Currency Design in the United States and Abroad: Counterfeit Deterrence and Visual Accessibility, by Marcela M. Williams and Richard G. Anderson: A Corrigendum, by Richard G. Anderson[*]

15 September 2007

Our recent article in this *Review* (Williams and Anderson, 2007) has generated a number of comments from readers. Here, I address three of them.

1. First, we wrote in our article that the Bank of England was the sole issuer of banknotes in the United Kingdom. This is incorrect.[1] The situation of banknotes denominated in pounds sterling is more complex than we discussed but, in our defense, we did not seek to provide a comprehensive discussion of the United Kingdom's financial system. There are a number of issuers of sterling-denominated banknotes; as expected, all are affiliated with England and the United Kingdom. The United Kingdom is defined to include England, Wales, Scotland and Northern Ireland. The Bank of England is the sole issuer of banknotes in England and Wales, and Bank of England notes are accepted as legal tender in these areas. Certain commercial banks in Scotland and Northern Ireland are allowed to issue their own banknotes in their respective areas, under terms of the Bank Notes (Scotland) Act of 1845 and the Bankers (Northern Ireland) Acts of 1845 and 1928.[2] Offices of these banks outside Scotland and Northern Ireland are not permitted to issue banknotes, although there are no restrictions against circulation of the notes outside Scotland and Northern Ireland. Bank of England notes circulate widely in Scotland and Northern Ireland.[3] In addition, certain other political entities issue sterling notes. The Channel Islands and the Isle of Man are British royal crown properties (or, crown dependencies), not part of the United Kingdom or the European Union, which issue sterling-denominated notes. The Falkland Islands, Gibralter, St. Helena Island and Ascension Island are British overseas territories whose governments issue their own sterling-denominated banknotes (the latter two islands sharing the St. Helena pound). In

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[1] I am indebted to Professor George Selgin for bringing this point to our attention, and for helpful subsequent discussion. All errors remain my own, however.

[2] In Scotland, the issuing banks are the Bank of Scotland, Clydesdale Bank, and Royal Bank of Scotland. Data for early 2005, averaged over selected dates, shows the quantity of outstanding notes divided approximately equally among these banks (HM Treasury, 2005, appendix C). In Northern Ireland, the issuing banks are the Bank of Ireland, First Trust Bank, National Bank, Northern Bank, and Ulster Bank. The report (HM Treasury, 2005) shows the Bank of Ireland comprising approximately one-third of total issuance, the National Bank negligible issuance, and the other three banks with approximately one-fifth each. Reported total outstanding note issuance during the same period by the Scotland banks was GBP2.7 billion, and by the Northern Ireland banks was GBP1.4 billion. For comparison, during first quarter of 2005, Bank of England notes in circulation averaged GBP35.2 billion (Bank of England Internet interactive statistical database, series RPQAEFA, Bank of England notes in circulation, not seasonally adjusted, quarterly)..

[3] Scots law has no concept of legal tender. Hence, while Bank of England notes are legal tender in England and Wales, notes issued by Scottish and North Ireland banks have no legal tender status. See, for example, the Committee of Scottish Clearing Bankers web page.

each case, the locally issued currency circulates little, if at all, outside the area of issue, and Bank of England notes intermix freely in circulation with locally issued notes. These are not discussed further here.

Scottish and Northern Ireland banks of issue back their note issue, above a small set fiduciary level (equal in early 2005 to approximately one-eighth of one percent of notes issued), with non-interest-bearing Bank of England banknotes.[4] The Committee of Scottish Clearing Bankers asserts on their Internet web page that notes issued by Scottish banks make up the majority of notes in circulation in Scotland.

The relationship between Bank of England notes and notes issued by Scotland and Northern Ireland banks became more visible in 2005 when the Treasury (HM Treasury, 2005) issued on July 25 a "consultative document" regarding proposals to change "the arrangements under which a limited number of commercial banks in Scotland and Northern Ireland are permitted to issue their own banknotes." The consultative document proposed that the Bank of England become the regulator of issuance by Scotland and Northern Ireland banks. The current situation is summarized by HM Treasury:

> "Under the 1845 Acts, the Commissioners of the Inland Revenue (Stamp Taxes, formerly the Stamp Office) are charged with carrying out certain administrative arrangements concerning the note issue of banks in Scotland and Northern Ireland. This responsibility was transferred to the Commissioners for Revenue and Customs, i.e. HM Revenue and Customs (HMRC), under the Commissioners for Revenue and Customs Act 2005, although the associated tasks are still carried out by Stamp Taxes. Their main task is to ensure that the average value of notes in circulation for each issuing bank at the close of business on each Saturday over a specified four week periods does not exceed the average value of note-covering assets held by that issuing bank at close of business on each Saturday during the same four week period."

The proposed changes included:

- "Require sufficient and appropriate note-covering assets to be held at all times, thereby creating a level playing field for all institutions with respect to bank note supply";
- "Strengthen the regulatory framework, including the transfer of current administrative responsibilities from the Commissioners for Revenue and Customs to the Bank of England"; and

[4] The enabling [original historical] legislation specified the backing to be in risk-free assets comprised of silver and gold coins. The Currency and Bank Notes Act 1928 extended the definition of gold coins to notes issued by the Bank of England. The backing in Bank of England notes continues, despite Bank of England notes having no gold backing themselves. We are told that the Bank of England issues special, non-circulating, high-denomination notes to the Scotland and North Ireland issuing banks. Banking historians will recall that the Federal Reserve System at one time issued special purpose, high-denomination notes for a similar purpose, to be used by Federal Reserve Banks to settle inter-district debits. According to HM Treasury (2005), 90 percent of the Bank of England notes pledged as backing by the issuing banks of Scotland and Northern Ireland are held at the Bank of England itself.

- “Ensure that note holders, as creditors, can obtain value for their notes.”

It is not the purpose of this note to comment on these proposals, but I offer one observation related to the incentives for, and measures to defeat, counterfeiting. HM Treasury argues (HM Treasury, 2005) that increased supervision is necessary to assure that banknote designers routinely incorporate up-to-date, adequate counterfeit deterrence features in notes issued by Scotland and Northern Ireland banks. Although so far as we are aware no published data are available, anecdotes in the historical record suggest that these notes have been little counterfeited. Three reasons perhaps contribute to this. First, the notes circulate in a relatively compact geographic region and hence frequently pass through the issuing bank, allowing for rapid discovery of counterfeit notes. Readers might recall mention in our article that, for U.S. banknotes, an incorrect “feel” of counterfeit notes is the most common method of identification by bank tellers and the public. Second, the limited geographic area and relatively small numbers of notes in circulation suggest an unattractive benefit-cost ratio for serious counterfeiters. Quite the opposite is true for United States banknotes. Third, the issuing banks have strong incentives to maintain modern security features—public announcement of widespread counterfeiting likely would induce a run on the issuing bank. The great size of monopoly banks of issue, such as the Federal Reserve System and the Bank of England, reduces the press of such forces on them. In our article, we mentioned the extreme case of the United States: because its banknotes circulate worldwide and often among unsophisticated users, counterfeit deterrence features of these notes are of foremost concern not only in the United States but worldwide.

With regard to counterfeiting, historical anecdotes also suggest that smaller issues are less likely to be counterfeited than larger ones, reinforcing the concerns of issuers such as the U.S. Bureau of Engraving and Printing. Two historical examples, one regarding English province notes and the other Scottish notes, were brought to my attention by Professor Selgin. I quote from our correspondence, with his permission:

> “Two tid-bits you may find of interest. The first is from V.H. Hewitt and J.M Keyworth, *As Good As Gold: 300 Years of British Bank Note Design* (London: British Museum, 1987). The authors note (p. 46) that English provincial banknotes were *less* susceptible to counterfeiting than Bank of England notes. "In some respects," they write, "the small size of country bankers' issues enabled them to indulge in producing high quality notes by methods which could not be used to produce quantities needed by the Bank [of England]. Also their notes often circulated in localized areas and so would be identified as forgeries sooner." [Personally I doubt that provincial banks had all that much of a cost advantage over the Bank of England. More likely the Bank simply lacked the incentive to make its notes more counterfeit-proof, because it could count on their treatment as high-powered money.]
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> The other tidbit is from Coppieters' *English Bank Note Circulation* (1955, pp. 64-5), where it is observed that Scottish banknotes were rarely counterfeited during its free-banking era (that is, before 1845), whereas

> Bank of England notes were aggressively counterfeited during that time. Even as late as 1873 (when consolidation and regulation had almost certainly increased it) the average circulation period of a Scottish banknote was only 10-11 days! That's perhaps one or two transactions before being scrutinized by a knowledgeable teller."

The interested reader might consult the HM Treasury press release and consultive document:

Press Release (available as of 15 September 2007):
www.hm-treasury.gov.uk/newsroom_and_speeches/press/2005/press_70_05.cfm

Consultive document (available as of 15 September 2007):
www.hm-treasury.gov.uk/media/7/0/banknote_issue_arrangements_210705.pdf

2. Second, we apologize to readers (and the Bank of England) for the poor quality of the images of Bank of England notes printed in our article. In the on-line PDF version of the article, we have inserted higher quality images, furnished by the Bank of England. We thank them for their assistance.

3. Third, some readers felt we erred by omitting mention of the book *Standard Catalog of World Paper Money Issues* (Krause Publications, Inc.). In our opinion, this volume was not directly related to our topic: the difficulties of designing currencies both secure against counterfeiting and accessible to the visually impaired. The *Catalog* is primarily a dealers' and collectors' reference, focused on quality ratings and prices. We mention it here in response to suggestions that it might be of interest to readers of our article. Further information is available on the publisher's web site, in the Wikipedia, and on the web sites of various booksellers.

Finally, readers have suggested many additional materials related to banknote history; these cannot be listed here. I do, however, choose to mention one article by the Australian banknote writer Peter Symes (www.pjsymes.com.au) because it addresses security features of Scottish banknotes: www.pjsymes.com.au/articles/ScotSecurity.htm. Although I find the article of interest, I am not a sufficient expert in the history of Scotland to vouchsafe its contents.

References

Emmanuel Coppieters (1955) *English Bank Note Circulation 1694-1954* (The Hague: Martinus Nijhoff)

[The] Committee of Scottish Clearing Bankers, "Banknote History." Available at: http://www.scotbanks.org.uk/banknote_history.php. Accessed September 15, 2007.

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Williams, Marcela M. and Richard G. Anderson (2007). "Currency Design in the United States and Abroad: Counterfeit Deterrence and Visual Accessibility," Federal Reserve Bank of St. Louis *Review*, September/October 2007, pp. 371-414.

Figure 10

United Kingdom: Security and Accessibility Features

Front

Security Features

1. Intaglio printing
2. Metallic thread
3. Watermark
4. Print quality
5. Holographic strip
6. Microlettering
7. See-through register

Accessibility Features

8. Large denomination numerals
- Different sizes
- Different colors

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NOTE: See Tables 1 and 2 and the appendix for a complete listing of security and accessibility features.
SOURCE: Bank of England.