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A Global Lottery and a Global Premium Bond

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Abstract

The world lottery market now amounts to at least US$126 billion in sales. World market sales for all gaming products (public, charitable and commercial) total some US$1 trillion, of which Internet gambling accounts for US$32 billion. This paper assesses the prospects for harnessing this large and growing market for the purposes of development finance by means of a global lottery and a global premium bond (with the successful UK scheme providing a model for the latter). Each has different strengths: the global lottery can add to the supply of grant finance for development, while the global premium bond could be an attractive savings instrument for ethical investors. The paper concludes that global versions of both a lottery and a premium bond are viable and complementary in mobilizing more development finance.

Keywords: lottery, development finance, Millennium Development Goals

JEL classification. F35, F33, H87

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1 Introduction

The use of lotteries by national and local/regional governments to raise funds for public-sector and charity projects is now commonplace across the world. In 2001 there were at least 177 public (national and local government) lotteries in operation, with combined sales amounting to some US$126 billion (see Table 1). Given the scale of the revenues raised, it is natural to ask whether lotteries could also be used to provide funds for global development programmes. Proposals to establish a global lottery to fund UN development activities have circulated since at least the early 1970s. In 1994, Erskine Childers and Brian Urquhart proposed that: 'One possibility for income moving more directly to the UN—but still with government licensing in each country—would be an annual United Nations Lottery, administered by a special authority under the Secretary-General' (Childers and Urquhart 1994: 155). The idea of a global lottery has recently been given a major impetus by a former President of Finland, Mr Martti Ahtisaari, together with the NGO Crisis Management Initiative (CMI) and the Ministry for Foreign Affairs of Finland.

In this paper we evaluate proposals for a global lottery. We also propose a complement to the global lottery, namely a global premium bond (which we dub the 'global ERNIE', after the UK's long-running premium bond scheme). The return on both a lottery ticket and a premium bond depends on a random prize draw but, unlike a lottery ticket, a buyer of a premium bond does not lose the initial stake: consequently this instrument has the characteristics of a savings product, making it potentially attractive to ethical investors.

Table 1
Jurisdictions and the types of gaming

Types of gaming \ Region	Africa	North America	Oceana	South America & Caribbean	Europe	Asia & Middle East	Total
No. of jurisdictions	46	70	26	36	51	38	
Betting	19	54	11	10	34	11	139
Casinos	34	27	16	33	34	25	169
Bingo	8	7	na	3	8	na	26
Gaming machines	4	25	11	4	19	6	69
Lotteries	26	56	17	21	42	15	177
Keno	0	1	8	na	na	na	9
Charitable gaming	0	56	9	na	na	na	65
Interactive gambling	4	31	16	18	30	12	111
Indian gaming	0	21	na	na	na	na	21
Card clubs	0	4	na	na	na	na	4
Gaming cruises	0	1	1	na	na	1	3
Illegal gambling	6	6	na	1	6	16	35
Community gaming	0	0	1	na	na	1	1

Source: Global Betting and Gaming Consultants. Available at: www.bettingconsultants.com/site/report.htm

The structure of the paper is as follows. Section 2 discusses how a global lottery might work and evaluates the issues in the following sub-sections: lottery operators and their regulation (2.1), the market for lotteries (2.2), competition between the global lottery and national lotteries (2.3), the challenge posed by Internet gambling (2.4), revenue-raising potential (2.5), cross-county equity (2.6), distributional and welfare effects (2.7), ethical issues (2.8) and development education (2.9). Section 3 discusses the potential for a global premium bond; we summarize the UK scheme as a model for a global version (3.1) and we set out the modalities of a global premium bond and highlight its differences with a global lottery (3.2). We conclude (section 4) that global versions of both a lottery and a premium bond are viable and complementary in mobilizing more development finance.

2 A global lottery

How would a global lottery function? Discussions of a global lottery yield two basic possibilities. The first is for national lotteries to run national versions of the global lottery game. The second is a single global lottery sold worldwide and run by one organization. The proposal developed by the Crisis Management Initiative, hereafter referred to as the CMI proposal, adopts the first approach (see Ahde, Pentikäinen and Seppänen 2002). As far as we know, the second approach has not been formally proposed by anyone, but it comes up in discussion because of the possibilities now offered by the Internet. In both versions an agreed international framework is necessary to regulate the lottery organizer(s), transfer the money into a global lottery fund (to be run by the UN or another agency), and distribute the funds to development programmes.

Lottery products consist of numbers games such as Lotto, conducted at regular intervals (usually weekly or bi-weekly in existing lotteries) and instant products such as ticket lotteries ('scratch cards') and video lottery terminals. Numbers games are organizationally more complex and require more infrastructure than instant ticket lotteries. For this reason, the CMI proposals argue for the introduction of instant ticket lotteries first and numbers games at a later stage. Lottery proceeds are divided between winning players, administrative costs and beneficiaries. In US state lotteries the proportions are roughly 40-50 per cent (winners), 15-20 per cent (administration) and 30-45 per cent (beneficiaries) (Clotfelter and Cook 1989: 164-5) and the proportions are roughly similar in European lotteries. A key issue for the global lottery is whether, before transferring any money to a global lottery fund, to share some of the beneficiaries' portion with local beneficiaries. This is a feature of the CMI proposal, which argues that otherwise a global lottery, in competing against national lotteries, may be opposed by local charities and governments. Section 2.3 discusses competition between lotteries.

National legislatures would be subject to lobbying for and against the global lottery and national debates would inevitably (and rightly) raise questions regarding the basic structure of the global lottery as well as its objectives and ethics. This needs to be paralleled by a well-structured and focused international debate.

Before proceeding further we must note several other possibilities. The first is to make development a beneficiary of existing national lotteries. The second is to liberalize national lottery markets in developed countries to permit the marketing of developing-

country lotteries. The third is for a developing country, or group of countries, to create their own world lottery product, with themselves as the main beneficiaries. We do not discuss these options in any detail, but if properly organized they could provide further sources of development finance.

Having set the scene, we now turn to the issues in detail, including our evaluation of the global lottery and its possible modus operandi.

2.1 Lottery operators and their regulation

National lottery operators range from government agencies and state-owned corporations (as in Sweden) to private corporations, licensed and regulated by government (as in the UK). A recent survey of 70 lotteries worldwide found that about a third of the lotteries were government agencies, and two-thirds were private corporations or corporations owned by local or national governments. Accordingly, there is a range of options regarding private versus public providers—whichever version of the global lottery is adopted (the single global lottery or national global lotteries).

The alternative merits of private versus public lottery operation have been extensively debated; older lotteries are often state-run, but newer lotteries tend to be private operators who hold the license until the next round of competitive tendering (the UK, a latecomer to national lotteries, opted for private operation on the grounds that it would raise more revenue than a state-operated lottery). If the global lottery is put out to competitive tender for private operation, then the process must be transparent and well-regulated. Competitive tendering captures some of the monopoly rents associated with being a lottery provider, thereby raising the amount generated for beneficiaries (development programmes in the case of the global lottery). However, in countries where private operators hold the market monopoly for a fixed period, a national version of the global lottery could not be introduced until the expiry (or renegotiation) of the license. Current as well as prospective lottery providers would inevitably lobby to influence the process of introducing a global lottery.

It is imperative to run the global lottery efficiently and honestly. This requires a governance structure—to set policy in an overall framework of objectives—as well as regulatory mechanisms. Regulation is by no means straightforward, and there is now a large economics literature on such problems as ‘regulatory capture’. Regulating a single global lottery provider, but with a worldwide operation, is obviously a different challenge to regulating numerous, but national, providers of a global lottery. If the single global provider sells the lottery through the Internet, then the issue of regulation becomes bound up with the larger issue of effectively regulating e-commerce (Clarke and Dempsey 2001; O’Connor 2003). If the national variant of the global lottery is chosen, then national lottery operators will fall under the purview of national regulatory authorities, but these vary considerably in their effectiveness. Hence, national regulatory authorities must be overseen by an international authority to ensure that the high standards of a global lottery are met. The World Lottery Association (WLA), a respected international organization with a large membership of national and state lotteries, could play an important role in this regard. Whatever form of international regulatory system is chosen, it must have the ability to impose sanctions and to deregister national global lotteries which fail to meet the required standards. This will

necessitate the creation of a suitable legal framework. And international bodies such as the United Nations will have to exercise final oversight.

2.2 The market for lotteries

In a Lotto game, players buy tickets where they choose *n* numbers from a possible available *N* numbers and winners receive a share of the prize pool; the design of the game affects the mean, variance and skewness of the prize distribution (Garrett and Sobel 2002; Walker and Young 2001: 703). Empirical evidence shows that ticket sales are an increasing function of the skewness of the prize distribution; players display a preference for games with very few large prizes and some small prizes (Creigh-Tyte and Farrell 1998: 4; Walker and Young 2000: 15). This 'long-shot' bias is evident in other types of gambling (Forrest 2003). Empirical studies show that rollovers (when nobody wins the top prize and the jackpot is added to the jackpot of the next draw) raise sales not only for the draw in question but also for successive draws (Farrell, Morgenroth and Walker 2000). This is referred to as the 'halo' effect in the industry. Most lotteries suffer from 'fatigue'; once the initial excitement of the launch wears off, revenues tend to stagnate or even decline (Creigh-Tyte and Farrell 2003). Periodic redesigns of lotteries—for instance reducing the probability of jackpot winners (for example, by raising *N*) thereby making rollovers more likely—are often used to raise excitement and bolster flagging sales.

Since the *expected* return is lower than the stake, lottery participation has puzzled economists and non-pecuniary motives have been much emphasized (Farrell and Hartley 1998). When the lottery funds 'good causes', as with the global lottery or the UK national lottery, there is a tendency to focus on *altruism* as a motive for buyers. It is certainly the case that charity-run lotteries can raise sizeable sums; in the US about US$6 billion is raised in this way, while UK charities derive 8 per cent of their income from their own lotteries (Douglas 1995; Morgan 2000). But some of this may simply be substitution from other forms of charitable giving; there is no evidence on *additionality*. Evidence on whether the use of funds affects the demand for lottery products is decidedly mixed. In the case of the UK national lottery, '… there is no evidence to suggest that play would be sensitive to the distribution of funds even though individuals may express disapproval over it' (Walker and Young 2000: 29). However, the US states which earmark lottery proceeds to public goods (for example, to education) have higher average per capita lottery expenditures than the states which do not (Morgan 2000). And experimental evidence—whereby laboratory participants are asked to choose between lotteries—shows that changes in the desirability of the public good significantly affect gaming behaviour, with gaming falling as the desirability of the offered good falls (Morgan and Sefton 2000). The public goods provided by US state lotteries benefit many players personally (for example, as parents). This effect may arise for global lottery players in developing countries, but for players in developed countries it may be of little importance unless development education convinces them that the global lottery will fund global public goods that benefit them personally (see section 2.9 on development education).

In summary, it appears that the global lottery will face the same design issues as existing lotteries if the objective is to maximize revenues, i.e. skew the prize structure towards a few large prizes and encourage rollovers to combat lottery fatigue. Altruism and the public goods funded by the global lottery may be less important as non-

pecuniary determinants of demand than the lottery's entertainment relative to other lotteries and other forms of gaming. However, there is another twist in the argument that we now turn to.

2.3 Competition between the global lottery and national lotteries

Running right through the debate is a concern that the global lottery may take too much market share from existing national lotteries, leading to local opposition by national charities and governments. Such opposition can certainly be vocal; for instance in the UK, national charities have lobbied hard on the national lottery, fearing its effects on their own charity-lotteries as well as donations (UK Parliament 2001). And a global lottery could take some revenues away from private gambling operators; these might be considered 'fair game'—especially when they are unregulated and untaxed Internet operations (see next section)—but gambling taxes provide substantial revenues for many state governments in Australia and the United States. Private commercial operators will therefore have powerful political friends.

How competitive would a global lottery be? Our discussion of non-pecuniary demand factors in the last section suggested that altruism/global goods characteristics may give the global lottery an edge for some buyers. But it is probably unwise to rely on these dimensions. We cannot conclude anything about its entertainment value relative to existing lotteries at this stage.

This leaves the global lottery's pecuniary characteristics. Recall that the mean, variance and skewness of the prize distribution all affect lottery demand, with the empirical evidence showing that ticket buyers prefer higher mean, lower variance and skewness towards very large prizes (Clotfelter and Cook 1989; Walker and Young 2000: 25). So for buyers the global lottery may be less/more attractive than competing lotteries along some or all of these moments of the distribution. Formally, the global lottery will only be unambiguously superior to a national lottery if it stochastically dominates the latter; that is $F(X)$, the probability of winning no more than X, is less for all X.

The most straightforward way to do this is to set a maximum prize below that of the national lottery (in the case of national versions of the global lottery) or below that of any national lottery (in the case of a single global lottery) and reduce the chances of a rollover by lowering the numbers (n) required to win the jackpot and by lowering the number of available numbers to choose from (N). Since all the evidence shows that players prefer skewness in the prize distribution, this implies that the global lottery will not raise as much money as it could with very large prizes and may be subject to faster lottery fatigue (given the lower occurrence of rollovers).[1] Moreover, in diluting its ability to raise development funds, such action reduces the incentive of development altruists to participate.

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[1] Note that a single monopoly lottery can maximize its revenues by offering a very large jackpot but if a new entrant into a field with a number of existing lotteries attempts to maximize revenues in this way it will face retaliation; for example existing lotteries will raise their maximum prize above the level offered by the new entrant, and will reduce the number of smaller prizes.

Table 2
Jurisdictions with some sort of online gambling

Africa	Asia Pacific	Caribbean	Central & South America	Europe	North America
Comoros (Anjouan)	Australia (Capital Territory)	Antigua & Bermuda	Belize	Austria	Canada (Saskatchewan)
Mauritius	Australia (New South Wales)	Dominica	Costa Rica	Belgium	Canada (Kahnawake)
South Africa (Western Cape)	Australia (Northern Territory)	Dominican Republic	Nicaragua	British Channel Islands(Alderney)	US (New Jersey)
Swaziland	Australia (Queensland)	Grenada	Argentina	British Channel Islands(Sark)	US (California)
	Australia (Tasmania)	Jamaica	Brazil (Parana)	Czech Republic	US (Nevada)
	Australia (Victoria)	Netherlands Antilles (Curacao)	Brazil (Santa Catarina)	Denmark	
	Australia (Western)	St Kitts & Nevis	Columbia	Finland	
	Cook Islands	St Vincent	Venezuela	France	
	India (Maharashta)	Virgin Islands (US)		Germany	
	India (Rajasthan)			Gibraltar	
	New Zealand			Iceland	
	Norfolk Island			Ireland	
	South Korea			Isle of Man	
	North Korea			Jersey	
	Philippines			Liechtenstein	
	Solomon Islands			Luxembourg	
	Taiwan			Malta	
	Vanuatu			Monaco	
	Vietnam			Norway	
				Russia (Kalmykia)	
				Serbia	
				Spain	
				Sweden	
				Switzerland	
				The Netherlands	
				United Kingdom (Great Britain)	

Source: www.gamblinglicenses.com/licencesDatabase.cfm

One extra twist should be noted when the global lottery is run through national versions rather a single lottery. When the dominance of the global lottery is eliminated, national versions of the global lottery will exhibit different distributions of the prize pot since the distributions of national lotteries show cross-country variation. If the differences in the distributions of national global lotteries are significantly large, and the transactions costs of cross-border purchase are low, then buyers may prefer to purchase another country's version of the global lottery. There already exist cross-border 'grey markets' in national lotteries, despite national legal prohibitions (for example, intermediaries sell UK national lottery tickets at a premium in Hong Kong). Hence, national lotteries could lose revenues even if their own national global lottery is designed to give an equivalent return.

A single global lottery would eliminate the international grey market arising from multiple national versions of the global lottery and the rents to intermediaries associated with the latter would be transferred to the global lottery operator, the prize winners and the beneficiaries. If the single global lottery were run through the Internet, it would almost certainly have lower administrative costs than the aggregate of the administrative costs of nationally-run global lotteries. Its costs would be further reduced if it were run on a not-for-profit basis rather than by a commercial lottery operator. These factors again give the global lottery a competitive edge.

Any opposition to the global lottery may be reduced if the formula for distributing the resulting global lottery funds together with their use are perceived to be in national interests, particularly when global concerns—regarding the environment, health and security—are seen as bearing on national interests (section 2.6 below discusses the formula). Moreover, if a single global lottery had jackpots sufficiently large to attract pure gamblers, then it might take substantial market shares away from private commercial gambling (which, as we noted above, is a US$1 trillion market); this would then permit generous 'compensation' to national causes that lose market share to the global lottery.

2.4 The challenge posed by internet gaming

The first proposals for a global lottery arose before the Internet age. The gaming industry is now being transformed by the IT revolution, which challenges traditional forms of gaming including lotteries (the Internet reduces the transactions costs of gaming, especially across borders, and it offers new gaming products).

A report undertaken for the UK Home Office by the Gaming Board for Great Britain estimates that Internet gambling contributes some US$32 billion to an annual global gambling turnover of US$1 trillion (a market share of about 3.2 per cent); online lotteries account for US$7.5 billion of the US$32 billion (Gaming Board for Great Britain 2003, data for 2001). Most of the online lotteries are run by private operators for private profit, although charities are now moving into this area. The growth of online lotteries (and online gambling) is not confined to developed countries. Indian states such as Maharashtra and Sikkim now operate competing online lotteries using public computer terminals and private companies compete vigorously for the business of setting up and running India's online state lotteries (BBC 2002a).

Table 2 shows the wide range of countries which provide a base for online gambling. Much of the online gambling is lightly regulated, if at all, and private operators tend to base themselves in jurisdictions with the least regulation, for example, small islands in the Caribbean but also traditional tax havens such as Gibraltar and the British Channel islands. Sophisticated Internet casinos targeted to the large Asian and Chinese markets operate from the Caribbean. Case law is still being created in the area of Internet gaming as new operators seek to exploit loopholes in existing national laws, or circumvent those laws entirely. The growth of the market has been slowed by the refusal of some credit card companies to process Internet bets. While this threatens some existing operators, the Internet market's long-term prospects remain strong since major (licensed) casinos are keen to win market share and are influencing US legislation to this effect—and they have political allies in states keen to expand their revenues from gambling taxes (*Wall Street Journal* 2003).

In summary, the global lottery will enter a crowded market-place in many countries. In developed countries gamblers can choose not only between a variety of lottery products but also between an increasingly large menu of gaming options, reflecting the growth of Internet gambling as well as the recent liberalization of major gaming markets such as the UK (Appendix Tables A1 to A6 show the gambling products available across countries). Asia's high-growth gambling markets are now well-served by both domestic and Internet gaming products, many of which are provided by large commercial operators with a sophisticated knowledge of the market and the new technologies. A global lottery would face much less competition in the smaller countries of Sub-Saharan Africa, but this is not a large market. These are all factors to keep in mind as we now turn to the revenue-raising potential of the global lottery.

2.5 Revenue-raising potential

The global lottery will raise money from (i) people who substitute in from other forms of gambling (including national lotteries) or are so motivated that they increase their total gambling expenditures and (ii) 'new players': people ('development altruists') who have not otherwise participated in lotteries as well as those who have not had access to lotteries before (the case in some developing countries).

Any assessment of the likely revenue-raising potential of the global lottery must be highly speculative. Tables 3 and 4 provide information on world lottery sales by region and by product, and their recent trends (see also Figures 1 to 7). The total size of world lottery market sales was US$126 billion in 2001 (aggregating the last row of Table 3). The largest market is Europe (US$54.8 billion), followed by North America (US$49.4 billion) and Asia and the Middle-east (US$16.7 billion). The global betting and gaming industry had a gross turnover of US$950 billion in 2001, generating gross profits of about US$200 billion and net revenues for the industry of US$115 billion after taxes, levies and payments to charities (Gaming Board for Great Britain 2003). Figure 8 shows the breakdown of the gross profits (US$200 billion) into sources; lottery gross profit is the highest of any gambling product (about US$62 billion) followed by gaming machines (US$58 billion) and casinos (US$50 billion). The largest gaming profits are derived from the US and Japanese markets (and one developing country, India, is in the top ten; see Figure 9). Australia is fourth in terms of the gross profit (Figure 9), but leads the world in average gambling loss per adult (Figure 10).

Table 3
World lottery sales by jurisdiction (US$ millions)
6-year comparison (1996-2001)

	Africa	Asia & Middle East	Australia & New Zealand	Europe	North America	Central & S. America
CL1996	289.0 (1	14,900.0 (1	2,888.7 (1	56,274.4 (1	42,394.3 (1	3,951.9
CL1997	280.0 (1	14,300.0 (1	2,600.0 (1	55,000.0 (1	42,600.0 (1	4,200.0
CL1998	272.8 (1	13,391.0 (1	2,334.8 (1	61,246.6 (1	42,825.6 (1	4,114.9
CL1999	190.8 (1	14,561.6 (1	2,469.5 (1	63,481.1 (1	43,607.4 (1	3,738.3
CL2000	289.0 (2	36,200.0 (2	3,100.0 (2	54,455.5 (2	45,997.0	na
CL2001	621.6 (1	16,649.7 (2	2,039.4 (2	54,821.5 (2	49,390.0 (1	2,888.9

Sources: (1 The Gaming Industry News Site, available at: www.lotteryinsider.com.au/stats/world.htm .
(2 Figures were provided by the World Lottery Association (Lynne Roiter, Secretary General, WLA Montreal).

Table 4
World lottery sales by product (US$ billions)
7-year comparison (1995-2001)

Product	Lotto	Keno	Draw/passive	Instant	Numbers	Sports toto	Total
CL 1995	45.20	2.40	19.90	24.50	11.80	6.90	113.50
CL 1996	45.6	2.90	20.40	26.90	13.3	6.70	120.60
CL 1997	46.7	3.00	18.00	27.30	14	5.60	119.00
CL 1998	50.4	3.10	17.50	26.80	15.5	5.30	124.20
CL 1999	53.1	3.00	18.30	26.30	16.5	4.40	128.20
CL 2000	na	na	na	na	na	na	121.50
CL 2001	46.3	4.90	16.70	26.90	16.2	5.10	123.10

Source: The Gaming Industry News Site, available at: www.lotteryinsider.com.au/stats/product.htm

From these data we can make two points regarding revenue-raising potential. First, the global lottery will generate most of its funds from the developed countries (although India is a significant potential market in the developing world). Second, these large markets are subject to intense and growing competition in the provision of gambling products. Take, for example, the United States, which is the largest market. In 1975 there were thirteen US state lotteries but by 1999 there were 37, and the 1990s saw the creation of hundreds of legal casinos as fiscal pressures on state governments, and a political reluctance to tax, drove the relaxation of previously tightly-controlled markets (Shiller 2000: 41). Similar forces are evident in Australia, India and South Africa.

If the global lottery took 10 per cent of the 2001 global lottery gross profit (US$62 billion) then it would raise US$6.2 billion annually. This compares to total official development assistance (ODA) of US$59.5 billion in 2001, or aid grants of US$38.3 billion in 2001 (OECD-DAC data from www.oecd.org/dac).

Developing more sophisticated estimates of global lottery revenues depends on making assumptions regarding the amount that the global lottery will 'capture' from the existing lotteries, substitution away from other forms of gambling, and the amount from new players (including global altruists). All of these assumptions hinge in one way or another on the effectiveness of the marketing of the global lottery, both to pure gamblers and global altruists.

Figures 1 to 7
World lottery sales by product

Figure 1

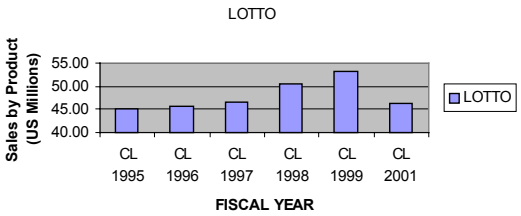


Figure 2

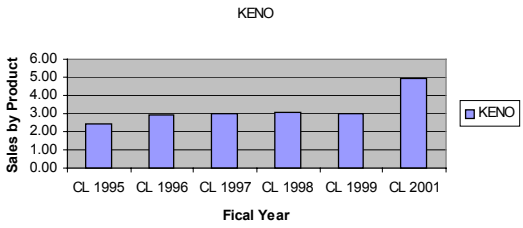


Figure 3

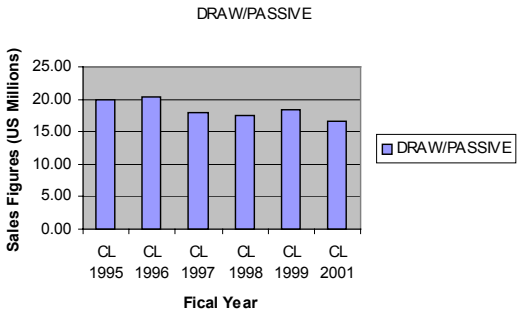


Figure 4

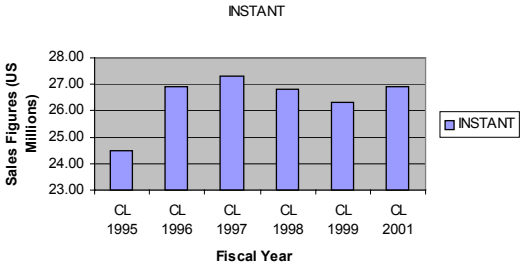


Figure 5

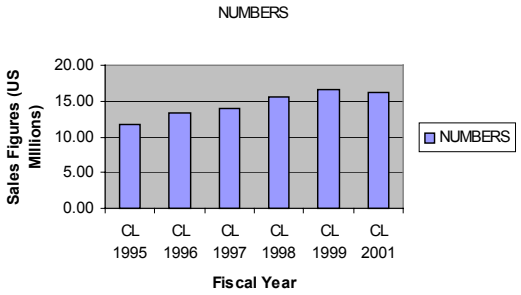


Figure 6

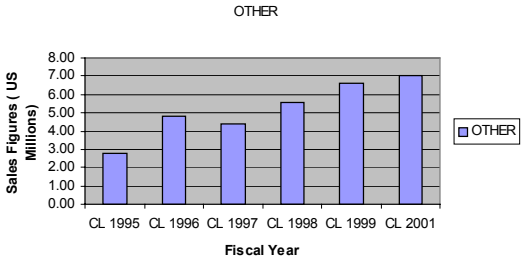
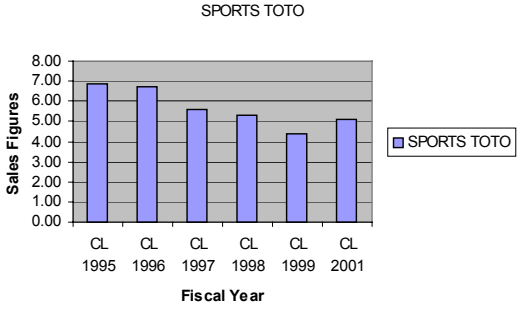
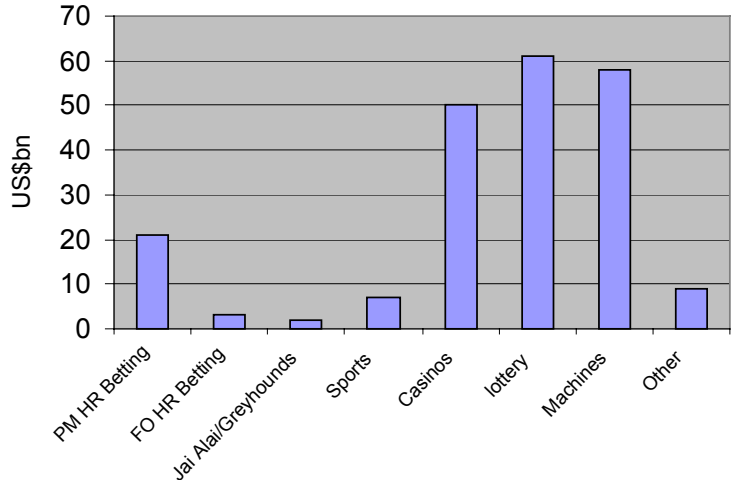


Figure 7



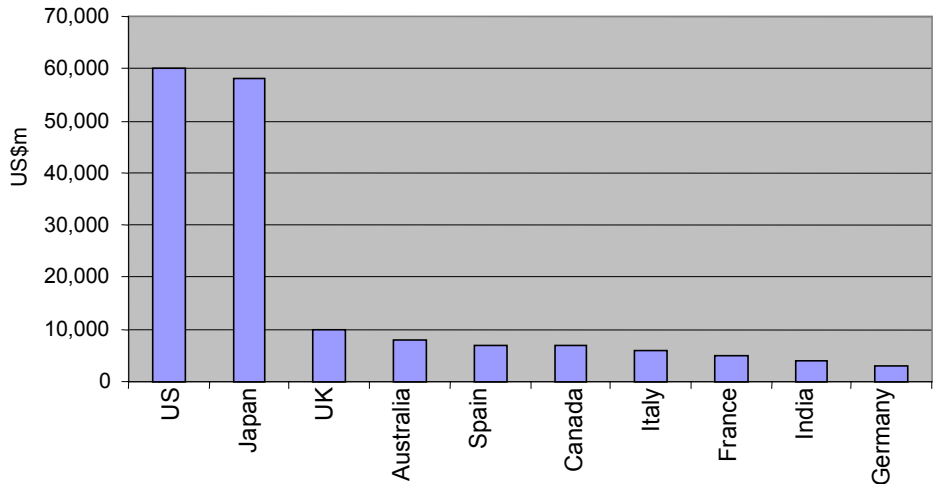
Source: Derived from data in Tables 3 and 4.

Figure 8
Global gross gaming yield by product, 2000



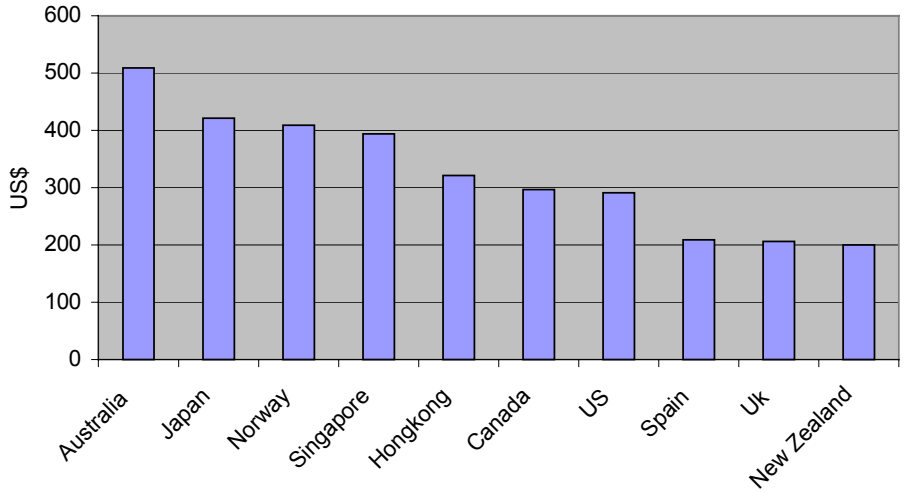
Source: Global Betting and Gaming Consultants (http://www.bettingconsultants.com/site/report.htm

Figure 9
Leading global betting and gaming nations (gross profit)



Source: As given in Figure 8.

Figure 10
Average gambling loss per audit



Source: As given in Figure 8.

Experience from introducing new national lotteries shows that revenue generation can stagnate as the novelty wears off (however, since the base for the global lottery is world income, it would not suffer as much from the business cycle fluctuations that affect national lottery proceeds). This must be taken into account in the disbursement of funds to development programmes, so as not to endanger delivery (i.e. any special development fund for this purpose may need to retain sizeable reserves).

2.6 Cross-country equity

As we discussed, countries differ substantially in the potential national market for the lottery. The CMI proposal is for a portion of the national global lottery to be distributed within the country concerned, in order to offset any negative impact on the revenue raised through existing lotteries or the causes they fund.

How should that portion be determined? Should the portion retained by the country be the same across all countries or should it vary according to the level of development (weights based on per capita income) or some form of poverty weighting (using weights derived from UNDP's Human Development Index for instance?). This issue applies not just to the global lottery as an instrument of innovative finance for developing countries, but also to other instruments such as global taxation (and it is part and parcel of any discussion on regional fiscal arrangements such as the European Union's system of contributions and rebates).

We do not resolve this issue here, but a simple example highlights the problem. India has a gross national income of US$460 per capita and a population of over one billion; Nicaragua has roughly the same per capita income (US$420) and a population of only five million (World Bank 2002: 232-3). For simplicity, assume that per capita annual expenditure on the global lottery is one dollar in each country, so that India sells US$1 billion of tickets per year and Nicaragua sells US$5 million (in fact Indians are estimated to spend US$10 billion annually on lottery tickets; BBC 2002a). If each country transfers the same percentage to the UN development fund, then India makes a much larger *absolute* transfer into the fund than Nicaragua. Although large countries will also retain higher absolute amounts for their own causes (including poverty reduction), they may still balk at the scale of their transfers to the UN fund and argue for higher percentage retentions for their national causes. There may be a case for a sliding scale, with countries with a GNI below US$*X* keeping 100 per cent, then with more than *X* keeping a fraction that falls to some defined level (say 80 per cent).

2.7 Distributional and welfare effects

Empirical evidence for developed countries shows that low-income groups spend a larger proportion of their income on lotteries than higher income groups.[2] This implies that lotteries are a regressive way of financing public spending, an aspect that has been much criticised (see, for example, Fekjoer 2002 and Reno 1997).[3] For each dollar bet, the average US state lottery pays 55 cents in prizes, spends 12 cents on retailer

[2] In the United States, the 1999 national survey on gambling behaviour found that households with incomes in the range of US$50,000-99,000 spent an average of US$301 per year, while households with an income less than US$10,000 spent an average of US$520 on lotteries in a year (Federal Reserve Bank of Minneapolis 2003).

[3] See Clotfelter and Cook (1989: 222-3) on defining regressivity in the context of lotteries.

commissions and other operating costs, which leaves 33 cents for the state (Clotfelter 2000). Clotfelter and Cook (1989) call this an 'implicit tax' because it has the same effect as a tax on lottery expenditures. Clotfelter (2000: 4) concludes that 'if it were an excise tax, it would amount to a 50 per cent tax on the cost of operating a lottery (67 cents), making it much higher than the excise taxes we place on alcohol or tobacco products'.

UK evidence shows that higher income groups are more likely to play in rollover weeks when the expected return is higher, presumably because their time carries a higher opportunity cost or they have many other forms of entertainment (Farrell and Walker 1997). Hence, lottery design affects the regressivity of the tax, and if the competitiveness of the global lottery relative to national lotteries is reduced by lowering the mean prize and the probability of rollovers (as discussed in section 2.3) then the global lottery tax is likely to be more regressive than existing national and state lotteries.

Compared to ODA financed through an income tax, the global lottery is regressive in its effect on the distribution of income in developed countries. But compared to nothing (i.e. lower development funding in the lottery's absence), it is progressive in terms of the world income distribution—provided that the additional development programmes are pro-poor in design and impact. When the lottery finances programmes with positive externalities for everyone (for example, efforts to preserve environmental capital and combat global warming), then the poor benefit along with the non-poor, and these benefits increase when the 'global bad' is especially acute for the poor (for example, flooding in Bangladesh due to global environmental change). Finally, when the poor themselves buy lottery tickets (as many do in South Asia) then as a group the expenditure effect is negative (recall that the expected return in buying a lottery ticket is less than the stake) but some individuals, the winners, may be lifted out of poverty. In summary, the lottery's welfare and distributional effects can be viewed from several different perspectives, some of them more favourable than others.

2.8 Ethical issues

While many countries run lotteries, there are many critics. Some religious groups discourage their members from buying lottery tickets, but practices vary widely. Muslim countries vary in their tolerance for lotteries: Bangladesh, Malaysia and Pakistan have active state lotteries, whereas Saudi Arabia does not (see the appendix tables for country-level data on the prevalence of different types of gaming). The Catholic religion does not expressly forbid lotteries or gambling, provided that the gambler acts freely and without unjust compulsion.[4] Many church organizations raise funds from their own lotteries, but gambling is not universally tolerated across all Christian groups.

Many people welcome the opportunity to participate in lotteries, judging by the numbers who buy tickets. But equally, gambling addiction can result in personal ruin; of the 125 million Americans who gambled in 1998, some 7.5 million were estimated to be 'problem gamblers' (Shiller 2000: 41 citing data collected by the National Gambling Impact Study Commission). Moreover, gambling addiction appears to be more prevalent in men than women, with catastrophic effects on the household when, as in many countries, men control most of the households' cash income by virtue of their

4 See the *Catholic Encyclopedia* at: www.newadvent.org/cathen/06375b.htm

greater participation in wage-labour etc. (see Kearney 2002 on the impact of US state lotteries on consumer expenditures).

So in 'social lotteries', there is always an uneasy tension between the desire to raise money to do good, and the recognition that one is providing a potentially addictive route to ruin, even if only for a small minority of people. For this reason some US state lotteries set aside funds for projects to reduce gambling addiction and some states impose strict controls on advertising (Clotfelter 2000).

The evidence on problem gambling in lotteries is mixed. Griffiths and Wood (1999) review the European research on lottery gambling addiction. The most addictive forms of gambling are those that give purchasers the chance to gamble continuously (thus slot machines are the most addictive). This also makes scratch cards more of a problem than weekly or bi-weekly lotteries. They conclude that:

> With regards to weekly or bi-weekly lotteries there is little evidence Europe-wide they are addictive. This is primarily because of their low event frequency (i.e. there are a number of days gap between knowing the result of each gamble) … Scratch cards and VLTs [Video Lottery Terminals] appear to be a different proposition to a discontinuous lottery game and appear to have the potential to promote repetitive habit patterns. Although the evidence is somewhat sparse, there does appear to be evidence in a number of countries … that scratch cards are a problem to a small minority of people … (Griffiths and Wood 1999: 21).

In India, lottery gambling has become a matter of public debate, particularly over gambling addiction among the poor, and its encouragement by lottery companies.[5] The Lotteries (Regulation) Act 1998, bans single digit lotteries and instant lotteries, and bills have been submitted to parliament to ban all lotteries (meeting fierce resistance from state governments, many of which have become increasingly dependent on lottery revenues).

Finally, there is some concern over the potentially negative effects of very large prizes on winners (for example, in press reports regarding family breakdown following lottery wins), leading to the argument that small prizes may be preferable. However, this creates a problem for maximizing lottery revenues given the positive effect of very large prizes on demand. Prizes could be paid in annuities (an option that is offered to winners in the United States), which may reduce such negative social impact.

Despite these problems, many observers might reasonably argue that the ethical case for a global lottery is strong and, indeed, that it is stronger than the case for many existing national lotteries (where national taxation offers more possibilities for meeting social goals if the ethical case for lotteries is in doubt). That is, given the extent of current global problems as well the scale of world poverty and the urgent need to eradicate it—recently reaffirmed by the adoption of the Millennium Development Goals (MDGs)—'exceptional' financing measures are required above and beyond raising foreign aid. And the ethical case for the global lottery will strengthen, as the funds it raises deliver tangible progress in meeting the MDGs by 2015.

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5 In 2002, an Indian builder earning US$3 a day won a US$1 million jackpot in an online lottery and was taken on a nationwide promotional tour by the lottery company (BBC 2002b).

2.9 The global lottery's role in development education

The global lottery has considerable potential as a vehicle for conveying information about development via local sales points together with the national and international media (for example, through regular advertisements and programmes on commercial (e.g. CNN) and public/semi-commercial TV and radio services (e.g. BBC World)).

A single global lottery might be superior to many national versions in its development education impact. Any global televised prize draw would command substantial audiences, affording a unique opportunity to publicize the impact of the funds raised. It would also provide potential for raising additional and large sums from the associated advertising in what could be a peak-viewing slot for a large global audience (for comparison, advertisers paid US$2 million for a 30 second TV spot during the broadcast of the 2002 US Super Bowl). Any hint of malpractice in the lottery operation or misuse of funds would undermine the positive development-education role: caution is therefore the appropriate watchword.

Development education might be promoted by offering in addition to a standard global lottery ticket a menu of lottery tickets (each with the same expected return), the funds from which are earmarked to important causes; for example, tickets to fund primary education; improvements in the livelihoods of poor women; or HIV/AIDS programmes, etc. This might also have positive effects for total funds raised since prospective buyers favour different causes. However, this could reduce the incentive for governments to fund these activities from general taxation or appropriate user charges, thus reducing the net impact—in terms of actual services created—from lottery funds themselves. This issue needs further investigation.

3 A global premium bond

3.1 Experiences with national premium bonds

We now turn to a measure which can complement the global lottery, namely a global premium savings bond modelled on the long-running and successful UK scheme. We describe the latter (and other national premium bond schemes in this section) before turning to the possible structure of the global premium bond in the next section.

In the UK premium bond scheme, people buy savings bonds, each with a unique number that is entered every month in a prize draw, with prizes ranging from £50 to £1 million (a random number generator, nicknamed ERNIE, picks the winners). The size of the total prize allocation is set so that the *expected* return is equivalent to the yield on UK government stock. Individual bond holders may receive a return substantially above or below the average expected return, but in aggregate bond holders get the average if they hold the maximum permitted amount of bonds (which is £30,000 per person). Winners can opt to reinvest their winnings and many people accumulate sizeable holdings in this way (and since the maximum is per person, not per household, families can potentially hold significant wealth in premium bonds). With average luck, a holder of £30,000 of bonds will win 12 prizes per year; given the minimum prize of £50, such an average winner will take home a minimum of £600 per year in prizes. Annual premium bond sales are presently running at £21.4 billion (US$34 billion) in the UK.

Bangladesh and Ireland have similar premium bond schemes. In Bangladesh the 'prize bond scheme' has operated for at least 30 years; the top prize is approximately US$2000 and there are many small prizes (there is no limit to the amount that may be held in prize bonds and the prizes are drawn quarterly). For fiscal year 2001-02, US$815 million was held in prize bonds (Bangladesh Bank 2003).

Premium bond holders never lose their investment (unless the government defaults) but the return depends on their luck. Hence an individual's return can be above or below that on an interest-bearing deposit account or other types of government bonds. The fact that some people prefer to hold premium bonds rather than conventional government bonds with a more certain return indicates their preference for skewness in the distribution of returns, a preference that outweighs the greater variance of the latter relative to conventional government bonds. Many investors prefer premium bonds to interest-bearing deposits when interest rates are low (as at present). Their return may fail to match the inflation rate but this is the case for most government bonds.[6] Premium bonds are much less risky than equities and may produce higher returns than equities over the short-to-medium term given the greater volatility of equity markets. They are also suitable for people in retirement, or closer to retirement, when the main concern is to earn an income from investment in a way that protects the accumulated capital. In addition, winnings are tax free in the UK; accordingly higher-rate taxpayers often hold the maximum allowable amount of premium bonds.

However, at this point we should issue a note of caution. Buying premium bonds *does* contain an element of gambling. You could view a premium bond as equivalent to saving in a savings bank and then using all of the interest in each period to buy lottery tickets. A premium bond offers you the ability to gamble with fewer transactions costs. That said, premium bonds and lottery tickets are incomplete substitutes for three reasons. First, the top prize on a UK premium bond is much less than a UK national lottery jackpot and the prize distribution is less skewed towards very large prizes; given gambler's preference for skewness, many will still prefer to buy lottery tickets.[7] Second, you cannot choose the numbers of your UK premium bond (bondholders are allocated a number), whereas this is important to the lottery's entertainment value.[8] Third, a premium bond offers less *ex post regret*. If you buy £100 of lottery tickets over a year and win nothing, then you lose £100, but if you buy £100 of premium bonds and win nothing then you forfeit the interest from holding the money in a savings account. This is important given that most people consistently overestimate expected returns—whether on lottery tickets, premium bonds, or equities (see Clotfelter and Cook 1989 on lotteries and Shiller 2000: 142 on 'irrational exuberance' in equity markets).

In summary, a premium bond is like a lottery ticket in that the return depends on a random prize draw, but otherwise the former is a savings instrument (with some entertainment value) whereas the latter is closer to other types of entertainment expenditure. Hence it can make financial sense to make a sizeable investment in premium bonds while it is very unwise to bet a large sum on a lottery. Premium bonds have a potentially wider market since their purchase is more socially acceptable to

6 The major exceptions are United States Treasury Inflation Protected Securities (TIPS)

7 The take-up of premium bonds in the UK was quite slow until the prize structure was redesigned to make it more appealing to gamblers (Rayner 1969, 1970).

8 It may be possible to design a system whereby premium bond holders select their draw numbers each month if they wish; the bond number would then carry a permanent reference number purely to record ownership.

groups who otherwise avoid lotteries; hence in the UK they are often given as gifts, especially to children (also the case with Bangladesh's prize bonds).

3.2 The modalities of a global premium bond

Whereas a global lottery can be run in either national versions or a single (international) version (see section 2), a global premium bond (a 'global ERNIE') is a more complex instrument and is therefore best provided by a single organization selling and administering the bonds worldwide (through national sales offices and/or the Internet). It is advantageous, for reasons discussed later, for the global ERNIE to be denominated in a major currency (or basket of major currencies to offset some of the exchange rate risk for bond holders). The flows of funds into and out of the global ERNIE will be subject to changes in its rate of return relative to other financial instruments (for example, other bonds and equities). The global ERNIE must be a liquid financial instrument and well-managed (and its credibility will be strengthened if the world's financial authorities conduct close oversight).

A premium bond is a *debt instrument,* the bond holder lends his or her money and is entitled to repayment upon request, whereas a lottery ticket is a non-refundable expenditure.[9] This has implications for the use to which the money can be put. A global lottery can provide *grant* finance for development purposes, whereas a global ERNIE is more suited to providing *loan* finance. If the UK model is followed and the expected return for an individual holding the maximum permitted amount of bonds is linked to the return on a comparable financial instrument (for instance a weighted average of the yield on a basket of developed-country government bonds) then the latter (plus associated administrative costs) sets a lower bound on the lending rate unless some element of subsidy from other sources is provided (from the funds raised by the global lottery, for example). This means that eligible borrowers, which could be developing-country governments, NGOs and international organizations, could borrow on terms as good as those facing rich-country governments (but on less concessional terms than IDA, unless a subsidy is provided).

Default by borrowers is always possible, but this is true for any loan instrument; thus the desirability of ERNIE funded-lending is bound up with the larger question of whether grants or loans are preferable for low-income borrowers, an issue hotly debated in the context of the Highly Indebted Poor Country (HIPC) Initiative (Addison, Hansen and Tarp 2004). Default could, in extremis, be absorbed by lowering the rate of expected return to bond holders and raising the lending rate to borrowers, but this would reduce the attractiveness of global ERNIEs to investors. Large-scale default would throw into question the repayment of the principal, with potentially fatal results for the viability of the scheme. In addition, since the bonds can be redeemed on demand, whereas loans are long-term, there is mismatch in the maturity structure between assets and liabilities. This mismatch is similar to that found in bond-financed mortgage markets and in the United States the government acts as the guarantor (through Freddie Mac and Fannie Mae). In the case of the global ERNIE, the guarantors would have to be rich country governments (G7).

As a financial instrument the global ERNIE would have the following qualities:

9 UK Premium bonds do not have a fixed term (the case with government and corporate debt).

i) It would be an attractive savings instrument in its own right, particularly for 'ethical' investors. Ethical investment products are a rapidly growing market, both for individuals (for example, pension investment) but also for charitable foundations (a large market). From the perspectives of risk management and return, ethical investors need to hold bonds but they face a dilemma in holding government paper; they cannot avoid financing categories of state spending (for example, the military, nuclear power etc.) that they deem unethical (whereas ethical investors in equities can pick and choose across companies, excluding those that are deemed unethical). A global ERNIE could therefore be in high demand.

ii) The global ERNIE would widen the range of savings instruments open to individuals and organizations (including NGOs as well as private public organizations) in developing countries that are often ill-served by domestic financial instruments. An ERNIE would provide a useful hedge against the inflation and currency risk arising from holding savings in domestic assets, since it will be denominated in a convertible foreign currency (or preferably a basket of foreign currencies so as to stabilize its global purchasing power—this also reduces the exchange rate risk for bond buyers in major currency countries).

iii) Global ERNIE's would be a suitable charity gift, including transfers between individuals or groups in developed and developing countries, and such gifts and bequests could be exempted from taxation under national legislation to increase their attractiveness (however a limit on purchases would be necessary to avoid the crowding-out of taxable bonds). International charities could also hold global ERNIEs on behalf of community organizations in countries and localities with insecure property rights and poor communications.

iv) The global ERNIE may over time establish itself as a collateral instrument that people can borrow against in their domestic capital markets, both informal and formal (to the advantage of poorer ERNIE holders who can diversify their collateral away from traditional instruments such as land, cattle, jewellery and (bonded) labour).[10]

In summary, the global lottery is superior to the global ERNIE from the perspective of the final user of the funds, since the lottery can provide finance on grant terms. But the lottery does not offer a savings instrument, whereas the premium bond does and, provided that the risks of borrower default are contained, the global ERNIE could be attractive to investors in both developed and developing countries. This would facilitate ethical investment in developing countries and provide individuals and organizations in developing countries with access to an international financial instrument.

The global ERNIE may be more ethically acceptable to those who disagree with gaming in general, including social lotteries. Since the funds raised by existing national premium bonds are not earmarked to charitable causes (as is often the case with government lotteries), but instead form part of general government funding, there would not be the level of resistance among national charities that poses a political problem for the global lottery (rather the opposition could arise from ministers of finance who might

[10] If ERNIEs were *bearer bonds*, then their use as collateral would be facilitated but this is almost certainly ruled out by the necessity to impose a maximum limit on the holding per person (as in the UK scheme) and the ease with which bearer bonds can be used in money laundering.

see the global ERNIE as taking market share from their country's domestic debt instruments).

Finally there is an issue of sequencing the introduction of the global lottery and the global premium bond. As we noted in section 2.1, the introduction of the global lottery may be delayed when national lottery suppliers hold licences for defined periods. Being a different product, the global premium bond could be introduced earlier.

4 Conclusion and recommendations

This paper has discussed the present proposals for a global lottery. This has potential to raising finance for development programmes, of benefit to both the world and to poor people. In addition, we have proposed a global premium bond as an additional instrument. Both the lottery and the ERNIE could have strong development education benefits, an important consideration in these days of 'aid fatigue', when the case for helping poor countries and poor people must again capture the public's imagination. But for this reason, both schemes must meet the highest possible ethical standards.

The revolution in global communication technologies is fundamentally changing the market for gaming. It is now possible to conceive of running the global lottery from a single organization via the Internet. This would have significantly lower administrative costs than selling national versions of the global lottery through national lottery agencies; a single authority would be easier to regulate than many national authorities and it would have potentially greater reach than national schemes. But for these reasons it may face more political opposition than nationally-run versions of the global lottery if it is seen to take money from national charities. We do not envision nationally-run versions of the global ERNIE since this is a more complex financial instrument than the lottery.

The market for gambling is also being altered by liberalization in many countries, which is in turn driven by the fiscal needs of central and local governments (including the increasing importance of gambling taxes given political opposition to other forms of taxation), the liberalization of cross-border transactions in services (for example, EU harmonization) and more permissive social attitudes to gambling. In the UK for example, the report of the Gambling Review Body, chaired by Sir Alan Budd, recommended relaxing legal restrictions on the advertising and promotion of gambling, in part to create a fairer and more competitive market for gamblers (Department for Culture, Media and Sport 2003). A global lottery will have to compete in an increasingly vigorous market.

Global altruism can play a big role in encouraging sales of the global lottery—hence the importance of the development education component—but sizeable sales depend as well on its attractiveness to gamblers relative to other gaming products, including those now provided commercially via the Internet. In contrast, the attractiveness of the global ERNIE depends more on its merits as a savings instruments and we indicated that it could find a strong place in the growing market for ethical investment. Whatever the final design of such schemes, it is imperative that we move ahead with further debate on these and other innovative forms of development finance.

Appendix tables

Appendix Table 1
Types of betting and gaming in Africa

	Betting	Casinos	Bingo	Gaming machines	Lotteries	Keno	Charitable gaming	Card clubs	Interactive gambling	Indian gaming	Gaming cruises	Illegal gambling	Community gaming
Algeria	x				x								
Anjouan									x				
Benin		x			x								
Botswana		x											
Burkina Faso					x								
Burundi					x								
Cameroon	x	x			x								
Côte d'Ivoire		x			x								
Congo, R.D.		x			x								
Ethiopia		x			x								
Gabon		x											
Gambia		x			x								
Ghana		x			x								
Kenya		x			x								
Lesotho		x											
Liberia									x				
Madagascar		x			x								
Mali					x								
Mauritius	x	x			x				x				
Morocco	x	x			x								
Mozambique		x			x								
Namibia		x		x									
Niger		x			x								
Nigeria		x			x								
Rwanda					x								
Senegal		x			x								
Seychelles		x											
Sierra Leone		x	x		x								
South Africa	x	x	x	x	x				x			x	
Eastern Cape	x	x											
Free State	x	x											
Gauteng	x	x	x									x	
KwaZulu-Natal	x	x	x	x								x	
Mpumalanga	x	x										x	
Northern Cape	x	x	x										
Northern Province	x	x	x	x								x	
NW Province	x	x	x										
Western Cape	x	x	x									x	
Swaziland	x												
Tanzania	x				x								
Togo	x				x								
Tunisia	x	x			x								
Uganda		x											
Zambia	x												
Zimbabwe		x			x								

Appendix Table 2
Types of betting and gaming in North America

	Betting	Casinos	Bingo	Gaming machines	Lotteries	Keno	Charitable gaming	Interactive gambling	Indian gambling	Card clubs	Gaming cruises	Illegal gambling	Community gaming
CANADA	x	x	x	x	x		x	x					
Alberta	x	x		x	x		x						
British Columbia	x	x	x	x	x		x						
Manitoba	x	x		x	x		x						
New Brunswick	x			x	x		x						
Newfoundland & Labrador	x			x	x								
NW Territories					x		x						
Nova Scotia	x	x	x	x	x		x	x					
Nunavut					x								
Ontario	x	x		x	x		x						
PE Island	x			x	x		x	x					
Quebec	x	x	x	x	x								
Mohawk–Kahnawake								x					
Saskatchewan	x	x		x	x		x	x					
The Yukon					x								
UNITED STATES	x	x			x		x	x	x				
Alabama	x				x		x		x				
Alaska		x					x		x				
Arizona	x				x		x	x	x				
Arkansas	x						x						
California	x				x		x	x	x	x			
Colorado	x	x			x		x	x	x				
Connecticut	x				x		x		x				
Delaware	x			x	x		x						
Distinct of Columbia					x		x						
Florida	x	x			x		x	x					
Georgia					x		x					x	
Hawaii	na												
Idaho	x				x		x	x	x				
Illinois	x	x			x		x	x					
Indiana	x	x			x		x	x					
Iowa	x	x		x	x		x	x					
Kansas	x				x		x	x	x				
Kentucky	x				x		x						
Louisiana	x	x		x	x		x	x					
Maine	x			x	x		x		x				
Maryland	x		x		x		x			x			
Massachusetts	x				x		x						
Michigan	x	x			x		x	x	x				
Minnesota	x				x		x	x				x	
Mississippi		x			x		x		x				
Missouri	x	x			x		x	x	x				
Montana	x		x	x	x	x		x	x	x		x	

Appendix Table 2 continues

Appendix Table 2 (cont)
Types of betting and gaming in North America

	Betting	Casinos	Bingo	Gaming machines	Lotteries	Keno	Charitable gaming	Interactive gambling	Indian gambling	Card clubs	Gaming cruises	Illegal gambling	Community gaming
Nebraska	x	x			x		x					x	
Nevada	x	x		x			x	x					
New Hampshire	x				x		x						
New Jersey	x	x			x		x	x					
New Mexico	x			x	x		x	x	x			x	
New York	x				x		x	x	x				
North Carolina		x		x			x	x					
North Dakota	x	x					x						
Ohio	x				x		x	x				x	
Oklahoma	x						x		x				
Oregon	x	x		x	x		x	x					
Pennsylvania	x				x		x	x					
Rhode Island	x			x	x		x						
South Carolina				x	x					x	x		
South Dakota	x	x		x	x			x					
Tennessee	na												
Texas	x				x		x	x	x				
Utah	na												
Vermont	x				x		x						
Virginia	x				x		x						
Washington	x	x			x		x		x				
West Virginia	x			x	x		x						
Wisconsin	x				x		x		x				
Wyoming	x						x		x				
Bermuda			x	x				x					

Appendix Table 3
Types of betting and gaming in Oceana

	Betting	Casinos	Bingo	Gaming machines	Lotteries	Keno	Charitable gaming	Interactive gambling	Indian gaming	Card clubs	Gaming cruises	Illegal gambling	Community gaming
American Samoa				x			x						
Australia	x	x		x	x	x	x	x					
Australia Capital Territory	x	x		x	x			x					
New South Wales	x	x		x	x	x	x						
Northern Territory	x	x		x	x	x		x					x
Queensland	x	x		x	x	x	x	x					
Southern Australia	x	x		x	x	x	x	x					
Tasmania	x	x		x	x	x	x	x			x		
Victoria	x	x		x	x	x	x	x					
Western Australia	x	x			x		x	x					
Christmas Island		x			x								
Cook Islands					x			x					
Easter Island	na												
Fiji	x				x								
French Polynesia		x											
Guam				x									
Nauru					x			x					
New Caledonia		x											
New Zealand	x	x		x	x	x	x	x					
Norfolk Island					x			x					
Northern Mariana Islands		x			x								
Palau								x					
Papua New Guinea								x					
Samoa					x								
Solomon Islands		x						x					
Vanuatu		x						x					

Appendix Table 4
Types of betting and gaming in Central & South America
and the Caribbean

	Betting	Casinos	Bingo	Gaming machines	Lotteries	Keno	Charitable gaming	Interactive gambling	Indian gaming	Card clubs	Gaming cruises	Illegal gambling	Community Gaming
Antigua & Barbuda		x						x					
Argentina	x	x	x	x	x			x					
Aruba		x			x								
Bahamas		x						x					
Barbados		x											
Belize								x					
Bolivia		x			x								
Brazil	x	x	x		x			x					
Chile	x	x			x			x					
Columbia		x			x								
Costa Rica		x			x			x					
Dominica								x					
Dominican Rep.	x	x			x			x					
Ecuador		x			x								
El Salvador		x											
Grenada								x					
Guadeloupe		x											
Haiti		x											
Honduras		x			x								
Jamaica		x			x			x					
Martinique		x											
Mexico		x			x							x	
Netherlands Antilles		x						x					
Nicaragua		x						x					
Panama	x	x		x	x			x					
Paraguay		x			x								
Peru	x	x		x	x								
Puerto Rico	x	x			x								
St Kitts & Nevis		x						x					
St Vincent		x						x					
Suriname		x			x								
Trinidad & Tobago	x	x			x			x					
Turks and Caicos		x											
Uruguay	x	x			x								
Venezuela	x	x	x	x	x								
US Virgin Islands		x			x			x					

Appendix Table 5
Types of betting and gaming in Europe

	Betting	Casinos	Bingo	Gaming machines	Lotteries	Keno	Charitable gaming	Interactive gambling	Indian gaming	Card clubs	Gaming cruises	Illegal gambling	Community gaming
Albania					x								
Alderney								x					
Austria	x	x			x			x					
Belarus					x								
Belgium	x	x		x	x			x					
Bosnia & Herzegovina	x				x								
Bulgaria	x	x		x	x								
Croatia	x	x			x			x					
Cyprus	x	x			x								
Czech Republic	x	x		x	x								
Denmark	x	x		x	x			x					
Faroe Is. (Den.)								x					
Estonia		x			x			x					
Finland	x	x		x	x			x					
Aland (Finland)	na												
France	x	x		x	x			x					
Germany	x	x			x			x					
Gibraltar					x			x					
Greece	x	x										x	
Guernsey					x								
Hungary	x	x		x	x								
Iceland	x				x			x					
Ireland	x			x	x			x				x	
Isle of Man	x							x					
Italy	x	x	x		x			x					
Jersey	x				x			x					
Latvia	x	x	x	x	x			x					
Liechtenstein								x					
Lithuania					x							x	
Luxembourg					x			x					
Macedonia		x		x	x								
Malta	x	x			x			x					
Moldavia		x			x								
Monaco		x											
The Netherlands	x	x			x			x				x	
Norway	x	x	x	x	x			x					
Poland	x	x	x	x	x							x	
Portugal	x	x			x								
Romania	x	x	x	x	x								
Russia	x	x		x	x			x					
Kalmykia, Russia								x					

Appendix Table 5 con't

Appendix Table 5 (con't)
Types of betting and gaming in Europe

	Betting	Casinos	Bingo	Gaming machines	Lotteries	Keno	Charitable gaming	Interactive gambling	Indian gaming	Card clubs	Gaming cruises	Illegal gambling	Community gaming
Serbia	x	x		x	x								
Slovakia	x	x		x	x			x					
Slovenia	x	x			x			x					
Spain	x	x	x	x	x			x				x	
Sweden	x	x	x	x	x			x					
Switzerland	x	x			x			x					
Turkey	x	x			x								
Ukraine		x			x								
United Kingdom	x	x	x	x	x			x					

Appendix Table 6
Types of betting and gaming in Asia and the Middle East

	Betting	Casinos	Bingo	Gaming machines	Lotteries	Keno	Charitable gaming	Interactive gambling	Indian gaming	Card clubs	Gaming cruises	Illegal gambling	Community gaming
Azerbaijan		x											
Bahrain	na												
Brunei		x											
Cambodia		x			x								
China					x			x			x	x	
Egypt		x											
Hong Kong	x	x			x			x				x	x
India	x	x		x	x			x				x	
Indonesia	na												
Iran	na												
Israel		x			x			x				x	
Japan	x	x		x	x			x				x	
Jordan	na												
Kazakhstan		x			x								
Kuwait	na												
Kyrgyzstan		x											
Lebanon	x	x			x							x	
Macao	x	x						x				x	
Malaysia	x	x			x			x				x	
Maldives	na												
Mongolia	na												
Nepal		x											
North Korea		x						x					
Palestine		x											
Philippines	x	x			x			x				x	
Qatar	na												
Rep. Georgia	x	x											
Saudi Arabia												x	
Singapore	x	x		x	x			x				x	
South Korea	x	x		x	x			x				x	
Sri Lanka	na												
Syria		x											
Taiwan		x		x	x			x				x	
Thailand	x	x			x							x	
Turkmenistan		x										x	
United Arab Emirates	na												
Uzbekistan		x											
Vietnam				x	x							x	

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