



Limited cash flow on slot machines

Effects of prohibition of note acceptors on Adolescent
Gambling Behaviour

Marianne Hansen & Ingeborg Rossow, SIRUS

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Norwegian Institute for Alcohol
and Drug Research, Oslo



Outline

- Bank note acceptors – a regulatory tool?
- A natural experiment in Norway
- Empirical study
- Changes in gambling behaviour and problem gambling?
- Discussion



Slot machines, youth gambling and regulation

- Addictive potential of slot machines (Turner & Horbay, 2004; Echeburua, 1996, Griffiths, 1995)
- Youths particularly vulnerable (Derevensky & Gupta, 2000; Griffiths, 1995)
- Slot machines – most dominant form for game in Norway (High gambling turnover, high density of EGMs)
- Little knowledge about effective measures -

However – some studies on manipulations of structural characteristics on EGMs



Bank note acceptors – a regulatory tool?

- **Most pathological gamblers (PG) uses bank note acceptors**
- **Introduction of \$20 as max note denomination reduced money spent and time used among 30-40% of high risk gamblers** (Productivity Commission, 1999; Brodie, Honeyfield & Whitehead, 2003)

- **PG used larger bills – But bill acceptors was not associated with gambling problems, money lost, or persistence of play**
- **Gambling revenue reduced with 42%**
- **Reduction of max bet from \$10 to \$1 - PG gambled for less money** (Blaszczynski, Sharpe & Walker, 2001; Sharpe, Walker, Coughlan et al., 2005)



Current knowlegde – bank note acceptors

- Manipulation of structural effects - regarding payment – may have some impact on gambling expenditures
- Link between bank note acceptors and gambling behaviour among problem gamblers

BUT

- A diversity in research methods and conclusions on whether the degree of problem gambling is influenced
- No research on removal of bank note acceptors
- No previous research on adolescents regarding bank note acceptors and its impact on problem gambling behaviour



A natural experiment in Norway

- 15 000 slot machines easily available
- Bank note acceptors prohibited in July 1, 2006
- A parallel prohibition on money exchange machines in the same location as slot machines
- Allowed currency - maximum 2.5 Euro (in coins)
- Maximum bet - 2.5 Euro

This is part of an extensive reform to limit gambling related problems




Aim of this study

To assess whether the prohibition of bank note acceptors had any impact on gambling behaviour and problem gambling among Norwegian youths



Study design

September 2004 - T1	September 2005 - T2	September 2006 - T3
No changes in the gambling market	1.7.06  Bank note acceptors	
15,500 EGMs	15,000 EGMs	



Samples

- Junior and senior high school (grades 8-13)
- Adolescents 13 to 19 year
 - T1: 2004 n= 20,648 (before regulation)
 - T2: 2005 n= 21,260 (before regulation)
 - T3: 2006 n= 20,573 (after regulation)



Methods

- School survey
 - Self administered questionnaires
- Gambling behaviour
 - Frequencies of gambling on slot machines, scratch card, lottery, sportsbetting, horse racing and internet gambling
 - Expenditures on slot machines
- Problem gambling
 - SOGS-RA
 - The Lie/Bet Questionnaire
- Additional data to evaluate possible impact
 - Questions about the removal of bank note acceptors
 - Awareness of the prohibition
 - Self-reported influence on gambling behaviour



Sample characteristics

	2004 (n=20648)	2005 (n=21260)	2006 (n=20573)
Males	49.3 %	50.1 %	49.6 %
Females	50.7 %	49.9 %	50.4 %
Age: 13-15	52.4 %	49.6 %	50.5 %
16-17	31.7 %	36.5 %	34.6 %
18+	15.9 %	13.9 %	15.0 %



Frequency and expenditures – before and after the intervention

	2004	2005	2006
Gambling frequency:			
All games/times gambled last year	47	50*	45***
Times gambled last year (slot machines)	15	15 _{ns}	12***
Gambled once or more per week on slot machines	11.3%	10.6%**	8.1%***
Expenditures on slot machines:			
Last week in average	3.40	3.10 _{ns}	2.40 _{ns}
No expenditure (last week)	80%	83%***	88%***
Spent > 63 Euro (last week)	1.3%	1.1% _{ns}	0.8%**

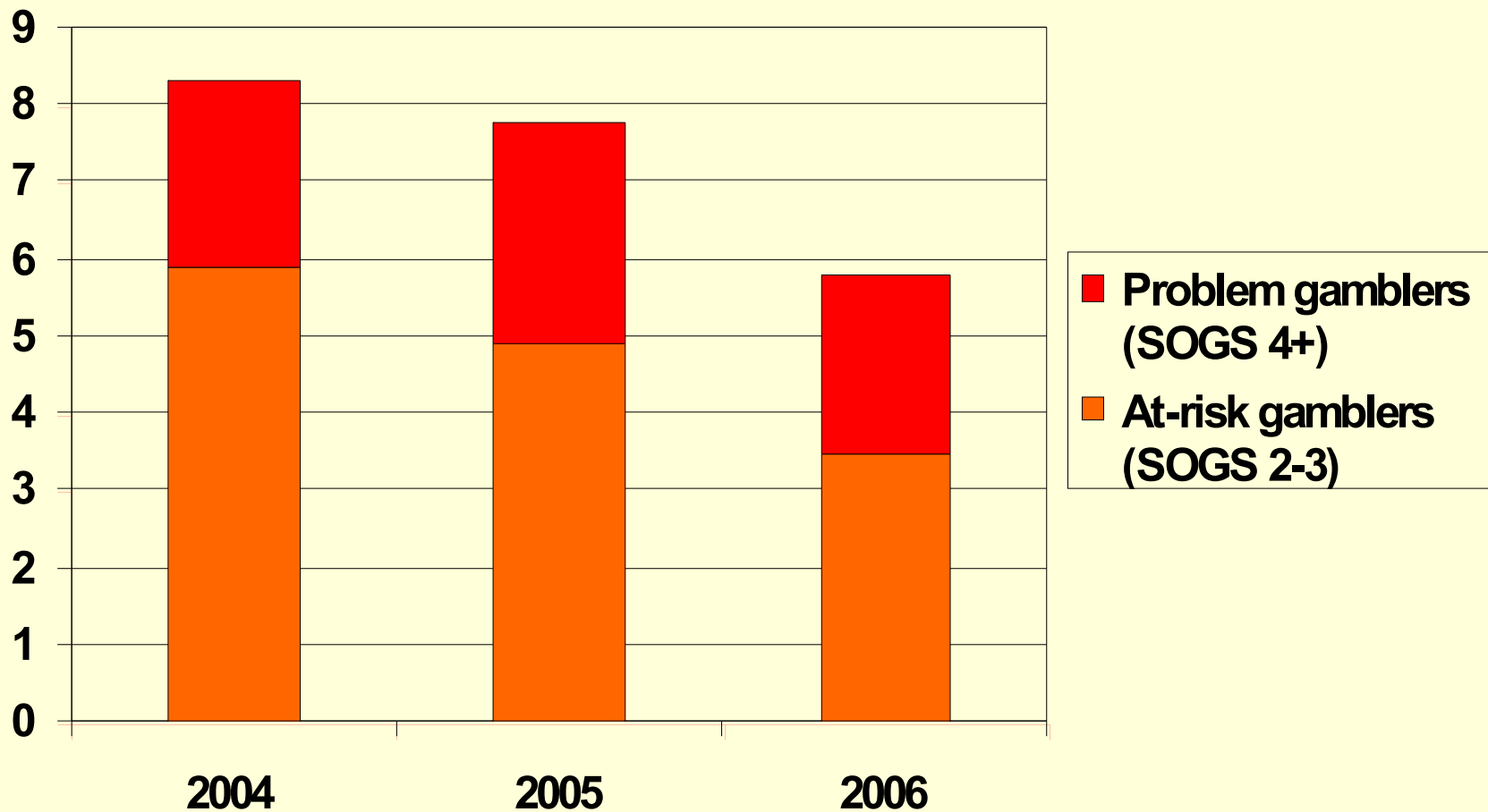


Problem gambling -

	2004	2005	2006
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SOGS-RA:			
At risk			
-problem (2+)	8.3 %	7.8 %	5.8 %
Problem (4+)	2.4 %	2.9 %**	2.3 %***
At-Risk (2-3)	5.9 %	4.9 %***	3.5 %***
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Lie/Bet (2)	3.7 %	3.6 %ns	3.0 %***
Lie/Bet (1 or 2)	10.8 %	10.2 %ns	8.5 %***

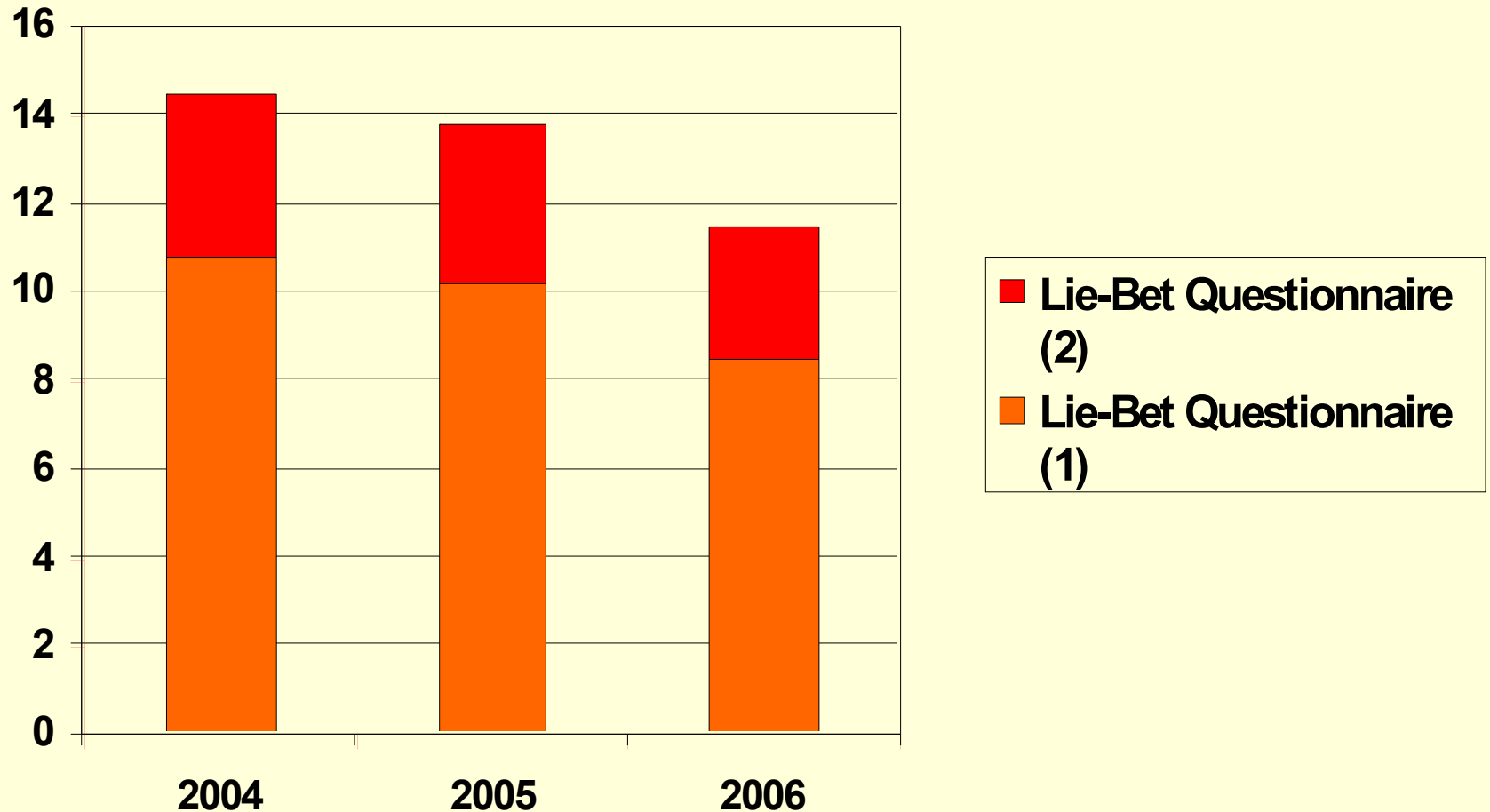


Proportion at-risk and problem gamblers (SOGS-RA)





One or both 'yes' at the 'Lie-Bet Questionnaire'



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Awareness of removal of bank note acceptors among adolescents (gambled last 12 months)

- 31.4 % Had noticed the prohibition of bank notes
- **21.2 %** Gambles less often without bank note acceptors
- 47 % Have stopped gambling

➔ Is this related to the bank note acceptors?

YES:	6.7%
NO:	75.7%
Not sure:	17.6%



Summary of findings

- A significant decrease in gambling frequency and expenditure on slot machines
- A significant decrease in 'at-risk' and 'problem' gambling after the intervention
- 1/5 gambled less often
- Almost half had stopped gambling
 - However, a minor fraction attributed this to the prohibition of bank note acceptors



Interpretations of the findings

- Interruptions in the gambling sessions a trigger to increased consciousness and self regulation
 - "hot" vs. "cool" system (Michel & Ayduk, 2004)
- The total consumption of gambling - a positive association between the overall amount of gambling and the prevalence of problem gambling
- Public health policy