measure of business cycle co-movement is the correlation between growth rates among different economies. The closer the correlation coefficient is to one, the more harmonised the business cycles; by contrast, the closer the correlation coefficient is to minus one, the more divergent the business cycles of the two economies. The table below provides a list of correlation coefficients for Scotland with a selected group of EU countries from the Scottish
Government’s Fiscal Commission Working Group’s (FCWG). The correlation between a country’s economic growth rates — taken here as a proxy for the business cycle more generally — is the highest between Scotland and the UK at 0.90. Scottish economic growth also showed correlations of about 0.80 with Spain and Italy. The lowest correlation was between Scottish and German economic growth, which was 0.59. Taken as a whole, it is clear that the Scottish business cycle moves more in line with the UK business cycle than with the business cycle of the Eurozone or any of its constituent members.

Table 8: Correlation coefficients of annual output growth rates (1996-2011)

<table>
<thead>
<tr>
<th>Country</th>
<th>Correlation coefficient with Scotland</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>0.90</td>
</tr>
<tr>
<td>Spain</td>
<td>0.85</td>
</tr>
<tr>
<td>Italy</td>
<td>0.83</td>
</tr>
<tr>
<td>France</td>
<td>0.78</td>
</tr>
<tr>
<td>Austria</td>
<td>0.73</td>
</tr>
<tr>
<td>Greece</td>
<td>0.69</td>
</tr>
<tr>
<td>Germany</td>
<td>0.59</td>
</tr>
</tbody>
</table>

*Source: FCWG First Report Annex*

Another indicator — the “degree of synchronisation” — was introduced by the FCWG in their 2013 report as an alternative measure of business cycle co-movement: the lower the value of the indicator, the higher the degree of synchronisation. Table 9 presents a summary of the five more and five least synchronised economies. The UK and Scotland are among the most synchronised pairs of economies listed, indicating again that the Scottish business cycle is more similar to the UK business cycle than the Eurozone business cycle.

---

### Table 9: Degree of synchronisation Scotland, UK & Eurozone

<table>
<thead>
<tr>
<th>Country</th>
<th>Degree of Synchronisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 closest EU countries by degree of synchronisation</td>
<td></td>
</tr>
<tr>
<td>Italy and Belgium</td>
<td>0.42</td>
</tr>
<tr>
<td>UK and Scotland</td>
<td>0.42</td>
</tr>
<tr>
<td>France and Belgium</td>
<td>0.43</td>
</tr>
<tr>
<td>Italy and France</td>
<td>0.43</td>
</tr>
<tr>
<td>Sweden and Finland</td>
<td>0.48</td>
</tr>
<tr>
<td>EU Average</td>
<td>0.64</td>
</tr>
<tr>
<td>5 most divergent EU countries by degree of synchronisation</td>
<td></td>
</tr>
<tr>
<td>Sweden and Portugal</td>
<td>0.89</td>
</tr>
<tr>
<td>Spain and Denmark</td>
<td>0.89</td>
</tr>
<tr>
<td>Greece and Netherlands</td>
<td>0.89</td>
</tr>
<tr>
<td>Greece and Finland</td>
<td>0.91</td>
</tr>
<tr>
<td>Greece and Sweden</td>
<td>0.98</td>
</tr>
</tbody>
</table>

Source: FCWG First Report Annex

3.3.3.2. Relative size within the monetary union

If the Scottish business cycle is divergent from the general Eurozone business cycle, then it is more likely that the ECB would take monetary policy decisions that are not appropriate for Scotland but more appropriate for the Eurozone as a whole. Other conditions on membership of the Eurozone, such as the Maastricht convergence criteria and the European Fiscal Compact impose constraints on fiscal policy in individual Member States. The appropriateness of currency-area-wide policy measures depends partly on Scotland’s relative size within its currency area. The larger Scotland is in a currency area, the more monetary policy responses will be appropriate to its needs.

### Table 10: GDP and Population of Scotland, the rest of the UK, and the Eurozone, 2012

<table>
<thead>
<tr>
<th></th>
<th>GDP (€)</th>
<th>Scotland as %</th>
<th>Population (m)</th>
<th>Scotland as %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scotland</td>
<td>180</td>
<td>5.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK (ex. Scotland)</td>
<td>1750</td>
<td>10.3%</td>
<td>58</td>
<td>9.1%</td>
</tr>
<tr>
<td>Eurozone</td>
<td>9489</td>
<td>1.9%</td>
<td>331</td>
<td>1.6%</td>
</tr>
</tbody>
</table>

Notes: Scottish and UK GDP converted at a rate of €1.2=£1; UK ex Scotland figures calculated as total UK figures less Scotland figures.

Source: Scottish Government; Eurostat

In terms of output, Scotland is far more significant to the UK than it would be for the Eurozone. In 2012, Scottish GDP of €180bn represented 10.3 per cent of the UK excluding Scotland’s GDP of €1,750bn, but only 1.9 per cent of the Eurozone’s €9,484bn GDP. Furthermore, Scotland’s population of 5.3m people was 9.1 per cent of the UK excluding

---

65 The “degree of synchronisation” metric was introduced by the FCWG in their 2013 report in their attempt to identify how closely economic/business cycles are moving in two economies. The lower the value, the higher is the degree of synchronisation.


Scotland’s population of 58m. By contrast, Scotland’s population is just 1.6 per cent of the Eurozone’s population of 331m.

Thus, as a member of the Eurozone, Scotland would be a far smaller player in its currency union. In a monetary union with the UK, economic policy decisions have consequences for nearly 10 per cent of output and the population. In monetary union with the Eurozone, economic policy decisions affecting Scotland would affect less than 2 per cent of the currency bloc’s output and population. Given the relative importance of Scotland to the UK economy, it is unlikely that economic policy decisions would be taken that run strongly against Scottish interests, as there could be considerable negative downsides to the UK as a whole. This policy incentive is lost under the euro, as the costs of implementing policy that is inappropriate for Scotland could be less than the benefits for the Eurozone as a whole.

### 3.3.3.3. Convergence, divergence, and macroeconomic stability

As noted above, one of the implications of joining the euro might be that Scotland’s economic cycle would change — it might become more correlated with movements in the Eurozone but less correlated with the economic cycle of the rest of the UK. Given that the rest of the UK would almost certainly remain Scotland’s biggest trade and capital flows partner, that might seem like an undesirable outcome. Yet that is not so clear.

If cycles between significant trade partners (say between Germany and the UK, or Scotland and the rest of the UK) are negatively correlated that means that when the UK is booming, then Germany is in recession, and vice versa. Now when the UK is booming, demand tends to outstrip supply, leading to capacity shortages. That is why booms are unsustainable, and why the cycle always eventually involves a downswing.

Similarly, when Germany is in recession, there is overcapacity, leading to an increase in unemployment, as firms lay off unneeded staff. But since the UK and Germany are major trading partners, being in opposite parts of the cycle benefits both. Why? Well, when the UK has under-capacity, which would tend to create inflation in the UK, UK consumers can, instead, buy from German exporters, rather than bidding up prices in the UK. Thus the UK gains. And in Germany, instead of laying off workers, German firms can use their spare capacity to export goods to the UK. Hence being in opposite parts of the economic cycle is good for both countries.

If the UK moved towards greater cyclical convergence with Germany, that would mean that all cycles will become more pronounced. The UK’s recessions will become deeper, and the UK’s booms will become more inflationary, because we will have lost the automatic stabilizer effects of having trading partners in different parts of the cycle. Conversely, Scotland’s economic cycle diverging with that of the rest of the UK could have positive aspects as well as negative — it might mean that Scottish slumps coincide with rest-of-UK booms, smoothing out such fluctuations, and vice versa.
Related to the above, and assuming that the rest of the UK remained Scotland’s largest trade and investment partner, exchange rate divergence between sterling and the euro could also smooth the business cycle. For a variety of reasons, when countries are in a recession, the country’s currency tends to be weak; similarly, when a country’s economy is growing, its currency is usually strong. A Scottish boom coupled with a UK recession could be accompanied by a strong euro and a weak pound. Movements in the exchange rate would make UK goods cheaper for Scottish consumers, encouraging them to import more from the UK and thereby boosting UK economic activity. Equally, a weak pound relative to the euro would render Scottish imports into the UK expensive, reducing the UK’s current account deficit and encouraging consumers to purchase local products over imports. This exchange rate effect would smooth the Scottish and UK business cycles as well.

3.3.4. Quality of management
The BoE and the ECB have often used different policy tools in order to address the challenges in their respective economies. Differences have ranged from their approach to Quantitative Easing to the target they have set for inflation; an additional differentiating factor outside their control is the extent of their independence from state authorities. These different approaches may have different levels of suitability for the particularities of the Scottish economy.

The BoE has a mandate to ensure monetary and financial stability. More specifically, it is committed to keeping inflation at the UK-government set 2 per cent target while also being responsible for bank supervision. The ECB is required by the Treaty to maintain price stability in the Eurozone, which it currently self-interprets as implying an inflation target of annual inflation at close to, but below, 2 per cent.

Additionally, in 2009 the BoE launched its quantitative easing program as an attempt to improve liquidity in the financial sector and encourage lending. Also, in 2012 it established the Funding for Lending Scheme (FLS), whereby cheaper funding was provided to banks that committed themselves to lending to home-owners and businesses.

In terms of monetary management and inflation control, White (2013) presents a comparison of historical inflation figures. Ten year sterling inflation is found to be within a 1.1-5.2 per cent range (compound rate for the period of 2.7 per cent) while inflation in the Eurozone has ranged from -0.6 to 4 per cent (compound rate: 2 per cent). Interpreting these figures, White argues that “it is difficult to attribute this to anything but the market forecasting lower inflation for the euro over a ten-year horizon. The euro thus appears to have a slight edge in inflation credibility.”

---

It would hence seem that in terms of inflation credibility, euro adoption will act favourably for the Scottish economy.

Finally, the annex of FCWG’s first report compares “Taylor Rule estimates” for Scotland, the Eurozone and the UK. Taylor Rule estimates use inputs inflation and the magnitude of the output gap in order to determine the “appropriate” nominal policy interest rate. On average, the Eurozone exhibits a 0.7 per cent deviation while the UK exhibits a 0.3 per cent deviation from the ideal Scottish interest rate, implying higher cyclical alignment between Scotland and the UK.69

3.3.5. Lender of last resort70

The Bank of England was originally founded to lend money to the government. In recent decades the practice of lending money directly to governments has come to be seen as dangerous, because of the history of its being used as a route to monetize debts and create high inflation as an alternative to fiscal discipline. But on a longer-term perspective acting as a lender of last resort to governments has been understood as in principle one of the core functions of a central bank, and the QE programmes in the UK and the US and the Draghi Plan in the Eurozone reflect this.

Similarly, as fractional reserve banking became established in the nineteenth century, the principle became firmly established that liquidity crises in fractional reserve banks, associated with problems such as bank runs, could be addressed by the central bank acting as a lender of last resort.

By joining the euro, Scotland would cease to participate in last-resort lending, either to government or to banks, from the BoE but would, instead, be dependent upon the ECB.

This creates a number of issues, partly arising from differences in monetary and regulatory policy theory between the ECB and the BoE, but, more straightforwardly, from significant differences in the economic, regulatory and constitutional frameworks in the sterling area and the Eurozone.

3.3.5.1. Problems with lending to the Scottish government

Firstly, there would be problems with the ECB providing last resort lending to the Scottish government because such lending would involve a fiscal transfer without democratic accountability.


When the government spends money, it buys real things — people’s time, concrete for roads, medicines for hospitals, etc. That real value must come from somewhere. If a central bank finances government spending, the real value arises because there is a real-terms transfer from users of the currency to that government spending. A simple driver (though this is not the only possibility) for such a transfer is that there is inflation. We can refer to this as an “inflation tax”.

Within a sole-country currency area (e.g. the UK) an inflation tax to fund government spending would be applied to broadly the same set of people (the British, users of the pound) as the recipients of government spending (the British). But within the Eurozone, the inflation tax is applied to Germans, Belgians, Finns and so on whilst the beneficiaries are, say, Italians or Spaniards. Monetary financing of government spending within the Eurozone involves a fiscal transfer between Member States, without any process of democratic accountability or straightforward limit.

As well as the problem of central-bank-mediated fiscal transfers occurring in the absence of democratic accountability, there are the usual problems that would apply to such transfers even if they were democratically approved. In particular, if someone else is paying your debts, you are likely to be less disciplined in controlling them.

To mitigate this problem, lenders seek to impose strict “conditionality”. In other words they insist on oversight of the spending and borrowing decisions of distressed sovereigns. Conditionality is, for example, a feature of the ECB’s Outright Monetary Transactions.

Conditionality is not unusual or unnatural in respect of single loans. Any company that has sought a temporary bank loan will be familiar with the need to provide a business plan and report to the bank on progress against it. But strict conditionality seems unlikely to be sustainable for long in respect of sovereign states. If, for example, Italy were required to submit its budgets for approval by Germans for a decade, it would be reduced to the status of an economic vassal. It would not be its own population making the key decisions, to which democracy normally applies, regarding how much taxes should be and whether money should be spent on this or that priority. Instead, such matters would be determined by foreign bureaucrats.

3.3.5.2. Differences with lending to Scottish banks
In addition to difficulties in lending to the Scottish government, there could also be difficulties in banking supervision and lending to Scottish banks. In the traditional theory of the lender of last resort function of the central bank, the provision of last resort lending and being the prudential supervisor of banks could be seen as two sides of the same coin. Last resort lending ought to be provided to banks, falling under a central bank, if the liquidity problems those banks had were the result of system-wide liquidity problems (rather than, say, overly risky cash management methods) and the bank receiving last resort lending should be able to repay the loans made, plus a penalty rate (so as to provide banks with an
incentive to borrow from each other rather than the central bank) and yet still remain solvent. To be aware of whether a bank applying for last resort lending really met these criteria, the central bank would need to have intimate and ongoing supervision of the prudential practices of the banks that might at some point apply for such lending.

The BoE is the prudential supervisor of the UK banks, and is thus in a position to play that sort of role. The ECB, by contrast, is not the prudential supervisor. Prudential rules within the Eurozone are set by the Capital Requirements Directives (not by relationship) and enforced by national regulatory supervisors, which need not even be the national central banks, let alone the ECB. (For example, before the BoE was restored to prudential supervisor in the UK, that role used to be served by the Financial Services Authority. Similar such arms-length supervisory enforcement of rules set at a pan-EU level remains the model in the Eurozone.)

The likely consequence of this for Scotland as a Eurozone member, versus being within the UK, is threefold. First, the ECB might well be slower in providing last resort lending than the BoE. Second, if the ECB does provide such lending it might place more weight upon lending against proven collateral rather than simply providing uncollateralised liquidity. Third, the ECB would not be in the same position to warn a Scottish bank, in advance, that liquidity might not be forthcoming unless it rectified its balance sheet or business practices in various ways.

Whether the differences in practice between the ECB and BoE in respect of last resort lending to banks would be a matter of “better” or “worse”, or even “tighter” or “laxer”, is not clear and it falls outside our scope here to assess the point in detail. But we do believe it is possible to say that the experience, for Scottish banks, of interacting with the ECB would be likely to be materially different from interacting with the BoE.

3.4. **Summary**

This section began by assuming that Scotland had adopted the euro and analysed the costs and issues involved in such a scenario. We identified five classes of potential impacts:

- One-off costs associated with the changeover to the euro;
- Ongoing transaction costs;
- Ongoing trade-related costs;
- Implications for the appropriateness of macroeconomic policy;
- Changes to the quality of monetary policy management;
- Changes to the role of the central bank as the lender of last resort.
Table 11: Selected costs to Scotland in joining the euro

<table>
<thead>
<tr>
<th>Cost Type</th>
<th>£m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transaction-related costs</td>
<td>94</td>
</tr>
<tr>
<td>Trade-related costs</td>
<td>468</td>
</tr>
<tr>
<td><strong>Total monetised ongoing costs</strong></td>
<td><strong>562</strong></td>
</tr>
<tr>
<td>Unmonetised costs</td>
<td></td>
</tr>
<tr>
<td>- Policy inappropriateness due to Scotland’s business cycle co-movements and size in the UK relative to the Eurozone.</td>
<td></td>
</tr>
<tr>
<td>- Constraints on fiscal policy.</td>
<td></td>
</tr>
<tr>
<td>- Adapting to institutional differences between the Bank of England and the European Central Bank (lender of last resort; banking supervisions; monetary policy framework).</td>
<td></td>
</tr>
</tbody>
</table>

Such costs would be leakages from the Scottish economy. Using average output and employment multipliers for the Scottish economy from Section 2.5, we can estimate how these leakages would affect Scottish GDP and jobs figures. The average output multiplier for all sectors of the Scottish economy is £1.5 of output via direct and indirect effects and £0.3 of output via induced effects for every £1 of expenditure. This means that transaction- and trade-related costs could cost the Scottish economy around €1,011m (£843m) per year. Furthermore, with an average total of 20 jobs created per £1m spent in the Scottish economy, a leakage of €562m would imply 9,637 jobs foregone.

Among the unmonetised costs, we note that Scotland’s business cycle is more highly correlated with that of the UK than the Eurozone. Additionally, Scotland is a larger player in the UK economy than the Eurozone economy. Both of these facts suggest that macroeconomic policy in the sterling area are likely to be more appropriate for the Scottish business cycle than macroeconomic policy in the Eurozone.

Finally, institutional differences between the BoE and the ECB imply that Scotland under the Eurozone would face a dramatically different financial regulatory environment. The ECB would only act as a lender of last resort “with strings attached”, due to the legal mandate of the ECB and the reluctance of some Eurozone Member States to issue mutually backed debt. Furthermore, a domestic Scottish central bank would be responsible for monitoring Scottish banks, with the ECB less directly involved than the BoE. Thus, in the event of a banking crisis, Scottish banks could struggle to remain liquid and perhaps even solvent. This is potentially less of a concern under the BoE, where the BoE is the prudential regulator of banks via the Prudential Regulatory Authority and has shown itself as willing to provide liquidity directly to distressed financial institutions.
4. Scotland and the Schengen Area

This section explores some of the potential economic implications associated with Scotland joining the Schengen Area.

4.1. The Schengen Acquis

The Schengen Agreement was signed on June 1985 between Belgium, France, Germany, Luxembourg, and the Netherlands. The agreements aimed to reduce border controls among signatory countries with the eventual goal of having a single external border. The list of countries participating in the Schengen Agreement — forming the geography of the Schengen Area — grew and eventually encompassed non-EU countries as well as EU Member States. In this sense, membership of the EU is not a pre-requisite for membership of the Schengen Area. The table below contains a list of Schengen members and the dates on which they joined.

Table 12: Effective joining dates for Schengen Area membership

<table>
<thead>
<tr>
<th>Country</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium, France, Germany, Luxembourg, Netherlands, Portugal, Spain</td>
<td>Mar-95</td>
</tr>
<tr>
<td>Italy</td>
<td>Oct-97</td>
</tr>
<tr>
<td>Austria</td>
<td>Dec-97</td>
</tr>
<tr>
<td>Greece</td>
<td>Mar-00</td>
</tr>
<tr>
<td>Denmark, Finland, Iceland, Norway, Sweden</td>
<td>Mar-01</td>
</tr>
<tr>
<td>Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland,</td>
<td>Dec-07</td>
</tr>
<tr>
<td>Slovakia, Slovenia</td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
<td>Dec-08</td>
</tr>
<tr>
<td>Liechtenstein</td>
<td>Dec-11</td>
</tr>
</tbody>
</table>

Source: European Commission

At the moment, joining the Schengen Area is a pre-requisite for new EU Member States. As a new member of the EU, Scotland may have to commit to joining the Schengen Area. The requirement for new EU Member States to commit to joining the Schengen Area came in via the Treaty of Amsterdam in 1999, which codified the Schengen acquis in EU law.71 The “Consolidated Versions of the Treaty on European Union and the Treaty on the Functioning of the European Union” explicitly requires prospective Member State acceptance of the Schengen acquis as a pre-condition for negotiations on admission to EU:

“For the purposes of the negotiations for the admission of new Member States into the European Union, the Schengen acquis and further measures taken by the institutions within its scope shall be regarded as an acquis which must be accepted in full by all States candidates for admission.” Consolidated versions of the Treaty on European Union and the Treaty on the functioning of the European Union, Protocol 19, Article 7.

By contrast, Ireland and the UK have the freedom to participate or request to participate in all or part of the provisions of the Schengen acquis. Any request to participate in selected aspects of the Schengen acquis requires the unanimous approval of Schengen Area members.

4.2. Perspectives on the Schengen Area Debate

To date, there is no consensus on whether an independent Scotland would continue to be a member of the Common Travel Area (CTA) with the rest of the UK and Ireland and, if not, whether it would join the Schengen Area — either as a legal requirement of EU membership or of its own volition.

Nicola Sturgeon, the current Deputy First Minister of Scotland, has expressed an interest in remaining in the CTA. At a 2013 speech in Brussels, Ms Sturgeon said:

"[T]he Scottish Government does not take the process of EU membership for granted. We understand that it is essential to respect the legitimacy of existing EU treaties. We also understand that our continued membership will require negotiations, and the agreement of other nations... [the Scottish Government] would begin [the negotiations] seeking to apply the principle of continuity of effect: in other words, on issues like the Euro, Schengen and the rebate, our aim would be to retain the prevailing terms of Scotland’s membership.” Nicola Sturgeon, “Scotland’s relationship with Europe”, speech delivered to European Policy Centre, Brussels, February 26, 2013.

Furthermore, the Scottish National Party is quoted as saying “Scotland will inherit and remain part of the Common Travel Area... [which] means that no passports are required to travel across these borders, as at present... European and international travel will be subject to the same checks as at present.”

The Scottish Government’s November White Paper on independence assumes that the EU would not try to make Scotland join Schengen on practical grounds.

Current UK Home Secretary Theresa May takes a different view. The Scottish Express cites her as saying “Scotland would be a separate state from the rest of the UK and there’s


73 The CTA is an agreement between the UK, the Republic of Ireland, the Channel Islands, and the Isle of Man that allows travel within the area without border control checks. In effect, the CTA is to the UK and Ireland what the Schengen Agreement is to Schengen Area countries.


absolutely no doubt it would be an international border.”  

Academic research echoes Ms May’s position, arguing that “it is now a given that new Member States will (eventually) become members of the Schengen Area” and “that the European Commission will stand firm on this matter.”

For our purposes here, we take as given that Scotland joins the Schengen Area, without offering any view on the merits or necessity of its doing so.

4.3. Implications of Schengen Membership

Membership of the Schengen Area would require Scotland to implement certain policy measures. The EU lists some of the key policy measures required by Schengen Area members:

- “removal of checks on persons at the internal borders;
- a common set of rules applying to people crossing the external borders of the EU Member States;
- harmonisation of the conditions of entry and of the rules on visas for short stays;
- enhanced police cooperation (including rights of cross-border surveillance and hot pursuit);
- stronger judicial cooperation through a faster extradition system and transfer of enforcement of criminal judgments;
- establishment and development of the Schengen Information System (SIS).”

Both the UK and Ireland have received approval from the Council to participate in selected aspects of the *acquis*, particularly those that relate to strengthened police and judicial cooperation. To the extent that Scotland already participates in measures of the *acquis* via the UK, transition into the Schengen may be less problematic.

Other measures — establishing border controls with the rest of the UK, eliminating border controls with the Schengen region, and harmonising rules on people entering Scotland from


outside of the EU and visa policies, and integrating border systems with the SIS — will be new.82

4.4. Assessing the Financial Implications of Schengen Membership

We focus on the costs associated with having a managed border between Scotland and the rest of the UK. We do not address the host of effects that could stem from Scotland separating from the rest of the UK as such, which are outside the scope of an analysis strictly of Scotland joining the Schengen region.83 We assess the costs of:

- Establishing a Schengen-compliant border
- Delays for work-related travel
- Delays for tourism-related travel
- Processing European Arrest Warrants from the UK.

4.4.1. The costs of establishing and maintaining a border

If Scotland were to join the Schengen Area, then it would be very likely to be required to enforce immigration controls with non-Schengen Area countries. Although UK citizens have the right to free movement within the Schengen Area as members of the EU, they are nonetheless required to go through immigration checks when entering the Schengen. This would imply that visitors from the rest of the UK would need to pass through immigration controls when entering Scotland.84

Scotland already conducts immigration controls at its air and sea borders for those entering Scotland through the UK Border Agency (UKBA), which is the UK authority responsible for border control. Thus, a Schengen Area Scotland may be able to repurpose immigration checkpoints for those arriving via air and sea; instead of conducting immigration checks on flights and vessels arriving from outside of the UK, it could conduct checks on those arriving from outside of the Schengen Area (including those from the rest of the UK). We proceed on the assumption that the repurposing of existing air and sea border control infrastructure would mean that entering the Schengen Area would entail no new immigration control costs for air and sea borders.

82 Some of the security implications of this are examined in: HM Government (2013) “Scotland analysis: Security”.
83 HM Government calls these “border effects” and has analysed them. They include, inter alia, effects on trade, economic policy, labour mobility, and regulation. See: HM Government (2013) “Scotland analysis: business and microeconomic framework”; and HM Government (2013) “Scotland analysis: macroeconomic and fiscal performance”.
84 For full requirements of Schengen Area countries with non-Schengen borders, see the Schengen Border Code: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32006R0562:EN:NOT.
An independent Scotland would share a land border with England, and as a member of the Schengen Area (whilst, we assume, England would continue not to be) it would be required to police and manage that land border. This would entail setting up formal border controls at the Anglo-Scottish border. Costs associated with this range from constructing a physical border and the infrastructure necessary to conduct immigration checks to incurring employment costs for staff overseeing the border.

For many countries, the costs of joining the Schengen Area also include those costs associated with improving existing border control infrastructure and integrating domestic systems with Schengen Area systems. This cost modelling alone can prove difficult, given the variety of inputs and assumptions undergirding various cost models.85

4.4.1.1. Costs associated with establishing a Schengen-compliant land border

One group of costs associated with entering the Schengen would be those to establish the land border with England. Costs to establish a border would be a first in the Schengen Area. Typically, Schengen candidate countries already have existing borders with non-Schengen countries. Costs then entail enhancing the existing border infrastructure to pass the Schengen Evaluation Test.

We approximate the costs of establishing a Schengen-compliant border by analysing costs incurred by other Member States in constructing new border infrastructure and upgrading existing borders to enter the Schengen Area.

Between 2004 and 2006, the European Commission ran a fund called the “Schengen Facility” to help new Member States finance border infrastructure enhancements in anticipation of joining the Schengen Area.86 Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia could access the fund to compensate for eligible expenses incurred in upgrading border infrastructure and processes ahead of their December 2007 entry into the Schengen Area. Costs covered under the Schengen Facility were:

- “border checks;
- border surveillance;
- visa management;
- IT systems
- training; and

---

85 An assessment of the costs of a Schengen Area Entry Exit System (EES) alone has taken years and involves a very large number of cost inputs. See: Unisys (2010) “Final report cost analysis of entry-exist & registered traveller systems”.

A specific element of these costs were “investment in construction, renovation or upgrading of border crossing infrastructure and related buildings”, and thus are appropriate to estimating the costs of establishing a Schengen-compliant border with England. Other aspects of joining the Schengen, such as harmonisation of visa processes, are also included. The vast majority, but not the entirety, of funds from the Schengen Facility was spent on land border infrastructure.

Some costs, such as those from integrating with the SIS or police cooperation, may not be applicable to Scotland as the UKBA’s operations are already integrated with or similar to those in the Schengen Area. On the other hand, other costs may not have been incurred for countries using the Schengen Facility, but will have to be incurred by a Schengen Area Scotland.

In addition to costs covered by the fund, some costs were co-financed by the Member States. Co-financing costs represent costs incurred by the Member States in the projects financed under the Schengen Facility that were not reimbursed.

---

87 Ibid., p. 2.

88 Ibid., p. 4. Furthermore, we assume that these costs include those of maintaining the border on its foreign side, such as passport control in foreign countries (for example, passport control for the Eurostar), in addition to controls at the border itself.
As shown in Table 13, Member State co-financing ranged between 1.88 per cent of the available programme amount in Poland to 34.12 per cent in Slovenia. Using population estimates for the middle of the programme period (2005), we estimate that average per capita costs incurred in upgrading were €2.26. If these figures were in 2005 euros, then €2.26 per capita in January 2005 would be €2.99 in September 2013, using Eurostat’s HICP figures for the countries participating in the Schengen Facility. Inflation-adjusted per capita total investment costs are €22.10 (€16.70 in 2005 euros). This is our estimate of the amount Scotland would have to pay to establish a Schengen-compliant border in the absence of external funding.

Combining the €2.99 per-capita costs of making a border Schengen Area compliant with Scotland’s population of approximately 5.2 million, it could cost Scotland around €15.5m to establish a Schengen-compliant border — including a land border with England — if European funds were allocated to Scotland to co-finance the border. Without external funding, it could cost Scotland an estimated €114.9m.

4.4.1.2. Costs associated with remaining Schengen compliant

In addition to investing in border infrastructure to pass the Schengen Evaluation Test, Scotland would have to continue to invest in Schengen-wide projects. At the moment, Scotland invests in border control projects via contributions to the UKBA’s budget. Costs in

---

89 [http://www.scotland.org/about-scotland/the-scottish-people/population-of-scotland]
maintaining existing border control infrastructure and investing in new infrastructure would not be unique to a Schengen Scotland.

It may be, though, that there are costs associated with investing in Schengen Area projects to build infrastructure that already exists in the UK. The EU’s “smart borders package” contains two border enhancement projects that currently or previously existed in the UK. One project is an Entry-Exit System (EES) for the Schengen Area. The EES would store information about those entering and exiting the Schengen Area, and the information could be used to pre-screen passengers for entry and monitor potential immigration or security threats. At the moment, several Schengen Area countries and non-Schengen EU Member States have state-level entry-exit systems.90 The UK has an EES as part of its e-Borders information system. As a member of the UK, Scotland shares its EES information with other parts of the UK, and thus implicitly participates in an EES within its own visa-free travel zone.

The European Commission is currently looking to establish an EES for the Schengen Area and has conducted a cost assessment of various options.91,92 Table 14 contains one-off and ongoing cost estimates for the preferred options under a centralised system (i.e. central EU-wide administration) and a distributed system (i.e. administered by individual Member States). The Commission estimates that the preferred EES option would cost each Member State between €5.5 million and €6.8 million in one-off costs and €2.6 million and €2.8 million in annual ongoing costs. These are costs that would probably not have to be incurred if Scotland remained integrated with the UK, as UKBA’s e-Borders system satisfies the same functions as the Schengen Area’s proposed EES.

---


91 Ibid.

Table 14: Estimated costs to Member States for the establishment of an Exit-Entry System for the Schengen Area

<table>
<thead>
<tr>
<th></th>
<th>Centralised system</th>
<th></th>
<th>Distributed system</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>One-off (€)</td>
<td>Ongoing (€)</td>
<td>One-off (€)</td>
<td>Ongoing (€)</td>
</tr>
<tr>
<td>Hardware</td>
<td>23,070,000</td>
<td>24,000</td>
<td>35,748,000</td>
<td>54,000</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>0</td>
<td>0</td>
<td>1,782,000</td>
<td>0</td>
</tr>
<tr>
<td>Software</td>
<td>41,159,100</td>
<td>836,000</td>
<td>67,500,000</td>
<td>880,000</td>
</tr>
<tr>
<td>Administration</td>
<td>37,567,248</td>
<td>64,135,354</td>
<td>27,000,000</td>
<td>56,602,308</td>
</tr>
<tr>
<td>Office space</td>
<td>34,074,720</td>
<td>14,102,800</td>
<td>36,499,680</td>
<td>14,002,800</td>
</tr>
<tr>
<td>Contractor development</td>
<td>5,758,592</td>
<td>575,859</td>
<td>10,578,668</td>
<td>357,867</td>
</tr>
<tr>
<td>Other (training, meetings)</td>
<td>1,158,521</td>
<td>115,852</td>
<td>11,769,115</td>
<td>1,176,912</td>
</tr>
<tr>
<td>Total</td>
<td>142,788,181</td>
<td>79,789,865</td>
<td>190,877,463</td>
<td>73,073,887</td>
</tr>
<tr>
<td>Average per country (26 Schengen members plus Romania and Bulgaria)</td>
<td>5,491,853</td>
<td>2,849,638</td>
<td>6,817,052</td>
<td>2,609,782</td>
</tr>
</tbody>
</table>

*Source: European Commission; Europe Economics’ calculations*

The second project is to establish a “Registered Travellers Programme” (RTP) system, which would allow pre-approved non-Schengen Area nationals to pass through an automated border control checkpoint. It is envisaged that this would reduce the time spent processing entry at the border, be more efficient, and reduce costs going forward. The UK had the functional equivalent of an RTP, the IRIS system, which it has since abandoned. It is currently piloting a “Registered Traveller Scheme” (RTS), which is similar to the RTP. Thus, the RTP would represent a new expenditure to replace a programme that once existed (IRIS) and a programme that is currently being rolled out (RTS) in Scotland.

The European Commission has also estimated costs for establishing an RTP system. As shown in Table 15, the Commission estimates that one-off costs to be €5.9m and annual ongoing costs to be €1.5m per Member State.

---


Table 15: Estimated costs to Member States for the establishment of a Registered Travellers Programme for the Schengen Area

<table>
<thead>
<tr>
<th></th>
<th>One-off (€)*</th>
<th>Ongoing (€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td>7,474,000</td>
<td></td>
</tr>
<tr>
<td>Infrastructure</td>
<td>9,248,260</td>
<td></td>
</tr>
<tr>
<td>Software</td>
<td>19,250,000</td>
<td></td>
</tr>
<tr>
<td>Administration</td>
<td>2,658,448</td>
<td></td>
</tr>
<tr>
<td>Office space</td>
<td>27,000</td>
<td></td>
</tr>
<tr>
<td>Contractor development</td>
<td>3,728,008</td>
<td></td>
</tr>
<tr>
<td>Development</td>
<td>502,145</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>164,000,000</strong></td>
<td><strong>42,887,861</strong></td>
</tr>
<tr>
<td><strong>Average per country (26 Schengen members plus Romania and Bulgaria)</strong></td>
<td><strong>5,857,143</strong></td>
<td><strong>1,531,709</strong></td>
</tr>
</tbody>
</table>

* Itemised one-off costs not provided.

Source: DG Internal Policies; Europe Economics’ calculations

4.4.1.3. **Total costs of Schengen border infrastructure**

Based on the costs of establishing a Schengen-compliant border and costs of investing in new Schengen-wide border control programmes, we estimate the total cost of border investment in the Schengen Area to be between €11.8m and €45m per year, depending on whether or not Scotland receives funds from the EU for border investment.

Table 16: Estimated annual Schengen border costs to Scotland

<table>
<thead>
<tr>
<th></th>
<th>With EU assistance (€ m)</th>
<th>Without EU assistance (€ m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishing a Schengen-compliant border</td>
<td>5.2</td>
<td>38.3</td>
</tr>
<tr>
<td>Establishing a Schengen EES</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Establishing a Schengen RTP</td>
<td>2.7</td>
<td>2.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11.8</strong></td>
<td><strong>45</strong></td>
</tr>
</tbody>
</table>

Notes: Establishing border costs assumed to be over 3 years, consistent with duration of the Schengen Facility fund. €15.5m / 3 = €5.2m. €114.9m / 3 = €38.3m. See Section 4.4.1.1. Costs for establishing the EES and RTP are a combination of annual ongoing costs and one-off costs divided evenly over 5 years (per the European Commission’s assumptions).

Source: European Commission; DG Internal Policies; United Nations; Europe Economics’ calculations

4.4.2. **Delays at the border**

A border between Scotland and England could have adverse effects for the Scottish and UK economies, and in particular their labour markets.

4.4.2.1. **Commuting patterns between Scotland and the rest of the UK**

Currently, there is an uninhibited exchange of labour between Scotland and the rest of the UK. In 2011, “around 30,000 people travel[led] between Scotland and the rest of the UK

---

95 The linkages between Scotland and the rest of the UK are apparent in the thinking of those living on the border between England and Scotland. More residents of the English border town of Berwick-
each day to work”. Nearly half of those individuals (13,000) lived in Scotland and worked across the border in the North East, the North West, or Yorkshire and the Humber.

Even more people reported living on one side of the Scotland/England border and working on the other, whether or not they commute across every working day. According the ONS’s Annual Population Survey, an estimated 53,256 individuals reported working in Scotland and living in other parts of the UK. This represented around 2.2 per cent of commuters surveyed by the ONS. Furthermore, the ONS estimates that 28,124 individuals live in Scotland and work in other parts of the UK, which represents around 0.1 per cent of survey respondents. In total, around 81,000 individuals lived and worked on opposite sides of the Scotland/UK border in 2011.

Table 17: Number and proportion of individuals living and working in Scotland and the rest of the UK

<table>
<thead>
<tr>
<th>Live in Scotland (number)</th>
<th>Work in Scotland</th>
<th>Work in other UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live in other UK (number)</td>
<td>53,256</td>
<td>28,936,251</td>
</tr>
<tr>
<td>Live in Scotland (per cent of total)</td>
<td>97.8%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Live in other UK (per cent of total)</td>
<td>2.2%</td>
<td>99.9%</td>
</tr>
</tbody>
</table>

Source: Office of National Statistics; Europe Economics’ calculations

4.4.2.2. How long could potential delays be?

If Scotland were to join the Schengen and set up a border with the rest of the UK, the primary cost to those crossing the border would be time spent in the crossing. We do not need to make any assumption about the mode of transport. For instance, delays for passport control could be directly at the border (in the case of cars) or on the foreign side of the border prior to crossing (as with trains, such as Eurostar passport control). We assume the same delays in each case.


For data on commuter flows between the rest of the UK and Scotland, see the Office of National Statistics’ interactive data visualisation of Annual Population Survey data:

http://www.neighbourhood.statistics.gov.uk/HTMLDocs/Commute_APS_Map/Index.html

We note that this figure is more than the 30,000 daily commuters reported by HM Government. HM Government’s figures are for daily commuters, while data we analysed from the Annual Population Survey simply matches the reported living and working locations of survey respondents. It may be that the excess 51,000 workers that do not cross the daily, but instead cross the border more infrequently and spend nights away from their primary residence.
Delays in crossing borders can be broken down into two separate sources of delay: the time to check citizenship documents and the queues associated with getting to and exiting the checkpoint.

In 2009, the Council of the European Union published a survey of document checking times in various EU Member States.\textsuperscript{99,100} For EU nationals and other nationals enjoying freedom of travel within the EU, document checking times varied between 10 seconds and 1 minute at external land borders. For third country nationals with or without a visa, document checking times ranged from 1 to 5 minutes at external land borders. Thus, if Scotland were to set up a land border with the UK, any delay associated with document checking would likely be no more than 1 minute.

While checking travel documents might be a short and straightforward process, queues that build up around the checkpoints could also be a source of delays. Information on queues at land borders with the EU is generally sparse, but the Stefan Batory Foundation conducted a study of the EU’s eastern external land borders in 2007.\textsuperscript{101} The study examined crossing points in Bulgaria, Estonia, Finland, Hungary, Poland, Romania and Slovakia and their respective non-EU neighbouring countries. As shown in Table 18, the time to cross different border varied significantly, from 13 minutes between Romania and the Republic of Serbia to over just over 8 hours (487 minutes) between Poland and Russia. The average reported time to cross the border at all crossings surveyed was just under 3 hours (170 minutes).

---


\textsuperscript{101} The Stefan Batory Foundation (2008) “Gateways to Europe – checkpoints on the EU external land border”.
Table 18: Average time to cross border between EU and non-EU countries in Eastern Europe, 2007

<table>
<thead>
<tr>
<th>EU country</th>
<th>Crossing name</th>
<th>Non-EU country</th>
<th>Average time to cross border (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td>Kapitan Andreevo</td>
<td>Turkey</td>
<td>174</td>
</tr>
<tr>
<td></td>
<td>Gjeshevo</td>
<td>FYROM</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>Kalotina</td>
<td>Republic of Serbia</td>
<td>118</td>
</tr>
<tr>
<td>Estonia</td>
<td>Narva-1</td>
<td>Russian Federation</td>
<td>107</td>
</tr>
<tr>
<td></td>
<td>Koidula</td>
<td>Russian Federation</td>
<td>150</td>
</tr>
<tr>
<td>Hungary</td>
<td>Tompa</td>
<td>Republic of Serbia</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>Tiszabecs</td>
<td>Ukraine</td>
<td>106</td>
</tr>
<tr>
<td></td>
<td>Bezledy</td>
<td>Russian Federation</td>
<td>487</td>
</tr>
<tr>
<td></td>
<td>Goldap</td>
<td>Russian Federation</td>
<td>217</td>
</tr>
<tr>
<td></td>
<td>Terespol</td>
<td>Belarus</td>
<td>315</td>
</tr>
<tr>
<td></td>
<td>Zosin</td>
<td>Ukraine</td>
<td>287</td>
</tr>
<tr>
<td></td>
<td>Medyka</td>
<td>Ukraine</td>
<td>356</td>
</tr>
<tr>
<td>Romania</td>
<td>Stamora-Moravita</td>
<td>Republic of Serbia</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Sighetul Marmatei</td>
<td>Ukraine</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>Sculeni</td>
<td>Republic of Moldova</td>
<td>108</td>
</tr>
<tr>
<td></td>
<td>Albita</td>
<td>Republic of Moldova</td>
<td>75</td>
</tr>
<tr>
<td>Slovakia</td>
<td>Vysne Nemecke</td>
<td>Ukraine</td>
<td>234</td>
</tr>
<tr>
<td></td>
<td>Velke Slemence</td>
<td>Ukraine</td>
<td>108</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td></td>
<td></td>
<td><strong>170</strong></td>
</tr>
</tbody>
</table>

*Source: Stefan Batory Foundation*

Of course, one must exercise caution in using these figures for an analysis of potential delays at an England-Scotland land border crossing. First, each of the crossings surveyed in the Batory study were between EU and non-EU pairs. Since non-EU citizens do not have freedom of travel within the EU, and since there is less harmonisation on immigration standards and policies between EU and non-EU countries, document checks alone would almost certainly have taken more time between countries in the Batory study than those between England and Scotland.\(^{102}\)

Second, the crossings analysed in the Batory study included customs traffic — primarily freight on lorries — in addition to general tourism traffic. As members of the Single Market, customs checks as such would necessarily be applied to goods shipments across the border of the Single Market, and not of the Scotland – UK border, though spot checks for immigration purposes could still be conducted.\(^ {103}\) Furthermore, freight and passenger vehicles sometimes shared the same queues and many of the delays were due to single

\(^{102}\) Indeed, inspections were said to have lasted between a few minutes and one hour during the crossing, which is far in excess of the time reported maximum 5 minutes crossing into the Schengen Area by the Council of the European Union.

\(^{103}\) For example, freight coming from Calais in France to Dover or Folkestone in the UK is checked for customs and immigration compliance.
shared queues. Currently, there are separate check points for freight and passenger traffic into the UK, and it is reasonable to expect a similar system to apply between a hypothetical England-Scotland land border.

Since, as discussed, robust estimates of total delays when crossing between Schengen and non-Schengen regions on land are not available, it is difficult to obtain a precise estimate of delays when crossing a hypothetical England-Scotland land border. However, given the volume of daily traffic moving across the border and the scarcity of crossings, it is not unreasonable to assume delays could exist, particularly during peak commuting times.

4.4.2.3. The cost of delays
Assuming the lowest reported delay from the Batory study represents a reasonable estimate for the average peak time delay (including queues and other delays) associated with crossing between a Schengen Scotland and England, then a hypothetical England-Scotland border could add 13 minutes to the time it takes to move between England and Scotland currently. If, as HM Government reports, 30,000 individuals commute between England and Scotland each day to work, that represents a total of 6,500 additional hours spent commuting to or from work daily. If the delay is faced on entering as well as exiting, the additional hours spend commuting doubles to 13,000 hours each day.

If an hour’s pay is equal to an hour’s leisure time for a commuter, than it does not matter to the commuter whether the additional commuting time results in fewer hours worked (and therefore less pay) or less leisure time. In 2012, the average annual salary in Scotland was £25,960. If there are 233 working days in a year for a full-time employee and 7.5 hours in a working day, then the average hourly wage is £14.86. Multiplying this average hourly wage by the total number of additional hours spend commuting each day, the total cost to all commuters crossing the Anglo-Scottish border is £193,121 each day. Annualised across 233 working days in a year, the total cost due to additional commuting time is £45m per year, or €54m.

---

104 Calculated as: $\frac{30,000 \times 13}{60}$
105 This comes from the equilibrium condition in microeconomics that the marginal utility of an hour one’s leisure time is equal to the marginal utility of an hour’s worth of one’s salary.
107 365 days in a year less 104 days of weekend time and statutory 28 days paid leave. See: https://www.gov.uk/holiday-entitlement-rights
108 Calculated as: £14.86 * 13,000 hours.
109 Calculated as: £193,121 * 233 working days.
110 Using €1.2 = £1.
4.4.3. Tourism

The Scottish Government has described tourism as of “vital importance to the Scottish economy” and actively promotes the Scottish tourism sector. Membership of the Schengen Area, which entails a harmonised visa policy with other Schengen members and a border with Ireland and the rest of the UK, could well have implications for Scottish tourism.

As the moment, those with the right to enter the UK can freely travel to Scotland under a UK visa. Travellers in Schengen that require a visa and want to enter Scotland from outside of the UK must have a separate UK visa. Similarly, travellers already in the UK that require a Schengen visa must obtain the visa before entering the common travel area.

Once a traveller has a Schengen visa, he or she is entitled to travel among the 26 Schengen Area countries freely. Thus, from a tourism perspective, Europe has a bifurcated visa system: travellers requiring a visa can enter most European countries with a single Schengen visa, but travellers require a separate visa for entering the UK.

The costs or benefits to a Schengen Scotland would depend on the relative importance of tourism flows — in particular flows of tourists that require a visa to enter the UK and the Schengen Area — from the rest of the UK and the Schengen Area. If Scotland were to join the Schengen Area, it would be likely to gain some visits from tourists with a Schengen visa but without a UK visa. On the other hand, it would be likely to lose some visits from tourists with a UK visa but without a Schengen Area visa.

In 2012, tourists from England, Wales, and Northern Ireland together took more trips, slept more nights, and spent more money in Scotland than overseas visitors. In each category, tourists from the rest of the UK engaged in as much or more tourism-related activity than domestic Scottish tourists as well. The rest of the UK, then, is the single most important source of tourism inflows for Scotland.


Table 19: Trips, nights, and expenditure in Scottish tourism by origin, 2012

<table>
<thead>
<tr>
<th>Country of Residence</th>
<th>Trips (m)</th>
<th>% of total</th>
<th>Nights (m)</th>
<th>% of total</th>
<th>Expenditure (£m)</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scotland</td>
<td>6.49</td>
<td>42%</td>
<td>18.17</td>
<td>29%</td>
<td>1,105</td>
<td>25%</td>
</tr>
<tr>
<td>England</td>
<td>6.05</td>
<td>39%</td>
<td>24.01</td>
<td>39%</td>
<td>1,703</td>
<td>39%</td>
</tr>
<tr>
<td>Wales</td>
<td>0.22</td>
<td>1%</td>
<td>1.17</td>
<td>2%</td>
<td>84</td>
<td>2%</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>0.33</td>
<td>2%</td>
<td>1.15</td>
<td>2%</td>
<td>88</td>
<td>2%</td>
</tr>
<tr>
<td>Overseas</td>
<td>2.23</td>
<td>15%</td>
<td>17.5</td>
<td>28%</td>
<td>1,401</td>
<td>32%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15.32</strong></td>
<td><strong>100%</strong></td>
<td><strong>62</strong></td>
<td><strong>100%</strong></td>
<td><strong>4,381</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Notes: A tourist trip is defined as a stay of one or more nights away from home for holidays, visits to friends or relatives, business and conference trips or any other purpose except such as boarding education or semi-permanent employment; tourist nights are those spent away from home using any type of accommodation or in transit on a tourist trip; tourist expenditure is spending incurred while away from home on a tourist trip and advance payments for such items as fares and accommodation. For overseas visitor statistics, the cost of travel to the destination is excluded. Expenditure is in 2012 prices.

Source: Visit Scotland

Some of the tourism gain associated with being a member in the Schengen Area could come from the relative ease and lower cost of obtaining a Schengen visa compared with a UK visa. For example, under current rules, the process for a hypothetical Chinese tourist to obtain a Schengen visa, which offers access to 26 different countries, is simpler and cheaper than the process to obtain a UK visa. Several leading UK business voices have argued that this has a detrimental impact on UK tourism and note that Switzerland enjoyed a huge influx of tourists upon joining the Schengen Area in 2008. According to Switzerland Tourism, Switzerland’s ascendency into the Schengen Area had a “striking impact.”

Still, not all visitors from overseas require a visa to enter the UK. The UK Office of National Statistics’ International Passenger Survey finds that approximately 95 per cent of passenger inflows from other countries come from visitors that do not require a visa prior to arriving in the UK, as presented below.

114 [http://www.telegraph.co.uk/finance/china-business/10173095/Visa-rules-for-Chinese-cost-Britain-5m-a-day.html](http://www.telegraph.co.uk/finance/china-business/10173095/Visa-rules-for-Chinese-cost-Britain-5m-a-day.html).
Table 20: Visits to the UK by passengers that do and do not require a visa prior to arrival

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visits requiring visa (m passengers)</td>
<td>1.1</td>
<td>1.2</td>
<td>1.3</td>
</tr>
<tr>
<td>Visits not requiring visa (m passengers)</td>
<td>21.8</td>
<td>22.5</td>
<td>22.7</td>
</tr>
</tbody>
</table>

Notes: Visitors considered only for individual countries that could be identified and excludes regional aggregates with the exception of “Other China”; countries requiring a visa include Russia, Turkey, Egypt, Morocco, Tunisia, South Africa, Nigeria, United Arab Emirates, “Other China”, India, Pakistan, Sri Lanka, Thailand, and Jamaica; countries not requiring a visa include Canada, USA, Austria, Belgium, Bulgaria, Czech Republic, Cyprus, Denmark, Finland, France, Germany, Greece, Hungary, Irish Republic, Italy, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Spain, Sweden, Switzerland, Israel, Hong Kong, Japan, Australia, New Zealand, Barbados, Brazil, and Mexico; country sources of inflows in the UK are based on figures in which the country of residence is also the country of nationality.

Source: Office of National Statistics

Thus, on tourism, the impact of joining the Schengen Area is not clear. On the one hand we have the industry claims that the UK — and by extension Scotland — has lost out on potential tourism revenues due to a relatively complicated and expensive visa process relative to the Schengen Area. From this perspective, Scotland could stand to gain by joining the Schengen Area.

On the other hand, tourists from England alone account for more tourism-related activity than all overseas travels, with Wales and Northern Ireland also contributing from the rest of the UK. Furthermore, of the overseas tourists that enter the UK, only around 5 per cent of them need to obtain a visa before arriving. If the UK-wide numbers are representative of the Scotland-only numbers, then about 0.75 per cent of tourist trips, 1.4 per cent of tourist nights, and 1.6 per cent of tourism-related expenditure comes from overseas tourists that require a visa prior to arrival.\(^{117}\)

Although any increase in visa-requiring foreign tourists or decrease in tourists from the rest of the UK resulting from Scotland entering the Schengen Area is uncertain, it is clear that the rest of the UK is far more important to the Scottish tourism industry than overseas countries. We can assess the economic effect of delays entering Scotland to residents of England, Wales, and Northern Ireland using figures from Table 19.

In 2012, there were 6.6m trips into Scotland from England.\(^{118}\) The median annual wage in the UK in 2012 was £26,500, which equated to an hourly wage of £15.16.\(^{119}\) If an average delay of 13 minutes applied to residents of the rest of the UK entering Scotland, the annual

\(^{117}\) These are calculated as 5 per cent of the “Overseas” percentages from Table 19.

\(^{118}\) We note that these figures include business trips but exclude semi-permanent employment. There should be no double counting in the tourism-related costs and the work-related costs in Section 4.4.2.

\(^{119}\) Hourly wage figures calculated using the same methodology used in Section 4.4.2.
cost to tourists from the rest of the UK would be, gross, £21.7m\textsuperscript{120}, or about €26m. If this cost manifested as less tourism revenue for Scotland, then, using 2012 expenditure figures from Table 19, total expenditure from the rest of the UK would have been £1,853m. In other words, foregone tourism revenue due to delays alone could have lowered tourism revenue from the rest of the UK by up to 1.2 per cent.

4.4.4. Policing operations

Although Scotland and the rest of the UK formally have separate legal systems and police codes, there is a considerable amount of power sharing and joint operations between the two regions. For instance, The Criminal Justice and Public Order Act 1994 allows for the powers of attention and arrest to be shared among police services when operating within different regions of the UK.\textsuperscript{121}

The UK also cooperates with the EU in certain aspects of policing. One of these areas of cooperation is through the mutual recognition of the European Arrest Warrant ("EAW"). The EAW is an arrest warrant recognised across the EU and compels local law enforcement in the country receiving the EAW to arrest, detain, and extradite any individual named in the EAW.

There is not currently a formal extradition process within the UK. As HM Government notes, the UK’s current policing arrangement means “a domestic warrant issued in one jurisdiction may be executed without any endorsement or judicial intervention in the other jurisdiction.”\textsuperscript{122} By contrast, extradition under an EAW in the UK took between 16 and 93 days in 2010. Furthermore, suspects being followed in hot pursuit within the UK can be followed and arrested by any domestic UK police force. The ability of a foreign police force to continue a hot pursuit across Member State borders within the Schengen Area are limited, and arrest and extradition can be carried out by local authorities only.\textsuperscript{123}

Therefore, if Scotland were a Member of the Schengen Area, there would be additional practical and procedural delays in policing activities in the rest of the UK. What is more, arresting and bringing to justice suspected criminals in the rest of the UK would also be more expensive. As a member of the Schengen Area — indeed, as an EU foreign country in general — Scotland would receive an EAW from the rest of the UK each time the UK were interested in arresting a suspect located in Scotland. HM Government reports that the cost of executing an incoming EAW is around £20,000.\textsuperscript{124}

\textsuperscript{120}£15.16 an hour is 25 pence (£0.25) per minute. Cost of delay = £0.25 * 13 minutes * 6.6m trips.
\textsuperscript{122}Ibid.
\textsuperscript{123}Ibid, p. 34.
Figures on “internal extraditions” between Scotland and the rest of the UK are, to our knowledge, not currently available. As a proxy, we use the number of extraditions from Ireland — a country that shares a land border with the UK and has a population similar to that of Scotland — to the UK. In 2012-2013, 31 arrests were made in Ireland on behalf of the UK under the EAW. If the same number of arrests would be made in an independent Scotland under the EAW, at £20,000 per EAW this would cost Scotland an additional £620,000 (€744,000) per year.

4.5. Summary

This section took as its starting point that Scotland had entered the Schengen Area. On this assumption we have worked out some potential costs associated with establishing a Schengen Area compliant border, costs of work-related travel delays for residents of Scotland and the rest of the UK, costs for the Scottish tourism industry due to tourism-related travel delays, and the cost of Scotland processing EAWs from the UK. In total, these costs could range between €92.5m and €125.7m, depending on whether Scotland receives assistance from the EU in establish a Schengen-compliant border.

Table 21: Selected costs for a Schengen Area Scotland

<table>
<thead>
<tr>
<th>Cost of Schengen-compliant border operations (€m)</th>
<th>With EU assistance in border investment</th>
<th>Without EU assistance in border investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of work-related travel delays (€m)</td>
<td>54</td>
<td>54</td>
</tr>
<tr>
<td>Cost of tourism-related travel delays (€m)</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>Cost of processing European Arrest Warrants from UK (€m)</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Total Schengen costs (€m)</td>
<td>92.5</td>
<td>125.7</td>
</tr>
</tbody>
</table>

Source: European Commission; DG Internal Policies; HM Government; Office of National Statistics United Nations; Visit Scotland; Stefan Batory Foundation; Europe Economics’ calculations


126 Using €1.2 = £1.

127 Scotland would also bear a cost to issue an EAW to other Member States. We have not included these costs as, according to HM Government, “work is underway to establish the unit costs of extraditing a person back to the UK under an EAW” but the cost estimates are not available. See: HM Government (2013) “Decision pursuant to Article 10 of Protocol 36 to The Treaty on the Functioning of the European Union”, p. 95.
These costs would not represent an external leakage (as in the case of losing the rebate) or costs of foregone economic activity (as in the case of the euro). Instead, some of these costs would be incurred by the Scottish Government through fiscal policy. In this sense, many of these costs represent additional government expenditure that would spread through the economy. Assessing the effect of these expenditures is difficult as it is difficult to identify ex-ante the sectors that would receive the expenditure, to know whether the expenditure would go to domestic Scottish businesses or be imported, and to understand how an increase in output due to government expenditure would be offset by a decrease in private sector output through crowding out.

There are two cases where the output and employment effects can be considered, if not fully identified. First, HM Government cites that 30,000 individuals cross the England-Scotland border daily to work\textsuperscript{128}, while our analysis suggests around 81,000 individuals report their primary residence on one side of the Anglo-Scottish border and their place of work on the other, whether or not they commute every working day. Thus, work-related travel delays could affect around 81,000 jobs.\textsuperscript{129} Evidence from the European Commission suggests that around a third of firms report difficulties in hiring across borders face difficulties in hiring residents in other Member States, even where doing so entails only crossing a national border. The output and employment costs to Scotland are unclear, as some of the impact of work-related delay costs would be borne by the rest of the UK as well.

The cost of tourism-related travel delays represents foregone tourism income due to the establishment of a managed border between Scotland and the rest of the UK. In other words, the €26m per year of foregone income represents a direct leakage to the Scottish economy. The average whole-economy output Scottish output multiplier is 1.5,\textsuperscript{130} meaning that €26m euros of lost tourism revenue would result in a loss of €39m of output via direct and indirect effects and €7.8m via direct effects, for a total foregone output of €46.8m. The jobs multipliers are 17 jobs via direct and indirect effects and 3 jobs via induced effects for every £1m spent. Tourism-related costs, then, could cost the Scottish economy 368 jobs via direct and indirect effects and 65 jobs via induced effects, for a total employment effect of 433 foregone jobs in the tourism industry. Visit Scotland estimates that 1.6m individuals were employed in the Scottish tourism industry in 2010.\textsuperscript{131} Thus, while the foregone input could result in 433 jobs not being created in the Scottish tourism industry, around 1.6m jobs could be adversely affected by a slowdown in tourism activity.


\textsuperscript{129} This is on the assumption that the 30,000 figure calculated by HM Government is included in the 81,000 figure from our analysis.

\textsuperscript{130} The latest available Scottish input-output tables do not directly identify any sectors related to tourism. As a working assumption, we use the whole-economy average multiplier.

\textsuperscript{131} Visit Scotland (2013) “Scotland: the key facts on tourism in 2012”.
5. Conclusions

This paper took as its starting point that an independent Scotland would lose its share of the rebate on the UK contribution to the EU budget, adopt the euro as its currency, and join the Schengen Area, without commenting on the likelihood, necessity, or merits of it doing so. From this starting point, we analyse potential economic impacts arising.

Table 22: Estimated impacts of select EU-related costs for an independent Scotland

<table>
<thead>
<tr>
<th>Issue</th>
<th>Ongoing annual costs (€m)</th>
<th>Output effect (€m)</th>
<th>Foregone jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rebate</td>
<td>409</td>
<td>736</td>
<td>6,680</td>
</tr>
<tr>
<td>Euro</td>
<td>562</td>
<td>1,011</td>
<td>9,637</td>
</tr>
<tr>
<td>Schengen</td>
<td>92.5-125.7</td>
<td>46.8</td>
<td>433</td>
</tr>
<tr>
<td><strong>Total Identified Costs</strong></td>
<td><strong>1,063.5 – 1,097.7</strong></td>
<td><strong>1,794</strong></td>
<td><strong>16,750</strong></td>
</tr>
</tbody>
</table>

Among identifiable costs, the highest was the trade- and transaction-related costs associated with Scotland adopting the euro but with the rest of the UK continuing to be Scotland’s largest trading partner. These costs total €562m annually. The next highest cost is the cost associated with losing the rebate, which would be €409m annually. Costs associated with being a member of the Schengen Area could total around 92.5 to 125.7 per annum, depending on whether or not Scotland receives assistance from the EU in setting up a Schengen-compliant border with the rest of the UK. Taken as a whole, these costs amount to between €1.1bn a year. Foregone output due to some of these costs could be around €1.8bn per year, with up to 17,000 potential net job losses. Furthermore, work- and travel-related delays could adversely affect around 1.6m jobs for workers who commute across the Anglo-Scottish border or work in the Scottish tourism industry.

We have also identified a number of potentially material unmonetised costs. In joining the euro:

- Fiscal policy would be constrained by Eurozone-wide rules, such as debt-to-GDP and deficit limits. This could reduce the scope for Scotland to use countercyclical fiscal policy in a downturn.
- Being a member of a larger currency union whose business cycle is less correlated with the Scottish cycle means that monetary policy that is appropriate for the Eurozone may be inappropriate for Scotland.
- Scotland would have to adjust to a new central banking model, assume direct responsibility for banking supervision and regulation, and have less scope to provide liquidity to distressed financial institutions as a result of moving from the Bank of England to the European Central Bank.

In respect of the Schengen Area, unmonetised costs include:
A managed border that could bifurcate what is now a unified labour market for Scotland and the rest of the UK.

Different visa rules and security policies may imply a break with current arrangements under the UK.

6. Tables

Table 1: The UK and Scottish Rebate
Table 2: Estimates of the Scotland's Contributions to the UK's Rebate
Table 3: Select costs associated with Scotland receiving no rebate
Table 4: Impacts on annual transaction costs (€ m)
Table 5: Total International Exports by geographic Region (£m), 2007-2011
Table 6: Annual impact on Scottish trade (€ m)
Table 7: Past and current EU legislation on fiscal policy
Table 8: Correlation coefficients of annual output growth rates (1996-2011)
Table 9: Degree of synchronisation Scotland, UK & Eurozone
Table 10: GDP and Population of Scotland, the rest of the UK, and the Eurozone, 2012
Table 11: Selected costs to Scotland in joining the euro
Table 12: Effective joining dates for Schengen Area membership
Table 13: Expenditure under the Schengen Facility on upgrading border infrastructure and processes to be Schengen Area compliant, 2004-2006
Table 14: Estimated costs to Member States for the establishment of an Exit-Entry System for the Schengen Area
Table 15: Estimated costs to Member States for the establishment of a Registered Travellers Programme for the Schengen Area
Table 16: Estimated annual Schengen border costs to Scotland
Table 17: Number and proportion of individuals living and working in Scotland and the rest of the UK
Table 18: Average time to cross border between EU and non-EU countries in Eastern Europe, 2007
Table 19: Trips, nights, and expenditure in Scottish tourism by origin, 2012

Table 20: Visits to the UK by passengers that do and do not require a visa prior to arrival

Table 21: Selected costs for a Schengen Area Scotland

Table 22: Estimated impacts of select EU-related costs for an independent Scotland