Gambling and the National Accounts

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Summary

''This isn't betting. This is bookmaking. And that's where our Trading team comes in. A big day on the trading floor creates an atmosphere to rival any stock exchange in the world.'' Recruitment advert for UK bookmaker Ladbrokes.

This paper considers how gambling transactions (wagers) and the institutional units involved (gaming institutions) should best be recorded in the National Accounts. The paper identifies errors, inconsistencies and oversimplifications in the current System of National Accounts 2008 treatment and offers a new treatment. This new treatment proposes that wagers are inherently financial rather than non-financial, that gaming institutions are financial institutions rather than non-financial institutions and that purely speculative transactions such as those involved in directly creating a wager have no associated output. The analysis underpinning these proposals develops research undertaken by the International Accounting Standards Board in a review of how wagers should be recorded in commercial accountancy.

Keywords

Derivatives, gambling, national accounts, speculation, wagers

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[2] The views in this paper are those of the author and do not necessarily represent the views of Statistics Netherlands.

1. Introduction

This paper argues that the current System of National Accounts 2008 (SNA) (IMF, 2009) treatment for recording gambling activities is incorrect, inconsistent and overly simplistic. This paper challenges the current treatment and, through consistent application of SNA, suggests an alternative that better reflects the economic reality of gambling activities and the transactions involved. In doing so, this paper develops existing analysis by the International Accounting Standards Board (IASB) who considered how gambling activities and the inherent transactions should be recorded by commercial accountants within the current International Financial Reporting Standards (IFRS).

Section 2 introduces the topic of gambling, the current SNA treatment and identifies issues with this treatment. Section 3 gives a case-study of the gambling industry in the UK. Section 4 develops the IASB analysis to determine how gambling transactions (wagers) could be better recorded in the National Accounts and makes proposals. Section 5 then considers some of the likely counterarguments to these proposals. Section 6 discusses the issue of whether to and if so how to measure any output involved in purely speculative transactions such as wagers. Section 7 offers concluding remarks. The annex gives examples of how different wagers would be recorded in the National Accounts.

2. Gambling and its current treatment

2.1 What is gambling?

There is no single legal definition of gambling, rather, activities are often prescribed to be gambling based on local and national laws. In the sparse treatment of gambling within SNA no sufficient definition is provided either. One oddly broad definition is to be found in the current Eurostat "Handbook on prices and volume measures in national accounts" (Eurostat, 2016) which relates entertainment and gambling to the opportunity for households to make gains in wealth. A definition, which if applied consistently, would see much of the financial sector recorded as non-financial entertainment activities. For the purposes of this paper gambling is therefore defined as:

> "the act of creating risk in the pursuit of profit, where the outcome is to be wholly determined by an uncertain future event over which the creator of the risk has no control."

Such a definition is intended to cover the broadest scope of gambling; lotteries, casino games, sports and non-sports wagers etc. The entities which, alongside consumers, undertake and facilitate this broad group of activities are covered in this paper by the term "gaming institution(s)". The term "wager(s)" is used to describe the activity of gambling.

The various different forms of wagers can, broadly speaking, be categorised into the following:

- Fixed-odds wagers, where bookmakers and similar gaming institutions offer 'odds' on the outcomes of uncertain future events. This is most commonly seen with sporting events though in recent years has broadened significantly to include: politics, entertainment awards, snow on Christmas day, television reality shows, etc.

- Casino wagers, where the casino accepts a position against the customer and offers odds or probability based pay-outs on the outcome of a random future event, most often probability based games such as roulette.

- Spread-bet wagers, where both the customer or gaming institution can win or lose depending on the margin by which the value of a particular outcome varies from a spread of expected values quoted by the gaming institution. This is most commonly seen in areas of financial information but also in sports related events.

- Pool wagers, where the total amounts wagered are pooled together and allocated to the winner with the organiser of the pool taking a cut of the winnings or charging an entrance fee of sorts to cover administrative costs, most obviously lotteries and some casino games where the casino is not a player in the game but rather a host, e.g. poker.

As this paper will go on to demonstrate, the economic characteristics underlying the various forms of gambling have implications for how each should be considered and recorded in National Accounts.

Table 1. Comparison of differing forms of gambling

Fixed-odds wagers	Casino wagers	Spread-betting wagers	Pool wagers
Initial stake paid by consumer.	Initial stake paid by consumer.	No initial stake paid by consumer.	Initial stake paid by consumer.
No explicit service charge.	No explicit service charge.	No explicit service charge.	Often an explicit service charge or a proportion of each stake is withheld as an explicit service charge.
Creditor and debtor position can change in magnitude but not direction.	Creditor and debtor position can change in magnitude but not direction.	Creditor and debtor can change in both magnitude and direction.	Individual creditor positions can change in magnitude but not direction. However total debtor position remains fixed at total staked.
Outcome determined by uncertain future event.	Outcome determined by uncertain future event.	Outcome determined by uncertain future event.	Outcome determined by uncertain future event.
Total cash pay-out can exceed total staked.	Total cash pay-out can exceed total staked.	Total cash pay-out can be unlimited.	Total cash pay-out cannot exceed total staked.

Table 1 does not consider additional charges that may be levied but that are not directly linked to the placing of a wager. For example, some gaming institutions might restrict their activities to those customers who have paid an entry or membership fee. As these transactions are entirely separate to any subsequent wagers they do not play a role in the analysis of how the wagers themselves should be recorded. Any such entry fees or membership charges should be seen as the sale of a service and accounted for in the usual way.

A further distinction that can be made between types of wagers is to look at the time element involved. Some wagers may last a matter of seconds or shorter (slot machine wagers) whereas some may last months or years (wager on the next president). Ultimately, the time element has no impact on the underlying economic characteristics of the wager and is therefore irrelevant to how such transactions should be classified. Though the time element does of course impact on when transactions are recorded in the accounts.

2.2 Current treatment of gambling in the National Accounts

The treatment of gambling in the National Accounts is described from 8.136 to 8.139 in SNA. This treatment focuses on lotteries but the use of the phrase "lotteries or gambling" and the absence of any other guidance in effect means that treatment of all gambling activities are covered by these four paragraphs. The current guidance can be summarised as:

- The amounts paid for lottery tickets or placed in bets consist of two elements: the payment of a service charge to the organiser and a residual current transfer that is paid out to the winner.
- The service charge may have to cover taxes on the production of gambling services.
- Where no explicit service charge is charged an estimate is calculated. COICOP defines the estimated service charge as the difference between the total amount placed in wagers and the total amount paid out in prizes. This calculation is more commonly described as the 'gross gambling yield'.
- The current transfers are regarded as taking place directly between those participating in the lottery or gambling activity. Most often this is between households though this is not always the case.

It is the view of this paper that SNA and the treatment currently stated for gambling is incorrect, inconsistent and overly simplistic. The main points of criticism held against SNA and the current treatment of gambling are that:

- SNA incorrectly treats all gambling activities as a form of lottery or pooled gambling and fails to take account of other forms of gambling where a different treatment may be required.

- SNA and the accompanying methodology overestimates the output of the gambling sector by assuming that the gaming institution only receives a service charge and is not in a position to gain or lose further from the transaction. This service charge is equated to the entire gambling yield. In doing so SNA fails to consider what the service element is in a gambling or any speculative transaction.

- SNA offers no way of recording any asset and liability position which the customer or gaming institution may hold. Such asset and liability positions could span across accounting periods and therefore require recording in the balance sheet. Alternatively the asset and liability positions could be traded on the market and therefore require recording in the accounts.

- SNA is inconsistent in its treatment of assets and transactions that have the same underlying economic characteristics. As this paper will go on to show wagers have the same underlying economic characteristics as some financial instruments. A consistent SNA would treat wagers equal to these financial instruments.

The following table shows the difference between the economic transactions in gambling. It is clear that there are significant differences between the forms of gambling and that the current recording treatment fails to recognise this by treating all gambling as a form of pool wager. Other forms of gambling differ largely from pool wagers and these differences must be recorded in the National Accounts.

Table 2. Comparison of economic transactions in various forms of gambling

	Fixed-odds/Casino wagers		Spread-betting wagers		Pool wagers	
	Consumers	GI	Consumers	GI	Consumers	GI
Premium	P	n/a	n/a	n/a	P	n/a
Explicit service charge	n/a	n/a	n/a	n/a	C	n/a
Max win	$\sum((Pw*D) + Pw) - \sum Pl$	$\sum Pl - \sum((Pw*D) + Pw)$	Unlimited	Unlimited	$\sum(P - C)$	$\sum C$
Max loss	$\sum Pl - \sum((Pw*D) + Pw)$	$\sum((Pw*D) + Pw) - \sum Pl$	Unlimited	Unlimited	$\sum(P - C)$	n/a

P = Premium, Pw = Premium winning wager, Pl = Premium losing wager, D = odds, C = Explicit service charge

3. Gambling industry – UK as a case study

3.1 Background

The UK has a mature and relatively prevalent gambling industry and therefore, provides an interesting case-study on the industry and its recording in National Accounts. The gambling industry in the UK consists of amongst others: a National Lottery as well as various smaller lotteries; casino gambling; a long tradition and nationwide industry of bingo halls; and a sports and non-sports betting industry operating both on and off-line (remote).

As a short aside, the regulatory element to the UK gambling industry gives an indication of the financial nature of gambling and the blurred lines that exist between gambling and financial activities. The UK gambling industry is largely regulated by the Gambling Commission, an arm of the UK central government. Except for spread-betting which, due to the decision by the UK Parliament that spread-betting is indistinguishable from financial contracts for difference, is regulated by the Financial Conduct Authority, itself an arm of the UK central government. Conversely financial binary options trading, essentially fixed odds bets on the movement of financial variables, are regulated by the Gambling Commission under UK law. Such a crossover in the regulation of gambling between the state gambling regulator and the state financial regulator is a clear indicator of the links between gambling activities and financial activities.

3.2 In numbers

The Gambling Commission compiles statistics on those parts of the UK gambling industry which fall under its remit. These statistics are the primary source used by the Office for National Statistics for the UK estimates of output and expenditure in the gambling industry. Following the COICOP methodology this service charge is calculated as the difference between total wagers placed and total prizes won otherwise known as the Gross Gambling Yield. Using data from the Gambling Commission an estimate can be calculated of the service charge or gross gambling yield as a percentage of the total bets placed or turnover.

The data in table 3 shows that current estimates of the implicit service charge in the gambling industry are between 20-24p in every £1 wagered. Such a service charge feels implausibly high. This implausibility is furthered when considering that explicit service charges charged by betting exchanges in the UK vary between 3-5% or 3-5p in every £1 wagered. By incorrectly equating the service charge to the total gross gambling yield the current COICOP methodology results in a large overestimation of the service charge in the gambling industry.

Such an issue and overestimation is not UK specific, but rather an issue for all NSIs following the COICOP methodology, of which Statistics Netherlands is one of many. Though, the macro-economic statistics of those countries with larger gambling industries (as a proportion of total economic activity) will be more greatly impacted by the current erroneous methodology. However, even in countries with more prevalent gambling industries the impact is still likely to be small. In the UK the gambling industry accounts for less than 1% of the total economy.

Table 3 – UK gambling industry data

							£ millions
	Gambling Industry Turnover by Sector						
	Apr 2008-Mar 2009	Apr 2009-Mar 2010	Apr 2010-Mar 2011	Apr 2011-Mar 2012	Apr 2012-Mar 2013	Apr 2013-Mar 2014	Oct 2014-Sept 2015*
Non-remote sector	**18,206**	**17,206**	**17,284**	**18,017**	**18,387**	**18,906**	**19,300**
*Arcades***	1,601	1,520	1,307	1,270	1,196	1,262	1,278
Betting	10,744	10,076	9,762	10,097	9,912	9,733	9,590
Bingo	1,435	1,337	1,273	1,249	1,216	1,146	1,115
Casinos	4,426	4,272	4,942	5,401	6,063	6,765	7,317
Remote betting, bingo and casino	11,218	11,531	13,367	14,793	20,625	26,329	33,390
National Lottery (remote and non-remote)	5,149	5,477	5,825	6,503	6,977	6,736	7,275
Lotteries (remote and non-remote)	179	195	208	301	346	377	452
Total industry turnover (A)	**34,752**	**34,408**	**36,683**	**39,615**	**46,335**	**52,348**	**60,417**
	Gambling Industry GGY by Sector						
	Apr 2008-Mar 2009	Apr 2009-Mar 2010	Apr 2010-Mar 2011	Apr 2011-Mar 2012	Apr 2012-Mar 2013	Apr 2013-Mar 2014	Oct 2014-Sept 2015
Non-remote sector	**4,883**	**4,646**	**4,772**	**4,964**	**5,220**	**5,334**	**5,269**
Arcades	480	456	392	381	359	379	383
Betting	2,903	2,811	2,957	3,030	3,199	3,173	3,201
Bingo	703	627	626	681	701	672	691
Casinos	796	751	797	873	961	1,111	993
Remote betting, bingo and casino	817	632	653	710	933	1,135	3,636
National Lottery (remote and non-remote)	2,522	2,679	2,840	3,124	3,280	3,100	3,293
Lotteries (remote and non-remote)	144	159	170	229	273	294	357
Total industry GGY (B)	**8,365**	**8,116**	**8,436**	**9,027**	**9,705**	**9,863**	**12,556**
GGY as % of turnover (B/A)	**24.1%**	**23.6%**	**23.0%**	**22.8%**	**20.9%**	**18.8%**	**20.8%**
*The Gambling Commission changed their reporting procedure and timescale							
** Data estimated from GGY figures based on arcades typically having an approximate 70% payout rate.							
	2009	2010	2011	2012	2013	2014	2015
ONS data: output of UK gambling industry	8,641	8,362	8,790	9,372	9,270	9,801	10,059
ONS data : weight of gambling in UK GVA	0.66%	0.59%	0.64%	0.66%	0.64%	0.64%	0.64%

Source: ONS data – Office for National Statistics, all other data UK Gambling Commission

4. Analysis of gambling

4.1 The IASB analysis

The International Accounting Standards Board (IASB, 2007) considered how gambling transactions should be recorded in relation to the current accounting standards and specifically how gaming

institutions should account for wagers. The IASB analysed the differing views of whether wagers should be recorded as immediate revenue, deferred revenue or as financial derivatives, before concluding that wagers are best recorded as a form of financial derivatives with the precise form of derivative determined by the underlying characteristics of the particular wagers. As part of their analysis the IASB reviewed how gaming institutions are currently accounting for wagers and found that the recording of wagers as financial derivatives is already prevalent. This paper will seek to develop the IASB research with reference to the key National Accounts guidance to determine how best gambling activities should be recorded by national accountants.

4.2 Are wagers financial instruments?

In considering how best to account for wagers in the National Accounts, and whether the IASB prescription to record such transactions as a form of financial derivatives can be applied, it is necessary to first determine whether wagers can be considered as a form of financial instrument. The IASB analysis considers wagers against IAS 32 which defines a financial instrument as:

> "any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity".

The two key issues to consider in determining whether a wager is a financial instrument are:

1) Is a wager a contract?
2) Does a wager give rise to a financial asset and a financial liability?

The IASB analysis determines that a wager is a contract in that, given the level of regulation, gaming institutions have little option but to pay out on successful wagers. The IASB also determines that a wager gives rise to a financial asset and a financial liability as IAS 32.11 states that financial assets include the contractual right to receive cash from another entity. Further IAS 32.AG8 states that:

> "the ability to exercise a contractual right may be contingent on the occurrence of a future event."

The IASB analysis also confirms that wagers do not meet any of the exemptions from financial instruments under IAS39; concluding that an unsettled wager gives rise to a financial asset for the customer and a financial liability for the gaming institution.

SNA 2.29, 3.33 and 3.35 broadly replicates the IAS 32 definition of a financial instrument with regard to financial transactions:

"Transactions in financial instruments (or financial transactions) refer to the net acquisition of financial assets or the net incurrence of liabilities for each type of financial instrument."

"A liability is established when one unit (the debtor) is obliged, under specific circumstances, to provide a payment or series of payments to another unit (the creditor). The most common circumstance in which a liability is established is a legally binding contract that specifies the terms and conditions of the payment(s) to be made and payment according to the contract is unconditional."

"A financial claim is the payment or series of payments due to the creditor by the debtor under the terms of a liability. Like the liabilities, the claims are unconditional. In addition, a financial claim may exist that entitles the creditor to demand payment from the debtor but whereas the payment by the debtor is unconditional if demanded, the demand itself is discretionary on the part of the creditor."

As with the IAS definition the SNA definition includes an implicit requirement for a contract. It is interesting to note that no explicit requirement is made for there to be a formal contract, rather a legally binding contract is only the most common circumstance of a liability. Under this implicit or explicit contract, one unit must under specific circumstances, provide a payment or series of payments to another unit. The reference to the payment being unconditional, according to the contract, should not be misread as implying that conditional payments are not liabilities. So long as the conditional element is stated in the contract then payment is unconditional. This mirrors perfectly the economic reality of all wagers (fixed odds/casino wagers, spread-bet wagers and pooled-wagers) where under specific and defined circumstances one unit must provide a payment to another unit.

The SNA definition of a financial claim (asset) indicates further that wagers give rise to a financial asset and liability. Under a wager the demand for a pay-out is discretionary on customers with winning wagers claiming their payment at which point the payment is unconditional. There is no requirement for gaming institutions to track down winning customers and make payment. Though the increase of internet gambling means that such payments are now often instant and do not require the customer to make any effort to claim a winning wager.

4.3 What type of financial instrument is a wager?

Having determined that a wager is a form of financial instrument, the following step is to ask what class of financial instrument a wager should be recorded, given that there is at present no specific class within SNA08 for wagers. The IASB paper states that wagers meet the definition of 'financial

assets or liabilities at fair value through profit or loss' . Derivatives are part of this classification and the IASB paper goes on to analyse whether wagers meet the definition of a derivative under IAS39. According to IAS39 a derivative is a financial instrument with all three of the following characteristics:

(a) its value changes in response to the change in a specified interest rate, financial instrument price, commodity price, foreign exchange rate, index of prices or rates, credit rating or credit index, or other variable, provided in the case of a non-financial variable that the variable is not specific to a party to the contract (sometimes called the 'underlying');

(b) it requires no initial net investment or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in market factors; and

(c) it is settled at a future date.

The IASB paper considers both spread-bet and fixed-odds wagers against the three IAS39 criteria. Spread-bet wagers are deemed to meet the definition of a derivative as: the value alters in response to changes in the underlying variable (e.g. points in a sports match), the initial investment is zero and the wager will be settled in cash at a future date. On the basis of this the IASB paper classifies all spread-bet wagers as derivatives.

Next fixed-odds wagers are considered by the IASB which notes the major difference with spread-bet wagers is that an initial investment is required with a fixed-odd wager. In order to meet the definition of a financial derivative in IAS39, this initial investment must be less than would be required for other types of contracts that would be expected to have a similar response to changes in market factors. The IASB are unable to identify any other types of contracts which would be expected to have a similar response to changes in market factors as that of a fixed-odds wager. However the IASB state that this does not prevent an instrument from being classified as a derivative. The IASB paper states that due to this and the many similarities between fixed-odds and spread-bet wagers both types of wager meet the IAS39 definition of a derivative. The IASB paper does not consider pool wagers.

SNA defines financial derivatives in 11.111 as:

"Financial derivatives are financial instruments that are linked to a specific financial instrument or indicator or commodity, through which specific financial risks can be traded in financial markets in their own right. The value of a financial derivative derives from the price

of the underlying item: the reference price. The reference price may relate to a commodity, a financial asset, an interest rate, an exchange rate, another derivative or a spread between two prices. The derivative contract may also refer to an index or a basket of prices."

Paragraph 11.112 goes on to state:

"…..Unlike debt instruments, no principal amount is advanced to be repaid and no investment income accrues."

SNA therefore embodies the same three characteristics for derivatives as IAS 39: the value is dependent on a separate underlying item; no principal amount is paid in advance and the contract and payment is settled at a later date.

Importantly, there is a slight difference between the description of a financial derivative between SNA and IAS39 regarding principal amounts paid in advance. Regarding derivatives IAS39 states that:

"it requires no initial net investment or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in market factors;"

However the definition of a financial derivative in SNA 11.11 and 11.112 is more nuanced. In place of no initial net investment the criteria is that:

"Unlike debt instruments, no principal amount is advanced to be repaid and no investment income accrues"

Under a debt instrument initial advances are required to be repaid. The holder of a debt instrument has a direct claim on the liability holder irrespective of any outcome of an underlying event. In a fixed-odds wager involving an initial investment, repayment of the initial investment is dependent on the outcome of the underlying event. This clearly distinguishes wagers from lottery bonds or premium bonds. Therefore following SNA the presence of an initial investment in a fixed odds wager is not a potential barrier to classification of a fixed-odds wager as a financial derivative because the repayment of the initial advance is conditional on the underlying event and no investment income is accrued.

Table 4. Comparison of wagers to key SNA08 financial derivative characteristics

	Fixed-odds wager	Casino wager	Spread-bet wager	Pool wager
Financial derivatives				
Value of contract is dependent on a separate underlying item.	✓	✓	✓	✓
No principal amount is advanced to be repaid.	✓	✓	✓	✓
Contract is settled at a later date.	✓	✓	✓	✓

As table 4 shows, considering wagers against the SNA definition of a financial derivative, it is clear that they fully meet the definition. This paper therefore concludes that all forms of wagers (spread-bet wagers, fixed-odds wagers, casino wagers and pool-wagers) are financial derivatives as defined by SNA.

4.4 What type of financial derivatives are wagers?

SNA describes two broad classes of financial derivatives: option contracts (options) and forward-type contracts (forwards). SNA 11.117 states:

> "Options are contracts that give the purchase of the option the right, but not the obligation, to buy (a "call" option) or to sell (a "put" option) a particular financial instrument or commodity at a predetermined price (the "strike" price) within a given time pan. (American option) or on a given date (European option). Many options contracts, if exercised, are settled by a cash payment rather that by delivery of the underlying assets or commodities to which the contract relates. Options are sold or "written" on many types of underlying bases such as equities, interest rates, foreign currencies, commodities and specified indices. The buyer of the option pays a premium (the option price) to the seller for the latter's commitment to sell or purchase the specified amount of the underlying instrument or commodity on demand of the buyer. While the premium paid to the seller of the option can conceptually be considered to include a service charge, in practice, it is usually not possible to distinguish the service element. The full price should be recorded as acquisition of a financial asset by the buyer and as an incurrence of a liability by the seller. However, where possible, the service charge component should be separately recorded."

SNA 11.120 states:

> "….A forward contract is an unconditional financial contract that represents an obligation for settlement on a specified date. Futures and other forward contracts are typically, but not

always, settled by the payment of cash or the provision of some other financial instrument rather than the actual delivery of the underlying item and therefore are valued and traded separately from the underlying item. At the inception of the contract, risk exposures of equal market value are exchanged and hence the contract has zero value. Some time must elapse for the market value of each party's risk to differ so that an asset (creditor) position is created for one party and a liability (debtor) position for the other. The debtor/creditor relationship may change both in magnitude and direction during the life of the forward contract."

Table 5 outlines the key criteria of both forwards and options whilst comparing these criteria against the various forms of gambling outlined in Table 1.

Table 5. Comparison of characteristics of differing wagers against characteristics of types of derivatives.

	Fixed-odds wager	Casino wager	Spread-bet wager	Pool wager
Forward type contract				
No premium paid	x	x	✓	x
Contract has zero value at inception	x	x	✓	x
Asset/liability position varies in both magnitude and direction	x	x	✓	x
Obligation for transaction at maturity	x	x	✓	x
Options contract Premium paid	✓	✓	x	✓
Contract has a value at inception	✓	✓	x	✓
Asset/liability position fixed in direction but can vary in magnitude	✓	✓	x	x
Exercise on maturity at discretion of the buyer	✓	✓	x	✓

Spread-bet wagers meet the SNA definition of a forward type contract perfectly. Considering a spread-bet wager on the number of points scored in a sports match, in advance of the event on which the spread-bet wager is based, the contract has zero value. As the match unfolds (the life of the contract), asset and liability positions are determined by the score line and fluctuate in both magnitude and direction to changes in the score. The final asset and liability positions are confirmed only at the end of the match and settled mostly commonly in cash.

Both fixed-odds wagers and casino wagers have the same key underlying economic criteria as options contract. An upfront payment is made (the stake), which gives the contract its initial value at inception. The gaming institution always holds the debtor position and the customer the creditor. The wager is then exercised at the discretion of the customer. Much like an options contract wagers frequently expire without worth.

Again there is a slight disconnect between spread-bet wagers and fixed-odds wagers. Fixed-odds wagers or casino wagers create an immediate debtor and creditor position. On accepting the wager the gaming institution immediately holds a financial liability whereas the other party to the transaction has a financial asset. Unlike a spread-bet wager with a fixed-odds wager the debtor creditor relationship does not change direction during the life of the contract though the market value can change in magnitude depending on the progress of the underlying event.

Pool wagers such as lotteries require an upfront payment (the stake), which gives the contract its initial value. The pool always holds the liability position and the customer always the asset position. Within the pool individual asset positions can change in magnitude however the total asset and liability position remains fixed at the total staked. The pool wager is exercised at the discretion of the customer if the wager is deemed to have won. There is no obligation to exercise a winning wager. Though the situation with pool wagers is slightly different to that of fixed-odds or casino wagers, this paper does not consider the difference to be large enough to prevent a classification of pool wagers as a form of options contract.

All wagers therefore meet the requirements to be recorded as a financial instrument specifically that of financial derivatives. In terms of the underlying economic reality there is no difference between a spread-bet wager and any other forward contract. A fixed-odds wager, casino wager or pool wager is no different to an options contract. Therefore following a consistent application of SNA that is how these transactions are recommended to be recorded.

4.5 Example recording of a wager in the financial account

The following is an example of recording wagers as a form of financial derivatives in the financial account and the balance sheet. This straight forward example shows a winning fixed-odds wager that is created and expires within the same accounting period.

Fixed-odds wagers encompass exactly the same economic characteristics as options contract. The recording of such wagers in the National Accounts must therefore follow the same practices as prescribed in SNA 11.117 and 11.118 for that of options type derivatives. Options type derivatives are recorded when such contracts are created, traded and settled. In addition to this, is the recording

needed when a derivative contract spans more than one accounting period and the change in market value of the derivative has be recorded on the balance sheet.

The annex to this paper gives further examples of the recording of different wagers including losing wagers, spread-bet wagers, pool wagers and wagers which span more than one accounting period.

Box 1. Recording of a fixed-odds wager following the SNA treatment of financial derivatives

The example uses a hypothetical wager of 100 units at odds of 3/1. The recording follows the same principle as prescribed for an options contract. The wager is successful and therefore returns in total 400 units to the consumer, the 100 unit stake plus the 300 unit winnings. The recording is split as follows:

1. Placing of the wager and the creation of the derivative asset and liability.
2. The settlement of the final asset and liability values following the event.
3. The pay-out on the winning wager between the gaming institution and the consumer.
4. Annual recording assuming the wager is placed and settled within the same according period.

In the absence of an explicit service charge, there is no transaction to record in the production account. The possibility of taxes and other such external fees/levies are ignored in this example.

1. Wager is placed at 3/1 and a premium charged (or stake) of 100

Opening balance sheets

Gaming institution

Assets	Liabilities	
AF.2 currency 1000		0

Financial account

Gaming Institution

Assets	Liabilities	
F.2 currency +100	F.71 derivatives +100	

Closing balance sheets

Gaming Institution

Assets	Liabilities
AF.2 currency 1100	AF.71 derivatives 100

Consumer

Assets	Liabilities	
AF.2 currency 200		0

Consumer

Assets	Liabilities	
F.2 currency -100		0
F.71 derivatives +100		

Consumer

Assets	Liabilities	
AF.2 currency 100		0
AF.71 derivatives 100		

2. Wager wins, final value of the derivative is therefore 400

Opening balance sheets

Gaming Institution

Assets	Liabilities
AF.2 currency 1100	AF.71 derivatives 100

Revaluation account
K.7 nominal holding gains/losses

Gaming Institution

Assets	Liabilities	
	0	AF.71 derivatives +300

Closing balance sheets

Gaming Institution

Assets	Liabilities
AF.2 currency 1100	AF.71 derivatives 400

Consumer

Assets	Liabilities	
AF.2 currency 100		0
AF.71 derivatives 100		

Consumer

Assets	Liabilities	
AF.71 derivatives +300		0

Consumer

Assets	Liabilities	
AF.2 currency 100		0
AF.71 derivatives 400		

3. Payout is made on the succesful wager from the Gaming Institution to the consumer

Opening balance sheets

Gaming Institution

Assets	Liabilities
AF.2 currency 1100	AF.71 derivatives 400

Financial account

Gaming Institution

Assets	Liabilities
F.2 currency -400	F.71 derivatives -400

Closing balance sheets

Gaming Institution

Assets	Liabilities	
AF.2 currency 700		0

Consumer

Assets	Liabilities	
AF.2 currency 100		0
AF.71 derivatives 400		

Consumer

Assets	Liabilities	
F.2 currency +400		0
F.71 derivatives -400		

Consumer

Assets	Liabilities	
AF.2 currency 500		0

4. Annual view

Opening balance sheets

Gaming institution

Assets	Liabilities	
AF.2 currency 1000		0

Financial account

Gaming Institution

Assets	Liabilities
F.2 currency -300	F.71 derivatives -300

Closing balance sheets

Gaming Institution

Assets	Liabilities	
AF.2 currency 700		0

Consumer

Assets	Liabilities	
AF.2 currency 200		0

Consumer

Assets	Liabilities	
F.2 currency +300		0
F.71 derivatives -300		

Consumer

Assets	Liabilities	
AF.2 currency 500		0

Revaluation account
K.7 nominal holding gains/losses

Gaming Institution

Assets	Liabilities	
	0	AF.71 derivatives +300

Consumer

Assets	Liabilities	
AF.71 derivatives +300		0

4.6 Alternative financial asset and liability classification

Having accepted that wagers are financial instruments, an alternative financial asset classification would be to consider wagers within the scope of the insurance industry and the asset liability relationship of insurance premiums and claims. SNA 17.1 states:

> "At its simplest, an insurance policy is an agreement between an insurance corporation and another institutional unit, called the policy holder. Under the agreement, the policyholder makes a payment (a premium) to the insurance corporation and if, or when a specified event occurs, the insurance corporation makes a payment (claim) to the policyholder."

This description aligns with the process involved in fixed-odds wagers. The premium is the amount of capital paid by the individual to the gaming institution in the form of a wager. The claim is then the winnings paid by the gaming institution to the individual in the event that a specified event occurs deeming the wager successful.

Just as with insurers, gaming institutions relate the premiums charged to the expected pay-outs. In the gaming industry, particularly within bookmaking, the odds offered are often altered to reflect the level of risk exposure that the bookmaker faces. Casinos do not alter the odds of their games in the same way as bookmakers do. But casinos can, over the course of time, alter the level prize payments of certain games so as to better reflect the expected pay-outs. Further gaming institutions can and do refuse to let certain individuals place wagers if they know they are particularly likely to cause a large pay-out. Just as insurers will not underwrite a policy with certain individuals on the grounds that they are considered high risk.

SNA 8.117 defines transactions in non-life insurance premiums as:

> "Non-life insurance policies provide cover against various events or accidents resulting in damage to goods or property or harm to persons as a result of natural or human causes (for example, fires floods, crashes, collisions, sinkings, theft, violence, accidents, sickness, etc.) or against financial losses resulting from events such as sickness, unemployment, accidents etc……… Net non-life insurance premiums comprise both the actual premiums payable to policyholders to obtain insurance cover during the accounting period (premiums earned) and the premium supplements payable out of the investment income attributed to insurance policyholders less the service charges payable to the insurance corporation."

SNA 8.118 defines non-life insurance claims as:

> "Non-life insurance claims are the amounts payable in settlement of damages that result from an event covered by a non-life insurance policy during the current accounting period."

From SNA 8.117 and the definition of non-life insurance policies a possible, issue arises in considering wagers as a form of insurance. Wagers are not a method of dealing with a pre-existing risk but rather they create a new risk. Secondly, insurance compensates for a loss as a result of the adverse effect of an underlying event on the policyholder. Insurance policies only pay out on evidence of the adverse effect not on the occurrence of an underlying event. Rather than compensating for a loss a wager actually rewards a winning party, there is no requirement for an adverse effect.

Drawing on commercial accountancy advice, IFRS 4 guidance on the definition of an insurance contract makes this distinction clear:

> " B14 **Some contracts require a payment if a specified uncertain event occurs, but do not require an adverse effect on the policyholder as a precondition for payment. Such a contract is not an insurance contract even if the holder uses the contract to mitigate an underlying risk exposure.** For example, if the holder uses a derivative to hedge an underlying non-financial variable that is correlated with cash flows from an asset of the entity, the derivative is not an insurance contract because payment is not conditional on whether the holder is adversely affected by a reduction in the cash flows from the asset. Conversely, the definition of an insurance contract refers to an uncertain event for which an adverse effect on the policyholder is a contractual precondition for payment. This contractual precondition does not require the insurer to investigate whether the event actually caused an adverse effect, but permits the insurer to deny payment if it is not satisfied that the event caused an adverse effect." (van der Veen H, Trench, & Cropsey)

Further the IFRS 4 guidance specifically states that gambling contracts are not insurance contracts:

> "B19 The following are examples of items that are not insurance contracts:
>
> > (d) **contracts (such as gambling contracts) that require a payment if a specified uncertain future event occurs, but do not require, as a contractual precondition for payment, that the event adversely affects the policyholder**. However, this does not preclude the specification of a predetermined payout to quantify the loss caused by a specified event such as death or an accident (see also paragraph B13)."

The recording of gambling as a form of insurance is also raised in the IASB analysis who consider whether wagers could be recorded as insurance transactions. The IASB paper concludes that, due to the difference between treating an existing risk and creating a new risk, wagers should not be considered as insurance contracts despite the obvious similarities that can be drawn between the two.

As the SNA guidance is currently written, it is also not possible to consider wagers as insurance contracts despite there being similarities in some of the underlying economic characteristics. The current SNA guidelines clearly stipulate that insurance contracts cover against the financial loss caused by natural or human causes. A wager does not cover against a financial loss.

4.7 Are Gaming Institutions undertaking financial intermediation?

The next question to ask is: how should gaming institutions undertaking transactions involving wagers be classified? In order to be classified as financial intermediaries in the National Accounts gaming institutions must be undertaking financial intermediation. SNA 4.101 states:

> "Financial intermediaries are institutional units that incur liabilities on their own account for the purpose of acquiring financial assets by engaging in financial transactions on the market."

The issue is whether all gaming institutions are financial intermediaries or are some merely financial auxiliaries? The categories of gambling detailed earlier in the paper can be undertaken by a variety of gaming institutions. These gaming institutions can be divided into those where the gaming institution places itself at financial risk and those where it does not. This paper follows the distinction drawn up by the IASB and deems that a gaming institution has placed itself at financial risk when the net gain of the gaming institution is dependent on the outcome of the wager(s) it has taken on. Those units placing themselves at financial risk can be said to be the principal and those not at financial risk are merely acting as an agent. Comparing the forms of gambling identified earlier in the paper to this criteria of being at financial risk the following distinction is made.

Table 6. Distinction between activities in which a gaming institution undertakes financial risk and where it does not

Gaming institution's activity is undertaking financial risk	Gaming institution's activity is not undertaking financial risk
Fixed-odds wagers	Pool wagers
Spread-bet wagers	Wagers transacted via betting exchanges
Casino wagers	

In the case of pool wagers, the gaming institution's net gain from the transaction is known as soon as the wagers are placed. It would be expected that the gaming institution operating a lottery takes a percentage of all ticket sales to cover operating expenses and possibly a degree of profit with the remainder forming the prize fund. A casino may charge participants in a poker game a set entry fee to cover the cost of administering the game. The gaming institution is not itself at risk from the transaction. The profit made can be calculated with certainty in advance of the outcome to the lottery or poker game.

Gaming institutions operating betting exchanges act as brokers directly matching opposing bets of customers. The gaming institution is not involved in the wager and does not take an asset or liability position. Typically, betting exchanges will charge an explicit fee to one or both of the parties involved to cover the facilitation services. The number and size of betting exchanges has increased via the use of internet gambling.

With fixed-odds wagers, spread-bet wagers and casino wagers the gaming institutions are directly involved in the wager and the net gain is dependent on the outcome of the wager. The gaming institution is therefore undertaking a financial risk that it could be on the losing side of the wager and be required to make a pay-out to the customer in excess of any initial stake.

This paper recommends that those gaming institutions that are undertaking financial risks are classified as financial intermediaries. Those gaming institutions that are not undertaking financial risks are not financial intermediaries but instead are offering auxiliary services to the financial intermediation process and should be classified appropriately.

Of course it is also possible and it frequently occurs that a single gaming institution can be involved in more than one kind of wager; and simultaneously in wagers which do and do not involve undertaking financial risk. In this case, classification will depend on the value added and which activity contributes more.

If gaming institutions are classified as financial institutions then they must be classified to one of the nine sub-sectors of the financial sector:

- Central bank
- Deposit-taking corporations except the central bank
- Money market funds (MMF)
- Non-MMF investment funds
- Other financial intermediaries, except insurance corporations and pension funds
- Financial auxiliaries
- Captive financial institutions and money lenders
- Insurance corporations
- Pension funds

In order to aid this further analysis it is assumed that gaming institutions are not active in financial instruments beyond wagers.

Those gaming institutions which are placing themselves at risk via financial intermediation cannot by definition be classified to either the central bank sub-sector; deposit taking corporations sub-

sector, money market funds sub-sector; the non-money market funds sub-sector; the captive financial institutions sub-sector; the financial auxiliaries sub-sector nor the pension funds sub-sector. This paper has also argued that wagers cannot be considered as insurance contracts within the current guidelines.

This leaves the only possible classification as the other financial intermediary sub-sector. SNA 4.109 defines the OFI sector as:

> "Other financial intermediaries except insurance corporations and pension funds consist of financial corporations that are engaged in providing financial services by incurring liabilities, in forms other than currency, deposits or close substitutes for deposits, on their own account for the purpose of acquiring financial assets by engaging in financial transactions on the market."

SNA 4.110 specifically includes derivative dealers operating on their own account as classified into the OFI subsector. The subsector classification of gaming institutions therefore seems clear. If wagers are to be classified as financial derivatives, which this paper argues strongly they should be, then gaming institutions should be classified to the OFIs subsector.

Those gaming institutions which do not undertake financial intermediation, but instead engage in activities related to financial intermediation, should be classified as financial auxiliaries. In the same way that brokers of other financial instruments and those units that provide exchange services are currently classified.

5. Counterarguments to recording wagers as financial derivatives

The proposal to classify wagers as financial derivatives and gambling activities as financial activities is likely to raise counterarguments and disagreement. This section attempts to consider the main counterarguments.

5.1 Derivatives are only for trading specific financial risks

It could be argued that wagers cannot be financial derivatives as financial derivatives are only for trading specific financial risks. SNA 11.111 itself states that:

> "Financial derivatives are financial instruments that are linked to a specific financial instrument or indicator or commodity, through which **specific financial risks can be traded** in financial markets in their own right."

The idea that financial derivatives are only for the trading of specific financial risks is undermined by the existence of speculative trading in financial derivatives. Speculative trading in financial derivatives is an accepted part of their classification in SNA 11.112.

Much like gambling, speculation is not trading a pre-existing financial risk. Rather it deliberately creates a financial risk with the explicit aim of making profit. In this sense there is no difference in the economic characteristics from gambling whereby consumers and gaming institutions agree a trade that creates a financial risk in the pursuit of profit.

Opponents of the proposal - that gambling is a financial activity akin to financial derivative trading - could argue that a wager is not a financial risk on the basis that the underlying item is not financial. A wager in a casino or on the outcome of a sports event or TV reality show has no underlying financial instrument. In making such a point SNA 11.111 could again be referred to:

> "...The value of a financial derivative derives from the price of the underlying item; the reference price. The reference price may relate to a commodity, a financial asset, an interest rate, an exchange rate, another derivative or a spread between two prices. The derivative contract may also refer to an index or a basket of prices."

Whilst it is true that many financial derivatives are based on information related to underlying financial instrument, it is not true of all financial derivatives. Weather derivatives are an accepted form of financial derivative despite there being nothing innately financial in the level of rainfall or air temperature. Derivatives on food prices such as wheat are linked to clear non-financial goods. Even where financial derivatives take their value from an underlying financial reference price such as a stock prices or indexes of financial activity the link is actually to information concerning the underlying stock or index and not to the actual stock or index itself. Ultimately, all financial derivatives and wagers derive their value from a form of information and information is not itself a financial item.

5.2 Gambling is entertainment

An obvious response to arguing that gambling is a financial activity is to counter that gambling is a form of entertainment and therefore belongs with other entertainment activities in the non-financial sector. Indeed the current International Standard International Classifications of All Economic Activities (ISIC) (United Nations, 2008) classifies gambling in the entertainment sector alongside the arts and sports activities. It is undoubtedly true that many people who gamble will enjoy the experience and receive positive utility from it. A few consumers may enjoy the gambling experience so much that even a continued series of losing wagers is seen as a price worth paying for

the enjoyment in the same way that other consumers see an entry ticket to the theatre or a sports match as a price worth paying.

However the view that gambling is entertainment fails to separate gambling from the underlying game or experience. It is perfectly possible to play casino games or to predict the outcome of an event without incurring a financial risk. Such activities are not in themselves financial. However they become financial activities once a financial stake is placed and asset and liability positions are established.

A second criticism is to identify that, unlike all other forms of entertainment, gambling can increase the consumers financial position. In no other form of entertainment is it possible to participate and be materially better-off after the participation. At best the financial position can remain constant, a free trip to a museum or a free concert. With gambling the possibility is either financially worse-off in the event of a losing wager or financially better-off if a wager wins.

A third counter to an argument that gambling is primarily entertainment rather than financial is to question why the current definition of the entertainment sector excludes much activity which is itself entertainment focused? If a consumer rents a book from a library or watches a film in the cinema then this is classed as an activity within the entertainment sector according to ISIC. However, if the same consumer were instead to buy the same book or the same film in a shop then this would no longer be classed as an entertainment activity under ISIC but instead as retail trade. The consumer has the same underlying intention, they are seeking utility from reading the book or watching the film. The reasons for such a distinction are not clear though one obvious difference between attending the cinema and buying a film on DVD is that in the latter case, the consumer takes ownership of a good which they are then free to do with as they wish. The consumer could dispose of the DVD and benefit from any sale price. Similarly in gambling activities the consumer receives an asset in return which they are free to dispose of on the market and to receive the proceeds. For example, a consumer can dispose of a wager on a betting exchange via a direct sale or a hedging strategy. In this sense, just as buying a DVD or book is considered retail and not entertainment so is gambling materially different to entertainment activities.

5.3 The house always wins – gaming institutions are in control of the market

It could be argued that gambling is not a financial activity as the underlying transactions are not real financial intermediation due to the propensity for the gaming institution to win in the long run via the control it has over the odds and pay-outs. This argument ignores the very high degree of competition in the gambling market which, in the absence of collusion, prevents the setting of odds

or pay-outs in a way that is slanted too heavily in favour of the gaming institution. The increase of internet gambling has furthered the competition by lowering the barriers between consumers and gaming institutions and also increasing the information available to consumers in terms of available odds and pay-outs.

More importantly, such an argument would show a blind-spot for the ways in which accepted financial intermediaries operate in terms of only looking to undertake trades which they believe will be profitable so as to also ensure that the house always wins in the long run. Derivatives dealers will price derivatives trades in a way that seeks to maximise their own return. An efficient market will limit the amount of bias that they could place on a trade and force prices towards the market clearing price at which the internal risks should be more evenly weighted. This is exactly the same process by which a bookmaker would set odds. Casinos and bookmakers are also known to discriminate against customers by limiting the amount certain individuals can wager if they are known to be more likely to win. Equally in the financial world, where it is legal, insurers will explicitly discriminate between consumers so as to attract the good risks. Where such discrimination is illegal then other tactics will be used such as marketing to ensure good risks are attracted and bad risks are not. Further, policy premiums can be adjusted to reflect increased potential pay-outs whilst maintaining an expected degree of profit.

Just as with gaming institutions, all financial intermediaries strive to ensure a guaranteed profit and have ways and means to ensure that they have the best possible chance of benefitting from their trades.

5.4 Gambling is luck; financial trading is skill

Some may seek to differentiate between gambling and those activities currently classified as financial by claiming that gambling is a luck based activity whereas benefitting from financial activities relies on skill. There are certainly some instances of gambling where luck is the only factor in determining the success or not of a wager. A lottery or roulette offers no possibility of increased chances of winning via skill or knowledge. Whilst some wagers can be seen as reliant entirely on luck the vast majority of wagers are a combination of knowledge based skill and luck. A skilled poker player will be more successful than a novice. A gambler with a high degree of knowledge of the horses in a race will be in a better position than a uninformed gambler.

Successful financial trades also carry elements of luck within them. Despite the wealth of information available, the amount of research undertaken and the knowledge of the participants all financial investments are, like wagers, still a combination of knowledge based skill and luck. As with

a wager, the element of luck or uncertainty in any financial investment can never be totally eliminated. A degree of background uncertainty is present in all financial investmStakes. Regardless of whether a customer places a wager with a gaming institution or a derivative trade with a derivatives dealer once the trade is confirmed all the customer can do is cross their fingers and hope for the best.

5.5 If not financial activities then what are gambling activities?

There will be other arguments for why gambling should not be recorded as a financial activity. The biggest problem with any view that gambling is not a financial activity is to flip the question and to ask how should wagers be classified if gambling is to be deemed a non-financial activity? The only option currently presented is the prescribed recording in SNA 8.136-8.139 which this paper has shown to be too simplistic and which fails to reflect the economic reality of the transactions. Opponents of the view that gambling is a financial activity must present an alternative case for its classification that answers these criticisms.

6. Gambling in the production account

In classifying gambling activities as financial derivatives all of the recording takes place in the financial account given there is no property income recorded for financial derivatives. There is however the question of how to record the output of gaming institutions. Where the gaming institution receives an explicit fee for its services then this should be recorded as the payment for a service and the level of output is clearly linked to the value of the service sold. However, the question of whether and what to record as output is more complicated when no explicit service charge is paid in relation to the placing of a wager.

6.1 Current recording of output in gambling industry

No detailed guidance is given in SNA on how to record the output from gambling transactions. SNA 8.136 mentions that the service charge in the gambling industry may be substantial and may have to cover taxes on the production of gambling services. Though SNA gives no indication of how to measure such service charges where they are not explicit. The current process for measuring the service charges paid in the gambling industry is given by COICOP (United Nations, 2008) (class 09.4.3 games of chance):

> "Service charges for lotteries, bookmakers, totalizators, casinos and other gambling establishments, gaming machines, bingo halls, scratch cards, sweepstakes, etc. (Service

charge is defined as the difference between the amounts paid for lottery tickets or placed in bets and the amounts paid out to winners.)"

COICOP equates the service charge to the gross gambling yield. It is the view of this paper that such a recording is methodologically erroneous and leads to the overestimation of the output of the gambling industry. As has been shown earlier in section 2.2 the types of gambling are materially different. Only in pool wagers can it be said that the sole revenue a gaming institution receives from a wager is the service charge. In all other forms of wagers where the gaming institution holds either the asset or the liability position, the transaction is recommended to be recorded as a financial derivatives transaction. Whether any other transaction relating to an implicit service charge should be recorded is discussed in 6.2.

6.2 Output associated with speculation

Neither SNA or any of the supporting manuals deal with the issues of whether and how to record output related to purely speculative transactions. With wagers considered a form of derivative, one could look to the recording of output for own account derivative dealers as a guide. However, here too SNA ignores the transaction in which financial derivatives are initially created. This transaction is analogous with the transaction involved in placing a wager. In relation to financial derivatives SNA chapter 17 part 4 states that the services appearing in the production account are to be calculated as the buy/sell margin. However, this clearly relates to the auxiliary or intermediary activities of dealers in pre-existing derivatives. Such methodology cannot be applied to the activities of a financial intermediary or gaming institution that, alongside the customer, co-creates a wager or derivative and initially takes either the asset or a liability position. There is no buy/sell margin on which to base a measure of output when a financial derivative is first agreed.

This blind-spot for the output involved in the initial creation of financial derivatives is reaffirmed in the joint United Nations; European Central Bank publication; 'Financial Production, Flows and Stocks in the System of National Accounts' (United Nations and European Central Bank, 2014), which in table 3.1 and paragraphs 3.125-3.126 re-states that the output of own account derivative traders in the OFI subsector (S.125) is to be calculated as using the buy/sell margin. Again, where the initial creation of a derivative is concerned there is no buy/sell margin.

The question remaining is, therefore, how is the output element to be calculated and recorded for transactions that create financial derivatives including those gaming institutions creating wagers? To answer this question, it is first necessary to consider if there is any output to be recorded (given there is no explicit service charge paid).

The absence of an explicit service charge element to initial transactions in wagers or financial derivatives is not unique. Other financial transactions do not encompass explicit service charges meaning methods have been devised to estimate the value of this service charge and enable its recording in the production account - the most obvious example being FISIM. The underlying basis of such an approach is an agreement that there is a specific service being provided which is being charged for in ways other than an explicit fee. With FISIM this service is that of safely storing money on behalf of one customer and making a loan with that money to another customer. The underlying service that requires recording is clear. Similarly, with services such as foreign currency exchange or market makers in shares, stocks or even derivatives, there is a clear service being provided in the form of intermediation or auxiliary mediation with as an implicit service charge in place of an explicit service charge, the buy/sell margin.

Having considered the transactions involved in establishing a financial derivative including wagers, it is the view of this paper that there is <u>no</u> output to be recorded in the production account. Further this paper argues that there is no output to be recorded from any purely speculative transaction.

In a purely speculative transaction there is clearly no good provided on which output would be based. Further, as the transaction involves no more than an agreement between two parties to establish a derivative contract between themselves, it is difficult to argue that there can be any service produced that would require recording in the production account. Some may claim that the service element in an initial derivatives transaction is analogous to that in the creation of insurance contracts. Indeed, the current methodology for calculating the output of gaming institutions broadly reflects that of insurers. However, unlike an insurance contract in which it can be justified that the insurer provides the service of accepting the transfer of a pre-existing financial risk from the customer. In a derivative contract both parties agree to create a financial risk that otherwise would not have existed. There is no service element as regards the transfer of financial risk nor does this paper believe there are any other grounds on which to justify a service element and therefore the necessity to record output in the production account. Rather than the gaming institution or derivatives underwriter providing a service to the customer, given that both sides enter the transaction as equals, it could just as easily be argued that customers provide a service to gaming institutions by giving the gaming institution the opportunity to profit from a wager or financial derivative. In purely speculative transactions there is no clear direction for which the service provision goes. Should we not in that case record an element of output for households for the services they provide to gaming institutions?

It is the view of this paper that speculative transactions are purely speculative. They do not involve the production of any associated good or service and therefore do not create output that requires recording in the production account. SNA itself alludes to the fact that speculation is not production in 6.145:

> "This inclusion of output due to storage applies only to goods that take a long time to complete, those that have an established seasonal pattern or those where maturing is part of the regular production process. It does not apply to holding financial assets, valuable or other non-financial assets including land or buildings. Even if anticipated increases in value result in these cases, the motive for holding the item is speculation. The increases in value are treated as holding gains and not as part of the production process."

The impact of not recording output for speculative transactions would be that the units involved in creating financial derivatives, including wagers, would incur negative value added. As a result of the fact that they will incur some intermediate consumption in their activities. This negative value added is funded by the financial derivative flows recorded in the financial account. Indeed, this is exactly how gaming institutions operate, rather than through explicit charges they fund their activities instead by the financial flows from the losing wagers of their customers.

Those non-speculative activities which gaming institutions and other institutions undertake would still produce output and this would be recorded in the usual way. Examples in the gambling industry would include entry or membership fees; specific service charges relating to pool wagers; the fees for auxiliary services charged by betting exchanges; hospitality goods and services.

The decision to not record output from speculative transactions would clearly reduce the level of economy wide output as compared to current estimates. However, the current estimates are based on an erroneous methodology. Specific to the gambling industry, the current method for calculating output is based on the mistaken premise that all gambling activities equate to lotteries or pool wagers, that specific service charges apply across all gambling activities and that these service charges are the only flow of revenue that gaming institutions receive. Any reduction in economy wide output and other macro-economic statistics is likely to be small for many economies. Though locally significant for a few places with prevalent gambling industries (Macau or Nevada) or to those areas with prevalent financial centres undertaking purely speculative transactions (Luxembourg, London, offshore jurisdictions).

7. Conclusion

By considering how gambling activities should best be recorded in the National Accounts following the rules of SNA this paper has identified the errors, inconsistencies and over-simplifications in the current treatment. New recording treatments of gambling activities and the transactions involved have been proposed which apply current SNA guidelines in a more consistent and economically sound manner. Wagers would better be classified as *financial derivatives* and gaming institutions as *financial institutions*. Such proposed recording treatments as regards wagers are in line with the analysis of the International Accounting Standards Board and the current accounting practices of the majority of gaming institutions. It is recommended that future revisions to SNA consider the inclusion of a sub-class for wagers within the financial derivative asset class.

It is proposed that: gambling activities should be considered as primarily financial activities and those institutional units engaged in gambling activities should be classified as financial institutions. Those units undertaking financial intermediation (via taking either the asset or liability side of a wager) should be classified as a form of OFI whereas those units merely facilitating gambling activities should be classified as a form of financial auxiliary. In future SNA revisions these proposed shifts in sector classifications should be considered.

Further, it is the view of this paper that no output should be recorded in the production account for purely speculative transactions including wagers. Pure speculation does not involve the provision of a good or that of an underlying service. Indeed, it is not possible to identify which party to the transaction could be considered to be providing a service as both sides to a speculative transaction are initially equal and have the opportunity to gain from it. As such speculative transactions should solely be recorded in the financial account and not in the production account. This point should be considered further in future revisions to SNA.

The proposed changes would impact measures of the economy wide level of output and value added as well as on the balance sheet. Output and value added would decrease as an imputation is no longer made for the assumed productive element of speculative transactions. The proposed changes, if implemented, would also impact on the sector split of economic aggregates by moving an activity (gambling) that is currently in the non-financial sector to the financial sector. Any such impact is likely to be limited, though more noticeable to those economies with a more prevalent gambling or speculative finance industry.

Recording gambling activities as financial derivatives may draw counter argument. In section 5, the main counterarguments have been identified and a rebuttal offered. There will undoubtedly be

other counterarguments to the proposals though for any counterargument or counterproposal to be valid it must deal with the criticisms of the current treatment given in section 2.2. The proposal to not record output for purely speculative transactions will also draw criticism and counterargument. However, it should be noted that the current SNA has a blind-spot for such transactions with the only discussion of speculation in SNA pointing strongly towards the fact that speculation should be considered as outside the production boundary.

This paper has been written with the aim of highlighting an issue that deserves greater consideration. It is hoped that the paper will draw broad agreement, if not for the proposals in their entirety then, at least, for the acceptance that the current treatment of gambling activities within SNA has not been considered and written with sufficient depth. The pursuit of accurate statistics necessitates that those responsible for their compilation hold current practices up to the light and identify areas in need of improvement. This paper has undertaken the first steps of this process with regards to the gambling and speculative finance industry and invites others to further consider the issue in the spirit of on-going improvement to current methods.

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Annex – Recording wagers in the National Accounts

This paper has established that wagers are a form of financial derivative. This section explains how this recording should take place for each form of gambling under various circumstances with reference to the SNA prescribed treatment for derivatives.

A.1 Fixed-odds wagers

Fixed-odds wagers encompass exactly the same economic characteristics as options contract. The recording of such wagers in the National Accounts must therefore follow the same practices as prescribed in SNA 11.117 and 11.118 for that of options type derivatives. Options type derivatives are recorded when such contracts are created, traded and settled. In addition to this, is the recording needed when a derivative contract spans more than one accounting period and the change in market value of the derivative has be recorded on the balance sheet.

Box A1. Recording of a fixed-odds wager following SNA treatment of financial derivatives

The example uses a hypothetical wager of 100 units at odds of 3/1. The recording follows the same principle as prescribed for an options contract. The wager is successful and therefore returns in total 400 units to the consumer, the 100 unit stake plus the 300 unit winnings. The recording is split as follows;

1. Placing of the wager and the creation of the derivative asset and liability.
2. The settlement of the final asset and liability values following the event.
3. The pay-out on the winning wager between the gaming institution and the consumer.
4. Annual recording assuming the wager is placed and settled within the same according period.

In the absence of an explicit service charge, there is no transaction to record in the production account. The possibility of taxes and other such external fees/levies are ignored in this example.

1. Wager is placed at 3/1 and a premium charged (or stake) of 100

Opening balance sheets

Gaming institution		
Assets	*Liabilities*	
AF.2 currency 1000		0

Consumer		
Assets	*Liabilities*	
AF.2 currency 200		0

Financial account

Gaming Institution		
Assets	*Liabilities*	
F.2 currency +100	F.71 derivatives +100	

Consumer		
Assets	*Liabilities*	
F.2 currency -100		0
F.71 derivatives +100		

Closing balance sheets

Gaming Institution		
Assets	*Liabilities*	
AF.2 currency 1100	AF.71 derivatives 100	

Consumer		
Assets	*Liabilities*	
AF.2 currency 100		0
AF.71 derivatives 100		

2. Wager wins, final value of the derivative is therefore 400

Opening balance sheets

Gaming Institution		
Assets	*Liabilities*	
AF.2 currency 1100	AF.71 derivatives 100	

Consumer		
Assets	*Liabilities*	
AF.2 currency 100		0
AF.71 derivatives 100		

Revaluation account
K.7 nominal holding gains/losses

Gaming Institution		
Assets	*Liabilities*	
0	AF.71 derivatives +300	

Consumer		
Assets	*Liabilities*	
AF.71 derivatives +300		0

Closing balance sheets

Gaming Institution		
Assets	*Liabilities*	
AF.2 currency 1100	AF.71 derivatives 400	

Consumer		
Assets	*Liabilities*	
AF.2 currency 100		0
AF.71 derivatives 400		

3. Payout is made on the succesful wager from the Gaming Institution to the consumer

Opening balance sheets

Gaming Institution		
Assets	*Liabilities*	
AF.2 currency 1100	AF.71 derivatives 400	

Consumer		
Assets	*Liabilities*	
AF.2 currency 100		0
AF.71 derivatives 400		

Financial account

Gaming Institution		
Assets	*Liabilities*	
F.2 currency -400	F.71 derivatives -400	

Consumer		
Assets	*Liabilities*	
F.2 currency +400		0
F.71 derivatives -400		

Closing balance sheets

Gaming Institution		
Assets	*Liabilities*	
AF.2 currency 700		0

Consumer		
Assets	*Liabilities*	
AF.2 currency 500		0

Opening balance sheets

Gaming institution

Assets	Liabilities
AF.2 currency 1000	0

Consumer

Assets	Liabilities
AF.2 currency 200	0

Financial account

Gaming Institution

Assets	Liabilities
F.2 currency -300	F.71 derivatives -300

Consumer

Assets	Liabilities
F.2 currency +300	0
F.71 derivatives -300	

Revaluation account

K.7 nominal holding gains/losses

Gaming Institution

Assets	Liabilities
0	AF.71 derivatives +300

Consumer

Assets	Liabilities
AF.71 derivatives +300	0

Closing balance sheets

Gaming Institution

Assets	Liabilities
AF.2 currency 700	0

Consumer

Assets	Liabilities
AF.2 currency 500	0

The example in Box A1 assumed that the wager was placed, settled and where required paid-out on within a single accounting period. This is not necessarily the case as wagers can span more than one accounting period be that monthly, quarterly or annually. A wager that spans more than one accounting period will require an extra recording step in the accounts. The wager would be recorded when it is placed, at the end of the first accounting period (and at the end of any subsequent accounting period thereafter), when the event has concluded and when final settlement is made. At the end of the accounting period the wager must be valued at its current market value. If this value is different to that on initial agreement, then this change must be recorded via the revaluation account. Importantly the value at the end of the accounting period does not impact the nominal value of the wager following the event. Rather it shows the cost at which either side to the wager could dispose of their asset/liability position at that single point in time.

Box A2. Recording of a fixed odds wager that spans two accounting periods.

The example uses a hypothetical bet of 100 units at odds of 3/1. The bet is placed on a sports tournament which runs from September to May of the following year, therefore crossing two accounting periods (year 1 and year 2). The bet is placed at the start of the tournament in September and will not be settled until the end of the tournament in May of the following year.

On 31st December of year 1 the odds on the bet have lengthened to 5/1. The market value of the wager has therefore changed and the value of the bet must therefore be recalculated at the current market price. The original bet of 100 units at 3/1 returned a total pay-out of 400. To achieve the same pay-out of 400 at the new odds of 5/1 it is only necessary to now wager 66.67 units. This is the price at which either the consumer or the gaming institution could dispose of the asset/liability on the market at the end of year 1. The market value of the derivative is now below its nominal value. The current market value should be recorded in the balance sheet accounts at the end of year 1.

The recording follows the same principle as prescribed for an options contract. The bet is ultimately successful and therefore returns in total 400 units to the consumer. The situation is split into four distinct parts;

1. Placing of the bet and the creation of the derivative asset and liability.
2. Recording of the bet at the end of year 1.

3. The settlement of the final asset and liability values following the event. Settlement takes place at the nominal value irrespective of the market value.

4. The pay-out on the winning bet between the gaming institution and the consumer.

1. Bet is placed at 3/1 and a premium charged (or stake) of 100, transaction occurs in September of year 1.

Opening balance sheets		Financial account		Closing balance sheets	
Gaming institution		**Gaming Institution**		**Gaming Institution**	
Assets	*Liabilities*	*Assets*	*Liabilities*	*Assets*	*Liabilities*
AF.2 currency 1000	0	F.2 currency +100	F.71 derivatives +100	AF.2 currency 1100	AF.71 derivatives 100

Consumer		**Consumer**		**Consumer**	
Assets	*Liabilities*	*Assets*	*Liabilities*	*Assets*	*Liabilities*
AF.2 currency 200	0	F.2 currency -100	0	AF.2 currency 100	0
		F.71 derivatives +100		AF.71 derivatives 100	

2. Recording of transaction at end of year 1. Odds have now lengthened to 5/1 so the market value of the asset/liability has fallen to 66.66 units.

Opening balance sheets		Revaluation account		Closing balance sheets	
		K.7 nominal holding gains/losses			
Gaming Institution		**Gaming Institution**		**Gaming Institution**	
Assets	*Liabilities*	*Assets*	*Liabilities*	*Assets*	*Liabilities*
AF.2 currency 1100	AF.71 derivatives 100	0	AF.71 derivatives -33.44	AF.2 currency 1100	AF.71 derivatives 66.66

Consumer		**Consumer**		**Consumer**	
Assets	*Liabilities*	*Assets*	*Liabilities*	*Assets*	*Liabilities*
AF.2 currency 100	0	AF.71 derivatives -33.44	0	AF.2 currency 100	0
AF.71 derivatives 100				AF.71 derivatives 66.66	

3. Bet wins, final value of the derivative is therefore calculated at the nominal value and the pay-out is 400 (May year 2)

Opening balance sheets		Revaluation account		Closing balance sheets	
		K.7 nominal holding gains/losses			
Gaming Institution		**Gaming Institution**		**Gaming Institution**	
Assets	*Liabilities*	*Assets*	*Liabilities*	*Assets*	*Liabilities*
AF.2 currency 1100	AF.71 derivatives 66.66	0	AF.71 derivatives +333.44	AF.2 currency 1100	AF.71 derivatives 400

Consumer		**Consumer**		**Consumer**	
Assets	*Liabilities*	*Assets*	*Liabilities*	*Assets*	*Liabilities*
AF.2 currency 100	0	AF.71 derivatives +333.44	0	AF.2 currency 100	0
AF.71 derivatives 66.66				AF.71 derivatives 400	

4. Pay-out of 400 is made on the successful bet from the Gaming Institution to the consumer (May year 2)

Opening balance sheets		Financial account		Closing balance sheets	
Gaming Institution		**Gaming Institution**		**Gaming Institution**	
Assets	*Liabilities*	*Assets*	*Liabilities*	*Assets*	*Liabilities*
AF.2 currency 1100	AF.71 derivatives 400	F.2 currency -400	F.71 derivatives -400	AF.2 currency 700	0

Consumer		**Consumer**		**Consumer**	
Assets	*Liabilities*	*Assets*	*Liabilities*	*Assets*	*Liabilities*
AF.2 currency 100	0	F.2 currency +400	0	AF.2 currency 500	0
AF.71 derivatives 400		F.71 derivatives -400			

The previous two examples have given an optimistic viewpoint by showing the recording of winning wagers. Of course wagers can and do lose or expire without worth. Box A3 shows how a losing wager would be recorded assuming the entire transaction took place within a single accounting period. Were the transaction to span more than one accounting period then the recording would include the revaluation of the asset and liability positions to the market value at the end of each accounting period.

Box A3. Recording of a losing fixed-odds wager

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Worked example of recording a fixed odds wager in the National Accounts as a financial derivative. The example uses a hypothetical wager of 100 units at odds of 3/1. The recording follows the same principle as prescribed for an options contract. The wager is unsuccessful (the option is not exercised), the consumer does not receive a pay-out from the gaming institution. The situation is split into two distinct parts;

>   1. Agreement of the wager, payment of the premium and the creation of the derivative asset and liability.
>   2. The settlement of the final asset and liability values following the event.

A third view shows how the transaction would be recorded in total in the annual account assuming the bet is placed and settled within the same accounting period.

1. Bet is placed at 3/1 and a premium charged (or stake) of 100

Opening balance sheets

Gaming institution

Assets	Liabilities
AF.2 currency 1000	0

Consumer

Assets	Liabilities
AF.2 currency 200	0

Financial account

Gaming Institution

Assets	Liabilities
F.2 currency +100	F.71 derivatives +100

Consumer

Assets	Liabilities
F.2 currency -100	0
F.71 derivatives +100	

Closing balance sheets

Gaming Institution

Assets	Liabilities
AF.2 currency 1100	AF.71 derivatives 100

Consumer

Assets	Liabilities
AF.2 currency 100	0
AF.71 derivatives 100	

2. Bet loses, final value of the derivative is therefore zero

Opening balance sheets

Gaming Institution

Assets	Liabilities
AF.2 currency 1100	AF.71 derivatives 100

Consumer

Assets	Liabilities
AF.2 currency 100	0
AF.71 derivatives 100	

Revaluation account
K.7 nominal holding gains/losses

Gaming Institution

Assets	Liabilities
0	AF.71 derivatives -100

Consumer

Assets	Liabilities
AF.71 derivatives -100	0

Closing balance sheets

Gaming Institution

Assets	Liabilities
AF.2 currency 1100	0

Consumer

Assets	Liabilities
AF.2 currency 100	0

3. Annual view

Opening balance sheets

Gaming institution

Assets	Liabilities
AF.2 currency 1000	0

Consumer

Assets	Liabilities
AF.2 currency 200	0

Financial account

Gaming Institution

Assets	Liabilities
F.2 currency +100	F.71 derivatives +100

Consumer

Assets	Liabilities
F.2 currency -100	0
F.71 derivatives +100	

Revaluation account
K.7 nominal holding gains/losses

Gaming Institution

Assets	Liabilities
0	AF.71 derivatives -100

Closing balance sheets

Gaming Institution

Assets	Liabilities
AF.2 currency 1100	0

Consumer

Assets	Liabilities
AF.2 currency 100	0

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A.2 Spread-bet wagers

SNA 17.290 explains the recording of a forward-type financial derivative. Spread-bet wagers are no different to forward-type derivatives and the recording of such wagers should follow that in SNA 17.290. As no premium is paid on a forward-type derivative or a spread-bet wager the initial value of the wager is zero. The wager acquires a value as soon as there is a change in the underlying circumstances. This value is recorded as a matching asset and liability in the financial account and on the balance sheet. Any subsequent changes in either the magnitude or the direction of the asset

and liability are recorded in the revaluation account as a holding gain or loss. If the derivative is ultimately exercised, or in the case of a spread-bet wager a pay-out is necessary, then this is recorded as a cash transaction in the financial account.

Box A4. Recording of a spread-bet wager

A customer agrees a spread-betting wager with a gaming institution (GI) on the outcome of a basketball match. The contract sets a strike difference in the scoreline of 10 points. For every point that the difference in the scoreline at the end of the match exceeds 10 then the GI will pay the customer €5. For every point that the difference in scores is below 10 the customer will pay the GI €5. The GI therefore faces a theoretically limitless liability. The liability of the customer is capped at €50, by virtue of the fact that the points difference cannot be less than 0 points.

In the first example the match ends with a 15 point difference between the teams. Meaning the consumer has won the wager and will receive 25 units from the GI. The recording shows the initial asset/liability at the end of the game and the final settling of the wager between the consumer and GI.

In the second example a more complicated recording is shown. The asset liability positions are now first recorded at half time in the match when the points difference is only 7. Meaning the consumer holds a liability position of 15 units. The spread-bet wager is then revalued at the end of the match when the game has finished with a points difference of 15. The first recording of the derivative takes place in the financial account, any subsequent changes in either the direction or magnitude of the associated asset/liability takes place in the revaluation account. Finally the payment is made on the winning bet between the GI and the consumer and this is recorded in the financial account.

Example 1

1. Recording of the final asset/liability position at the end of the match. The difference between the teams is 15 points.

Opening balance sheets — Gaming Institution

Assets	Liabilities
AF. 2 cash 1000	0

Financial account — Gaming Institution

Assets	Liabilities
	0 F.71 derivatives +25

Closing balance sheets — Gaming Institution

Assets	Liabilities
AF.2 cash 1000	AF.71 derivatives 25

Opening balance sheets — Consumer

Assets	Liabilities
AF.2 cash 200	0

Financial account — Consumer

Assets	Liabilities
F.71 derivatives +25	0

Closing balance sheets — Consumer

Assets	Liabilities
AF.2 cash 200	0
AF.71 derivatives 25	

2. Recording payment on the wager between the Gaming Institution and the consumer.

Opening balance sheets — Gaming Institution

Assets	Liabilities
AF.2 cash 1000	AF.71 derivatives 25

Financial account — Gaming Institution

Assets	Liabilities
F.2 cash -25	F.71 derivatives -25

Closing balance sheets — Gaming Institution

Assets	Liabilities
AF.2 cash 975	0

Opening balance sheets — Consumer

Assets	Liabilities
AF.2 cash 200	0
AF.71 derivatives 25	

Financial account — Consumer

Assets	Liabilities
F.2 cash +25	0
F.71 derivative -25	

Closing balance sheets — Consumer

Assets	Liabilities
AF.2 cash 225	0

Example 2

1. Recording of initial asset/liabilty position at half-time in the match with a 7 point difference between the teams.

Opening balance sheets — Gaming Institution

Assets	Liabilities
AF. 2 cash 1000	0

Financial account — Gaming Institution

Assets	Liabilities
F.71 derivatives +15	

Closing balance sheets — Gaming Institution

Assets	Liabilities
AF.2 cash 1000	
AF.71 derivatives 15	

Opening balance sheets — Consumer

Assets	Liabilities
AF.2 cash 200	0

Financial account — Consumer

Assets	Liabilities
	F.71 derivatives +15

Closing balance sheets — Consumer

Assets	Liabilities
AF.2 cash 200	AF.71 derivatives 15

2. Recording of the final asset/liability position at the end of the match. There is a 15 point difference between the teams.

Opening balance sheets		Revaluation account		Closing balance sheets	
Gaming Institution		**Gaming Institution**		**Gaming Institution**	
Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
AF.2 cash 1000		F.71 derivatives -15	F.71 derivatives +25	AF.2 cash 1000	AF.71 derivatives 25
AF.71 derivatives 15					
Consumer		**Consumer**		**Consumer**	
Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
AF.2 cash 200	AF.71 derivatives 15	F.71 derivatives +25	F.71 derivatives -15	AF.2 cash 200	
				AF.71 derivatives 25	

3. Recording payment on the wager between the Gaming Institution and the consumer.

Opening balance sheets		Financial account		Closing balance sheets	
Gaming Institution		**Gaming Institution**		**Gaming Institution**	
Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
AF.2 cash 1000	AF.71 derivatives 25	F.2 cash -25	F.71 derivatives -25	AF.2 cash 975	0
Consumer		**Consumer**		**Consumer**	
Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
AF.2 cash 200	0	F.2 cash +25	0	AF.2 cash 225	0
AF.71 derivatives 25		F.71 derivative -25			

A.3 Pool wagers

Pool wagers operate slightly differently to both fixed-odds and spread-bet wagers in that the prize fund is limited to the total of stakes paid minus any cut taken as an administration fee by the organiser. Besides this they should broadly follow the same recording principles of an options contract in that an asset and liability position is immediately established due to the paying of a premium or the ticket price.

Box A5. Recording pool wagers as financial derivatives

A lottery is organised as a pool wager. Tickets costs 1 unit and 1000 tickets are sold. The gaming institution that organises the lottery takes a 10% cut from all ticket sales to cover their expenses. The total prize pool is therefore 900 units. The lottery is a random draw with only one winner who receives the entire 900 units as a prize.

The recording of the lottery in the accounts follows that of an options contract. The transaction is split into two distinct pats;

1. Recording the initial wagers and establishing the asset and liability positions.
2. Paying out on the successful wager.

1. 1000 tickets are sold at a cost of 1 unit. The organiser of the lottery takes a 10% cut of each ticket as a service charge.

Opening balance sheets		Financial account		Closing balance sheets	
Gaming Institution		**Gaming Institution**		**Gaming Institution**	
Assets	*Liabilities*	*Assets*	*Liabilities*	*Assets*	*Liabilities*
AF.2 cash 1000	0	F.2 cash +1000	F.71 derivatives +900	AF.2 cash 2000	AF.71 derivatives 900
Households		**Households**		**Households**	
Assets	*Liabilities*	*Assets*	*Liabilities*	*Assets*	*Liabilities*
AF.2 cash 10000	0	F.2 cash -1000		AF.2 cash 9000	0
		F.71 derivatives +900		F.71 derivatives +900	

2. The draw takes place and payout is made to the winner

Opening balance sheets		Financial account		Closing balance sheets	
Gaming Institution		**Gaming Institution**		**Gaming Institution**	
Assets	*Liabilities*	*Assets*	*Liabilities*	*Assets*	*Liabilities*
AF.2 cash 2000	AF.71 derivatives 900	F.2 cash -900	F.71 derivatives -900	AF.2 cash 1100	
Households		**Households**		**Households**	
Assets	*Liabilities*	*Assets*	*Liabilities*	*Assets*	*Liabilities*
AF.2 cash 9000	0	F.2 cash +900		AF.2 cash 9900	0
AF.71 derivatives 900		F.71 derivatives -900			