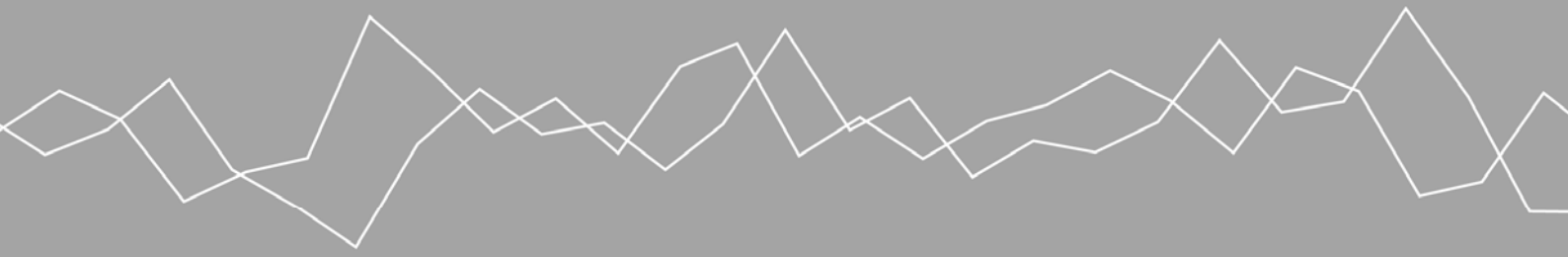
Better chances for charity lotteries



seo economisch onderzoek

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Better chances for charity lotteries

Study on the regulation of European lottery markets

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Executive Summary

National governments should not be afraid to allow charity lotteries to enter the regulated lottery market. Opening the market to charity lotteries will lead to a larger total lottery market, which will not worsen the position of the state lotteries. In the event that a government decides to open the lottery market, from a welfare-economic perspective it is advised not to allow too many charity lotteries to enter the market. The rationale behind this is that charity lotteries will compete with each other, and as a result the total funds raised for charity will decrease. From this perspective it is even optimal to allow only one player to enter. A government should then allow the charity lottery to implement product differentiation, because this will enable the charity lottery to maximize total charity funds raised. As such, a legal alternative is offered for all kinds of needs in society. Also, it is better not to treat new players in exactly the same way as the current supplier(s), because this would worsen total welfare.

Introduction

The gambling market in European states is traditionally strictly regulated along national borders. The market for games of chance comprises, among others, lotteries, sports betting, casinos and slot machines. Tight government intervention and control over gambling is generally believed to ensure that problems such as gambling addiction, money laundering and fraud are minimized, while at the same time the population's desire for gambling is accommodated in such a way that illegal alternatives are also minimized.

Recently, strict national regulation has been challenged. The European Commission, for instance, launched an inquiry in 2006 into the restrictions on sports betting services in several European Member States, including the Netherlands. The idea is to further break down barriers to cross-border trade in services between EU Member States and ensure that the regulation of the gambling market is proportionate. In a nutshell, the proportionality test involves checking whether a regulation has a clearly defined public interest objective and whether it is the method least restrictive of competition to achieve that desired objective.

Regulatory issues related to the market for games of chance are also under debate at a national level. In 2000 the Dutch government considered opening the market to any operator adhering to certain high quality standards. Some years later, the government considered tighter regulation by introducing a modified Gambling Act and stricter advertising rules. After some initial heated discussion, as of 2007 political ideas about Dutch gambling policy have been changing rapidly (the current draft revision of the Gambling Act is indicative of this). Consequently, the institutional context in which the Dutch market parties operate is about to change. It is obvious that the legislation is getting stricter, but the extent and exact direction of the changes is still somewhat unclear. Given this dynamic and uncertain situation and given the great impact of regulation in this market, the Dutch National Postcode Lottery has asked SEO Economic Research to study the regulation of the lottery market. The lottery market is a submarket of the gambling market and comprises, amongst others, the state lottery, lotto and the charity lotteries.

The central research question is twofold:

I. What are the effects of re-regulation of the Dutch lottery market?
II. How can the National Postcode Lottery anticipate these regulatory changes?

In order to answer this central research question we will address several underlying questions:

1. Market description and definitions. How can the gambling market be described? What is gambling? Which games of chance can be distinguished? What are the trends influencing the market for games of chance (with regard to new games, technological developments and consumer preferences, for example)?
2. Policy and regulation. What is the gambling policy of the Dutch government? Is the policy differentiated to the submarkets of different games of chance (lotteries versus gambling and state lotteries versus private (charity) lotteries, for example)? Does the EU have a gambling policy, and if so, what is it? How is the Dutch gambling market regulated? What are the possible economic and political motives for government regulation of the market? What is the public interest at play?
3. International quick scan. What are the differences and similarities between twenty-one European countries with respect to the gambling market and its players, (charity) lotteries, and gambling regulation?
4. SWOT analysis for charity lotteries. What are the strengths and weaknesses of charity lotteries compared to other games of chance? Which circumstances and developments offer opportunities to enhance the position of charity lotteries, and which circumstances and developments might threaten their position? What recommendations can be formulated based on the confrontation of strengths, weaknesses, opportunities and threats? What are the effects of the various dimensions in the SWOT analysis on other economic actors such as consumers, other lotteries, charity organizations and the government?
5. Analysis of regulatory options. Given the fact that the Dutch government has various regulatory options, what would – from a welfare economic perspective – be the optimal option? Is opening the national market to charity lotteries a wise thing to do for governments whose treasury partly depends on revenues collected by state lotteries? How many charity lotteries should be allowed to enter the national market? Should a government opt for the monopolistic model or for the competition model? Should the government set the same rules for state lotteries and charity lotteries (level playing field)? In order to answer these questions we perform an empirical and theoretical analysis for three central propositions. These propositions are:
    - *Proposition 1: Charity lotteries are not substitutes for the state lottery, but complementary or independent.*
    - *Proposition 2: A large supplier in the market for charity lotteries (monopolistic model) is to be preferred over several small suppliers (competition model) because this maximizes total funds raised for charity organizations.*
    - *Proposition 3: Product differentiation for charity lotteries entails positive welfare effects.*

Questions 1 and 2 are discussed in Chapter 1 of this report. Chapter 2 presents the findings of the international quick scan (question 3). The SWOT analysis (question 4) is addressed in Chapter 3. Question 5 is answered in the last chapter of this report, Chapter 4. In addition to these four chapters, the report contains a list of definitions and abbreviations (Appendix A) and references

(Appendix B). In this executive summary we present the highlights and main conclusions from Chapters 1 to 4.

Gambling market and policy (Chapter 1)

A game of chance is characterized as a game with a random outcome. Wagering money on the outcome of a game of chance with the intent of winning money is called gambling. In a game of chance the outcome of the wager becomes evident within a limited period of time. In the Netherlands, these games are regulated under the Dutch Gambling Act. The main subjects of this study are charity lotteries. We define a charity lottery as follows:

A charity lottery distributes at least 40% of its turnover to good causes (in its maturity), has freedom to determine its beneficiaries and the distribution of proceeds among these good causes, transfers the money to good causes without government intervention, and has a national or regional coverage.

The definition is relatively strict and based on the Dutch situation, from which perspective we consider the charity lotteries. In the Netherlands, charity lotteries have a minimum charity payout ratio of as much as 50%. Essential, however, is the statement that charity lotteries have the freedom to determine beneficiaries and transfer money to them without government intervention.

The charity lottery market is embedded in the lottery market, which in turn is embedded in the market of games of chance. An important criterion for categorizing games of chance is the distinction between short odds and long odds games. In a short odds game the player obtains an immediate result when playing, such as with slot machines, casino card games and instant lotteries. In a long odds game some time passes between the wager and the result. Examples of long odds games of chance are lotteries such as the Dutch State Lottery and the National Postcode Lottery. Short odds games are far more likely to be associated with gambling addiction than long odds games.

The Dutch Gambling Act, the *Wet op de Kansspelen* (WOK), was introduced in 1964 and applies to all games of chance. A revision of the WOK is currently in progress and will be ready in 2008. It prohibits the provision of all forms of gambling unless a licence is issued by the state. The basic starting point, therefore, is that the government controls and regulates the supply of games of chance (canalization). The regulation of gambling has three fundamental objectives:

1) to regulate and control the supply of games of chance, with the intention to prevent gambling addiction
2) to protect consumers
3) to fight crime, in particular money laundering and fraud.

In practice, these three objectives have led the Dutch government to elect to introduce a number of monopolies for various games of chance.

Public interest at play

Viewed from an economic perspective, problems arise at the moment that markets are not functioning properly – a phenomenon known as 'market failure' – or if the market's outcome is socially or politically unacceptable. In the latter case, the government can intervene so as to set right an unequal division of income (redistribution) or to correct undesirable and incorrect decisions or stimulate more desirable and correct choices (demerit and merit goods or paternalism). In the lottery market, market failures do occur that may justify government action. On the other hand, government failures may also occur. Box I summarizes our analysis.

Box I: Analysis of market failures, political considerations and government failures in the lottery market

Market failures

- A concentration of lotteries is likely when large lotteries are able to raffle higher jackpots, which in turn attracts more players (network effects and possibly mergers). This results in a lack of competition. In a liberalized European market, concentration could occur on a European level. However, extra government action is not needed as the Dutch National Competition Authority (NMa) and the European Commission already handle these problems as they arise.
- Information asymmetry between players and lotteries may attract criminal lottery suppliers that fail to issue prizes (and payments to beneficiaries) correctly. This results in overcharging of consumers, money laundering and public order problems, and a deterioration of consumer trust in the sector, and hence a decreasing demand for lottery products. The government already regulates these information problems; no extra government action is needed.
- One negative external effect of gambling is gambling addiction. Without regulation, gambling addiction can be a severe problem. However, for the charity lottery market, gambling addiction does not play a role, as lotteries are mainly long odds games (no evidence has been found for addiction regarding (number) lotteries). Therefore less regulation rather than even stricter regulation is called for.
- Consumer feelings of missing out on the jackpot in *it would be you*-type games of chance, such as the National Postcode Lottery, can be regarded as a form of negative external effect. As the court has stated, this is all part of the game and regulation is not necessary.
- The beneficiaries of a charity lottery can become dependent on the lottery. This problem is already tackled through self-regulation and does not require government intervention.

Political considerations

- The government can put restrictions on markets of games of chance, on the grounds of the paternalistic motives that consumers underestimate the risk of gambling addiction. The government no longer invokes moral arguments in order to motivate the regulation of gambling and games of chance; instead, reference is made to the preservation of public order, protection against gambling addiction, and the prevention of fraud and money laundering. However, this slight change in terminology has not led to a different regulatory scheme.

Government failure

- The policy process requires a great deal of information on several market aspects. In the case of the charity lottery market, the government has limited market information. This can lead to inefficient regulation (for example, slow adaptation to Internet and other market developments).
- Regulation can sometimes create a non-level playing field. Charity lotteries must transfer at least 50% of turnover to charity organizations, while the state lottery has a minimum prize payout of 60%. A non-level playing field distorts competition.
- A new government can implement new regulation. This can incur costs for the market and creates uncertainties for investors.

Source: SEO Economic Research

We conclude that the justification for the present Dutch policy is mainly to be found in non-economic, political considerations (paternalism). As we have described, emphasis on these pater-

nalistic motives and the lack of an economic welfare perspective have led to government failures, that is, over-regulation and some inconsistencies in the current policy. It is important to iron out these inconsistencies and harmonize regulation on a national level. Moreover, Dutch policy is too general, and differentiates very little in terms of the degree to which the various games are addictive.

The economic justification for a restrictive government regulation of charity lotteries stems from a desire to prevent information problems and money laundering. On the other hand, the economic justification for an encouraging government regulation stems from a desire to increase the turnover of charity lotteries to enhance the positive external effects of these lotteries. This is a purely economic argumentation, which has so far not been used by the European Court of Justice in any perspective or sector. The Dutch policy for games of chance is thus caught between two thoughts: restriction and encouragement, which might explain why some of the present policy is inconsistent.

EU policy

At the 1992 EU Summit in Edinburgh the European Council decided that the regulation of gambling markets should remain on a national level, because national regulation was regarded as more effective and efficient. In the absence of European legislation, all EU Member States regulate gambling at the national level. It is, in the short term, not likely that the European Commission will come up with proposals for the harmonization of gambling markets because it has been decided that games of chance are excluded from the Services Directive.

International quick scan (Chapter 2)

An international quick scan of twenty-one EU Member States shows that lotteries play a significant role in most European gambling markets. The total market size for lottery games ranges from less than EUR 20 million in Luxembourg to almost EUR 5 billion gross gaming revenues in Germany. Table I on the next page shows the main lottery market characteristics of the surveyed countries.

Per capita gambling spending is low in the Eastern European countries. However, gambling spending has shown a steep increase in these countries in recent years, and may be subject to further growth in the near future. Gambling markets in Western European countries are more mature, and generally show only modest growth. In mature markets, new entrants must focus more on gaining market share from existing players, while in Eastern European countries sufficient space for growth may be available next to existing players. Overall, high per capita spending relates mostly to a large share of short odds games.

Differences in market shares can be ascribed to differences in regulation, historical endowments and cultural differences in gaming preferences. In half of the European countries investigated only one licensee is allowed to organize lotteries. In the Czech Republic, Denmark, Germany, Greece, Italy, Lithuania, Luxembourg, the Netherlands, Poland, Spain and Sweden more than one licence is granted by the national government. The existence of more than one licence could be considered an indicator of liberalization. The absence of competition within the lottery market does not mean that consumers do not have any freedom of choice. Most single suppliers organ-

ize several games. The most frequent lottery formats are number lotteries, lottos and instant lotteries. On the other hand, a high number of licences will not automatically lead to broader game assortments.

Table I: Size of the lottery market and its components

	Size of lottery market	Components of lottery market size		
		Share of lotteries in gambling market	Per capita gambling	Population
Austria	€ 400 – € 1,000 million	> 50%	€ 100-175	< 10 million
Belgium	€ 400 – € 1,000 million	> 50%	< € 100	10-25 million
Czech Republic	< € 400 million	< 33%	< € 100	10-25 million
Denmark	€ 400 – € 1,000 million	> 50%	€ 100-175	< 10 million
Finland	€ 400 – € 1,000 million	33-50%	> € 175	< 10 million
France	> € 1,000 million	33-50%	€ 100-175	> 25 million
Germany	> € 1,000 million	> 50%	€ 100-175	> 25 million
Greece	€ 400 – € 1,000 million	33-50%	< € 100	10-25 million
Hungary	< € 400 million	33-50%	< € 100	10-25 million
Ireland	< € 400 million	< 33%	> € 175	< 10 million
Italy	> € 1,000 million	> 50%	> € 175	> 25 million
Lithuania	< € 400 million	> 50%	< € 100	< 10 million
Luxembourg	< € 400 million	< 33%	> € 175	< 10 million
Malta	< € 400 million	< 33%	> € 175	< 10 million
Netherlands	€ 400 – € 1,000 million	33-50%	€ 100-175	10-25 million
Poland	< € 400 million	> 50%	< € 100	> 25 million
Portugal	€ 400 – € 1,000 million	> 50%	€ 100-175	10-25 million
Slovakia	< € 400 million	< 33%	< € 100	< 10 million
Spain	> € 1,000 million	> 50%	€ 100-175	> 25 million
Sweden	€ 400 – € 1,000 million	33-50%	> € 175	< 10 million
UK	> € 1,000 million	< 33%	> € 175	> 25 million
	Large: > € 1,000 million Medium: € 400 – € 1,000 million Small: < € 400 million	Large: > 50% Medium: 33-50% Small: < 33%	High: > € 175 Medium: €100-175 Low: < € 100	Large: > 25 million Medium: 10-25 million Small: < 10 million

Red: high/large; grey: medium; white: low/small.

Based on 2003 data.

Source: SEO Economic Research

The Dutch charity lotteries are first in Europe both in terms of market share in the national lottery and gambling market and with respect to the total funds raised for charity. In most European countries charity lotteries are absent or negligible. The exceptions are Spain and Sweden. In Spain, the charity lottery ONCE accounts for 25% of the lottery market. The four largest nationwide charity lotteries in Sweden account for approximately 24% of the lottery market (there are also two smaller nationwide charity lotteries).

To conclude, charity lottery markets in most European countries are still relatively small. Therefore, the Dutch charity lottery market may be considered as an example for possible future developments in other European countries.

SWOT analysis for charity lotteries (Chapter 3)

We conducted a SWOT analysis for charity lotteries in the European Union. The internal and external analysis is summarized in Table II.

Table II: SWOT matrix

	Positive	*Negative*
Internal	– S1: Product differentiation: charity donations serve as an additional product attribute that other lotteries lack – S2: The product attribute of charity donations attracts new customer groups to the lottery market – S3: Additional funds for charities (income flows from charity lotteries are not a substitute for but rather a complement to direct donations) – S4: Solidarity between charity organizations (because lottery participants do not have a say in the exact distribution of charity funds, charity lotteries are able to also subsidize charity organizations that are not popular and have difficulty raising funds directly)	– W1: Lower prize money because charity lotteries distribute at least 40% of their revenues to charity organizations – W2: Positioning in two markets: as a lottery and as a raiser of charity funds – W3: Risk of brand dilution because charity lotteries may be held (partly) responsible for negative developments or rumours relating to the charity organization they subsidize – W4: Non-earmarked participation: a lottery participant has limited influence on the destination of the charity funds if their lottery participation is non-earmarked and the charity organizations receive non-earmarked donations – W5: Limited penetration and market share: in most European countries charity lotteries are absent or only play a marginal role
External	– O1: International expansion: given the low penetration of charity lotteries throughout Europe, foreign entry is an important opportunity for existing charity lotteries to expand[1] – O2: Cooperation between the existing charity lotteries in different countries – O3: The increasing penetration, adoption and usage possibilities of Internet and mobile channels are an interesting opportunity, especially for charity lotteries (to support international expansion, advantages of scale, advertising and so on)	– T1: Unequal level playing field for lotteries (state versus charity lotteries) and for lotteries versus other games of chance (lotteries versus slot machines) – T2: Competition between charity lotteries will decrease the total funds raised for charity organizations – T3: Associations with gambling addiction, although in the case of long-odds lotteries gambling addiction does not occur in practice – T4: Government failure: in many countries the government adapts regulation very slowly to changes in market needs and innovation – T5: Lotteries are vulnerable to negative media rumours – T6: In most countries Internet games of chance are still forbidden

Source: SEO Economic Research

Our SWOT analysis for charity lotteries, and more specifically for the Dutch National Postcode Lottery (NPL), shows that there are several opportunities for charity lotteries. The operator of the existing charity lotteries (Novamedia) can realize growth through growth in their home countries or international expansion. National growth can be realized through optimizing prize schemes, cooperating with other lotteries to give higher first prizes, and making use of techno-

[1] Dutch lotteries are not permitted to use lottery money for international expansion; therefore, external investors must be found to enable entry into foreign markets.

logical innovations such as e- and m-commerce, to the extent that this is legalized. In many countries charity lotteries are small or absent and there seems to be sufficient space for market growth. Given the high penetration and market share of the Postcode Lottery within the Netherlands, market growth through international expansion seems most promising for the operator of the lottery, Novamedia. The opportunity is, then, not to create one large European charity lottery, but rather a national charity lottery in every European state.

Dutch law does not permit the use of lottery money for setting up new lotteries. Novamedia has made the first steps towards international expansion. The NPL can make use of its unique product concept, innovative marketing assets and relationships with charity organizations and celebrities.

At the same time, charity lotteries find themselves confronted with a number of threats. Charity lotteries often face a non-level playing field with respect to other lotteries and games of chance. Furthermore, they are vulnerable to negative media rumours, government failure and Internet games (but the latter holds for non-charity lotteries as well). The economic reality is that in markets with many charity lotteries the total funds raised by charity lotteries for charity organizations decrease. As such, competition is a serious threat for charity lotteries.

Analysis and propositions (Chapter 4)

The Dutch government has various regulatory options. In order to determine the optimal regulatory options, we elaborate the findings of the SWOT analysis and formulate three propositions concerning the liberalization of the market of charity lotteries. We test these propositions empirically using relevant data for the Dutch, Swedish and Spanish lottery markets.

Proposition 1: Charity lotteries are not substitutes for the state lottery, but complementary or independent

When state lotteries and charity lotteries are substitutes, the entry of charity lotteries into new markets (countries) is a threat for the state lottery, and therefore for the treasury. However, both theoretically and empirically we do not have indications to assume that they are indeed substitutes. Rather, empirical support exists for the complementarity of charity and state lotteries. Our results indicate that the entry of charity lotteries would lead to an increase in the revenues for state lotteries. The empirical analysis of the Dutch, Swedish and Spanish lottery markets does not provide evidence to support a policy that prevents charity lotteries from entering the market.

We therefore advise policymakers to open their markets to charity lotteries. Charity lotteries will enhance (consumer) welfare. Based on their popularity in the Netherlands, Sweden and Spain, we may conclude that charity lotteries fulfil certain consumer needs. Moreover, they stimulate welfare by raising funds for good causes. Furthermore, we advise policymakers in countries where charity lotteries have already entered the market not to be reluctant in giving charity lotteries space to develop and grow. In the worst-case scenario, the state lottery is unaffected by charity lotteries' success, but it may very well be that the state lottery and consequently the treasury would even benefit from deregulating the charity lottery market.

Proposition 2: A large supplier in the market for charity lotteries (monopolistic model) is to be preferred over several small suppliers (competition model) because this maximizes total funds raised for charity organizations

Both the theoretical and empirical analysis support the proposition that concentration of the market is optimal for a charity lottery market, which aims to maximize charity funds. The theoretical analysis makes plausible that a monopoly maximizes profits of charity lotteries, from which charity funds are derived. The differences in market concentration and charity funds raised (defined as GGR per capita) between Spain, the Netherlands and Sweden support the theoretical analysis. Furthermore, the formal empirical analysis of the Swedish data (regression analysis) supports the theory as well, by finding a positive effect of market concentration on Gross Gaming Revenues.

The policy implication of these findings is that if the lottery market is opened to charity lotteries – which is a welfare-enhancing strategy, as we saw when discussing proposition 1 – it is preferable that only a limited number of suppliers should be able to enter the market. Too many suppliers will decrease the total funds available for charity organizations. This undermines the potential welfare created by charity lotteries for society.

Note that our analysis does not imply a recommendation for a monopoly for state lotteries (non-charity lotteries). First, without admitting charity lotteries to the national market, one would miss out on the complementary effects of entry by a charity lottery. Opening the market only entails complementary effects if a charity lottery enters the market and not if a state-controlled lottery enters the market or if the state incumbent markets a new lottery product. Second, competition among charity lotteries is welfare-decreasing whereas competition among charity and non-charity lotteries is welfare-increasing. If the state lottery had no charity lottery with which to compete there would be too little incentive to achieve cost efficiencies.

Proposition 3: Product differentiation for charity lotteries entails positive welfare effects

Under a policy of strict regulation, charity lotteries should have some flexibility to differentiate themselves from each other. In order to promote differentiation, regulation must either differ from the regulation applying to other suppliers or they must have sufficient flexibility to determine their market policy and positioning. Also, as we saw when discussing proposition 1, charity lotteries should be able to differentiate themselves from state lotteries. Because charity lotteries are essentially different from state lotteries, these lotteries are complements rather than substitutes.

This does not mean that an unequal level playing field is justified. Regulation must therefore not be unequal but rather different. For example, the Dutch state lottery and lotto distribute through kiosks and shops, whereas the Dutch charity lotteries have chosen to sell subscriptions only through direct channels (telephone, mail and Internet). It is clear that the state lottery and lotto compete with each other because they both distribute through the retail channel.

To summarize, in order to maximize charity funding through charity lotteries, the creation of a level playing field between charity lotteries and state lotteries is preferable. However, within this level playing field the regulator should permit for possibilities for product differentiation because this allows charity lotteries to optimize their revenues.

Conclusions

We conclude that opening the national markets to national charity lotteries is welfare-enhancing. Opening the market will not harm the incumbent state lotteries. On the contrary: our findings indicate that the entry of charity lotteries is profitable to state lotteries. Because charity lotteries are essentially different from state lotteries, these lotteries are complements rather than substitutes. Charity lotteries that enter a national lottery market do earn market share at the expense of the incumbent state lotteries, but at the same time enhance the total market earnings in such a way that the revenues for state lotteries are increased.

If the lottery market is opened to charity lotteries, we conclude that it is better not to grant too many licences. From a welfare economic perspective it is better to have one large supplier in the market for charity lotteries (monopolistic model) than to have several small suppliers (competition model). The entry of many suppliers will decrease the total funds available for charity organizations, which undermines the potential welfare created by charity lotteries for society.

Moreover, we conclude that – if national markets are opened to charity lotteries and governments adhere to the monopolistic model – it is preferable to allow for product differentiation for charity lotteries as this entails positive welfare effects. In order to be able to differentiate, regulation must either differ from the regulation applying to other suppliers or they must have sufficient flexibility to determine their market policy and positioning. Also, charity lotteries should be able to differentiate themselves from state lotteries.

1 Gambling market and policy

This chapter describes the Dutch market for games of chance (section 1.1), the gambling policy of the Dutch government and the EU (section 1.2). In section 1.1 we define the concept of a charity lottery as well as the other categories of gambling and lotteries (section 1.1.1). In section 1.1.2 we describe the various trends that influence the market for games of chance (e.g. new games, technological developments) and in section 1.1.3 we provide a categorization of games of chance. Section 1.2 discusses current Dutch and European regulation of the market for games of chance (section 1.2.1 and 1.2.2). This is followed by an analysis of the possible motives for government regulation of the Dutch gambling market, looking at market failures and political motives (section 1.2.3). In other words, we identify the public interest at play.

1.1 The Dutch market for games of chance

1.1.1 Market description and definitions

A *game of chance* is characterized as a game with a random outcome. Wagering money on the outcome of a game of chance with the intent of winning money is called *gambling*. In a game of chance the outcome of the wager becomes evident within a limited period of time. The occurrence of luck is the dominant factor within this period. A distinction can be made between short odds games, under which the outcome becomes apparent instantly when playing (such as slot machines), and long odds games, under which a longer period of time passes between placing a stake and the outcome of the wager (such as lotteries). The traditional games of chance consist of lotteries, sports betting, casinos and slot machines. In the Netherlands, these games are regulated under the Dutch Gambling Act.

The Dutch Gambling Act, or the *Wet op de Kansspelen* (WOK), distinguishes between the following games of chance:

- Long-term lotteries (multiple years)
  - State Lottery
  - Lotto
  - Charity lotteries
- Instant lottery
- Incidental (charity) lotteries
- Sports betting
  - Toto
  - Totalizator
- Casinos
- Slot machines
- Small games of chance

Each game has its own subset of regulations. All games are restricted to players over eighteen years of age. We will now briefly discuss each of these games.

Long-term lotteries concern lotteries that have a licence for multiple years. In the Netherlands three types of long-term lotteries exist: state lottery, lotto and charity lotteries. The State Lottery has a permanent licence. Dutch law restricts long-term licences for the lotto and charity lotteries to five years at most, but licences can be renewed.

By law, the *state lottery* is a monopoly. The *Stichting Exploitatie Nederlandse Staatsloterij* (SENS) is the licensee of the Dutch State Lottery, and holds an indefinite licence. Three variants exist: a weekly variant called *Dayzers*, the original monthly *Staatsloterij*, and two special draws on New Year's Eve (*Oudejaarsloterij*) and Queen's Day (*Koninginnedagloterij*). Tickets can be purchased from kiosks or online. It is also possible to subscribe online. The law determines that the State Lottery must have a prize payout ratio of at least 60%. The treasury receives all the proceeds. The Minister of Justice regulates among other things the maximum selling price of a lottery ticket and the maximum number of draws a year (13 per year).

The *lotto* is a lottery in which a player predicts a fixed number of symbols, usually numbers or letters, which are later drawn at a specific time. The ticket number may also serve as a draw number in an extra lottery. The lotto is monopolized by law through the issuing of a single licence that must be renewed every five years. The licensee is *Stichting de Nationale Sporttotalisator* (SNS). SNS also holds a licence for instant lotteries and sports betting. The law determines that the lotto must have a prize payout ratio of at least 47.5%. In 2006, 50% of SNS's turnover was paid out as prize money, and 22% was transferred to good causes predetermined by SNS. The proceeds go primarily to sports organizations (75%), as well as to organizations in the areas of welfare, public health and culture. The Ministry of Justice regulates among other things the maximum number of draws per year (approx. 70) and the destination of the turnover.

Next to these monopolized lotteries, the WOK offers the possibility of granting a licence to private organizations for organizing *charity lotteries*. To obtain a licence for such lotteries, which is valid for a given number of years, two criteria must be met. First, the purpose of the lottery must be of public interest (good causes). Second, a minimum share of 50% of the total turnover must be transferred to good causes.[2] Charity lotteries are restricted to a maximum of thirteen draws per year. The three licence holders, the BankGiro Lottery, National Postcode Lottery and Sponsor Bingo Lottery, are placed under the public limited liability company structure the *Holding Nationale Goede Doelen Loterijen* (NGDL). In 1995, the Dutch government decided to grant no more licences for national charity lotteries, as part of their consolidation policy.

The BankGiro Lottery (BGL) started in 1961 as the first charity lottery in the Netherlands.[3] The proceeds go to thirty-nine cultural organizations, including several museums, the Prins Bernhard Cultuurfonds and the Anne Frank Foundation. In 2006 total proceeds transferred to charity were EUR 51 million. The BGL has approximately 830,000 participants. In 2002, Novamedia took over the BankGiro Lottery.

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2 The compulsory transfer from the proceeds to charity organizations was reduced from 60% to 50% in September 2004.

3 Under the name the 'Algemene Loterij Nederland'.

The Sponsor Bingo Lottery (SBL) started in 1989. In 1998, Novamedia took over the management of the Sponsor Bingo Lottery. The proceeds (EUR 37 million in 2006) go to thirty-three health and well-being organizations. Participants can either support all thirty-three organizations or purchase 'earmarked' tickets that support a single organization. In addition, local clubs in the health and well-being sector (such as sports clubs) can register with the Sponsor Bingo Lottery, after which their members can purchase 'earmarked' tickets to support their clubs. The SBL has approximately 580,000 participants, of which 26% participate with earmarked tickets. Each year, 1,800 to 2,200 clubs participate in the lottery, which realized a turnover of EUR 9 million in 2006.

The National Postcode Lottery (NPL) also started in 1989. It launched a new lottery format with a combination of individual and – a novelty – postcode area participation.[4] The NPL participates in television shows on a frequent, regular basis. In 2006, the NPL had 2.3 million participants, with a total turnover of EUR 432 million. In total, EUR 217 million was distributed to fifty-three different beneficiaries in the area of development cooperation, nature and environment, human rights, and social cohesion in the Netherlands. Seven organizations receive at least EUR 10 million per year. Some of these, like the beneficiary *Stichting DOEN*, redistribute their income from the charity lotteries to multiple small organizations and projects.

Alongside these long-term lotteries, Dutch law allows temporary *incidental lotteries* that raise funds for good causes. The granted licences last for six months at most. There is no limit on the number of licences granted. In practice, this category concerns approximately 70–80 lotteries per year. If the total prize money does not exceed EUR 4,500 the licence is granted by the mayor of the municipality in which the lottery is organized. For charity lotteries with a total prize payout of more than EUR 4,500 the Minister of Justice must grant a licence. One of the five current nation-wide incidental lotteries is the *National Grote Club Actie* (Big Club Action). Local clubs and associations can participate to raise funds for their operations and activities. They may purchase tickets from the lottery organization for EUR 0.50 per ticket, and make their members sell them for EUR 2.50. In 2006, 3.5 million tickets were sold, turnover was approximately EUR 8.75 million, and proceeds raised for the clubs and associations stood at EUR 7 million. The other national incidental lotteries are Jantje Beton Lottery (distributed by primary schools and their pupils), Zonnebloem Lottery, KWF Seizoenloterij (linked to the Dutch Cancer Society), and the National Scouting Lottery.

An *instant lottery* is a lottery where the determination of prize-winning tickets takes place *before* the tickets are issued. This implies that someone who purchases a ticket can determine instantly whether he has won or lost: a consumer purchases a lottery ticket at a kiosk and scratches the surface in order to check out his prize instantly. The law monopolizes the instant lottery by issuing a single licence that must be renewed every five years. SNS is the licensee; it issues a variety of different instant lotteries. These lotteries differ in ticket price (between EUR 1 and EUR 10), maximum prize (between EUR 25,000 and EUR 500,000) and the odds of winning (26%-33%). The Minister of Justice regulates among other things the maximum number of tickets per instant lottery, the maximum number of instant lotteries, the maximum selling price for a ticket, marketing and destination of proceeds.

4 The lottery ticket number is the combination of three numbers plus the (usually the ticket buyer's own) postal code.

Sports betting is a prize contest in which a player guesses on the correct outcome of sports events. Sports betting is monopolized by law by issuing a single licence that must be renewed every five years. SNS is the licensee of sports betting, and the game is issued under the name Toto. Toto focuses on professional soccer matches, but betting on Formula 1 racing, bicycle racing and several other sports is also possible. A player can bet on one match (*toto-score*) or on several matches simultaneously (*toto-select*, *toto-13* or *toto-champions league*). The odds are predetermined. Bets are placed through the Internet or at a kiosk. The prize payout ratio must be at least 47.5%. The proceeds go primarily to sports organizations (75%), as well as to organizations in the areas of welfare, public health and culture. The Minister of Justice regulates among other things the maximum number of different games and the destination of proceeds.

The *totalizator* sells bets on horse races, a small niche market within the Dutch gaming sector. Scientific Games Racing (SGR), based in the United States, is the licensee of the totalizator. A player can place a bet online, at a betting office, or at the racetrack. The prize payout ratio is 72%; the proceeds (10% of turnover) are mainly used to contribute to equestrian sport. The Minister of Justice regulates among other things the maximum number of horse races, the maximum bet, and the maximum fixed deduction percentages.

A *casino* accommodates several games of chance: slot machines, card games and roulette. Casinos are monopolized by law. The *Nationale Stichting Casinospelen* is the licensee of 'Holland Casinos', and holds an indefinite licence. The first Dutch casino opened its doors in 1976, and there are currently fourteen of them. Both the number and location of casinos are regulated, as well as numerous other things. Card games and roulette all pay out more than 90% by construction. The proceeds go to the treasury. Slot machines were prohibited until 1986, but are currently allowed in and outside casinos. In casinos slot machines must have a minimum payout of 80%. The actual payout ratio is approximately 92%. Furthermore, the Minister of Justice regulates among other things the minimum and maximum bets per game of chance, the honest and trustworthy application of the rules of the games, and the marketing.

Slot machines are machine games where the outcome is not very dependent on the skill of the player. In the Netherlands, slot machines are permitted in casinos and amusement arcades, hotels, restaurants and cafes, and fairs. Slot machines fall under a specific set of articles of the WOK, and are regulated according to establishment (location), integrity and technological requirements. Establishment licenses are issued by the mayor of the municipality in which the slot machines are located. There is no limit on the number of licenses that can be issued. Furthermore, the licence holders can keep the proceeds, and as such slot machines are the only Dutch game of chance that is exploited on a truly commercial basis. The law regulates the integrity of slot machines by allowing only a limited number of (reliable) slot machine *producers* (companies that make the machines). The technological requirements for the machines aim to prevent addiction. The WOK regulates payout ratios and sets limitations on maximum prizes, light and sound effects, save functions that encourage continued play, money changing machines in the vicinity of slot machines, etc. The minimum prize payout ratio is 60%, with a maximum average loss per hour of EUR 40 per machine. As for the other games, players must be eighteen years or over. Both the player *and* the licensee are responsible for complying with this rule. The proceeds go to the licensee. In this way, slot machines differ from all other long-term games commercially exploited.

Finally, several *small games of chance* are permitted: bingo, wheel of fortune and *vogelpiekspel*. Bingo is the most popular. In 2004, 8% of the Dutch population participated in a bingo game. Licenses are granted by the mayor of the municipality. Prize money may not exceed EUR 4,500. WOK also discusses contests. Contests concern draws from a pool of correct submissions or a selection of the best submissions. Traditionally, Dutch law does not consider contests as games of chance. However, according to the current proposal for modification of the law, for contests with total prize money exceeding EUR 4,500 a license will be required. For both small games of chance and contest proceeds at least 50% of turnover must be distributed to good causes.

Defining a charity lottery

To structure our discussion we will use the following definition of a charity lottery:

A charity lottery distributes at least 40% of its turnover to good causes (in its maturity), has freedom to determine its beneficiaries and the distribution of proceeds among these good causes, transfers the money to good causes without government intervention, and has a national or regional coverage.

Total turnover of a lottery can be broken down into costs, prizes and proceeds.[5] A starting assumption is that mature lotteries have a cost/turnover ratio of at most 20%. The remaining 80% is distributed between prizes and proceeds (for good causes). Lotteries are considered charity lotteries if the remaining 80% is distributed 50-50 between good causes and prizes. This comes down to the rule of a minimum of 40% of turnover to good causes. According to this rule the National Postcode Lottery, BankGiro Lottery, Sponsor Bingo Lottery and incidental charity lotteries are charity lotteries (50% to good causes) but the lotto is not (22% to good causes).

The definition is relatively strict and based on the Dutch situation, from which perspective we consider the charity lotteries. In the Netherlands, charity lotteries have a minimum charity payout ratio of as much as 50%. Essential, however, is the statement that charity lotteries have the freedom to determine beneficiaries and transfer money to them without government intervention.

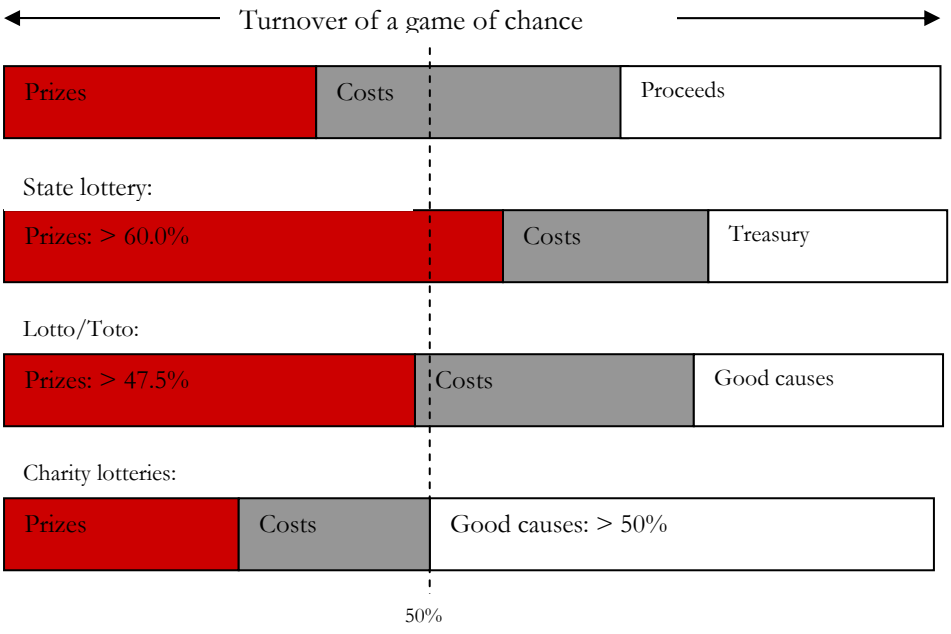
Charity lotteries can be long-term (multi-year licence) or incidental, and have a national or regional coverage. Next to the three permanent Dutch charity lotteries, several incidental national charity lotteries exist, such as Grote Club Actie, Jantje Beton Lottery and Zonnebloem lottery. Small local lotteries with prizes of up to EUR 4,500 receive licenses from their municipalities and are excluded from the definition. These are organized by schools, sports clubs, choirs and orchestras on a limited scale.

The definition states that the lottery has freedom to determine how proceeds are distributed among good causes. For the proceeds of a charity lottery only the sectors may be regulated in the license, but the lottery itself has a say in the distribution of proceeds within the regulated sectors. The Dutch charity lotteries have chosen to donate to clearly-defined subparts of the charity market. For the NPL this is people and nature, for the BankGiro Lottery culture, and for the Sponsor Bingo Lottery health and well-being. Furthermore, charity lotteries distribute funds without government intervention.

[5] See the appendix for exact definition of concepts.

The breakdown of turnover for the Dutch lotteries (state lottery, lotto and charity lotteries) is illustrated in Figure 1.1. The total turnover of a lottery is divided into costs, prizes and proceeds. The proceeds are transferred to either the treasury or to charity organizations. Concerning prize payout ratios, the state lottery and lotto have a minimum prize payout ratio determined by the government. For the state lottery this is 60%; for the lotto it is 47.5%. The charity lotteries, however, are restricted in the percentage of turnover transferred to good causes (minimum 50%). Because of these different requirements a non-level playing field exists between the Dutch lotteries. For example, if charity lotteries grow, the possibility of increasing their prize money is more limited than for the lotto and state lottery, were they to experience similar growth.

Figure 1.1: Illustration of the concept of Dutch charity lotteries (2006)



Source: SEO Economic Research

Market developments

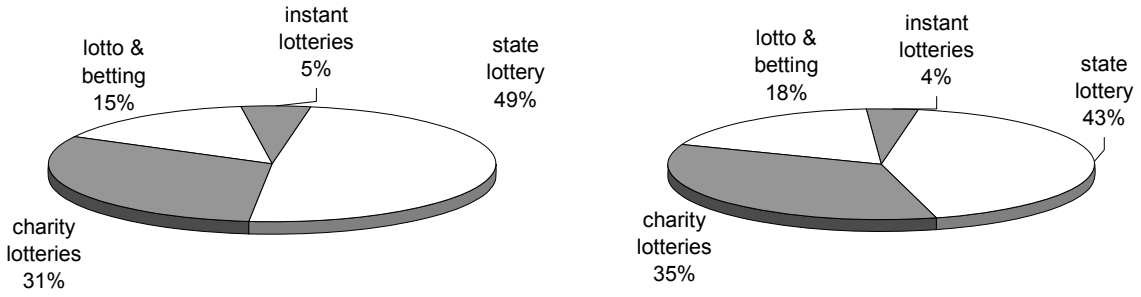
The aggregate turnover of long-term lotteries and betting in the Netherlands has grown by 27% in the last five years, from EUR 1,352 million in 2001 to EUR 1,718 million in 2006 (annual reports 2001 & 2006, College van Toezicht op de Kansspelen).[6] Figure 1.2 shows the market shares for the different long-term lotteries and betting in 2001 and 2006. It shows that the market share of charity lotteries has increased and the market share of the state lottery decreased. In 2006 the turnover of the state lottery was EUR 738 million, and of the three long-term charity lotteries together EUR 609 million. Within the submarket of charity lotteries the NPL has a 70% share. The relative market positions of the NPL, BGL and SBL have remained practically unchanged since 2001. Instant lotteries had a small market share (4%) in 2006.

6 We have taken lotteries and betting together, because lotto, betting and instant lotteries are all organised by one operator (SNS).

The penetration rate of lotteries in the Netherlands is high. Approximately 80% of the Dutch population has participated in a lottery in the past twelve months. However, the average spend on lotteries is only EUR 105 per person. This is low compared to other EU countries, such as Sweden (EUR 417) and Spain (EUR 277). Almost 50% of the total turnover is paid out as prize money, and thus returned to its players. In the Netherlands, if a prize exceeds EUR 454 the prizewinner pays a 29% gambling tax.

A merger between SENS, SNS and the BankGiro Lottery was vetoed by the Dutch Competition Authority NMa in 1999. According to the NMa, this concentration would have had a negative impact on competition in the lottery market. The NMa approved a merger between the three charity lotteries in 2004. In the current structure, three limited liability companies (*NV*'s) hold the licenses, and these companies are placed under one holding. The three lotteries have thus kept their separate concepts and licenses with their own sets of beneficiaries.

Figure 1.2: Market shares in the lottery and betting market, 2001 and 2006



1.1.2 Trends in games of chance

Innovations in the market for games of chance take place in the area of online gambling and promotional games via telephone or text message. In many countries such as the Netherlands, however, these are not legalized. One game that has recently grown significantly in magnitude is poker.

There were about 2,500 Internet sites 'worldwide' providing gambling services in 2006, covering both free and paid games. A recent survey revealed that 8.7% of the Dutch population had played e-games in the past twelve months, but only 3.5% had played paid e-games. Those who play for money spend on average EUR 223 per year. The total turnover for online gambling in the Netherlands has been assessed at between EUR 62 million and EUR 120 million in 2005 (Motivaction study 2006, 2007). Providing paid gambling services on the Internet is prohibited in the Netherlands, as well as in most other European countries. However, as an experiment, Holland Casinos will be allowed to run an Internet casino for three years in the near future. The purpose of this experiment is to obtain controlled experience in online gambling and its effects.

E-commerce is not forbidden as far as it concerns the distribution of existing games. All Dutch long-term lotteries (except instant lotteries) and betting games offer online possibilities for purchasing tickets and checking winning numbers and game results.

One game type that has received growing attention recently are promotional games. Promotional games concern a game of chance that supports the promotion of a product, service or organization. Examples are sweepstakes on packages, telephone voting in a television show with a prize draw from among the voters, and so-called 'phone-in' television programmes. The majority of these games use text messaging and telephone as a medium for participation. Roughly one-third of the Dutch population (35.6%) has participated in a text messaging or telephone promotional game in the past twelve months: 12.5% took part in a text messaging game, 16.5% in a telephone game, and 6.2% participated in both (Motivaction study 2006, 2007). For most players (74%) their participation frequency is lower than once a month. Total turnover for text messaging and telephone promotional games was assessed at between EUR 59 million and EUR 298 million in 2005 (Motivaction study 2006, 2007). In principle, no stake is required for participation in promotional games. But in practice additional communication costs (telephone and text) must be made by the participants. Also, the aggressive promoting of these games has worried the authorities. Finally, some incidents have occurred in which prizewinners have not received their prizes, and television programmes have given the impression of being live but in fact were not (see Tweede Kamerfractie SP, 2001). The new draft law on games of chance formulates conditions under which a promotional game is allowed. Free promotional games are self-regulated with a code of conduct on promotional games of chance. A code of conduct for promotional games was formulated in 2006. Promotional games are also used by long-term lotteries (such as the NPL) as a promotional tool. The prize budget related to these games is considered as part of the marketing budget.[7]

The latest rapidly growing trend in games of chance is poker. Poker is particularly popular among young people. Although some believe poker is a game of skill, the Dutch government considers it to be a game of chance. Poker is in principle forbidden when it is offered systematically in a disclosed setting. Playing poker (for money) is only allowed at Holland Casinos and on slot machines. Nevertheless, poker has become a very popular game. About half of Dutch young people between 15–25 years played poker in 2006 (Franssen, Koning & Kolar, 2007). Higher-educated individuals are somewhat overrepresented. About half play poker in informal settings with groups of friends. Online poker has also become a significant part of the gambling market: 25% of Dutch young people regularly play poker on the Internet. Around 60% claim they play poker mostly without a money wager. Those who play poker for money spend on average EUR 420 per year.

Gambling addiction is an issue of concern related to games of chance, mainly for short odds games. The number of gambling addicts has decreased during the last decade in the Netherlands, from 70,000 in 1996 to 40,000 in 2005 (de Bruin et al., 2005). These numbers are necessarily rough estimates, because a significant proportion of gambling addicts either operate on the illegal circuit or keep their addiction silent. It appears that consumers participate in several games simul-

7 If a supplier of a charity lottery offers a game free of charge on line, it is not allowed to pay prizes to consumers that do not have a subscription to the lottery. These prizes have to be taken from the marketing budget.

taneously; participating in just one game almost never results in an addiction problem (de Bruin et al., 2005). Furthermore, slot machines correlate most strongly with addiction problems. Restrictions exercised in 1995 on the installation of slot machines in 'low threshold' locations (such as snack bars, sports canteens) may therefore explain the decrease in addiction numbers. No evidence has been found for addiction regarding (number) lotteries.

1.1.3 Categorizing games of chance

Several criteria exist to distinguish between different games of chance and the organizations that run them. In this section we describe criteria that will be used in the analysis later on. The categorization given will be used to describe, among others, the market structure, competition and the justification for government interference. The six criteria are given in Table 1.1 below and are further described in the remainder of this section.

Table 1.1: Criteria for categorizing games of chance

1.	Short odds games ↔ long odds games
2.	Could have been you ↔ would have been you games
3.	Prizes: payout ratio & first prizes
4.	Payout ratio to good causes
5.	Accessibility
6.	Public ↔ private organizations

The first criterion is the distinction between short odds and long odds games. A game of chance is called a short odds game if the player obtains an immediate result when playing. In a long odds game a certain amount of time passes between the wager and the result. Short odds games are associated more with gambling addiction. For long odds games, however, we could not find evidence that gambling addiction occurs (De Bruin et al., 2005). Examples of short odds games of chance are slot machines, casino card games and instant lotteries. Examples of long odds games of chance are lotteries such as the Dutch State Lottery and the National Postcode Lottery.

Second, a distinction can be made between 'it *could* have been you' and 'it *would* have been you' games (Zeelenberg & Pieters, 2004). The first is simply the common notion that you *could* have won a (lottery) jackpot, had you purchased a lottery ticket. The latter, however, is the notion that if you had purchased a lottery ticket, you *would* have won. For example, the state lottery can be characterized as having an 'it could have been you' format; a non-player could have been a winner had he played, but he will never know this for sure. The postcode lottery is a clear example of the second format. Within the NPL a participant's postal code makes up (part of) his draw number. The NPL issues 'street prizes', in which all participants within an entire postal code win a prize. As such, a non-player knows explicitly whether he would have won had he been an NPL participant. As such, this trait may have an attractive force towards non-players, who anticipate and want to avoid the regret effect of 'it would have been you'.

Recently, a case was opened by a non-participant living in a postcode which had received a large prize in an NPL draw (see Algemeen Dagblad, 17 December 2006). The non-participant claimed that the NPL treats non-participants of winning postcodes as losers and harms their personal privacy and well-being by setting up large-scale festivities in streets with winning postcodes. However, this claim was found to be unjustified by the court, because such occurrences

are merely part of the everyday risks of society. Lotto games and Dayzers (from the state lottery) take a position in between pure 'it *could* have been you' and 'it *would* have been you' games. They are in principle 'it could have been you' games, but become 'it would have been you' lotteries if a regular participant plays a constant set of (lucky) numbers. Missing out on a draw implies a risk of missing out on winning with 'your' set of numbers.

A third criterion is the prize payout distribution of the game. A higher prize payout ratio is expected to have a positive effect on turnover. However, it does not necessarily result in higher proceeds, while unbounded profit maximizers will seek the payout ratio that maximizes proceeds. Moreover, the distribution of payouts among the prizewinners and the number of prizes determine the attractiveness of a lottery. In general, a very high first prize (jackpot) in combination with a large number of runner-up (small) prizes has a maximizing effect on demand for the particular gambling product (Shapira & Veniza, 1992; Douglas, 1995).

A fourth criterion is the payout ratio of the turnover to good causes. Charity lotteries in the Netherlands, for instance, have a minimum payout ratio to good causes of 50%. However, other lotteries and games of chance also transfer money to good causes. We define a good cause as a cause having some public interest, with the exception of the mere remittance to the treasury.

A fifth criterion is the accessibility of the game. In general, better accessibility stimulates demand. Since 2000, for instance, slot machines have been prohibited in the Netherlands in so-called low-threshold public places, such as snack bars. This has led to a decrease in demand in the slot machine market, while at the same time overall demand for games of chance has increased rapidly. Accessibility for lotteries concerns the number of points of sale at which tickets are sold. This concerns physical points of sale, the Internet, postal mail, telephone and door-to-door selling. The accessibility of the Internet and telephone numbers is higher than for physical points of sale such as kiosks and casinos. NPL, SBL and BGL only distribute through postal mail, phone and via the Internet, because the lotteries operate a subscription system. Consumers therefore do not buy these tickets on impulse, but rather purchase a subscription.

Lastly, a distinction can be made between licenses granted to organizations with private and public stakeholders. Theoretically, profit-maximizing private organizations are expected to behave differently in the same market as public organizations, which are expected to also prioritize the public interest. The main argument in this context for creating a division between public and private organizations is the fact that private organizations have freedom to allocate proceeds (among charity organizations in the case of charity lotteries, for example), whereas public organizations do not (or to a much lesser extent). The Dutch charity lotteries are organizations with private stakeholders. However, they are strictly regulated and must transfer half of their turnover to charity organizations.

1.2 Gambling policy

In this section we discuss how the national government and the EC intervene to rectify problems in the market (section 1.2.1 and 1.2.2). We then discuss the economic arguments for government intervention and apply these arguments to the gambling market (section 1.2.1).

1.2.1 Dutch gambling policy

In this section we describe the way in which the Dutch government intervenes in the market for games of chance.

The Dutch Gambling Act, the *Wet op de Kansspelen* (WOK), was introduced in 1964 and applies to all games of chance. It prohibits the provision of all forms of gambling unless a licence is issued by the state. The basic starting point, therefore, is that the government controls and regulates the supply of games of chance (canalization). The regulation of gambling has three fundamental objectives (Ministry of Justice, 2005):

1) to regulate and control the supply of games of chance, with the intention to prevent gambling addiction
2) to protect consumers
3) to fight crime, in particular money laundering and fraud.

In practice, these three objectives have led the Dutch government to elect to introduce a number of state monopolies for various games of chance, as discussed in section 1.1.

Since its introduction in 1964, the framework of the WOK has been extended and modified several times. In 1974 the WOK was extended to cover casinos and the lotto, in 1986 to cover slot machines, and in 1992 to cover the instant lottery. During the early 1990s the Dutch gambling regime experienced several re-regulations involving the licensing of two charity lotteries, the National Postcode Lottery (NPL) and the Sponsor Bingo Lottery. In 1993, SNS obtained a license to introduce an instant lottery, the Dutch Instant Lottery.

However, in 1995 the government reduced the number of slot machines outside arcades and decided to stop issuing new licenses for national lotteries, as recommended by the report 'Kansspelen herijkt' ('Games of chance re-enriched'). According to this report, Dutch gambling policy should be based on three pillars. Firstly, the human desire to gamble is regulated. The supply of games of chance is limited and standardized in order to protect players, the integrity of the game and to fight abuse. Secondly, the proceeds of games of chance must be transferred to the treasury or to some good cause. Thirdly, gambling policy must be designed to fight illegal gambling and money draining away to foreign operators (Tweede Kamer der Staten-Generaal (1995), p.4).

In 1996 the Gaming Board (College van Toezicht) was established, which is responsible for the supervision of gambling licensees. It plays an advisory role regarding the public interest of gambling, but it has no policy formation, licensing or surveillance powers.

As part of the operation to search for ways to improve the implementation of Dutch law, 'Competition, Deregulation and quality of Legislation' (MDW), in 2000 the Dutch legislation on games of chance was analyzed. This research recommended that any operator adhering to high quality standards should be granted a license, and that there should be freedom for operator and consumers to allocate the proceeds of a game of chance. Furthermore, the regulation of games of chance should be brought under the umbrella of just one ministry.

In reaction to the MDW report the Dutch government considered a number of issues, including the following:

- Reconsider the number of casinos
- Extend the charity lottery market from three lotteries to six
- Reconsider less severe restrictions for current licensees
- Improve accessibility to new beneficiaries for the proceeds of lotteries, in combination with a certification of beneficiaries
- Allow the operation of Internet games of chance by Dutch licensees
- Remove the prohibition of free games of chance
- Concentrate regulation into one ministry

Although the MDW operation has been quite successful in some areas (for example, notaries and shop closing times), it has not led to any deregulation of the market for games of chance. On the contrary, some time after the MDW report was published regulation became stricter with the introduction of a modified Gambling Act and stricter advertising rules.

In 2003 the regulation of gambling was concentrated into a special department of the Ministry of Justice. However, the Ministry of Finance is still to some extent involved in the State Lottery and Holland Casinos. The former involvement of different ministries in different games of chance led to mixed interests and fragmented gambling policies (Kingma & Van Lier, 2006). The harmonization did not lead to a level playing field for charity lotteries, the State Lottery and the Lotto. The government maintains the relatively high prize payout for the State Lottery and Lotto, and a high contribution to charity organizations for charity lotteries.

A code of advertising for games of chance, the *Reclamecode voor Kansspelen*, was introduced in 2006, with the intent to support the Dutch gambling policy and to prevent advertising targeted at teenagers and other vulnerable groups, to avoid misleading the public and to set general limits on advertising.

1.2.2 EC gambling policy

At the 1992 EU Summit in Edinburgh the European Council decided that the regulation of gambling markets should remain on a national level, because national regulation was regarded as more effective and efficient. In the absence of European legislation, all EU Member States regulate gambling at the national level. The debate started again over the adoption of the Service Directive. The European Parliament decided that games of chance would be excluded from the scope of the Service Directive. Therefore, it is, in the short run, not likely that the European Commission will come up with proposals for the harmonization of gambling markets. Commissioner McCreevy of the European Commission was remarkably cautious in announcing that the Commission had taken the first step in an infringement procedure under Article 226 of the EC Treaty against seven Member States. He states "The Commission wishes to verify whether the measures in question are compatible with Article 49 of the EC Treaty which guarantees the free movement of services. This decision relates only to the compatibility of the national measures in question with existing EU law, and only to the field of sports betting. It does not touch upon the

existence of monopolies as such, or on national lotteries. Nor does it have any implications for the liberalization of the market for gambling services generally." (European Commission, 2006).

The Services Directive, based on Articles 43 and 49 and adopted by the European Parliament in February 2006, aims to further break down barriers to cross-border trade in services between EU Member States. The provision of games of chance is a service and as such falls under Article 43 and Article 49 of the European Treaty. Article 43 states that a Member State may not place restrictions on the freedom of establishment of inhabitants of other Member States in its country. Article 49 states that Member States are not allowed to place restrictions on the freedom of supply of services on inhabitants of other Member States. In other words: according to these articles there should be freedom of movement for the provision of games of chance.

The gambling market, however, is excluded from the Services Directive, as games of chance are said to have specific characteristics that make them different from other services. As Van Damme (2007a) rightly asserts, this attitude of the Commission towards gambling services differs remarkably from its attitude and policy towards other services (like, for instance, network industries): "In some service industries, the European Commission has been following a vigorous policy of opening up the European markets to competition, a process that is also known as market liberalization. […] In the process, state owned companies were frequently privatized. Along the way, public interest objectives were, and are still guaranteed by regulation rather than by means of government provision. […] While in network industries, the benefits of competition, subject to appropriate regulation, are being emphasized; it seems that in the discussion of the liberalization of the gambling sector, the focus is on the cost associated with competition. One wonders about the asymmetric treatment and whether, from an economic point of view, such asymmetry is justified."

The European Court of Justice has ruled that countries are authorized to prohibit or restrain foreign gambling activities. A landmark case was the ruling on the Gambelli case (2003, Case C-243/01), which stated that the prohibition of foreign gambling operators conflicted with the freedom of supply of services. However, prohibition and regulation is allowed as long as "the restrictions on freedom of establishment and on freedom to provide services must […] be justified by imperative requirements in the general interest, be suitable for achieving the objective which they pursue and not go beyond what is necessary in order to attain it. They must in any event be applied without discrimination. […] It is for the national court to decide whether in the main proceedings the restriction on the freedom of establishment and on the freedom to provide services […] satisfy those conditions." (Gambelli, paragraphs 64-66.)

Another relevant case is the Placanica case (C-360/04[8]), in which it was shown that – viewed from the perspective of preventing the use of betting and gaming activities for criminal or fraudulent purposes by channelling them into controllable systems – the Court considers it possible that a policy of controlled expansion in the betting and gaming sector may be "entirely consistent with the objective of drawing players away from clandestine betting and gaming – and, as such, activities which are prohibited – to activities which are authorized and regulated. In order to achieve that objective, the Court states, authorized operators must represent a reliable, but at

8 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62004J0338:EN:HTML

the same time attractive, alternative to a prohibited activity. This may as such necessitate the offer of an extensive range of games, advertising on a certain scale and the use of new distribution techniques." (paragraph 55). Consequently, it is important for Member States to continuously balance restrictions: how many games should be allowed, and what constitutes a reasonable amount of advertising?

The European Court of Justice has, through leading cases, become a major producer of new gambling legislation in Europe, due to the absence of a European gambling law combined with possible multiple interpretations of (parts of) gambling legislation in Member States. This way, new gambling legislation seems to originate from a legal instead of a democratic and political process. Until now, these leading cases have concerned pre-judicial decisions; in the end the national courts of the Member States make the final judgment.

Despite the special position of games of chance, gambling is still part of the internal market, and as such has to comply with the European Treaty. For this reason the European Commission has sent several official requests for information on national legislation restricting the supply of certain gambling services to countries such as the Netherlands. The reason for this is that the Commission is not convinced that Dutch gambling policy, with its state monopolies and other national restrictions, is convincingly applied. Their concern applies mainly to the area of sports betting.

The harmonization of the EU gambling markets is fiercely debated. Vlaemminck and De Wael (2003) argue that the best option is to leave gambling as a purely national competency, enabling each EU Member State to adopt its own national gambling approach while respecting the basic principles of EU law, such as proportionality and non-discrimination. In addition, according to a joint study of Dutch lottery organizations, the Dutch government should have a prohibitive policy towards foreign providers, in order to confront the negative effect of foreign competition on the building up of public aid by the Dutch lotteries (Stichting Algemene Loterij Nederland et al., 2000).

On the other hand, Europe Economics (2004) argues that competition in the European lottery market will result in welfare gains. Moreover, unless a Member State prohibits games of chance outright, it cannot simultaneously encourage consumers to participate in games of chance and betting that benefit the public purse while invoking public order concerns about too much gambling to justify restrictions on other service providers. Overall, the EU should remove barriers to cross-border competition. They conclude that European countries have to be open for foreign providers.

The Dutch firm Research voor Beleid examined consumer demand for gambling in the case of an expansion of the Dutch casino market, and its effects on total turnover, gambling addiction, product differentiation, crime, illegal gambling and policy implications (Pemberton et al., 2002). They concluded that two scenarios were the most valid. The first scenario is the perpetuation of the present situation, in order to minimize gambling addiction. The second scenario is an extension of the gambling market, in order to respond to a growth in demand, the nature of the gambling market and a shift in policy objectives. Table 1.3 summarizes the effects of five different liberalization scenarios for the casino market.

Table 1.3: Situations in which government intervention can be desirable

	1	2	3	4	5
Scenarios / Effects	Present situation	Extension in present market situation	Monopoly per region	Limited competition	Competition
Turnover	0	+	+	++	++
Gambling addiction	0	+/-	+	+	++
Product differentiation	0	0	0	+	+
Criminality	0	0	0	0	0
Illegality	0	-	-	--	--
Supervision	equal	equal	different	different	Different
Tax regime	equal	equal	different	different	Different

- decrease, +/- slight increase, + increase, 0 no effect

Source: Pemberton et al. (2002)

1.2.3 The public interest at play

The description in every standard work on microeconomic theory puts it so neatly: 'In a market with perfect competition, a Pareto-optimal allocation is realized automatically'. In plain English, this means that 'free market forces lead to the best price-quality ratio and the highest welfare levels for consumers' (see Box 1.1 for an explanation of the economic term welfare). When do economists refer to a situation of perfect competition? Perfect competition means that:

- there are many small producers and consumers who cannot influence market prices individually
- there is perfect information on prices and the features of goods, and
- all economic goods have a price (i.e. there are no external effects).

In everyday practice, however, the conditions for perfect competition in a strict sense will virtually never be met. Consequently, the market does not provide a panacea for all economic problems. Economists speak of market failures. Depending on the severity of the market failures, it may sometimes be necessary for the government to intervene. From an economic point of view, competition is preferable to government intervention unless the latter (through regulation, for example) leads to a higher degree of efficiency (Megginson & Netter, 2001). The government's role in this regard is one that exists by virtue of market failure. In this section, we first describe in general terms the concept of market failures. We then ascertain whether the particular market failure plays a role in the gambling market.

Box 1.1: The economic concept of welfare

The economic concept of welfare has a central position within economic science, but is circumvented with some misinterpretation. Economics studies how scarce resources must be distributed to optimally fulfil the needs of people and to maximize welfare. Note that the economic concept of welfare has a broad meaning: it consists of everything that influences people's needs. Another economic designation for welfare is utility. Because utility or welfare is hard to measure, in daily life welfare is often used to denote financial welfare only. However, financial welfare is a much more limited concept than welfare as used in economic science. "Well-being" is probably a better day-to-day label for welfare.

Market failure

Economic theory describes four types of market failure: lack of competition, information asymmetry, external effects and public goods. Below we discuss each of these in general terms and then apply them to the market for games of chance.

Monopoly/dominance

A first ground for government action is when competition is seriously threatened, for example in the case of a (natural) monopoly (the electricity grid), or in the case of a dominant supplier or the threat of one arising as a result of a merger or acquisition. Market power enables producers to make an excess of profits over the normal rate (monopoly rents)[9] and government action may be necessary to prevent under-provision and over-charging for goods.

Not all monopoly rents are bad for society. First, monopoly rents are needed to cover the high fixed cost of investments in infrastructures. Second, the prevalence of network effects can make the establishment of a (natural) monopoly desirable. A network effect is a characteristic that causes a good or service to have a value to a potential customer which depends on the number of other customers who own the good or are users of the service. The classic example of a network effect is the telephone. The value of a telephone is positively correlated with the number of telephone users. Thirdly, as recent research tells us, a monopolist or market leader has a greater incentive than any other firm to conduct research and keep innovating in order to stay on top (Etro, 2004).

The occurrence of lack of competition could apply for lotteries in the event that consumers have a strong preference for lotteries with the highest first prize or for *it would have been you* lotteries. In this case a monopoly may arise endogenously, as a consequence of network effects which generate an advantage on the demand side. If consumers value lotteries with high first prizes relatively highly, the ticket sales for such lotteries increase, and in turn the first prize of these lotteries can become even higher. In the case of *it would have been you* lotteries the anticipated regret effect may attract participants, because larger participation numbers may further enhance the anticipated regret effect of those who are not yet participating (Zeelenberg & Pieters, 2004). However, it is unclear whether these monopolizing effects are very strong. Furthermore, in the event that the lotteries give rise to monopolizing effects, the Dutch competition authority (NMa) can take action based on competition law. The same applies to monopoly problems due to mergers and acquisitions in the market of games of chance.

As such, monopolization or lack of competition is not valid grounds for extra government interventions in the gambling market. In fact, it is the other way around. The present monopolization and concentration of the Dutch gambling market is a result of government intervention. Restricted competition in the market for games of chance is an explicit goal of the government and is realized through explicitly creating monopolies for certain games (instant lotteries, casinos) and limiting the number of licenses for others ((charity) lotteries).

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9 *Normal profit* means that companies make enough profit to reward the invested capital. No more than normal profit, also referred to as *economic profit*, means that no profit remains after the deduction of rewards for invested capital. It differs in this respect from the term *profit* in a bookkeeping sense or as used in normal conversation (see, among others, Stephen Martin (2001), pp. 13–14).

Information problems

A second type of market failure is information asymmetry between the producer and the consumer. In most cases, the problem occurs when consumers cannot properly assess quality and therefore the incentive for suppliers to offer an optimal price-quality ratio is restricted and gives suppliers the opportunity to overcharge consumers. In these cases, consumers cannot determine whether the information they have on the good or service is complete and correct.

In the market for civil law notary services, for example, consumers have difficulty in assessing the quality of services, while civil law notaries have better knowledge of what they offer. If consumers cannot assess quality effectively, there is no incentive for producers to offer above-average quality. Information asymmetry can lead to adverse selection and deterioration in the quality of the products and services offered.[10] After all, most consumers are prepared to pay a price consistent with the average quality standard. In the case of adverse selection, poor quality providers will price good quality providers out of the market if there is no regulation, resulting in a vicious spiral with an increasingly poor price-quality ratio.

Regarding gambling markets, two possible forms of information asymmetry exist between the producer and the consumer. First, information asymmetries exist as consumers are not able to check whether a game of chance is executed fairly with respect to the drawing of winners and distribution of the prizes to winners. An absence of government supervision on these matters could, therefore, incite criminal behaviour. This in turn could have a negative effect on consumer trust in the sector. This implies that the government must guarantee that prize draws are executed fairly. For lotteries this is realized by obligating the presence of a notary. For slot machines, this is realized among other things by placing restrictions on the number of players that may produce slot machines.

A second type of information asymmetry occurs because consumers have difficulty assessing the odds of winning (prize payout ratio) and determining which part of their stake is spent on good causes (payout ratio to good causes). In principle, consumers can obtain such information, but it requires considerable effort, especially when consumers want to compare several lotteries simultaneously.

This could have been one of the reasons why the Dutch government placed restrictions on the minimum prize payout ratio and payout ratio to good causes. A restriction on the minimum payout ratio to good causes, however, is somewhat questionable. Under (free) market circumstances charity lotteries will use their payout to good causes as part of their positioning and marketing communications to attract potential new participants. Consumers base their participation choice for lotteries both on prize payouts and payout to good causes, and search for the optimal combination of both given their personal preferences. Because of this, the only issue that really should be guaranteed through government regulation is that lottery organizers provide correct and easily accessible information on payouts of prizes and to good causes. Another issue related to restrictions on payout ratios to good causes is that lotteries face differences in restrictions. The Dutch charity lotteries must transfer larger parts of their turnover to good causes than SNS and SGR. Therefore, the charity lotteries are restricted in determining their strategy, i.e. the ratio paid out to prizewinners and to good causes.

[10] This phenomenon was described by Akerlof (1970), on the basis of the example of the second-hand car market.

External effects and Public goods

A third type of market failure occurs through external effects, that is, effects of production and consumption that influence production opportunities and welfare but do not have a price. Without regulation, negative external effects result in overproduction (for example, 'excessive' noise pollution in aviation). In the case of unregulated positive external effects too little is produced. Innovation is one such example.[11]

As public goods[12] are an extreme case of a positive external effect, we will discuss the occurrence of public goods in the gambling market simultaneously with the occurrence of external effects. The two distinctive features of public goods are 'non-exclusiveness' and 'non-rivalry'. Non-exclusiveness of benefits means that it is impossible to exclude people from the use of the property. Non-rivalry means that use by one consumer is not at the expense of use by another. In other words, the marginal costs of an extra user are zero. Public goods include goods such as defence and dikes. Consumers will often be unwilling to pay for these goods on an individual basis. Without government intervention, either nothing or far too little will be produced, even though there is a need for such products.

In markets of games of chance several forms of negative external effects may occur. The first and most obvious external effect is gambling addiction. Without regulation, profit-maximizing market players have no incentive to prevent and fight gambling addiction, because addiction in fact increases their turnover. Addiction occurs most strongly for short odds games (De Bruin et al., 2005), implying that in particular short odds games should be regulated. In practice, we observe that charity lotteries, which are in fact long odds games, are regulated more strictly than instant lotteries or slot machines. Instant lotteries are discouraged by keeping prizes limited. Considering the short odds character of instant lotteries it is surprising that instant lottery tickets are so easily accessible. Instant lottery tickets can be purchased at numerous locations (sometimes close to schools), and they are advertised widely. Slot machines, among the most addictive games of chance, can even be exploited on a purely commercial basis. The present regulation policy, therefore, looks inconsistent.

In addition, current regulation is set up from the perspective of potential addicted consumers. We would expect the regulator, as in other areas of government action, to differentiate between consumers who are vulnerable to addiction and for whom the consequences are most far-reaching (young people, people in social welfare) and people who are not vulnerable and simply want to have a fun night out (casinos) or enjoy the excitement of having a lottery ticket. In practice, such a differentiation is hard to achieve and, therefore, government policy is restrictive on all forms of gambling and on all Dutch inhabitants. In this way it also restricts people who derive utility from playing in lotteries or going to casinos (as a leisure activity).

The second type of negative external effects is the danger that games of chance, in particular casinos, facilitate money laundering. This external effect justifies strict regulation and supervision of financial settlements of casino games.

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11 If the benefits of an innovation can leak away to other companies, businesses will invest less in innovation and development than is socially desirable. Intellectual property law (patent law, copyright law etc.) enables innovators to (partially) internalise the benefits of innovation.

12 The term goods also refers to services.

The third type of negative external effects is the occurrence of negative feelings of missing out on the jackpot or the first prize. In the case of the NPL this occurs when a non-participant lives in a postcode area that has won a high prize. For the state lottery, strong negative emotions may arise if ticket numbers differ only in minor aspects from the prizewinning number of a first prize. A recent court ruling (Court of Amsterdam, case 360206, 20 June 2007) has made it clear that such effects must be considered as a normal part of the game and do not justify government intervention.

Finally, a beneficiary can become financially dependent on its charity lottery. In this case, a decrease in turnover of a charity lottery may jeopardize the protection of public interests that the charity organizations take care of. Within current Dutch market practice, this danger is only limited, because charity lotteries require that a beneficiary raise a minimum amount of funds from alternative sources (NPL requires EUR 1,000,000 or at least two-thirds from alternative sources). Additional government regulation is not needed.

In markets of games of chance several forms of *positive* external effects occur, because fundraising for good causes through charity lotteries leads to higher total funds for charity organizations than direct consumer donations to good causes alone (Morgan, 2000). Furthermore, the cooperation of charity lotteries with charity organizations has also boosted direct donations to charity organizations. As such, charity lotteries increase fundraising in two ways (see also SWOT analysis). This effect would justify an increase in the number of licenses for charity lotteries or for giving existing charity lotteries more freedom to further increase charity funds (through advertising, new products (Internet) and more prize draws). The state lottery and casinos add extra money to the public treasury, which diminishes public deficits. The regulator seems to encourage this positive external effect by allowing the state lottery and casinos to use consumption-stimulating strategies (whereas charity lotteries are not given these opportunities). This is another inconsistency in the present Dutch government policy.

The argument of public goods does not play a role in the market for games of chance, because the market cannot be characterized as non-exclusive or non-rival. Non-exclusiveness does not apply to games of chance because individual consumers can be excluded from betting or a lottery. Furthermore, the market is rivalrous because a lottery ticket purchased by a specific consumer is not sold again to another consumer.

Political considerations

In practice, we see that the government intervenes not only to correct the above four forms of market failure, but also for other reasons. The issue is then to achieve objectives in areas including justice, legal security, distribution of wealth, and ethics and morality. These are all areas in which no uniform statements can be made on the basis of economic theory.

The non-economic motives for government intervention can be roughly divided into two situations: income distribution and paternalism. In situations where the market outcome is regarded as unjust, intervention is aimed at achieving a fairer outcome, such as in the case of progressive income tax rates.

It is unclear whether games of chance result in unequal distribution of income or social groups, and government policy on games of chance aiming to redistribute between those groups

is completely absent. That is, government policy on games of chance is not differentiated to different consumer groups. In sum, redistribution of wealth does not play a role in the market for games of chance.

Intervention may also be introduced for paternalistic motives. This applies in relation to both the discouragement of production and consumption of products that the government believes are bad for citizens (for example, demerit goods like tobacco or drugs) and to the stimulation of production and consumption of products that the government believes are good for citizens (for example, merit goods like educational courses, theatre visits and wearing seatbelts).

In order to motivate the regulation of gambling and games of chance, the Dutch government no longer invokes moral arguments; instead reference is made to protection against gambling addiction. The paternalistic motive for regulation stems from the conviction of the regulator that consumers – even when fully informed – fundamentally underestimate the risk of gambling addiction. Therefore, the Dutch government aims to protect civilians from their own preferences for games of chance. The government uses this argumentation to justify the regulation of the number of suppliers and games, number of prize draws, prize money and advertising for games of chance. However, the regulation is barely differentiated in terms of the degree to which a game is addictive. Short odds games are not discouraged more strongly than long odds games. Therefore, the justification of the current policy is not fully valid.

From an economic perspective, it is the government that should be able to justify state intervention in the market. With regard to gambling addiction, this implies that the government should be able to prove that this addiction is indeed a problem for (charity) lotteries. If no such proof exists, there is no reason to regulate the market on the grounds of prevention of gambling addiction. We were unable to find evidence that long odds games such as lotteries provoke addiction.

To sum up

Table 1.2 summarizes the situations in which government intervention can have a welfare-enhancing effect.

Table 1.2: Situations in which government intervention can be desirable

Theory	*Games of chance*
Market failure	
Lack of competition	- Network effects - Concentrated lottery market (bigger is better) → Note that these do not call for *extra* government action
Information asymmetry	- Prize payout/payout to good causes - Entry by criminal suppliers - Fair execution
External effects	- Gambling addiction - Money laundering/public order
Public goods	None
Political considerations	
Unequal distribution of welfare	None
Paternalistic motives	Underestimation of risk of gambling addiction

The various sources of market failures and political considerations provide a prima facie case for considering public regulation of some goods, public investments and redistribution of incomes. All these measures, however, are also exposed to potential failings (government failure).

Government failure

For a long time it was assumed that the government had a corrective role to play in the event of market failure or of one of the above, politically undesirable situations. Today we have more reservations about this concept: government intervention can itself lead to undesirable social effects. We then refer to 'government failure' or 'regulatory failure'. Often, five forms of regulatory failure are distinguished.

The first form of regulatory failure relates to the complexity of regulation. Reality is far more complex than the idealized picture presented in rational policy theory. After all, many complex decisions must be made in the political process from a policy problem to the choice of an instrument and the design of its implementation and enforcement. With such complex choices, government intervention can have unforeseen and unwanted effects.

One problem with restricting the provision of gambling is that it can lead to illegal supply. In the illegal market proper supervision of problem gamblers is absent. On the other hand, the legal provision of games of chance makes them more visible, and could, therefore, attract more consumers. This in turn could add to the problem of gambling addiction. The Dutch government aims to offer a legal alternative for consumers tending to move away towards (new) illegal games (concept of canalization). However, government policy reacts only very slowly to new innovations and changes. As such, existing legal suppliers can only make use of them after a considerable time lag. A current example is the supply of games through the Internet.

Secondly, the policy process requires a great deal of knowledge and information on the area to be regulated. This often involves information asymmetry: as a rule, the market parties have more and better information than the regulator (the government). Information asymmetry between the regulator and the regulated sector(s) can lead to regulatory failure.

Despite the fact that a large part of the Dutch market for games of chance is in public hands, information asymmetry problems of this kind can still arise. The regulator lacks practical knowledge of the slot machine and charity lottery markets, in which private parties are active. Because of the information asymmetry with respect to charity lotteries, the government implements regulation that is inappropriate or merely reacts to initiatives already developed in the market (by transposing self-regulation of charity lotteries into legislation).

Thirdly, regulation can give rise to transaction costs that are higher than the efficiency gains of the regulation. Regulation almost always involves transaction costs: (a) institutional costs and (b) 'compliance' costs. Institutional costs are the costs of maintaining the system. Strongly steering regulation has few built-in incentives for self-enforcement, and so carries high institutional costs. Sometimes, the government can benefit from economies of scale by instructing an institution to take on several regulatory tasks. This has its limitations, however, and can lead to overburdened government machinery. Compliance costs are the costs that companies must bear because they have to adapt their conduct or production to the new rules.

Both categories of transaction cost occur in the market for games of chance. The level of these costs depends on the concrete terms of the regulations and on how radical regulation is in a specific case.

Fourthly, there are also economic costs: regulation can damage both static and dynamic efficiency.[13] European agricultural policy is a good example of this. Because of political considerations (such as food security) and the strong sector lobby, agricultural production in Europe is kept artificially high. As a result, both static and dynamic efficiency remain lower than they could be. Static efficiency is damaged in the sense that too much is produced in Europe, while this is not cost efficient in comparison with production in other parts of the world. This also has consequences for dynamic efficiency, particularly the investment behaviour of private parties. In the absence of the Common Agricultural Policy, investments would flow to other locations (outside Europe) and to other sectors.

For the lottery market, the state lottery is restricted to a minimum payout ratio of 60%, whereas the charity lotteries are obliged to transfer a minimum of 50% of their turnover to charity organizations, which leads to a maximum possible payout ratio of 50%, which is further reduced when production costs are taken into account. In this way, regulation creates a non-level playing field, which has a distorting effect on competition. Also, by restricting the number of suppliers, competition is restricted and the possible benefits of competition – increased static and dynamic efficiency – cannot be achieved.

Finally, another regulatory risk is related to the fact that the ex ante regulatory framework may not be clear. Sometimes governments change the ex post regulatory framework in order to look after the public interest.

Current regulation is for a large part justified on non-economic, mainly paternalistic grounds. This implies that policy content is very sensitive to the political climate and cycles. Dependent on the political background of the parliament and the Minister of Justice, regulation will be more liberal or restrictive. This results in uncertainties for market parties. For example, in 2000 it seemed that a more liberal policy would be executed with an extension of the number of licenses. With the change in political power, the MDW operation moved into the background and was replaced by a more conservative, restrictive policy for games of chance.

Changing policies of (subsequent) governments can place an additional investment risk in gambling markets. As an example, in 2000 the Dutch government decided to prohibit slot machines in public places that are easily accessible to the underaged, such as snack bars and sports clubs. Moreover, a number of slot machines had to be replaced by new, less addictive, machines. Hence, any (new) government can place new restrictions on the gambling market at will, which often result in additional costs for market players.

In addition to complexity, information problems, transaction costs and economic costs, there are other problems involved in government regulation. Regulation is not only an answer to market failure, but also the result of rent-seeking behaviour[14] by interest groups that are in a position to

[13] Static efficiency is based on the short term and relates to the optimal distribution of scarce resources among alternative production targets. Dynamic efficiency is based on the long term and focuses on increasing welfare over time.

[14] Rent-seeking behaviour is behaviour aimed at gaining (financial) advantages.

influence government regulation.[15] *Public choice theory* explains how individual preferences are reflected in the voting procedures used for public institutions. An important assumption here is that politicians do not aim to maximize the general interest, but aim instead to serve their own interests, for example by maximizing their own status, budgets or votes. This can lead to inefficient regulation, particularly if lobbies are involved (disregarding bribery, corruption and 'jobs for the boys' for the time being).

The *economic theory of regulation* also identifies lobbying as a source of government regulation that is detrimental to welfare (Stigler, 1971). In this theory, the sector itself calls for regulation, such as qualification requirements, quality requirements or import protection. However, such regulations can lead to problems if they are too stringent from the point of view of competition, as they constitute access barriers. These can easily be higher than necessary, because once entrepreneurs are active in the market they have an interest in the highest possible access restrictions and in a lack of competition in terms of quality, or from imports. If the benefits are concentrated (among the producers) and the costs are divided among a large group (the consumers), lobby groups are in a better position to push through inefficient regulation.

Because of the above difficulties and problems, the view gained ground since the 1990s that, where possible, the government should leave tasks to the market. According to this view, the government should confine itself to creating the conditions under which the free market can function well, and should not intervene unless the self-regulating capacity proves inadequate in a particular area. This is in line with the view of the government as a corrective party in the event of market failure (see section 1.2.1).

Dutch regulation contains inconsistencies which have a historical explanation and can therefore not be easily harmonized. This results in an unequal level playing field between the present players in the market for games of chance. For example, why do instant lotteries and lotto (SENS) and betting (SGR) not have a similar requirement concerning payout ratio to good causes as charity lotteries, given that all the organizations are private? Why is policy on slot machines less restrictive than on charity lotteries (commercial profits are allowed when operating slot machines), given that slot machines are more addictive than lotteries? What justifies the intensity of advertising for Holland Casinos given that their games are addictive (short odds)?

In the near future, several changes may occur as a consequence of European case law and internal market policy. Case law has clarified the conditions under which a restrictive licensing regime for gambling would not violate Articles 43 and 49 and what type of restrictions would be justified in this case. However, it is the Dutch court of justice that must decide whether the Dutch gambling policy is proportionally aimed at preventing gambling addiction, money laundering and fraud. Until now, neither the Dutch court nor the regulator has explicitly defined the requirements of proportionality and non-discrimination. The Minister of Justice, the Raad van State and other courts have simply concluded that the Dutch gambling policy is indeed of imperative public interest and that the monopoly is an effective and proportional measure.

What is lacking is a broader welfare economic perspective in which the pros and cons are weighed. This weighing has not yet been done; it is merely asserted that the benefits of the re-

[15] See also: Posner (1974); Stigler (1974); Buchanan & Tullock (1962), Buchanan (1987).

strictions are great enough to justify current gambling policy, without reference to the cost of this policy. As Van Damme (2007a) states: "In the case of gambling, the negative side effects (which are only possible and not quantified) dominate the discussion; the possible gains in consumer surplus are only mentioned in passing, if at all, and they are not discussed. In effect, they are not taken into account." This is surprising, as in other areas the Dutch government does take into account the possible benefits of liberalization: lower costs, lower prices, better quality, more freedom of choice (product differentiation) and innovation.

Two studies are relevant here. Eadington (2007) shows that jurisdictions that treat gambling in a more liberal way do indeed see more innovation. Farrell and Walker (1999) measure the welfare gain from the availability of the market for lottery tickets by using consumer surplus (that is, the difference between the price consumers are willing to pay (or reservation price) and the actual price). This paper estimates the consumer surplus associated with the UK market for lottery tickets at just under GBP 1 billion per annum. As non-problem gamblers benefit from increased competition in a variety of ways, as indicated above, the gains in consumer welfare associated with market liberalization should also not be underestimated; they should at least be recognized.

Consequently, although liberalizing gambling markets may be associated with negative side effects, there are positive effects as well.

1.2.4 Conclusions

In this section we summarize the possible market failures and government failures in the Dutch lottery market.

Market failures

- A concentration of lotteries is likely when large lotteries are able to raffle higher jackpots, which in turn attracts more players (network effects and possibly mergers). This results in a lack of competition. In a liberalized European market, concentration could occur on a European level. However, extra government action is not needed as the Dutch national competition authority and the European Competition Authority already handle these problems as they arise.
- Information asymmetry between players and lotteries may attract criminal lottery suppliers that fail to issue prizes (and payments to beneficiaries) correctly. This results in the overcharging of consumers, money laundering and public order problems, and a deterioration of consumer trust in the sector, and hence a decreasing demand for lottery products. The government already regulates these information problems; there is no need for extra government action.
- One negative external effect of gambling is gambling addiction. Without regulation, gambling addiction can be a severe problem. However, for the charity lottery market, gambling addiction plays a minor role, as lotteries are mainly long odds games. Therefore, less regulation instead of even stricter regulation is called for.
- Consumer feelings of missing out on the jackpot in *it would be you*-type games of chance, such as the National Postcode Lottery, can be regarded as a form of negative external effect. As the court has stated, this is all part of the game and regulation is not necessary.

- The beneficiaries of a charity lottery can become dependent on the lottery. This problem is already tackled through self-regulation and does not require government intervention.

Political considerations

- The government can put restrictions on markets of games of chance, on the grounds of the paternalistic motive that consumers underestimate the risk of gambling addiction. The government no longer invokes moral arguments in order to motivate the regulation of gambling and games of chance; reference is made instead to the preservation of public order, protection against gambling addiction, and the prevention of fraud and money laundering. However, this slight change in terminology has not led to a different regulatory scheme.

Government failure

- The policy process requires a great deal of information on several market aspects. In the case of the charity lottery market, the government has limited market information. This can lead to inefficient regulation (i.e. slow adaptation to Internet and other market developments).
- Regulation can sometimes create an unequal level playing field. Charity lotteries are restricted to transfer at least 50% of their turnover to charity organizations, while the State Lottery has the restriction of a minimum prize payout of 60%. A non-level playing field distorts competition.
- A new government can implement new regulation. This can incur costs for the market and creates uncertainties for investors.

We conclude that the justification for the present Dutch policy is mainly to be found in non-economic, political considerations (paternalism). As we have described, emphasis on these paternalistic motives and the lack of an economic welfare perspective have led to government failures, that is, over-regulation and some inconsistencies in the current policy. It is important to iron out these inconsistencies and harmonize regulation on a national level. Moreover, Dutch policy is too general, and differentiates very little in terms of the degree to which the various games are addictive.

The economic justification for a restrictive government regulation of charity lotteries stems from a desire to prevent information problems and money laundering. On the other hand, the economic justification for an encouraging government regulation stems from a desire to increase the turnover of charity lotteries to enhance the positive external effects of these lotteries. This is a purely economic argumentation, which has so far not been used by the European Court of Justice in any perspective or sector. The Dutch policy for games of chance is thus caught between two thoughts: restriction and encouragement, which might explain why some of the present policy is inconsistent.

2 International quick scan

In this section we conduct an international quick scan among twenty-one European countries. The purpose of the scan is to detect similarities and differences between the countries with respect to the gambling market and its players, (charity) lotteries and gambling regulation. In section 2.1 we discuss each of the countries on these dimensions. A table summarizing the information is included. In these tables, gross gaming revenues (GGR) per capita are given, defined as total turnover minus prize payouts. Turnover figures for slot machines and casinos are not available for reasons relating to the game concepts. We use GGR because it enables comparisons between all types of games of chance. Section 2.2 contains a synthesis based on the differences and similarities observed. The sources we have consulted in order to construct this international quick scan are listed in the bibliography at the end of this report.

2.1 Country investigation

2.1.1 Austria

The gross gaming revenue of the Austrian gambling market was EUR 893 million in 2003, and market growth is negligible. The lottery market had a gross gaming revenue of EUR 595 million in 2003 (EUR 618 million in 2004), which represents a share of almost two-thirds. Casinos make up 25% and betting approximately 10%. Slot machines are prohibited outside casinos, except for machines with small stakes (50 eurocents maximum) and winnings (EUR 20 maximum). These machines are considered a soft form of gambling and individual regions (Länder) can decide how to regulate them. No information is available on these on the national level. The payout ratio for lotteries is about 60%. Gross gaming revenues per capita are EUR 110.

Figure 2.1: Summary statistics for the Austrian gambling market (2003)

		Annual growth rate
Size of gambling market*	EUR 893 million	<+0.01%
Size of lottery market*	EUR 595 million	−1.6%
Lottery proceeds to public health	EUR 146 million (25%)	
Share lottery market	67%	
Largest game	Lotteries	
Inhabitants	8.1 million	
GGR per capita	EUR 110	
Number of license holders lotteries	1	

* Measured in gross gaming revenues

Charity games are insignificant in Austria. Authorization for conducting a lottery is only permitted to legal persons domiciled in Austria, and the prizes may not exceed EUR 15,000. Furthermore, the proceeds of these lotteries must be transferred to Austrian public health organizations.

The national gambling industry spent EUR 146 million on good causes in 2003. Some organizations, such as the Austrian Sport Federation, depend largely upon revenues from Austrian lotteries.

The main objectives of the policy on games of chance are the prevention of organized crime (e.g. money laundering, financing of terrorism and other illegal activities), prevention of crime (theft, burglary, fraud) committed by gambling addicts, youth protection, consumer protection and financial market stability (pyramid schemes).

Gambling, casinos and lotteries are regulated by the Law on Games of Chance (GSpG) and fall within the remit of the Ministry of Finance. Furthermore, the Ministry of Finance is the responsible authority for the supervision of licensed companies. The gambling law also determines which games are considered games of chance. The only license for lottery games, which is limited to 15 years, has been allocated to the Österreichische Lotterien Gesellschaft M.B.H. until 2012. The 'Österreichische Lotterien GmbH' is licensed to offer lotto, toto, goal betting, letter lotteries and scratchcards, as well as electronic lotteries via the Internet and video lottery terminals. 'Casinos Austria AG' operates twelve casinos in Austria and offers various table games and slots.

Licensees are not permitted to establish a branch abroad or acquire a qualified participation in a foreign company if this would result in a reduction in revenue from the license fee. Bwin, listed on the Vienna Stock Exchange and also active in the UK betting market, is lobbying to be allowed to offer its online sports betting and casino games to Austrian citizens. Casino Austria International is active in the Belgian casino market, where it runs the Grand Casino Brussels. Gambling activities such as those offered internationally via electronic media (Internet) are also subject to the national gambling monopoly and may not be advertised or executed within Austria. Interventions into the monopoly are punishable by civil law or administrative penalty regulations of the gambling law.

In October 2006 the European Commission sent an official request for information on national legislation with respect to casinos. This prohibits the promotion or advertising of casinos licensed and established in other Member States. The Commission also has concerns that the legislation in question provides that casinos must act diligently so as to protect Austrian players from excessive losses, but makes no such provision for foreign players. The official request could be considered as the first stage of an infringement case. The Commission wishes to verify whether the measures in question are compatible with Article 49 of the EC Treaty, which guarantees the free movement of services. This decision relates only to the compatibility of the national measures in question with existing EU law.

The GSpG contains tax regulations which apply to all types of games falling under the purview of this Act. A federal license levy of 2% to 27.5% calculated according to the stakes applies to lotteries. In addition, a federal tax of 16% applies to lottery games generally, calculated according to the stakes and on the basis of the stakes less the winnings for electronic games.

2.1.2 Belgium

The gross gaming revenues of the Belgian gambling market were EUR 679 million in 2003, a 7% increase on 2002. The lottery market had a turnover of EUR 987 million in 2003 (EUR 1.2 billion in 2006), with a gross gaming revenue of EUR 485 million. Lotteries are by far the largest game in Belgium (72% share). In 2006 the lotto represented roughly half of the lottery market, EuroMillions[16] 30% and instant lotteries 20%. Since 2004 Belgium has participated in the EuroMillions lottery, which has since rapidly gained popularity among Belgian citizens.

Figure 2.2 Summary statistics for the Belgian gambling market (2003)

		Annual growth rate
Size of gambling market*	EUR 679 million	+7.0%
Size of lottery market*	EUR 485 million	+2.9%
Share lottery market	72%	
Largest game	Lotteries	
Inhabitants	10.4 million	
GGR per capita	EUR 66	
Number of license holders lotteries	1 (state monopoly)	

* Measured in gross gaming revenues

Charity games are only organized on a small scale on a national, provincial or local level.

The Belgian gambling policy has always been restrictive, with the aim to protect players. Until 1999 games of chance were illegal, but were tolerated to a certain degree. In 1999 the Belgian Gambling Act was established, with a strict regime. The Belgian Gaming Commission, also established in 1999, exercises the supervision of the Belgian market of games of chance (except for the National Lottery). The Gaming Commission has four main tasks: to grant licenses for casinos, amusement arcades and street locations (for example bars), to hold responsibility for controlling the market, to advise the government and being responsible for the protection of players.

The organization of lotteries and horse racing betting is also subject to strict rules and authorizations under the Law of 26 June 1963 (Del Ninno, 2002). The market for national lotteries is monopolized in Belgium. The only licensee is the National Lottery, a public limited company since 2002, with the State as the only shareholder. The supervision of the National Lottery is organized by self-regulation.

In 2004 the eight casinos in Belgium had a total gross turnover of EUR 45 million. A ninth casino, operated by Casinos Austria International, opened in Brussels in 2005, taking the number of casinos operating according to the Belgian Gambling Act to the maximum. The betting market is concentrated. Ladbrokes Belgium, a subsidiary of the English Ladbrokes plc, is market leader with a 70% market share, followed by Tierce Franco Belge (25%).

16 EuroMillions concerns a cooperation of eight national lotteries that enables the distribution of huge jackpots; see section 2.2.2.

The Belgian tax regime applicable for lotteries is divided into three regions: Flanders (tax: 15% of the stake), Walloon and Brussels (both 11%). The proceeds of the National Lottery go to the state, the regional authorities and a number of specific charity organizations, which are determined by the Belgian Parliament. The majority of these charity organizations are nationally orientated.

2.1.3 Bulgaria

No national statistics are available on the economic magnitude and impact of the gambling market and lotteries in Bulgaria. Therefore, the quick scan focuses on regulation issues and individual players.

The market for games of chance in Bulgaria is regulated by the Bulgarian Gaming Act, established in 1999. Foreign participants may participate in corporations that organize games of chance if these corporations invest resources equivalent to at least USD 10 million and create at least 500 jobs in Bulgaria within the first year after the issuing of the license.

The Bulgarian lottery market is a monopoly. Approximately 11% of Bulgarian State Lottery proceeds are distributed to Bulgarian public health organizations. Two attempts to organize a public tender for the execution of the Bulgarian State Lottery, in 2003 and 2004, failed. In the last tender, Intralot SA, Scientific Games International, Oesterreichische Lotterien and Sweden's EssNet were contestants. In 2002, Intralot SA, a member of the Intracom Group, acquired 49% of Eurofootball (sports betting), which has a 50% share in the Bulgarian gaming market.

2.1.4 Czech Republic

The gross gaming revenues of the Czech gambling market were EUR 640 million in 2004, an increase of 8% on 2003. Lotteries are not very popular in the Czech Republic. They represent only 15% of the total gambling market with gross gaming revenues of EUR 96 million. Furthermore, it is the only game for which gross gaming revenues decreased between 2003 and 2004 (-1.6%). The prize payout ratio is roughly 40%. The gross gaming revenues per resident are EUR 63, which is low compared to Western European countries but higher than for most Eastern European countries. However, this amount has grown sharply and doubled since 1992. More than two-thirds of the adult population (69%) participate in gambling. The majority (60%) are between 30 and 59 years of age; the proportion of young players is decreasing. Slot machines are the most popular game, with a 58% share. Overall, 56,218 slot machines were in operation in 2003, of which 3,258 were in casinos with higher stakes involved.

The lottery market is dominated by one player, Sazka, which holds 98% of the market. For instant lotteries, Sazka has 90% of the market, with Ceskomoravska loterijni holding the remaining 10%. The lottery market is, however, dominated by number lotteries. For the other games there is more competition: the Czech Republic has forty privately-run casinos, approximately 450 companies operating slot machines, six major suppliers of sports betting and three bingo hall licensees.

Figure 2.3: Summary statistics for Czech gambling market (2004)

		Annual growth rate
Size of gambling market*	EUR 640 million	+7.9%
Size of lottery market	EUR 96 million	−11.6%
Share lottery market	15%	
Largest game	Slot machines (58% share)	
Inhabitants	10.2 million	
GGR per capita	EUR 63	
Number of license holders lotteries	>1, but one dominant player (98% market share)	

* Measured in gross gaming revenues

A license is granted if the operation of lotteries or other similar games is in compliance with other laws and provided that it does not disturb the peace and public order, and further provided that the proper operation of lotteries or games is secure and uses the appropriate equipment. No special regulations exist for charity games. Lotteries are not obliged to donate to good causes, but the Lottery Act encourages them to do so. Legal requirements are set on 6% to 20% of the GGR. In 2005 the market leader, Sazka, transferred almost 15% of its turnover to its shareholders, which are all public health organizations, mostly in the area of physical education and sports.

A lottery may be operated by the state (the Ministry or a government entity charged by the Ministry) or a joint stock company with registered address in the Czech Republic, with only registered shares, established for the operation of lotteries and other similar games. A minimum amount of registered capital (EUR 3.5 million) is also required.

Neither the operation of lotteries nor other similar games (nor the winnings from them) is subject to income tax and value added tax. Tax duty regarding other taxes and fees is determined in accordance with other relevant tax laws. The Czech Republic's corporate tax rate for the year 2005 was 26%.

Several municipalities have recently set up an association against gambling and want to see a tightening of the rules, as does the Finance Ministry and the senate. According to the head of the Finance Ministry's lottery section, Petr Vrzan, a draft new lottery legislation is due to be presented to the government by the end of the year and should take effect as of 2009.

2.1.5 Denmark

The gross gaming revenues of the Danish gambling market were EUR 888 million in 2004, up 6.9% on 2003. The lottery market had a gross gaming revenue of EUR 453 million. Lotteries represent 51% of the total gambling market, and are the largest game. Gaming revenues per capita are EUR 164, which is above average and in the same range as for Sweden. Denmark has only six casinos with a share of 5.3%. The share of casinos in the gambling market is among the lowest in Europe, but for the other Scandinavian countries in this quick scan (Sweden and Finland) the share is low as well.

Figure 2.4: Summary statistics for the Danish gambling market (2004)

		Annual growth rate
Size of gambling market*	EUR 888 million	+6.9%
Size of lottery market*	EUR 453 million	+5.6%
Share lottery market	51%	
Largest game	Lotteries	
Inhabitants	5.4 million	
GGR per capita	EUR 164	
Number of license holders	4	

* Measured in gross gaming revenues

The Danish gaming policy balances the social advantages and the risks of gambling. In this perspective, games of chance are only allowed on a limited scale. Most of the games of chance in Denmark are offered by public parties. Only casino games and slot machines are (partly) offered by private parties. The Danish Gaming Board, a unit of the Ministry of Taxation established in 2000, supervises the Danish gaming market, grants licenses and advises the government.

Lotteries are authorized under the Lotto Prohibition Act, and authorization can only be obtained if the lottery donates part of their revenues to a good cause. Also, a lottery permit cannot be granted to a lottery in which a player can 'choose' their numbers, such as in the Dutch Lotto. The only state lottery is operated by Dansk Tipstjeneste A/S. The shareholders of Dansk Tipstjeneste A/S are the Danish state (80%), the Danish Sport Federation (10%) and the Danish Gymnastics and Sports Association (10%). Dansk Tipstjeneste A/S also runs betting games and gaming machines outside casinos. This is in accordance with the Act on Certain Games, Lotteries and Betting Games, introduced in 2003, which aims to keep consumption at a moderate level in relation to a free market situation, and channel betting activities into legal, controlled games. The proceeds, EUR 411 million in 2004, all go to different ministries, according to constant proportions. A large part, roughly two-thirds of the proceeds, goes to the Ministry of Culture.

Aside from the state lottery, there are three other national lotteries in Denmark. They are the Landsbruglotteriet, the Varelotteriet/Industrilotteriet and the Danske Klasselotteri A/S. The total turnover of the Landsbruglotteriet and the Varelotteriet in 2004 was approximately EUR 6.7 million. The proceeds of the Landsbruglotteriet are transferred to the Ministry of Food, Agriculture and Fisheries (25%), agricultural public health organizations (65%) and the Ministry of Finance (10%). The proceeds of the Varelotteriet go to the Ministry of Justice, and all the proceeds of the Danske Klasselotteri A/S go to the Ministry of Finance. In addition to this, Aeldresagen (an influential lobbying organization for the elderly with around 500,000 paying members) organizes a nationwide lottery for its members to raise additional funds. Total gross gaming revenues from this lottery were EUR 1.5 million in 2006, less than 10% of the total income of this organization.

In 2004 Ladbrokes sued the Danish state in an attempt to break the state's betting monopoly. In 2006 the European Commission sent official requests for information on national legislation restricting the supply of sports betting services, which could be considered as the first stage of an infringement case. The Commission intends to verify whether the measures in question are com-

patible with Article 49 of the EC Treaty which guarantees the free movement of services. This decision relates only to the compatibility of the national measures in question with existing EU law, and only to the field of sports betting.

The European Commission has taken action to put an end to obstacles to the free movement of sports betting services in Denmark. In March 2007 the Commission formally requested that Denmark amend their laws following consideration of their replies to letters of formal notice sent in April 2006. These formal requests take the form of "reasoned opinions", the second stage of the infringement procedure laid down in Article 226 of the EC Treaty.

2.1.6 Finland

The gross gaming revenues of the Finnish gambling market were EUR 1,241 million in 2003, up by 3.3% on 2002. Though the current growth rate is moderate, the gambling market grew remarkably in the 1990s. The total market more than doubled between 1992 and 2003. The lottery market had a gross gaming revenue of EUR 485 million in 2003 (EUR 515 million in 2004), and represents almost 40% of the gambling market. Slot machines have the largest share (46%). However, lotteries have gained market share in recent years, with a growth rate (7.8%) higher than for the total market. The gross gaming revenues per resident are EUR 238, which is relatively high compared to other European countries. The latest prevalence study (Ministry of Social Affairs and Health/Taloustutkimus, 2003) shows that 74% of the population (15–74 years) gambles on a regular basis. Over 40% gamble weekly (43%), and 12% more than once a week.

Figure 2.5: Summary statistics for the Finnish gambling market (2003)

		Annual growth rate
Size of gambling market*	EUR 1,241 million	+3.3%
Size of lottery market*	EUR 485 million	+7.8%
Share lottery market	39%	
Largest game	Slot machines (46% share)	
Inhabitants	5.2 million	
GGR per capita	EUR 238	
Number of license holders	1	

* Measured in gross gaming revenues

The Ålands Penningautomatförening (PAF) offers gaming on publicly-owned ferries, in the independent Finnish province of Åland, and on the Internet. Founded in 1966, PAF is an association governed by public law that aims to raise money for public goods by offering gaming. It supplies a wide range of games: lotteries, slot machines, casino games, betting, bingo, totalizators and amusement games.

Charity lotteries are allowed, but with the restriction that they can only issue tangible prizes (goods), and no money prizes. The Finnish Sports Federation (FSF) arranges about three nationwide lotteries yearly. Its gross gaming revenues are approximately EUR 1.5 million. The FSF transfers 50% of its sales directly to local clubs. Besides the FSF lotteries, about 150 licenses are

provided yearly at a provincial level and another 750 licenses to smaller, mostly local, charity lotteries (2006 info).

Finland's policy with respect to games of chance consists of a combination of protecting the participants of games and protection of government interests. The goals of regulation are two-fold: combating the illegal market and combating gambling addiction. Since 2002 the supervision of the market for games of chance has been executed by the Department of Games of Chance and Firearms, which is part of the Ministry for Internal Affairs.

All games of chance are monopolized, and each is offered by one single national public party. The organizations are Veikkaus OY (betting and national lottery), Fintoto OY (equestrian bets) and RAY (casinos and slot machines). Veikkaus OY has a very dense distribution network, both online and offline. There is one outlet for every 1,103 Finnish inhabitants (adults).

The proceeds of Veikkaus OY are distributed to Finnish culture and arts (47.5%, EUR 190.6 million in 2006), science (19.4%, EUR 77.9 million), sports (24.4%, EUR 97.8 million) and youth work (8.8%, EUR 35.2 million). The tax rate on lotteries is 9.5% of proceeds. In addition, gaming operators reimburse the state for costs incurred in the supervision of gaming activities (about EUR 1.5 million). Prizewinnings are not subject to taxation.

The European Commission has taken action to put an end to obstacles to the free movement of sports betting services in Finland. In March 2007 the Commission formally requested that Finland amend their laws following consideration of their replies to letters of formal notice sent in April 2006. These formal requests take the form of "reasoned opinions", the second stage of the infringement procedure laid down in Article 226 of the EC Treaty.

2.1.7 France

The gross gaming revenues of the French gambling market were EUR 8,388 million in 2005, up 3.8% on 2004. Lotteries are the largest game in France, with more than 40% of the total market. Its growth rate is about the same as the growth of the entire market. Casinos make up 32% of the market. Slot machines outside casinos are forbidden in France. Sports betting is relatively significant with a share of 26%. Gross gaming revenues per resident are EUR 134, which is about the same as for the Netherlands.

Prize payouts for lotteries and sports betting are regulated at between 50% and 70%, with an actual average prize payout ratio of almost 60% in 2005. The recent growth in lottery revenues can be mainly ascribed to the launch of the EuroMillions lottery in 2004.

The national lottery transfers proceeds to the treasury and to the French National Sports Committee. The national lottery is subject to a 19.6% VAT charge. Small incidental charitable lotteries are also permitted, but with the restriction that they can only issue tangible prizes (goods), and no money prizes.

Figure 2.6: Summary statistics for the French gambling market (2005)

		Annual growth rate
Size of gambling market*	EUR 8,388 million	+3.8%
Size of lottery market*	EUR 3,554 million	+4.7%
Share lottery market	42%	
Largest game	Lotteries	
Inhabitants	62.7 million	
GGR per capita	EUR 134	
Number of license holders	1	

* Measured in gross gaming revenues

The French policy regarding games of chance is restrictive, and it only allows a limited number of operators the right to offer games of chance. Supervision of games of chance is exercised by the Sous-Direction des Courses et des Jeux (SDCJ), established in 1973. The main objective of the SDCJ is to regulate games of chance and serve the interests of the state, the players and the providers of games of chance. The lottery and sports betting markets are monopolized; both are organized by La Française des Jeux, a semi-public company which is 72% state-owned. The European Commission has taken action to put an end to obstacles to the free movement of sports betting services in France. In June 2007 the Commission formally requested that France amend their laws following consideration of their replies to letters of formal notice sent in April and October 2006. These formal requests take the form of "reasoned opinions", the second stage of the infringement procedure laid down in Article 226 of the EC Treaty.

Casinos require the prior authorization of the Minister of the Interior. Gambling on horse races is monopolized by law and entrusted to Paris Mutuel Urbain. The European Commission has opened an infringement case against France, because it suspects that tight restrictions on the supply of sports betting in the country's legislation are not in compliance with EU law. With the exception of the national betting and lottery monopolies, the French Government aims to block all online gambling transactions. The leading French credit card organization has taken action to ensure that all French banks do not facilitate transactions from foreign Internet gaming sites. Observers have noted that the newly elected Sarkozy government is moving quickly on gambling regulation in France. Gambling will be high on his agenda for reform.

2.1.8 Germany

The gross gaming revenues of the German gambling market were EUR 8,420 million in 2005, approximately the same as for France. The gambling market has grown on a long-term basis in proportion to the growth in gross domestic product. Lotteries are the largest game in Germany, with an almost 60% share of the total market. Lotteries are organized on the regional level (Bundesland) as well as on the national level, with a large number of licensees. The regional lotteries have a prize payout ratio of between 37% and 58%. Slot machines have a 28% share, casinos 12%, and sports betting has only a very small share in Germany (1.4%). Gross gaming revenues per resident are EUR 102, which is somewhat lower than in its neighbours France and the Netherlands.

Figure 2.7: Summary statistics for the German gambling market (2003)

		Annual growth rate
Size of gambling market*	EUR 8,421 million	+0.6%
Size of lottery market*	EUR 4,991 million	-0.4%
Share lottery market	59%	
Largest game	Lotteries	
Inhabitants	82.5 million	
GGR per capita	EUR 102	
Number of license holders	19	

* Measured in gross gaming revenues

In Germany, gambling is covered by the legislation of the 16 states (Bundesländer). Every state has its own laws, which are generally very similar. In all states, operating games of chance requires a license. Licenses for casinos are granted in a limited number of cases per state. Where lotteries are concerned, the Interstate Agreement on Lotteries aims to curb the human urge to gamble. Licenses are therefore only granted to public bodies or private enterprises where the majority of shares are held by public bodies. Furthermore, lotteries must be organized for a charitable (or similar) cause and activities are limited to the specific state territory. Nevertheless, there are no restrictions on the number of lotteries or market players in each state.

There are nineteen separate lottery organizations. Sixteen provincial lotteries form two blocks: lotto blocks and toto blocks. These represent 77% of the lottery turnover. In August 2006, the Federal Cartel Office judged the block arrangements of the lotto organizations to be anticompetitive, because through these arrangements the lotto organizations created regional monopolies. The Higher Regional Court in Düsseldorf confirmed the cartel decision in June 2007. The lotto organizations reacted by shutting down their Internet offerings.

There are also two private lotteries (the *Aktion Mensch* and *Ein Platz an der Sonne*) that are run by the national television stations ARD and ZDF, which are both authorized by all Bundesländer to operate nationwide (lottery share: 5%). The Aktion Mensch lottery is a charity lottery that raises funds for Aktion Mensch, a German social welfare organization concerned with human rights and solidarity. With seven million participants, this lottery is the largest public health lottery in Germany. The German television channel ZDF collaborates with the lottery. *Ein Platz an der Sonne* is a television lottery from the German channel ARD. The revenues are used for social projects, for example to arrange holidays for needy children. The lottery has existed since 1956. The prize payout ratio and the charity payout ratio are both 30% of the total turnover. In 2004, total funds available for good causes were EUR 44 million, growing to EUR 70 million in 2005.

There are also two class lotteries: number lotteries in which consumers pay a fraction of a ticket in a number of classes of tickets (lottery share: 13%). Besides these, there are two savings lotteries (Sparen + Gewinnen, PS Lotterie sparen) that run across all the Länder, where bank account holders share their money between lottery tickets and a savings account or purchase tickets from the interest on their savings (lottery share: 5%). The essential aspect is that a participant both saves money and plays in the lottery.

The taxation of lotteries in Germany is dealt with in the acts of different states. Taxes are set at one sixth of the stake. Winnings are not subject to taxation.

In 2006 the European Commission sent an official request for information on national legislation restricting the supply of sports betting services, which could be considered as the first stage of an infringement case. The Commission wishes to verify whether the measures in question are compatible with Article 49 of the EC Treaty which guarantees the free movement of services. This decision relates only to the compatibility of the national measures in question with existing EU law, and only to the field of sports betting.

2.1.9 Greece

The gross gaming revenues of the Greek gambling market were EUR 1,068 million in 2003, up 24.3% on 2002. The lottery market had a gross gaming revenue of EUR 474 million in 2003 (EUR 659 million in 2004), and represents 44% of the gambling market. Since 2003, instant lotteries have been completely absent in Greece. The share of betting is slightly higher (47%). Greece has seventeen casinos, but they mainly cater for tourists. With a total share of 9%, casinos are relatively unimportant. Slot machines outside casinos are prohibited. Within the casinos 60% of gross gaming revenues are generated by slot machines and 40% by table games. The gross gaming revenues per resident are EUR 97, which is close to the average of the twenty-one European countries investigated (EUR 110).

Figure 2.8: Summary statistics for the Greek gambling market (2003)

		Annual growth rate
Size of gambling market*	EUR 1,068 million	+24.3%
Size of lottery market*	EUR 474 million	+16.7%
Share lottery market	44%	
Largest game	Betting (47% share)	
Inhabitants	11.0 million	
GGR per capita	EUR 97	
Number of license holders	2	

* Measured in gross gaming revenues

Games of chance are an important source of income for the state. Greece has no charity gambling.

There are two major lotteries licensed to operate in Greece: the Greek state lottery (operated by the Ministry of Finance) and the Greek Organization of Football Prognostics (OPAP) (the state is the largest shareholder). The Greek state lottery operates a certain number of lotteries, including Laiko, Ethniko, Eidiko-Kratiko, Europaiko and Stigmieo-Xysto. The proceeds of all lotteries except those from the Eidiko-Kratiko lottery are transferred to the state budget. The proceeds of

the Eidiko-Kratiko are transferred to charitable causes.[17] The prize payout ratio of lotteries is approximately 60%, except for the Eidiko-Kratiko lottery, which has a slightly lower payout ratio of 53%. OPAP organizes several games, including lotto and sports toto. Its license gives OPAP the right to operate six numerical and three sports betting games. Another license is issued for the operation of horse racing betting (ODIE).

Greece has one of the highest per capita expenditures on betting in the world, in a market controlled by OPAP, one of the world's most overarching betting monopolies. OPAP's license to operate is soon to expire and speculation surrounds the next moves for one of Europe's most powerful operators. Since 1999, OPAP has operated as a limited company under Greek law and is one of the most successful companies on the Greek Stock Exchange.

Greece has a history of implementing disproportionate gaming and gambling laws by prohibiting card games, even in private quarters, in the 1970s and banning video, interactive or software-generated gaming in 2002. The principle on which the regulation of games of chance is based in Greece is one of general prohibition of playing for money in public places or in any other place. In general, any authorized play functions on the basis of one legal exemption from this prohibition.

The European Commission has taken action to put an end to obstacles to the free movement of sports betting services in Greece. In June 2007 the Commission sent an official request for information on national legislation restricting the supply of sports betting services. This takes the form of a letter of formal notice, the first step in the Article 226 infringement procedure.

2.1.10 Hungary

From 2000 onwards, the Hungarian gambling market experienced an annual growth rate in total revenues of 20%. This was due to the rapid growth of the lottery and slot machines markets. Following several years of rapid growth at around 30%, the lottery market decreased in 2004 by 11.6%. The downturn in the lottery market slowed the growth of the gambling market in 2004. However, the turnover of the Hungarian lottery market increased again in 2005 by 20%. Slot machines and lotteries cover most of the gambling market in Hungary, with a market share of 46% and 41% respectively.

The Hungarian Gambling Act, established in 1991, set down general rules for the operation of lotteries. Betting and gaming in Hungary falls under the authority of the Ministry of Finance and is supervised by the Hungarian Gambling Supervisory Authority. Hungary operates a state-controlled monopoly of gaming providers, granting licenses only if the state has a majority share in the company.[18] Any activity connected to foreign gambling activities is prohibited.

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17 Charity pay-out ratio could not be retrieved; given its prize-pay out ratio (53%) it is highly unlikely that charity pay-out ratio is higher than 40%, as stated by the definition of a charity lottery.

18 The Act requires that a license for number lotteries may only be granted to 100% State owned companies, while companies with major state ownership may issue instant tickets.

Figure 2.9: Summary statistics for the Hungarian gambling market (2004)

		Annual growth rate
Size of gambling market*	EUR 595 million	+2.5%
Size of lottery market*	EUR 246 million	−11.6%
Share lottery market	41%	
Largest game	Slot machines (46% share)	
Inhabitants	10.1 million	
GGR per capita	EUR 58	
Number of license holders lotteries	1	

* Measured in gross gaming revenues

Since 1997, Szerencsejáték has held the monopoly in the lottery and sports betting markets in Hungary, and also has interests in four Hungarian casinos. It is the largest gambling service provider in Hungary, having more than a 50% market share in the gambling market. Szerencsejáték contributes directly to good causes such as health, culture and sports, and as a significant taxpayer and a reputable state-owned corporation, it is a major contributor to the National Treasury. The Hungarian lotto game has a very high, progressive jackpot, attracting players from other Middle-European countries.

The taxation system is complex in Hungary. Szerencsejáték must pay 30% of instant ticket revenues, 24% of lotto turnover and 17% of joker turnover as gambling taxes. In addition to taxes, Szerencsejáték contributes 0.6% of its total revenues to good causes by sponsoring various organizations and foundations for culture, sports and health of its choice (EUR 3 million in 2004). Furthermore, Szerencsejáték is required to spend a proportion of the game tax (in 2006: 2.6%) on the support of professional and recreational sports through the state budget (EUR 15.3 million in 2004). In sum, contribution to charity organizations is very limited, and Szerencsejáték by no means meets the requirements of a charity lottery.

The European Commission has taken action to put an end to obstacles to the free movement of sports betting services in Hungary. In March 2007 the Commission formally requested that Hungary amend their laws following consideration of their replies to letters of formal notice sent in April 2006. These formal requests take the form of "reasoned opinions", the second stage of the infringement procedure laid down in Article 226 of the EC Treaty.

2.1.11 Ireland

The size of the Irish gambling market is EUR 1.1 billion. The gross gaming revenue per capita is EUR 286, the highest in Europe. Betting, divided into horse racing and greyhound betting, is the most popular game in Ireland, with a market share of 53%. Betting and the slot machine market were the major contributors to the staggering growth of the gambling market in 2003. Casino gambling is prohibited in Ireland.

Figure 2.10: Summary statistics for the Irish gambling market (2003)

		Annual growth rate
Size of gambling market*	EUR 1,144 million	+37.1%
Size of lottery market*	EUR 265 million	+5.0%
Share lottery market	23%	
Largest game	Betting (53% share)	
Inhabitants	4.0 million	
GGR per capita	EUR 286	
Number of license holders lotteries	1	

* Measured in gross gaming revenues

Gaming and lotteries are regulated in Ireland under the National Lottery Act and Gaming and Lotteries Act of 1986. The National Lottery Act provides for a national lottery to be held by, or on behalf of, the Minister for Finance. This lottery is exempt from the provisions of the Gaming and Lotteries Acts. The first license for the Irish National Lottery was granted to An Post, Ireland's national postal service, which created An Post National Lottery Company to operate the lottery. The National Lottery is regulated by the Department of Finance. The proceeds are transferred to public health causes determined by the government. In 2006 a total of EUR 217.5 million was raised for good causes, up EUR 14.3 million from EUR 203.2 million in 2005.

The National Lottery does not have to pay VAT (normally 21%). There are neither gambling-specific taxes nor license fees levied on the National Lottery. There are no other mandatory payments required of the company.

2.1.12 Italy

The Italian gambling market has a total gross gaming revenue of EUR 6.2 billion, or EUR 107.7 per capita. This is down 4.6% on figures for 2002. The lottery market decreased from EUR 5.2 billion in 2002 to EUR 4.5 billion in 2003, a decrease of 12.9%.

Figure 2.11: Summary statistics for the Italian gambling market (2003)

		Annual growth rate
Size of gambling market*	EUR 6,205 million	−4.6%
Size of lottery market*	EUR 4,502 million	−12.9%
Share lottery market	73%	
Largest game	Lotteries	
Inhabitants	57.6 million	
GGR per capita	EUR 108	
Number of license holders lotteries	2	

* Measured in gross gaming revenues

The Italian gambling market consists of two operators that organize multiple lottery games, lotto, bingo and a number of sports betting games. Since gaming is a state-reserved activity, private

operators intending to provide their gaming services in Italy must obtain an Italian license, which is issued by means of a public tender. There are also four land-based casinos, authorized under special standalone legislative acts, as an exception to a general prohibition of casino type games, set by the Criminal Code.

The supervision and regulation of games of chance in Italy is exercised by the *Amministrazione Autonoma dei Monopoli di Stato* (AAMS), established in 2002, as part of the Ministry of Economy and Finance. The objectives of the AAMS are to create conditions for stimulating competition and to protect the public interest, such as the player's interest and a proper provision of gambling. Nevertheless, the AAMS is targeted at maximizing gambling taxes.

The two main operators that currently dominate the lottery market are Lottomatica and Sisal. Lottomatica is the holder of an exclusive licence for the lotto game (Gioco del Lotto) and the traditional and instant lottery games. Sisal is the exclusive licence holder for the Superenalotto, a lotto-type game based on the results of the Gioco del Lotto with a very high jackpot.

The lottery tax rate is different for each lottery type, and varies between 35% and 55% of the revenues. These taxes partly flow to public health organizations.

A recent tender that allowed a large number of online and land-based gambling operators to enter the Italian market with sports betting services started a phase of liberalization in Italy. It is believed that in the coming year international operators such as Ladbrokes and Intralot will capture a relevant share of the Italian gambling market. Italy's gambling market is expected to grow to EUR 61 billion (turnover) by 2010. [19] One growth driver will be interactive gambling, which is expected to reach around EUR 3.7 billion by 2010, a growth of around 240% above the current level.

In October 2006 the European Commission sent official requests for information on national legislation restricting the supply of (remote) sports betting services, which could be considered as the first stage of an infringement case. The Commission wishes to verify whether the measures in question are compatible with Article 49 of the EC Treaty, which guarantees the free movement of services. This decision relates only to the compatibility of the national measures in question with existing EU law, and only to the field of sports betting. In particular, the Commission has concerns that recent Italian legislation, which has blocked access to the websites of legitimate European operators, is a disproportionate restriction. The Commission has asked the Italian authorities to explain the proportionality of these measures, particularly in the light of the expanding sports betting market which appears reserved to domestic operators.

2.1.13 Lithuania

Until 2001, the only games of chance conducted in Lithuania were lotteries. Since the legalization of the other games of chance in July 2001 the casino, slot machine and betting markets have grown rapidly. Nevertheless, gross gaming revenue per capita in Lithuania is still very low, at

[19] See: http://www.researchandmarkets.com/reportinfo.asp?report_id=540697.

slightly less than EUR 12 in 2003. The largest player in the slow but steadily growing lottery market, Olifeja, has a market share of 93%.

Figure 2.12: Summary statistics for the Lithuanian gambling market (2003)

		Annual growth rate
Size of gambling market*	EUR 40 million	+38.8%
Size of lottery market*	EUR 25 million	+0.7%
Share lottery market	61%	
Largest game	Lotteries	
Inhabitants	3.4 million	
GGR per capita	EUR 12	
Number of license holders lotteries	3	

* Measured in gross gaming revenues

Gambling in Lithuania is regulated by the State Gaming Control Commission (SGCC), which is an independent state-funded body founded in 2001. The SGCC is responsible for executing government gambling policy, issuing licenses and permits, the inspection of gaming equipment and supervision of lotteries and gambling. Illegal lotteries, as well as gambling addiction, are seen as a moderate threat to public health.

The lottery market in Lithuania is a private market. The law on lotteries of 1 July 2003 regulates the conditions and procedures for operating lotteries in the country. Only Lithuanian enterprises and those foreign enterprises with a registered branch acting in conformity with the procedures established by Lithuanian law, complying with the requirements of this law and holding a license to operate a major lottery may do so. A tax rate of 5% on turnover is imposed.

2.1.14 Luxembourg

The market for games of chance in Luxembourg is dominated by the only casino, Casino 2000 at Mondorf-les-Bains. Casino 2000 accounts for over 80% of the gambling market; however, it is aimed at the tourist market. There are no exact figures for the size of the slot machine market and the betting market, which makes it difficult to make clear statements about the overall gambling behaviour of citizens of Luxembourg.

Figure 2.13: Summary statistics for the Luxembourg gambling market (2003)

		Annual growth rate
Size of gambling market*	EUR 97 million	+31.5%
Size of lottery market*	EUR 19 million	+39.1%
Share lottery market	19%	
Largest game	Casinos (81% share)	
Inhabitants	0.45 million	
GGR per capita	EUR 215	
Number of license holders lotteries	3	

* Measured in gross gaming revenues

The Luxembourg gambling regulation rests on the principle of prohibition of the exploitation of games of chance as set down in Article 1 of the law of 20 April 1977. Any authorized gambling functions on the basis of exemption from this prohibition. For lotteries, the prime objective of authorization is not to collect funds for charitable organizations and public health, but to channel, satisfy, limit and control the desire to gamble. The fact that lottery proceeds are transferred to charitable causes is a secondary element.

The only lottery provider that is based in Luxembourg is Loterie Nationale Luxembourg. However, two German lottery providers, Lotto Rheinland-Pfalz and the Saarland-Sporttoto, are also allowed to offer lotteries in Luxembourg. All the proceeds of Loterie Nationale Luxembourg go to national public health organizations.

The tax rate for games of chance can be proportional or progressive and is prescribed by rules of public administration. The tax rate can vary from one game to another, without being able to be lower than 10% or higher than 80%, according to Article 12 para. 2 of the law of 20 April 1977. A tax on profits is made on the German lotteries by the Luxembourg state, according to the law of 30 July 1983. All games of chance are exonerated from VAT.

2.1.15 Malta

The Maltese market for games of chance is quite distinctive. Betting, apparently the largest game of chance in Malta, accounts for 58% of the total gross gaming revenue. However, a large part consists of foreign betting revenues from Malta-based Internet sites. These licensees are prohibited from taking bets from the island's citizens. Furthermore, the casinos in Malta are largely intended to attract tourists from abroad. Therefore, exact figures for the gross gaming revenue per capita are lacking. Lotteries, the only reliable proxy for the gambling behaviour of the Maltese, demonstrated stagnating revenues over the period 1999-2003, with a decrease in lottery spending over this period of 3.3%.

Figure 2.14: Summary statistics for the Maltese gambling market (2003)

		Annual growth rate
Size of gambling market*	EUR 114 million	−8.2%
Size of lottery market*	EUR 23 million	+3.2%
Share lottery market	21%	
Largest game	Betting (58% share)	
Inhabitants	0.40 million	
GGR per capita	EUR 286[20]	
Number of license holders lotteries	1	

* Measured in gross gaming revenues

The Lotteries and Other Games Act (LOGA) provides for the regulation of all gaming operations other than land-based casinos, which remain regulated under the Gaming Act of 1998.

[20] Foreign betting revenues included.

LOGA established a new regulatory body, the Lotteries and Gaming Authority, a legal entity distinct from the government, which is the gaming regulator for Malta. The Lotteries and Gaming Authority (LGA) is responsible for the governance of all forms of gaming in Malta.

Malta has opted to embrace the gaming industry and permits a broad range of activities. Important distinctions, however, are made between gaming by Maltese residents and foreigners, the latter being subject to less stringent regulation than the former. Malta invites active participation in this industry by foreign companies, offering favourable corporate and tax structures to such enterprises.

The National Lottery was set up as a state monopoly in 1934. In February 2004, Maltco Lotteries Limited was awarded the exclusive license, valid for seven years, to operate all the National Lottery games. For this license, Maltco was set up in 2004 with a 73% shareholding by Intralot and the remaining 27% owned by Maltese businessmen. Intralot is a global leader in integrated games and transaction processing systems that currently ranks third in terms of revenues amongst integrated lottery systems suppliers worldwide. The National Lottery licensee must be a company registered in Malta whose sole purpose is to operate the National Lottery.

Based on information provided by the LGA, the tax on lotteries is 20% on gross turnover and 12.5% on gross turnover from instant lottery tickets.

Not-for-profit games can be licensed by the LGA provided that they are organized by not-for-profit organizations and the net proceeds are destined for a religious, sporting, philanthropic, cultural, educational, social or civic purpose.

2.1.16 Poland

The gambling market in Poland is relatively small. The gross gaming revenue per capita is EUR 12 which, together with Lithuania, is the lowest among all the countries investigated. The gambling market is dominated by the lotteries, which account for roughly two-thirds of total gambling revenues. There are two licensees active in the lottery market, but the market leader, Totalizator Sportowy, has a lottery market share of nearly 100%.

Figure 2.15: Summary statistics for the Polish gambling market (2004)

		Annual growth rate
Size of gambling market*	EUR 460 million	+6.4%
Size of lottery market*	EUR 306 million	+3.5%
Share lottery market	66%	
Largest game	Lotteries	
Inhabitants	38.2 million	
GGR per capita	EUR 12	
Number of license holders lotteries	2	

* Measured in gross gaming revenues

Polish gambling legislation is based on the law of 29 July 1992 on games and betting. In Poland, only joint stock or limited liability companies based in Poland can run gambling operations. Shareholders in gambling businesses must be Polish citizens or Polish-owned corporate bodies.

The objectives of gambling policy are fighting illegal gambling and addiction. Illegal gambling is experienced as a bigger issue than gambling addiction in Poland, however. No accurate data appears to exist on these matters.

Entities conducting their economic activity within the scope of games of chance and betting on the basis of a granted permit and entities organizing games and lotteries that constitute the state monopoly are subject to the tax on games. Poland's corporate tax was 19% in 2005. In addition, there is a tax on cash lotteries of 15% of turnover. The tax on cash lotteries is transferred to national public health organizations.

At present, the second Polish lottery, Polski Monopol Loteryjny, may have to be closed due to its poor financial condition. This in turn would make Totalizator Sportowy the monopolist in the Polish lottery market.

2.1.17 Portugal

The market for games of chance in Portugal had a turnover of EUR 1.6 billion in 2004, an increase of 13% on the previous year. Lotteries are by far the most important games in this market, with a market share of 62%. The multinational EuroMillions lottery was introduced in Portugal by the state lottery monopolist in October 2004, and had revenues in that year of EUR 150 million, which accounted for three-quarters of the growth of the lottery market in 2004.

Figure 2.16: Summary statistics for the Portuguese gambling market (2004)

		Annual growth rate
Size of gambling market*	EUR 1,625 million	+13.3%
Size of lottery market*	EUR 1,014 million	+24.7%
Share lottery market	62%	
Largest game	Lotteries	
Inhabitants	10.5 million	
GGR per capita	EUR 155	
Number of license holders lotteries	2	

* Measured in gross gaming revenues

The Portuguese gambling market is regulated by Portuguese Gaming, which is currently undergoing significant restructuring and will soon be transferred from the Portuguese Ministry of Tourism to the Ministry of Finance.

The Portuguese gambling market is effectively a state monopoly. Portugal accorded a national monopoly on lottery and lottery-like gaming to the charity entity Santa Casa da Misericordia de

Lisboa (SCML), in order to ensure their association with good causes, in recognition of the trustworthiness and credibility that SCML has demonstrated in the past.

SCML is not taxed on its lottery and other gaming operations. It benefits from tax exemption on account of the fact that its turnover is mainly transferred to social entities. SCML pays VAT for all goods and services purchased on a rate that fluctuates between 5% and 21%. The prizes themselves are taxed with rates up to 35% (EuroMillions 0%, Totoloto, Loto2 and Joker 35%, Totobola, Lotaria Nacional and Lotaria Instantânea 25%). Around 43% of turnover is transferred to good causes.

In Portugal, charity gambling, mostly charity lotteries, is defined as a temporary game and is authorized on a case-by-case basis by the Ministry of Internal Affairs. The Ministry of Internal Affairs also has the power to stop the organization of an authorized charity lottery if it becomes addictive or causes other social damage. Whenever tickets are to be issued, authorization is conditional upon the use of the corresponding net profit for charity purposes or other purposes in the public interest, as well as on the prohibition of the respective operations in places where SCML lottery tickets or mutual bet bulletins are sold.

Despite its gambling monopoly, Portugal has thus far avoided the scrutiny of the European Commission, because the Portuguese authorities have not taken affirmative action to prevent companies from operating in Portugal.

In a recent report prepared for the Portuguese government a working group enumerated the reasons justifying the well-framed environment in which gaming may be exploited. Gaming, states the report, is an atypical and sensitive economic activity concerning the public order, which must be closely scrutinized in order to prevent organized crime and money laundering. For the sake of protecting consumers and their families, and in order to sublimate the human tendency towards gambling, the state undertook to regulate each area of gaming, keeping the few persons and entities allowed to exploit gaming under tight control.

2.1.18 Slovakia

The total gross gaming revenue of the Slovakian market for games of chance grew rapidly from EUR 154 million in 2001 and EUR 177 million in 2002 to EUR 216 million in 2003. However, this is primarily the result of an increase in both casino and slot machine revenue. The market share of lotteries decreased from 46% to 35% as a result of stagnating revenue over these years.

The Act on Gambling Games, established in 2005, is the main source of legislation for the gaming and gambling sectors, outlining procedures for licensing, regulation and supervision. According to the Act on Gambling Games, operating foreign gambling games in Slovakia is prohibited. The individual sale of lots, taking bets and paying out winnings, including mediation of such activities, by foreign entity operators and where stakes are paid abroad, are also prohibited in Slovakia.

Figure 2.17: Summary statistics for the Slovakian gambling market (2003)

		Annual growth rate
Size of gambling market*	EUR 216 million	+21.8%
Size of lottery market*	EUR 71 million	+6.0%
Share lottery market	35%	
Largest game	Casinos (44% share)	
Inhabitants	5.4 million	
GGR per capita	EUR 40	
Number of license holders lotteries	1	

* Measured in gross gaming revenues

A gambling license may be issued only to a legal person with a registered office in the EU or OECD. The state lottery, known as Tipos, has a payout ratio of 64%. A percentage of 15% to 20% of turnover, depending on the type of lottery game, is transferred as beneficial taxes. State income from this beneficial tax is used to finance public services, for example healthcare, social work and assistance, humanitarian care, production, development and protection of cultural heritage, support for arts and cultural activities, education, development of sport, environmental protection and public health. Tax duty regarding other taxes and fees is determined according to other respective tax laws. The standard corporate tax rate in Slovakia was 19% in 2005.

2.1.19 Spain

The market for games of chance is relatively large in Spain. The gross gaming revenue per capita is EUR 195.50, giving a market size of EUR 8.3 billion. The two lottery licensees cover more than half of this market; the Spanish state lottery (LAE - *Organismo Nacional de Loterías y Apuestas del Estado*) and the charity lottery ONCE account for 75% and 25% of the lottery market respectively. The state lottery alone was responsible for the 8.2% increase of the lottery market in 2004. The proceeds of ONCE remained at a constant level during the period 1996–2004.
Slot machines are also very popular in Spain, with a market share of 32%. Spain has the second highest number of slot machines in Europe after the United Kingdom.

Figure 2.18: Summary statistics for the Spanish gambling market (2004)

		Annual growth rate
Size of gambling market*	EUR 8,348 million	+5.1%
Size of lottery market*	EUR 4,485 million	+8.2%
Share lottery market	54%	
Largest game	Lotteries	
Inhabitants	42.7 million	
GGR per capita	EUR 196	
Number of license holders lotteries	2	

* Measured in gross gaming revenues

During the past decades, Spanish gambling regulation has become more and more an issue of the individual regions rather than a central government issue. Consequently, casinos, slot machines and bingo halls are licensed by regional authorities and exploited by private parties. However, nationally organized games, such as sports betting and national lotteries, are still regulated by the central government.

All the revenues of the Spanish state lottery, LAE, go to the treasury. It is one of the largest lottery operators in the world. Another nationwide lottery active in Spain is ONCE, created in 1938. ONCE aims to improve the well-being of Spanish disabled people, and 25% of its turnover is earmarked for this purpose. Another 25% is spent on operating costs. The remaining 50% of turnover is prize money. Ticket sales are handled through street vendors. ONCE is not a charity lottery according to the definition that at least 40% of revenues must be distributed to charity organizations. However, ONCE sells lottery tickets through blind selling agents, thereby supporting good causes directly through the service operation process. Both the LAE and the ONCE lotteries are exempt from operational taxes. The tax rates for other games of chance are different across Spanish regions.

2.1.20 Sweden

The Swedish market for games of chance had a gross gaming revenue of EUR 1.6 billion in 2004, a growth of 1% on the previous year. However, the total lottery revenue decreased that year by 2.8%. Svenska Spel is the lottery market leader, with a market share of approximately 80%. There are also around thirty not-for-profit lotteries operating nationwide in Sweden (source: Swiss Institute of Comparative Law). Two trends are apparent in Sweden. Firstly, short odds games are gaining in popularity, while the revenues of long odds games, except for the Swedish lotto, have stagnated. Secondly, there appears to be a positive relation between high winnings and sales of a game of chance.[21]

Figure 2.19: Summary statistics for the Swedish gambling market (2004)

		Annual growth rate
Size of gambling market*	EUR 1,598 million	+0.96%
Size of lottery market*	EUR 645 million	−2.8%
Share lottery market	40%	
Largest game	Lotteries[22]	
Inhabitants	9.0 million	
GGR per capita	EUR 178	
Number of license holders lotteries	±30 (state lottery is market leader with market share of 75%)	

* Measured in gross gaming revenues

21 The sales of the Swedish lotto, for instance, show an upward trend after the introduction of a high 'superjackpot'.

22 Measured in turnover, betting is the largest game in Sweden. However, because betting has a much higher payout ratio, lotteries are the biggest game in terms of gross gaming revenues (turnover minus prize payouts).

In Sweden, the Lotteries Act regulates gaming activities. According to this Lotteries Act, a license is needed to organize lotteries, except for very small, local lotteries. Only Swedish not-for-profit associations may be licensed (Del Ninno, 2002). The payout ratio of charity lotteries is regulated by the Lotteries Act and must be between 35% and 50%. The maximum prize of a charity lottery may not be higher than one-sixth of the total stake. The four nationwide charity lottery organizations of significant size are: Folkspel, which organizes the Bingolotto; Svenska Postkodlotteriet (since 2005); A-Lotterierna, which organizes the Kombilotteriet; and IOGT-NTO, which organizes the Miljonlotteriet. These not-for-profit lotteries account for approximately 24% of the lottery market (2005). There are also several other smaller charity lotteries. Ideela Spel is a service organization comprising five NGOs (the Swedish Society for Nature Conservation and the Swedish Association for Deaf and Blind people, among others) that distribute the proceeds of the lottery among each other. Lottericentralen organizes ten to fifteen lotteries per year for NGOs such as the Swedish Red Cross, BRIS (Children's Rights in Society) and the Swedish Doctors without Borders. There are also a number of small local and regional charity lotteries, which in total account for approximately 1% of the lottery market. Svenska Spel accounts for the remaining 75% of the lottery market.

In 2005 Svenska Spel created Svenska Spel International to develop commercial partnerships with lotteries and operators of games controlled by other European states. Svenska Spel is generally exempt from tax. However, the state does oversee the assigning of its profits: the statutes of Svenska Spel provide that all revenues must be used to serve the public interest. Not-for-profit organizations are also exempt from tax on lotteries.

Supervision of games of chance in Sweden is executed by the Swedish National Gaming Board, established in 1995. The main objective of supervision is to ensure that games of chance are safe, reliable and in consensus with legislation. Furthermore, the Gaming Board tries to control for the risks and negative effects of gambling.

The European Commission has taken action to put an end to obstacles to the free movement of sports betting services in Sweden. In June 2007 the Commission formally requested that Sweden amend their laws following consideration of their replies to letters of formal notice sent in April and October 2006. These formal requests take the form of "reasoned opinions", the second stage of the infringement procedure laid down in Article 226 of the EC Treaty.

2.1.21 United Kingdom

The UK market for games of chance is the largest in Europe, with total gross gaming revenues of EUR 11.5 billion, and an annual increase of 5.6%. The average UK citizen spends EUR 192 on gambling a year. Camelot is the lottery monopolist, with revenues of EUR 3.5 billion in 2003. This was 3% less than in 2002. Betting is, just ahead of lotteries, the most popular game of chance with a market share of 32%. Slot machines represent 17% of the market.

Figure 2.20: Summary statistics for the UK gambling market (2003)

		Annual growth rate
Size of gambling market*	EUR 11,522 million	+5.6%
Size of lottery market*	EUR 3,533 million	−3.0%
Share lottery market	31%	
Largest game	Betting (32% share)	
Inhabitants	59.6 million	
GGR per capita	EUR 192	
Number of license holders lotteries	1 (Camelot)	

* Measured in gross gaming revenues

All five types of gambling (lotteries, casino games, machine gambling, betting and bingo) are permitted in the United Kingdom by the Gambling Act, which was established in 2005, subject to the requirement that the operator has been granted a license by the British authorities. Gambling operator licenses are issued by the Gambling Commission. The three objectives of the Gambling Commission are to prevent gambling being a source of crime or disorder, to ensure that gambling is conducted fairly and openly, and to protect the underaged.

The British lottery market is divided in two parts. The first part consists of the National Lottery, which is monopolized by law, and the local private charitable lotteries. The National Lottery Commission issues the license for the National Lottery. Since 1994, Camelot Group has held the sole license to run the National Lottery and all of the issued licenses to promote various lotteries (including EuroMillions) as part of the National Lottery. The turnover is divided as follows: 50% is paid out as prize money, 28% is paid out to good causes such as arts, sport and national heritage projects; 12% is paid out to the government as taxes and 5% to retailers, operating expenses account for 4.5%, and 0.5% remains as profit for the operator Camelot. The National Lottery Commission has delayed its decision over who will win the contract for the next ten-year license for the National Lottery, which starts in 2009. The current operator, Camelot, is the favourite.

For private, charity and local lotteries, it is necessary to register with the Gambling Commission. From the turnover, 20% must go directly to the particular good cause or the local authority that promotes the lottery, no more than 35% may be used for expenses, and the payout ratio may not exceed 55%. Furthermore, the turnover of any one lottery must not exceed GBP 2 million (EUR 2.97 million), and the maximum prize must not exceed GBP 25,000 (EUR 37,174). There are currently 650 such lotteries registered with the Gambling Commission. Since August 2005, the UK postcode lottery (People's Postcode Lottery England) has been run in the North East of England. In November 2007, the People's Postcode Lottery was launched in Scotland (although official sales do not start until 1 January 2008).

2.2 Synthesis

The investigation of market conditions and regulation of the gambling market among twenty-one countries shows interesting differences, but also similarities. We now analytically summarize the

most important results.[23] We first analyze differences in the market structures of the gambling markets (2.2.1). We then focus on the competition in lottery markets, the existence of charity lotteries and the existence of multinational lotteries and lottery players (EuroMillions, Ladbrokes and Intralot) (2.2.2). Finally, we investigate the differences in regulation between the investigated countries and the role of the European Commission of late (2.2.3).

2.2.1 Market structure

The European countries differ in the importance of the various games in their gambling markets. Table 2.21 shows the average shares of the various games in the twenty-one European countries.[24] The share of lotteries in the gambling market is on average 44% in the investigated countries. The average shares of slot machines, casinos and betting are significantly lower at between 15% and 20% each. The category 'other' contains several, mostly locally organized, games, with bingo as the most dominant.[25] In the Netherlands slot machines and casinos are more widely represented than the European average, and betting has less of a share.

Table 2.21: Market share of gambling games in European countries

Game	Average share	Lowest share	Highest share	Number of countries in which this game has largest share	Netherlands
Lotteries	44%	18% (Czech Republic)	73% (Belgium)	12	38%
Slot machines	19%	0% (several)	58% (Czech Republic)	3	27%
Casinos	18%	0% (Ireland)	81% (Luxembourg)	2	34%
Betting	16%	0% (Luxembourg/ Slovakia)	58% (Malta)	4	1%
Other	3%			0	0%

Based on 2003 data

Source: SEO Economic Research

For twelve countries (including the Netherlands) lotteries are the largest game. In eight countries lotteries represent more than 50% of the total gambling market. In four countries betting is the largest game (Ireland, United Kingdom, Malta and Greece); in three countries slot machines have the highest share (Spain, Czech Republic and Finland); and in two countries casinos have the highest share (Slovakia and Luxembourg). Lotteries are relatively unimportant in the Czech Republic and Luxembourg, where their market shares are lower than 20%. In several countries slot machines are prohibited outside casinos. Casinos are prohibited in Ireland. For betting a wide variation in shares is observed; in some countries betting is very popular, while in others betting

23 We consider the numbers of 2003 because of the integral comparison; for some countries more recent numbers are not available.

24 Unweighted averages over the 21 countries investigated.

25 The consistency with which the category 'other' is registered in the national statistics differs between the countries. Therefore, we pay limited attention to the numbers in this category.

is practically absent. In six countries betting has a less than 2% share (Luxembourg, Netherlands, Belgium, Spain, Portugal and Slovakia).

Differences in market shares can be ascribed to differences in regulation, historical endowments and cultural differences in gaming preferences. Although it is impossible to disentangle these factors exactly, some general observations can be made. Some countries prohibit certain games completely, particularly slot machines outside casinos. Other countries restrict certain games to such a high extent that this explains their relatively low shares. For example, some countries allow only a very limited number of casinos. Also, betting is a very specific game that relates to sports matches (mostly horse racing and soccer). The interest in betting games therefore depends strongly on the people's interest in these sports games. Furthermore, high per capita spending relates mostly to a large share of short odds games. Also, high per capita spending is sometimes not completely due to a country's own inhabitants. Some countries are very open to foreigners, tourists and business people. Foreign consumers are more likely to play in short odds than in long odds games. This may explain the structure of a couple of small open countries (Luxembourg and Malta) that have high per capita spending but low market shares for lotteries.

Lotteries play a significant role in most European gambling markets. The total market size for lottery games ranges from less than EUR 20 million in Luxembourg to almost EUR 5 billion gross gaming revenues in Germany. The market size of lotteries can be broken down into population size, per capita spending on gambling (EUR per year), and the market share of lotteries in the gambling market, as a product of the three dimensions:

*Size of lottery market = per capita spending on gambling * market share lotteries * population*

In Table 2.22 on the next page we classify the European countries on each of these three dimensions by categorizing them in three approximately equal-sized groups. Not surprisingly, the largest lottery markets are found in countries with large populations: France, Italy, Spain, Germany and the United Kingdom. The Scandinavian countries and Austria have relatively large lottery markets given their population sizes. The Netherlands takes a position in the middle group for each of the dimensions and for total market share as well. Remarkably, none of the other countries shows an exactly similar pattern. Relatively similar markets are (based on the four characteristics): Belgium, Denmark and, more surprisingly, Portugal and Greece. Also remarkable is that many countries have a unique pattern on the four variables, indicating that gambling markets are relatively unequal. Countries that show a high degree of similarity (that is, perfect similarity based on the four variables in Table 2.22) are: Spain/Italy/Germany, Sweden/Finland, Austria/Denmark and Luxembourg/Italy/Malta.

Per capita gambling spending is low in the Eastern European countries. However, gambling spending has shown a steep increase in these countries in recent years, and may be subject to further growth in the near future. Gambling markets in Western European countries are more mature, and generally show only modest growth. In mature markets, new entrants must focus more on gaining market share from existing players, while in Eastern European countries sufficient space for growth may be available next to existing players.

In most cases high per capita spending does not go together with high market shares for lotteries. In only one country with high per capita gambling spending (> EUR 175) are lotteries the largest game (Sweden). In others this is betting (Ireland, UK, Malta), casinos (Luxembourg) and slot machines (Finland). This seems to imply that not lotteries but rather other games benefit most from a growing market. These other games are, unlike lotteries, short odds games.

Table 2.22: Size of the lottery market and its components

	Size of lottery market	Components of lottery market size		
		Share of lotteries in gambling market	Per capita gambling	Population
Austria	€ 400 – € 1,000 million	> 50%	€ 100-175	< 10 million
Belgium	€ 400 – € 1,000 million	> 50%	< € 100	10-25 million
Czech Republic	< € 400 million	< 33%	< € 100	10-25 million
Denmark	€ 400 – € 1,000 million	> 50%	€ 100-175	< 10 million
Finland	€ 400 – € 1,000 million	33-50%	> € 175	< 10 million
France	> € 1,000 million	33-50%	€ 100-175	> 25 million
Germany	> € 1,000 million	> 50%	€ 100-175	> 25 million
Greece	€ 400 million – € 1,000 million	33-50%	< € 100	10-25 million
Hungary	< € 400 million	33-50%	< € 100	10-25 million
Ireland	< € 400 million	< 33%	> € 175	< 10 million
Italy	> € 1,000 million	> 50%	> € 175	> 25 million
Lithuania	< € 400 million	> 50%	< € 100	< 10 million
Luxembourg	< € 400 million	< 33%	> € 175	< 10 million
Malta	< € 400 million	< 33%	> € 175	< 10 million
Netherlands	€ 400 – € 1,000 million	33-50%	€ 100-175	10-25 million
Poland	< € 400 million	> 50%	< € 100	> 25 million
Portugal	€ 400 – € 1,000 million	> 50%	€ 100-175	10-25 million
Slovakia	< € 400 million	< 33%	< € 100	< 10 million
Spain	> € 1,000 million	> 50%	€ 100-175	> 25 million
Sweden	€ 400 – € 1,000 million	33-50%	> € 175	< 10 million
UK	> € 1,000 million	< 33%	> € 175	> 25 million
	Large: > € 1,000 million Medium: € 400- € 1,000 million Small: < € 400 million	Large: > 50% Medium: 33-50% Small: < 33%	High: > € 175 Medium: €100-175 Low: < € 100	Large: > 25 million Medium: 10-25 million Small: < 10 million

Red: high/large; grey: medium; white: low/small.

Based on 2003 data

Source: SEO Economic Research

2.2.2 Lotteries

Competition

In half of the investigated European countries only one licensee is allowed to organize lotteries. In most of these countries the state licenses a specific organization to organize the lottery. In the Czech Republic, Denmark, Germany, Greece, Italy, Lithuania, Luxembourg, Netherlands, Poland, Spain and Sweden more than one license is granted by the national government. The existence of more than one license could be considered an indicator of liberalization of the market, but does not imply effective competition. In a highly concentrated market with one dominant state lottery effective competition is often not (yet) realized (Czech Republic, Luxembourg and Poland). In some of these countries licenses are issued to specific regions, for example in Germany.

The absence of competition within the lottery market does not mean that consumers do not have any freedom of choice. A single supplier mostly organizes several games. The most important lottery formats are number lotteries, lottos and instant lotteries. Within these formats several draw types and subformats are possible. Tickets are traditionally purchased through kiosks, but opportunities to purchase them through the Internet are becoming more widespread in several countries.

On the other hand, a high number of licenses will not automatically lead to broader game assortments either. In Poland one of the two licensees is expected to leave the market because of financial problems, and in the Czech Republic the second player holds only a very small market share. Furthermore, in Chapter 1 we discussed the attractiveness of large prizewinnings. This drives lotteries to cooperate and upscale. In Germany the regional lotteries cooperate in lotto and toto games that have a national scope. Another development is the cooperation of several national lotteries in the EuroMillions lottery (discussed more extensively below).

Charity Lotteries

The Dutch charity lotteries are first in Europe, both in terms of market share in the national lottery and gambling market and with respect to the total funds raised for charity. Section 2.1 revealed that in most European countries charity lotteries are absent or negligible. In this section we describe the four main charity lottery markets in Europe at this moment, established in Sweden, Spain, the United Kingdom and Denmark.

Novamedia entered the Swedish charity lottery market with the Swedish Postcode Lottery (Svenska Postkodlotteriet) in October 2005, and had a successful first year with an amount transferred to charity organizations of EUR 6.6 million. The format of the Swedish Postcode Lottery is quite similar to that in the Netherlands. At present at least 20% (but in the long run at least 40%) of turnover goes to charity organizations, funding is non-earmarked, and there is no political interference in the allocation of funds. The four nationwide charity lottery organizations of significant size are: Folkspel, which organizes the Bingolotto; Svenska Postkodlotteriet; A-Lotterierna, which organizes the Kombilotteriet; and IOGT-NTO, which organizes the Miljonlotteriet. There are also other smaller charity lotteries organized by Ideela Spel and Lotteriecentralen. The not-for-

profit lotteries account for approximately 24% of the lottery market (2005). There are also a number of small local and regional charity lotteries, which in total account for approximately 1% of the lottery market.

In Spain, the lottery ONCE accounts for 25% of the Spanish lottery market. ONCE is not a charity lottery in the strict sense of the definition. ONCE devotes 25% of the lottery proceeds to other charity programmes aiming to help Spanish disabled people in general. Moreover, it supports social services and job creation for the blind and visually impaired, because tickets are sold through street sellers. As such it supports good causes in a direct way as well.

In the United Kingdom, charity lotteries must register with the Gambling Commission. From the turnover, 20% must go directly to the particular good cause or the local authority that promotes the lottery, no more than 35% may be used for expenses, and the payout ratio may not exceed 55%. Furthermore, the turnover of any one lottery must not exceed GBP 2 million (EUR 2.97 million), and the maximum prize must not exceed GBP 25,000 (EUR 37,174). There are currently 650 such lotteries registered with the Gambling Commission. Since August 2005, the UK postcode lottery has been run in the North East of England.

In Denmark, two not-for-profit lotteries exist, the Varelotteriet and Landbrugslotteriet. Their turnover is transferred to good causes indirectly via the treasury. Their prize payout ratio is considerably high at around 65%. Total turnover for the Landsbruglotteriet and the Varelotteriet in 2004 was approximately EUR 6.7 million. In addition to this, Aeldresagen (an influential lobby organization for the elderly with around 500,000 paying members) organizes a nationwide lottery for its members to raise additional funds. Total gross gaming revenues for this lottery were EUR 1.5 million in 2006.

To conclude, charity lottery markets in most European countries are still relatively small. Therefore, the Dutch charity lottery market could be considered as an example for possible future developments in other European countries.

EuroMillions

EuroMillions is a European lotto game that consists of a cooperation of nine national lotteries. It was founded in February 2004 as a joint venture between three countries: France, Spain and the United Kingdom[26]. Later that year (October 2004) six additional countries joined EuroMillions: Belgium, Ireland, Luxembourg, Austria, Portugal and Switzerland[27]. The lottery aims to be the biggest in Europe, with mega lotteries in the United States (Powerball, Mega Millions) serving as an example. The multinational cooperation enlarges the scale of the lottery, and as such enables the lottery to distribute extremely high jackpots. Its motto "become scandalously rich" reflects this.

Every Friday a draw takes place at the studios of La Française des Jeux in Paris, and is broadcast live on television. The game is played using the 'rollover' technique. The minimum jackpot is

[26] La Française Des Jeux (France), Loterías y Apuestas del Estado (Spain), National Lottery (UK).
[27] An Post National Lottery Company (Ireland), Oesterreichische Lotterien (Austria), Loterie Romande en Swisslos (Switzerland), Loterie Nationale Luxembourg, Santa Casa da Misericordia de Lisboa (Portugal).

EUR 15 million, but this amount rolls over to the next draw if there is no winner. The highest jackpot so far was EUR 183 million in February 2006, which was distributed among three winners. The highest prize won by an individual player was GBP 79,881,799 (approx. EUR 115,837,588) on 29 July 2005.

EuroMillions is based on the coordination and joint management of national games according to agreed rules and principles. The standards of integrity and security applied are extremely strict. A joint company based in Brussels provides some common services, but each partner is subject to the authorizations and controls of its own country's authorities. Under this approach, each national operator remains the sole operator of the game in its territory as regards distribution, collecting wagers, paying prizes, promotion, advertising, etc. This cooperative strategy primarily involves sharing research resources, product line development, infrastructure and organization. The system is designed to enable other lotteries in Europe to join in the near future.

The success of EuroMillions in several of the participating countries indicates the attractiveness of high first prizes for which the probability of winning is very small. It also shows the possible consequences of further liberalization of gambling markets, namely further cooperation and scaling-up of lotteries.

3 SWOT Analysis for charity lotteries

In this chapter we conduct a SWOT analysis for the European charity lotteries. A SWOT analysis is a framework for analysis developed in the 1960s in the area of strategic management. The framework helps to map the strengths and weaknesses of a company or sector and its relevant surrounding circumstances and developments. Initially, SWOT analysis was primarily used as a strategic tool for individual companies. In the 1990s its dimension changed as a result of new insights from industrial organization. For example, Porter's five competitive forces model has led to stronger emphasis on the entrance and exit barriers in a sector.

A SWOT analysis consists of three steps:

a) Internal analysis: **S**trengths and **W**eaknesses (section 3.1)
b) External analysis: **O**pportunities and **T**hreats (section 3.2)
c) Confrontation of the internal and external analysis (section 3.3).

Our unit of analysis in this SWOT analysis is *charity lotteries in the European Union*. This can be considered a subsector of the lotteries or games of chance market. In addition, we pay some attention to factors relevant to the Dutch (permanent) charity lotteries (Dutch Postcode Lottery, Sponsor Bingo Lottery and BankGiro Lottery), and the Dutch Postcode Lottery specifically, in separate boxes throughout this chapter. The strengths, weaknesses, opportunities and threats we will bring up may also affect economic actors other than the charity lotteries themselves, such as consumers, charity organizations, competitors and the government. These will be discussed throughout the following sections. A summary is given in Tables 3.1 and 3.2.

3.1 Internal analysis

The internal analysis deals with controllable factors for the charity lotteries, such as product concept, brand equity, costs and innovativeness. Strengths are internal strong points of the charity lotteries that enable them to take advantage of opportunities and withstand threats. This concerns unique resources such as knowledge and skills, products and services, customer base and alliances. Weaknesses are internal weak points that hinder the European charity lotteries from taking advantage of opportunities and make them vulnerable to threats from the environment.

3.1.1 Strengths

Strength 1: Product differentiation: utility from charity donations

The choice literature states that a consumer bases his purchasing decision for a lottery ticket on the utility he derives from it. The utility of a lottery ticket can be considered as the weighted sum of the utility derived from its product attributes, such as the ticket price, prize payout ratio, number of prizes, first prize or jackpot, etc. For charity lotteries, consumers also derive utility from the donations made to charity organizations. In other words, charity donations serve as an additional product attribute that other lotteries lack. This does not mean that lottery prizes and other

product attributes are not important for consumers. But it does imply that a charity lottery is more attractive to those consumers who derive utility from donating to charities than a comparable (state) lottery that transfers its proceeds to the treasury.

This strength relates to increased consumer benefits, because the lottery supply fits consumer preferences better. At the same time, it may put pressure on the position of other lotteries. In Chapter 4 we will show empirical evidence that charity lotteries and state lotteries are complements rather than substitutes. This implies that charity lotteries do not jeopardize the position of state lotteries, and can even enhance their sales. Currently this may not be well discerned by policymakers.

Strength 2: Attraction of new consumer segments

The product attribute of charity donations attracts new consumer groups to the lottery market. As stated, charity donations serve as an additional product benefit. Moreover, charity donations may serve as a justification to consumers who feel intrinsic reluctance to participate in games of chance. The consumer welfare of these new customer groups increases. Because of the attraction of new customer segments the total lottery market expands. Competing lotteries are not negatively affected because the total pie increases, and some of these new participants may even start to play in other games of chance as well (complementarity effect). Substitution effects also occur: some other leisure sectors may see their income decrease when the new lottery participants reduce their expenditure in these sectors. However, we expect that these effects are widely scattered over the economy, and will not hurt one sector specifically. The government may worry that because of new lottery players addiction problems will worsen, but we argue that this effect is only very limited or absent, because there is no evidence that lotteries are addictive (see also Threat 3).

Strength 3: Additional funds for charities

Charity lotteries raise additional funds for charity organizations. It appears that this income flow is not a pure substitute for direct donations. Charity organizations attract in particular consumer segments that traditionally do not donate heavily to charity organizations (Motivaction study 2006, 2007). Also, Canadian research provides evidence that consumers perceive charity lotteries as complementary to and not as substitutes for current direct donations (Peloza & Hassay, 2007). Rather, charity lotteries provide a communication platform for charity organizations to strengthen their position and popularity. In this way the charity lotteries enhance the consciousness of consumers about charity organizations. As a result the income for charity organizations increases, both through the charity lotteries and from direct donations. Note that this concerns additional funding that is transferred without government intervention, and is given in addition to possible government subsidies. In other words, it is by no means disguised taxation.

Strength 4: Solidarity (cross-funding) between charity organizations

Generally, lottery participants have no say in the exact distribution of charity funds. There is only a general statement to which group of charity organizations funds will be distributed. For instance, consumers who buy tickets for the National Postcode Lottery support good causes related to people and nature, whereas money raised from ticket sales for the BankGiro Lottery is distributed to good causes related to culture, and from the Sponsor Bingo Lottery to good causes related to health and well-being. This enables charity lotteries to subsidize charity organizations

that are not popular and have difficulty raising funds directly. The smaller charity organizations benefit from the popularity of other, well-known charity organizations to which the lottery donates, because these popular charity organizations are able to attract consumers to the charity lottery.

Box 3.1: Strengths of Dutch charity lotteries (DCL)

DCL Strength 1: Positioning within charity market
The Dutch charity lotteries have chosen to donate only to clearly-defined subparts of the charity market. For the NPL this is people and nature, for the BankGiro Lottery culture, and for the Sponsor Bingo Lottery health and well-being. These subparts do not overlap. As such, the permanent charity lotteries do not compete on charities. This clear positioning is a benefit in building up relationships with charity organizations and in discussion with policymakers. A clear positioning also serves as a benefit for consumers, though this effect is probably not too large as the exact positioning is not always well-known to consumers (Motivaction study 2006, 2007).

DCL Strength 2: Market share
The Dutch charity lotteries constitute more than one third of the total Dutch lottery and betting market (see Figure 1.2). This market share is high compared to that of charity lotteries in other European countries. Furthermore, it has a strong and growing position within the aggregate market for games of chance. The three permanent charity lotteries have 3.7 million participants (as at 2007): NPL 2.3 million, BankGiro Lottery 830,000 participants, and Sponsor Bingo Lottery 580,000 participants. Brand cognition is above 90% for all three charity lotteries (Mindworld, 2007). Because of its size it faces advantages of scale and is able to withstand external opportunities and threats.

DCL Strength 3: Customer loyalty
The Dutch charity lotteries handle a subscription system for participants. Participants play in the lottery continuously, unless they cancel their subscription. In other words, it requires a certain effort to be disloyal. As a result the Dutch charity lotteries have a stable, loyal customer base. For example, 76% of the current NPL subscriptions have lasted more than three years, and 64% more than five years. Customer loyalty is a strong competitive advantage in withholding new entrants and competitive attacks.

DCL Strength 4: Media value
The Dutch charity lotteries feature in several television programs (Miljoenenjacht, Een tegen100, Lingo). The NPL was the first to initiate this form of value creation and publicity. For consumers considering playing in the charity lotteries, television programs serve as the most important information source. Around 60% of prospective consumers use information from the television programs to support their participation decision (Motivation, Mentality study 2006). Furthermore, the charity lotteries make use of several national celebrity endorsers. More generally, the Dutch charity lotteries have a strong and innovative marketing policy.

Source: SEO Economic Research

Box 3.2: Strengths for Dutch Postcode Lottery (NPL)

NPL Strength 1: Market leadership
In 2006, the National Postcode Lottery had 2.3 million participants, with a total turnover of EUR 432 million. This gives a penetration rate of around 18%, given that there are approximately 13 million Dutch inhabitants 18 years and older. Given that participation mainly takes place on a household level we could state that penetration is in fact as much as 33%, given that there are approximately 7 million Dutch households. The other charity lotteries have lower participation numbers; as such, the National Postcode Lottery has market leadership within the charity lottery market.

NPL Strength 2: Unique product concept
The fact that the ticket number is linked to the participant's postcode is a unique product feature. It means that non-participants explicitly know when they would have won. The anticipated regret effects related to this serve as a motivator for participation in the National Postcode Lottery. In addition, this product feature may support a sense of community (see below). Consumer research shows that enjoyment of playing is evaluated relatively highly by participants of the National Postcode Lottery (Motivaction study 2006, 2007).

NPL Strength 3: Sense of community
The National Postcode Lottery enhances the sense of community in a neighbourhood, because most of the prizes are not drawn by participant but by postcode. This implies that a lottery player wins together with their neighbours. This enhances the feeling of community among people in neighbourhoods because they succeeded together. Television programs and prize-giving ceremonies enhance this sense of community.

NPL Strength 4: Highest first prize
The NPL has the highest first prize of lotteries in the Netherlands. It pays out a EUR 25 million prize in the so-called "Postcode Kanjer". The winner may have to share the prize with participating neighbours. The Dutch State Lottery gives a somewhat lower first prize of EUR 20 million in the New Year's Eve lottery.

NPL Strength 5: Skills for foreign entry
The Postcode Lottery has been launched in England, Scotland and Sweden, meaning that it has obtained export experience, which is unique for a charity lottery. Furthermore, the Dutch NPL has built up strong relationships with several worldwide charity organizations, such as Amnesty International, UNICEF and Greenpeace. The operator Novamedia can make use of these relationships when launching charity lotteries in other European countries. The charity organizations can explicitly help with the promotion of new charity lotteries in new countries, which is in their own interest after all. The relationships with international charity organizations also support the international image of the product concept. Overall, the NPL's broad experience with charity lotteries serves as a strong competitive advantage, specifically in countries in which charity lotteries have been completely absent until now.

Source: SEO Economic Research

3.1.2 Weaknesses

Weakness 1: Limited prize money

Charity lotteries distribute at least 40% of their revenues to charity organizations (cf. definition in Chapter 1), with Dutch charity lotteries transferring as much as 50%. This implies that, given the same revenues, less money is available for prizes than for lotteries that do not donate to charities. Given a cost level of approximately 20%, the prize payout ratio is at most 40%. This is considerably lower than for most state lotteries. As an example, the Dutch state lottery has a prize pay-

out ratio of at least 60%. As such, charity lotteries must realize higher sales to have the same amount of money available for prizes.

Consumers consider the low prize payout ratio as a less attractive aspect of charity lotteries. On the other hand, consumers may not be well aware of lower payout ratios, and only become dissatisfied after not having won anything for a long time. For 40% of the consumers who cancelled their participation in a charity lottery the low probability of winning a prize was one of the reasons for quitting (Motivation, Mentality study 2006). At the same time the low prize payout ratio of the charity lotteries serves as a competitive advantage for the state lotteries, at least in the Netherlands. The treasury may benefit if the state lotteries can increase their market shares based on this advantage.

Weakness 2: Positioning in two markets

Charity lotteries position themselves as lotteries and charity fundraisers. This causes a conflicting pressure on both prize payout and charity payout ratios. Given a fixed cost level, an increase in prizes reduces money available for charities and vice versa. Consumers want high prizes, but considerable charity donations as well. For charity lotteries it is a challenge to satisfy on both aspects, and to satisfy both consumers and charity organizations. Moreover, given strict legislation, charity lotteries have limited flexibility in deciding on the exact charity payout ratios.

Weakness 3: Risk of brand damage because of joint branding

Charity lotteries work closely together with charity organizations. Therefore, they may be held (partly) responsible for negative developments or rumours surrounding these charity organizations. Generally speaking, joint brands or products make the cooperating partners vulnerable to each other's actions, and especially to ones with negative associations. This is naturally two-sided: the actions of the charity lotteries also affect the charity organizations.

Weakness 4: Non-earmarked participation

Lottery participants have limited influence on the destination of the charity funds if their lottery participation is non-earmarked and the charity organizations receive non-earmarked donations. In the case of the Dutch charity lotteries, the only thing the consumer knows is that the funds are distributed among organizations in a specific subpart of the charity sector, and information is available on which organizations have received donations in the past. The consumer faces some uncertainty about how funds will be distributed in the future, but more importantly he has no say in it. When donating directly, a consumer has more control over the destination of the money.

However, for some lotteries participation is earmarked because the lottery is one-on-one linked to a charity organization (for example, the Zonnebloem lottery), or because a participant can purchase earmarked tickets (Sponsor Bingo lottery). Note that this is different from earmarked donations, which occur when charity organizations do not receive lump-sum funding but can spend the money received on a specific project.

Weakness 5: Low penetration and market share in many European countries

Charity lotteries play a significant role in a limited number of European countries, particularly the Netherlands, Sweden, the United Kingdom and Spain. In most European countries charity lotteries are absent or only play a marginal role, often at a local level only. Therefore, the awareness

and image-building of charity lotteries among the inhabitants of these countries still requires considerable effort. A related potential weakness is that some state lotteries position themselves as charity lotteries, when they are in fact raising funds for earmarked state activities, such as sport events. The unfamiliarity with charity lotteries in several European countries serves as a benefit for competitors and the treasury. When considering possible foreign entry into formerly closed national markets this is a disadvantage for charity organizations that miss out on potential additional funding from charity lotteries.

Box 3.3: Weaknesses of Dutch charity lotteries (DCL)

DCL Weakness 1: Low distribution intensity
The Dutch charity lotteries have no physical points of sale in shops, kiosks, etc., and therefore less visibility. This is, however, a conscious and strategic choice with clear cost advantages. Furthermore, through the subscription system the lotteries have built up a stable customer base. Still, one weakness resulting from this choice is that the charity lotteries have limited power for consumer acquisition outside the subscription format. For example, for an incidental extra draw they would have more difficulty attracting new consumers and stimulating impulse buying. Furthermore, the lotteries miss out on specific consumer segments that are reluctant to purchase through subscriptions, Internet or telephone. Competitive lotteries that have physical points of sale benefit from this.

DCL Weakness 2: National endowment
The Dutch charity lotteries have necessarily conformed themselves strongly to the Dutch situation and legislation, for example with respect to the number of draws, customer acquisition, charity donations, etc. Therefore, when exporting their product concept, they must adapt their concepts strongly to the national situation of the markets entered.

DCL Weakness 3: Knowledge of charity funding
Many lottery participants do not know to which charity organizations the charity lottery in which they participate makes donations. This is remarkable, because consumers can easily retrieve this information from the lottery website and it is communicated actively (for example, on the reverse of standard letters). Nevertheless, many participants specify the sectors to which the lottery donates incorrectly, incompletely or say they do not know. For the BGL the percentage of participants that do not know which organizations BGL donates to is 60%; for the SBL this is 33%, and for the NPL 20%. This ignorance may lead to wrong associations and misinterpretations of news and media items.

Source: SEO Economic Research

3.2 External analysis

The external analysis of a SWOT analysis deals with the relevant uncontrollable market factors, such as law and regulation, demographics and sociological developments. Opportunities are circumstances and developments that charity lotteries face which offer the potential to enhance or extend their position. In contrast, threats are circumstances and developments that could harm or weaken the position of charity lotteries in the European Member States.

3.2.1 Opportunities

Note that the opportunities mentioned for charity lotteries could also apply to other lotteries.

Opportunity 1: International expansion

Given the low penetration of charity lotteries throughout Europe, foreign entry is an important opportunity for existing charity lotteries to expand. They may make use of the resources they have built up through the operation of existing charity lotteries: experience, campaigns, services, etc. In the long run, charity lotteries can make use of advantages of scale by setting up shared service centres. Consumers in newly entered markets benefit from an extension of the lottery assortment. For national governments, international lottery operators imply a loss of control on national markets. For national competitors the entrance of new players is a clear threat.

The opportunity is not to create one large European charity lottery, but rather a national charity lottery in every European state. One European lottery would have two disadvantages over national lotteries. One important feature of a charity lottery is that the government has no hand in the determination of the beneficiaries and the distribution of proceeds among charity organizations. Consequently, the charity lottery must know the charity organizations in the market personally in order to make the right choices. A European lottery lacks this detailed market knowledge. Second, consumers who buy charity lottery tickets feel a bond with the charity organizations they know; these are often national organizations operating in the country where the consumer lives. Consumers are willing to buy tickets to support these familiar national charities, but are probably much less willing to buy tickets to support faraway, unfamiliar charities in other countries. Since only a few international charity organizations exist that consumers all over Europe can identify with (like UNICEF), it is advisable to create charity lotteries on a national basis.

Opportunity 2: Cooperation between charity lotteries

Next to expansion, an opportunity stems from cooperation between the existing charity lotteries in different countries. These could organize international prize draws, possibly combined with international television shows. Pooling the funds of different lotteries enables them to give higher first prizes and jackpots, thereby making their lotteries more attractive to consumers. International cooperation has proved highly successful in the EuroMillions lottery, a cooperation of state lotteries. It therefore serves as a clear opportunity for charity lotteries as well, but as a threat to the current EuroMillions lotteries. Under the current legislation, each individual lottery must obtain a license to participate in EuroMillions from its national government. Governments may argue that jackpots and extremely high first prizes lead to indulgence, and possibly to addiction.

Opportunity 3: Adoption of e- and m-commerce

The increasing penetration, adoption and usage possibilities of the Internet and mobile channels are an interesting opportunity. These can be used to advertise and communicate, and to facilitate the purchasing process. In principle, the use of e-commerce and m-commerce is an opportunity for producers in practically every sector of the economy. We argue that for charity lotteries they have specific interesting features:

- e- and m-commerce can be used as a statement and endorser of their innovativeness
- e- and m-commerce can be used for international expansion and reveal advantages of scale and lower transaction costs

- charity lotteries are often legally restricted in their advertising possibilities. New technologies mean more communication possibilities, despite the fact that e- and m-commerce are strictly regulated as well in most countries.

Because of e- and m-commerce, consumers can benefit from lower transaction costs. Usage of the Internet and mobile channels implies a loss of control for the government, and it requires additional efforts to achieve the same degree of market regulation. For competitors these new technologies could be used as an opportunity as well.

Box 3.4 Opportunities for Dutch charity lotteries (DCL)

DCL Opportunity 1: Adoption of e- and m-commerce

We argue that for the Dutch charity lotteries e- and m-commerce have specific interesting features.

- The Dutch charity lotteries have no physical points of sale and therefore lack regular personal contact with their consumers; Internet and mobile communication can create additional points of contact
- The Dutch charity lotteries base themselves strongly on interactive and direct communication, therefore the Internet is a congruent opportunity through which they can realize improvements in effectiveness and cost reductions.

Source: SEO Economic Research

3.2.2 Threats

Note that Threats 3 and 6 do not only apply to charity lotteries, but to state lotteries as well (see also Table 3.2).

Threat 1: Non-level playing field between lotteries

Charity lotteries often face a non-level playing field with respect to other lotteries and games of chance. This can relate to several aspects of regulation. Most obvious is the regulation on prize payout ratios, and on proceeds to be transferred to charity organizations or the treasury. Charity lotteries must transfer a minimum percentage of revenues to charity organizations (regulation on payout ratio to charities); other lotteries must return a minimum percentage of revenues as prizes (regulation on prize payout ratio). As such, charity lotteries have less flexibility to increase prizes in the event that their revenues increase than the other lotteries. Furthermore, it is also sometimes the case that the regulation on other lottery determinants – such as the number of draws – is different for charity lotteries than for other lotteries.

Threat 2: Competition between charity lotteries

Economic theory predicts that total charity funds raised are lower in a market (read: country) with several competing charity lotteries than in a market where there is only one charity lottery supplier (a monopolist). This will be explained in more detail in Chapter 4. The entry of new charity lotteries into a market is therefore a threat for both charity lotteries and charity organizations.

Apart from this, traditional lotteries may reposition themselves as charity lotteries. The charity aspect of the charity lotteries serves as a cue for attracting consumers. As a result, other lotteries (such as the Dutch lotto) try to reposition themselves as charity lotteries. For consumers it is

often unclear exactly what defines a charity lottery, because they lack complete market information on, among other things, charity donation rates (even though this information is available).

Threat 3: Associations with gambling addiction

Gambling addiction is an issue of concern related to games of chance, but mainly for short odds games. For long odds games, however, there is no evidence that gambling addiction occurs (De Bruin et al., 2005; Hendriks et al., 1997; Kingma, 1993). Lotteries, both state and charity lotteries, are long odds games. Furthermore, charity lottery consumers would appear less likely to be involved in other forms of gambling (Peloza & Hassay, 2007). Specifically, when one knows that the proceeds of a game of chance are going to charity, the "sting of losing" is decreased. The number of gambling addicts has decreased during the last decade in the Netherlands, and is marginal compared to the number of alcoholics or drug addicts. Nonetheless, lotteries are often associated with addiction. This has the potential to harm the reputation and image of lotteries, both state and charity lotteries. In the political arena in particular the topic of addiction serves as a serious threat to charity lotteries as it is used as an argument for strong market regulation.

Threat 4: Government failure

In many countries the government adapts its regulation very slowly to changes in market needs and innovations. For example, in the Netherlands the setting-up of an experiment into legalized Internet games has been in preparation for seven years already. Moreover, government policy is drifting, dependent on the policymakers in charge. Recently, we have observed some liberalization tendencies being reversed towards a very strict regulation policy. Furthermore, both in the EU and the Netherlands the court of justice is more or less replacing the role of the policymaker. Sometimes this is caused by the fact that policymakers refuse to give a clear interpretation to the current law. This way of operating creates uncertainty for market players. Investments and decisions may need to be reversed after policy changes, which causes unnecessary costs, slows down growth and harms innovativeness. Government failure is a threat to all games of chance, but we observe that state lotteries suffer less from this than charity lotteries, because the government and state lotteries share to a higher extent the same interests. Consumers and charity organizations suffer from government failure indirectly, because the available products do not completely satisfy their needs and the total funds raised for charity organizations are suboptimal.

Threat 5: Negative media rumours

Lotteries are vulnerable to negative media attention. A distinction can be made between rumours about games of chance or lotteries in general and rumours about issues surrounding charities and charity lotteries specifically. The first category is of concern to all lotteries; the second category only hurts the charity lotteries. For example, the media and politicians have argued that the distribution of charity funds takes place among a too limited group of beneficiaries. It has also been stated that charity lotteries are an expensive and indirect way to raise charity funds, which coincides with the idea that much of the money sticks to the fingers of its organizers. Given the fact that there have been stories to support this, consumers may decide that too little lottery money is getting through to the charity goals. Negative media attention can lead to a decrease in sales. Another possible consequence is that the government uses it as justification for intensifying its influence on the distribution of income flows of charity lotteries.

Threat 6: Internet games of chance

In most European countries it is prohibited to supply Internet games: games of chance which are processed entirely online. Free games are excluded from this prohibition. Offline lotteries and games are also allowed to use the Internet as an additional distribution channel. The reality is that the number of online games is growing rapidly. Internet games are often short odds games, which may trigger addiction, especially among young people. Many of these games and casinos circumvent legislation or are completely illegal. Illegal Internet games are a threat to charity lotteries (and state lotteries) for several reasons.

- Illegal Internet games have more flexibility because they do not operate within the boundaries of legislation. They can offer more attractive prize schemes, realize large-scale advantages, have limited transaction costs, and are not limited in the number of draws they can operate. As such, these games are a threat to the market share of charity lotteries and other existing lotteries.
- Illegal suppliers can also threaten the reputation of the games of chance sector as a whole, thereby harming charity lotteries as well. As a result, some consumers may withdraw completely from the market for games of chance. The government may use the operation of illegal suppliers as an argument for intensifying regulation. This would particularly affect legal organizations.

Box 3.5 Threats to Dutch charity lotteries (DCL)

DCL Threat 1: Foreign entry through Novamedia

By Dutch law, the Dutch charity lotteries are not allowed to offer their product or launch a charity lottery in other European countries. The operator and owner of the intellectual property of the Postcode Lottery, Novamedia, has launched similar lotteries in Sweden and England. However, Novamedia is a small organization with limited resources and international expansion takes place at a slower pace than if the Dutch charity lotteries were to launch the concept independently.

DCL Threat 2: Promotional games of chance

Dutch law allows promotional games with a maximum of thirteen draws per year. This allows many companies to organize small games of chance to promote their products. But many organizations can circumvent the maximum number of draws per year because they hold a wide assortment of products. The Dutch charity lotteries can also organize promotional games of chance. However, the prizes must come from their marketing budget and the number of draws is strictly limited to only thirteen games per year.

Source: SEO Economic Research

3.3 Confrontation of internal and external analysis

3.3.1 Confrontation and policy implications

The internal and external analysis discussed in the previous sections is summarized in Table 3.1.

By confronting the several dimensions of the SWOT analysis with each other, we can formulate the following conclusions and recommendations:

Table 3.1: SWOT matrix

	Positive	*Negative*
Internal	– S1: Product differentiation: charity donations serve as an additional product attribute that other lotteries lack – S2: The product attribute of charity donations attracts new customer groups to the lottery market – S3: Additional funds for charities (income flows from charity lotteries are not a substitute for but rather a complement to direct donations) – S4: Solidarity between charity organizations (because lottery participants do not have a say in the exact distribution of charity funds, charity lotteries are able to also subsidize charity organizations that are not popular and have difficulty raising funds directly)	– W1: Lower prize money because charity lotteries distribute at least 40% of their revenues to charity organizations – W2: Positioning in two markets: as a lottery and as a raiser of charity funds – W3: Risk of brand dilution because charity lotteries may be held (partly) responsible for negative developments or rumours relating to the charity organization they subsidize – W4: Non-earmarked participation: a lottery participant has limited influence on the destination of the charity funds if their lottery participation is non-earmarked and the charity organizations receive non-earmarked donations – W5: Limited penetration and market share: in most European countries charity lotteries are absent or only play a marginal role
External	– O1: International expansion: given the low penetration of charity lotteries throughout Europe, foreign entry is an important opportunity for existing charity lotteries to expand[28] – O2: Cooperation between the existing charity lotteries in different countries – O3: The increasing penetration, adoption and usage possibilities of Internet and mobile channels are an interesting opportunity, especially for charity lotteries (to support international expansion, advantages of scale, advertising and so on)	– T1: Unequal level playing field for lotteries (state versus charity lotteries) and for lotteries versus other games of chance (lotteries versus slot machines) – T2: Competition between charity lotteries will decrease the total funds raised for charity organizations – T3: Associations with gambling addiction, although in the case of long-odds lotteries gambling addiction does not occur in practice – T4: Government failure: in many countries the government adapts regulation very slowly to changes in market needs and innovation – T5: Lotteries are vulnerable to negative media rumours – T6: In most countries Internet games of chance are still forbidden

Source: SEO Economic Research

A. Market positioning

One weakness of charity lotteries is that they cannot match the level of prize payout ratios of other lotteries (W1). There are three main ways of dealing with this:

1. *Make prizes more attractive with the same prize payout ratio*

   Consumers do not only consider prize payout ratios, but also factors such as the probability of winning and the magnitude of the highest prize (Shapira & Venezia, 1992). Around 75% of participants in Dutch charity lotteries find the probability of winning a prize more important than the magnitude of the prizes (Motivation, Mentality study 2006). For 40% of the consumers who cancelled their participation the low probability of winning a prize was one of their reasons for quitting (Motivation, Mentality study 2006). Not winning a prize functions as a dissatisfier: participants expect to win a prize now and then. A charity lottery should obtain detailed knowledge on consumer prize preferences and optimize its prize schemes accord-

[28] Dutch lotteries are not allowed to use lottery money for international expansion; therefore, external investors must be found to enable foreign entry.

ingly. One opportunity for paying out high first prizes is through cooperation with other charity lotteries (O2).

2. *Stronger position towards charity benefits*
   For charity lotteries, charity donations are a means to differentiate their product from traditional lotteries (S1 and S2). Charity lotteries can make better use of this aspect by moving away from a positioning that centres on prizewinnings. Currently, an important reason why consumers purchase tickets for charity lotteries is that they can win prizes. This may be changed towards an additional positioning in which consumers see a charity lottery as a means to give money to charity organizations (under an umbrella). Some incidental lotteries, such as the *Grote Clubactie* are already positioned more like this. Below the line, what charity lotteries really need is more flexibility to choose prize and charity payout ratios, something that is currently almost absent (T1). Furthermore, charity lotteries must balance the preferences of consumers and their own goals. For example, consumers seem to prefer earmarked tickets (W4), but providing this opportunity to them implies abolishing the current solidarity between charity organizations that charity lotteries are pursuing (S4).

3. *Innovate on other product aspects*
   Consumers base their position mainly on prizes and charity donations. Nevertheless, additional product features may also contribute to product attractiveness. The NPL has been very successful with its concept of linking ticket numbers to the participant's postcode. Proper usage of Internet and mobile channels may be another fruitful way to innovate (if legislation allows) (O3). Though the directions in which charities should innovate are not straightforward, the NPL has shown that innovativeness can be a powerful weapon. In general, enhancing market positioning will make the charity lotteries less vulnerable to new entrants, such as Internet lotteries, as well (T6).

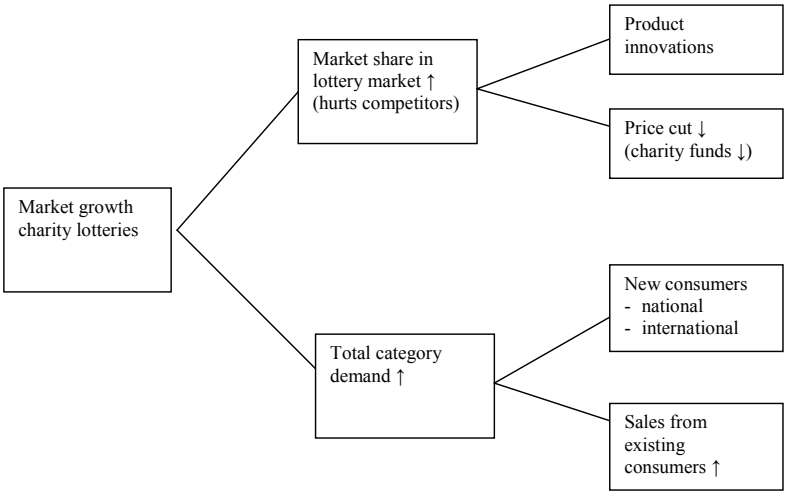
B. Market growth strategy

Organizations can realize growth in different ways: Figure 3.1 shows the most important growth strategies for charity lotteries. Charity lotteries can realize market growth by increasing *market share* in the lottery market or by increasing total *category demand*. Category demand is the total revenues realized in the lottery market. Given a certain category demand, charity lotteries can grow through realizing a higher market share (a larger piece of the pie). But we argue that increasing category demand (a larger pie) is the most promising way to realize long-term growth.

An increase in market share hurts competitors (their market share will decrease) and may therefore trigger competitive reactions. It may also trigger reactions from policymakers. A strong state lottery is in their interest, because state lotteries transfer money to the treasury. When charity lotteries compete against each other and realize market share growth, this implies a reduction in the total funds available for charity organizations (T2). Increasing market share can occur through product innovations (television programs, new prizes or prize draws, etc.) or through price cuts. Within the lottery market the ticket price can be used somewhat flexibly: the Dutch state lottery has relatively high ticket prices, but offers the possibility of shared tickets. The tickets for charity lotteries are cheaper, so the lotteries actively try to sell more than one ticket per subscriber.

An increase in category demand can be realized through attracting new consumer groups or through increasing the total expenditures of existing consumer groups. Convincing existing consumers to purchase more tickets or participate in extra draws can realize market growth, but seems a relatively limited growth strategy. The NPL actively tries to convince participants to expand the number of tickets they purchase. This has been partly successful, but the retention rates of these new additional tickets are lower than for new participants. Increasing new consumer groups (S2) within existing countries or expanding into countries without charity lotteries (O1) therefore offers the best advantages.

Figure 3.1: Market growth strategies



Source: SEO Economic Research

C. Relationships with charity organizations as a stepping stone

Relationships with charity organizations are a valuable asset for charity lotteries (S3). It is important to leverage these relationships optimally. Charity lotteries can benefit from them in several ways:

- Charity organizations can promote charity lotteries (for example, in their magazines)
- Charity organizations have built a reputation, consumer awareness and knowledge, from which the charity lotteries can benefit
- Charity lotteries can benefit from charity organizations' networks; more specifically, they can gain support from their contacts and communication with policymakers.

A potential threat is that charity lotteries suffer from image problems and incidents relating to charity organizations. Charity lotteries must make themselves resistant to these by building a strong image for themselves. We will discuss this below.

D. Invest in image building

Charity lotteries are less sensitive to developments concerning charity organizations when their own brand equity is high. Furthermore, charity lotteries are less vulnerable if they sponsor a wide variety of charity organizations (such as the NPL) than if they cooperate with one or a small set of charity organizations. Brand equity can be enhanced in two ways:

1. *Enhance brand cognition*
   Consumers must first of all have access to sufficient information about the operations of the charity lotteries and their results. Charity lotteries must ensure that information is available to consumers (on their website, for example), but they must also ensure that the information does in fact reach consumers (for example, by actively communicating it in advertisements, brochures and to the press). The NPL has built up high brand awareness; practically every Dutch inhabitant knows of the NPL. However, Dutch people may not be very aware about facts such as the odds of winning, prize payout ratio, payout ratio to charity organizations, etc.

2. *Enhance brand attitude*
   Apart from cognitive aspects, consumers must have positive emotions and feelings towards the brand or organization. A proper communication policy and positive consumer experiences can ensure this. As discussed, negative media rumours (T5) and the actions of charity organizations (W3) may damage brand equity.

E. Legal strategy and government relationships

In section 1.2.3 ("The public interest at play") we conclude that the justification for the present Dutch policy is mainly non-economic (paternalism) and only partially economic (preventing information problems and money laundering). Moreover, we observed government failures, namely too much regulation and some inconsistencies in the current policy (as it is caught between two thoughts: restriction and encouragement). Moreover, Dutch policy is too general, and differentiates very little in terms of the degree to which the various games are addictive. In this SWOT analysis we identified these issues in terms of the non-level playing field (T1) and government failure (T4).

In order to cope effectively with these threats it is important to develop a legal strategy that will iron out these inconsistencies and harmonize regulation on a national level. By liberalizing the national market, it will be very hard to stop foreign suppliers from entering the Dutch market. Because Dutch lotteries are not allowed to enter foreign markets this strategy may not be beneficial in the long run. In other words, picking the right strategy is not straightforward at all.

Also, it is important to discuss the reasons behind the government's intervention in the market for games of chance. In order to make constructive discussion possible it is essential to establish a good relationship with government officials. What are their ideas on gambling addiction and lotteries? And how can better, objective information change these ideas? How much regulation is necessary in order to prevent money laundering with money from charity lotteries? How problematic is this in practice? What is the appreciation of the Dutch government of the charity work of the lotteries? To sum up, it is necessary to identify what the current ideas and impressions of government officials are and how the charity lotteries can improve this information with objective numbers and data.

3.3.2 The impact of the SWOT on other economic actors

Table 3.2 summarizes how the dimensions discussed in the SWOT analysis affect other economic actors: consumers, other lotteries, charity organizations and the government. We will discuss these effects briefly below.

Table 3.2: The impact of SWOT dimensions on other economic actors

	Consumers	Other lotteries	Charity organizations	Government
S1: Product differentiation	+	0/-	+	0/-
S2: Attraction of new consumer segments	+	0/+	+	0
S3: Additional funds for charities	0	0	+	0
S4: Solidarity between charity organizations	0	0	0/+	0
W1: Lower prize money	-	+	0	+
W2: Positioning in two markets	0	+	0	+
W3: Risk of brand damage	0	+	-	0
W4: Non-earmarked participation	-	0	0	0
W5: Low penetration and market share	-	+	-	+
O1: International expansion	+	-	+	-
O2: Cooperation charity lotteries	+	-	+	-
O3: Adoption of e- and m-commerce	+	+	0	-
T1: Unequal level playing field	-	+	-	+
T2: Competition between charity lotteries	0	0	-	-
T3: Associations with gambling addiction	-	-	-	+
T4: Government failure	-	0	-	0
T5: Negative media rumours	-	0/-	-	+
T6: Internet games of chance	+	-	-	-

Source: SEO Economic Research

Consumers

Consumers mainly benefit from the strengths and opportunities of charity lotteries. In many countries charity lotteries are not available or only exist on a limited scale, or the government interferes heavily in the distribution of charity funds from such lotteries. The entry of charity lotteries into the market represents an extension of the available games of chance. An assortment extension (product differentiation in economic terms) will increase consumer welfare, at least for consumer segments that value the product attribute of charity donations.[29] Product innovations through cooperation between charity lotteries and implementation of new technologies are an improvement of the product concept, from which consumers benefit. At the same time, consumers also benefit from product differentiation of competing suppliers, such as Internet lotteries. The government may argue that free entry of lottery suppliers is fraught with dangers. The government should indeed take care that information asymmetries are resolved: consumers must have sufficient information on the lotteries and be sure that they are operated fairly. But other arguments are often based on paternalistic grounds or unjustified (such as addiction problems with respect to lotteries). Therefore, we cannot underwrite them on economic or other objective grounds (see section 1.2.4 for an elaboration on these points).

[29] Product differentiation implies that the available products in a market match consumer preferences better. However, product differentiation also enhances the market power of the suppliers, and as a result prices may increase.

Other lotteries

Charity lotteries may weaken the position of other lotteries if they gain market share in a non-growing market. However, if charity lotteries attract new consumer groups[30] the existence or entry of charity lotteries is neutral or may even enhance the position of other lotteries. Chapter 4 provides empirical evidence of this.

The charity lotteries' weaknesses of lower prize money, risk of brand damage and positioning in two markets serve as a competitive advantage to other lotteries. Other lotteries benefit from the unequal level playing field between different games of chance, which in most cases leaves the charity lotteries behind. A strengthened position of charity lotteries implies a weakened position for other lotteries, and vice versa. But lotteries collectively suffer from associations with gambling addictions and illegal suppliers. Moreover, Internet games of chance are a threat to all traditional lotteries.

Charity organizations

Charity organizations benefit from the introduction of charity lotteries because it increases their available funds and introduces a kind of institutional support. It attracts new consumer groups who do not donate funds directly. Charity lotteries may also benefit in terms of increased brand awareness and knowledge. This can trigger lottery participants to give (more) direct donations to charity organizations. Some charity organizations benefit from the fact that charity lotteries mainly supply non-earmarked tickets and subsidize less popular organizations. Competition among different charity lotteries leads to a decrease in the total charity funds raised through lotteries.

Charity organizations and charity lotteries have mainly shared interests. The cooperation of charity lotteries with charity organizations makes them vulnerable to each other's actions, which is a threat to both parties. Charity organizations should take care that they do not become dependent on funding from charity lotteries (Azmier & Rach, 2000). The charity organizations must also determine whether fundraising through games of chance is ethical according to their direct donors and in line with the organization's goals. For some categories of organization, for example those with a religious background, this appears to be a relevant issue (ibidem).

Government

The government benefits from the strong position of state lotteries, because these provide additional funds for the treasury. It is therefore in their interest to maintain the existing unequal level playing field and limit the competitive advantages of charity lotteries. Furthermore, it is easier for the government to solve information asymmetries and prevent addiction when there are a very limited number of suppliers and a closed economy. Internationalization and Internet games imply a loss of control for the national governments. Because of this, the government partly benefits from negative rumours about charity lotteries, because it can use these as an argument to keep considerable control over the sector.

[30] Namely, some new lottery consumers may start to play in other games of chance as well.

Conclusion

The SWOT analysis shows that there are several opportunities for charity lotteries. Existing charity lotteries can realize growth through growth in their home countries or international expansion. National growth can be realized through optimizing prize schemes, cooperating with other lotteries to give higher first prizes, and making use of technological innovations such as e- and m-commerce. In many countries charity lotteries are small or absent and there seems to be sufficient space for market growth. Given the high penetration and market share of the NPL within the Netherlands, market growth through international expansion seems most promising for the owner of the intellectual property of the Postcode Lottery (Novamedia). Novamedia has made the first steps towards international expansion. The NPL can make use of its unique product concept, innovative marketing assets and relationships with charity organizations and celebrities.

At the same time, charity lotteries find themselves confronted with a number of threats. Charity lotteries often face an unequal level playing field with respect to other lotteries and games of chance. Furthermore, they are vulnerable to negative media rumours, government failure, and Internet games. The economic reality is that in markets with many charity lotteries the total funds raised for charity organizations decrease. As such, competition is a serious threat for charity lotteries. We will elaborate on this in the next chapter.

4 Analysis and propositions

Given the fact that the Dutch government has various regulatory options, what would – from a welfare economic perspective – be the optimal option? Is opening the national market to charity lotteries a wise thing to do for governments whose treasury partly depends on revenues collected by state lotteries? How many charity lotteries should be allowed to enter the national market? Should a government opt for the monopolistic model or for the competition model? Should the government set the same rules for state lotteries and charity lotteries (level playing field)?

In this chapter we answer these questions by analysing three propositions concerning the liberalization of charity lotteries. These propositions follow from the analysis in the previous chapters and address the key elements in the discussion.

Proposition 1: Charity lotteries are not substitutes for the state lottery, but complementary or independent.

Proposition 2: A large supplier in the market for charity lotteries (monopolistic model) is to be preferred over several small suppliers (competition model) because it maximizes total funds raised for charity organizations.

Proposition 3: Product differentiation for charity lotteries entails positive welfare effects.

The three propositions are discussed in the following sections (4.1-4.3). Each section starts with a theoretical explanation of the proposition. It then proceeds to a subsection that provides empirical support. We finish the discussion of each proposition with policy implications.

For the empirical investigation, we make use of data and observations from countries that currently have charity lotteries. These markets can yield empirical evidence of the effects of the coexistence of state and charity lotteries. In Europe there are three countries in which charity lotteries operate on a significant scale: the Netherlands, Sweden and Spain. We analyze the developments in these countries over time, and compare the situation in these countries with comparable countries without charity lotteries. To repeat briefly what was mentioned in Chapter 2, in Sweden charity lotteries have a long tradition and several lotteries operate alongside each other. The largest players are Bingolotteriet, Miljonlotteriet, Kombilotteriet and the Swedish postcode lottery (SPL). In the Netherlands, three charity lotteries operate (NPL, BGL and SBL), but they are all embedded in one mother organization (Novamedia). In Spain, the charity lottery ONCE operates alongside a dominant state lottery. ONCE is not a charity lottery according to the definition that at least 40% of revenues must be distributed to charity organizations. However, ONCE sells lottery tickets through blind selling agents, thereby supporting good causes directly through the service operation process. Therefore, we also consider ONCE as a charity lottery for the sake of this analysis.

4.1 Relationship between the demand for state and charity lotteries

4.1.1 Description

A crucial issue in determining appropriate lottery regulation is how the demand for state lotteries and the demand for charity lotteries are interrelated. Any two products (markets) can be substitutes, complements or independent.

Two products are substitutes if consumers make a choice between the two, such as for coffee or tea. In economic terms this shows up through a negative cross-price elasticity. When the price of one of the two decreases (e.g. coffee), total demand for this product increases but it decreases for the substitute (tea).

Two products are complements if purchase and usage of one stimulates purchase and usage of the other, such as coffee and sugar. Economically this results in a positive cross-price elasticity. When the price of one of the two decreases (e.g. coffee), total demand for both this product and for the complement (sugar) increases.

A third option is that the products have no relationship, and the markets for these products function independently (e.g. coffee and toys). In this case the cross-price elasticity is zero. A price decrease for one of the two products (e.g. coffee) has no consequences for the demand for the other (toys).

The relationship between state lotteries and charity lotteries is not straightforward. If charity lotteries and state lotteries are substitutes an increase in the revenues of charity lotteries leads to a decrease in the revenues of state lotteries. If the charity lotteries are complements, an increase in the revenues of charity lotteries has a positive effect on the revenues of state lotteries. In the case of independent lotteries the growth of charity lotteries has no influence on the market developments of state lotteries.

Therefore, the entry of charity lotteries in a country may affect state lotteries in one of the following ways. State lotteries either:

1) get a smaller part of a given pie (substitutes)
2) get part of a larger pie, total revenues increase (complements)
3) stay unaffected; a new market (pie) arises.

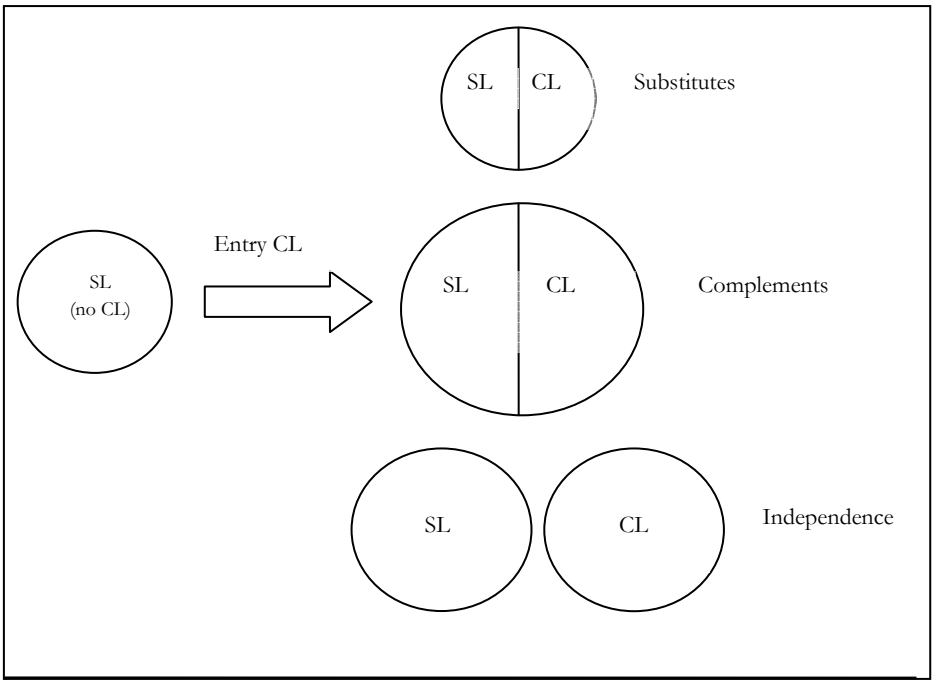
Figure 4.1 on the next page illustrates this.

We argue that it is unlikely that charity lotteries and state lotteries are substitutes, because their product attributes are crucially different. Whereas state lotteries position themselves based on their prize payout ratio, charity lotteries must divide their revenues among both prizes and charity donations. Charity lotteries use these charity donations as a product benefit and a justification for participation, thereby attracting other consumer segments that participate with different motivations to consumers in state lotteries (cf. section 3.1.1). It also tempers consumer expectations with respect to prizewinnings.

Existing literature provides some evidence for the proposition that charity lotteries are not substitutes. A qualitative study among Canadian charity lottery players shows that consumers of charitable lottery tickets are more likely to perceive purchases as a donation than gambling. Most charity players revealed that if they were to actually win something, it would be perceived as "just a bonus" (Peloza & Hassay, 2007). We therefore propose the following:

Proposition 1: Charity lotteries and state lotteries are not substitutes but complements or independent products.

Figure 4.1: Possible relationships between state lotteries (SL) and charity lotteries (CL)



Source: SEO Economic Research

4.1.2 Empirical evidence

To empirically inspect the first proposition, we compare the revenue developments of state lotteries in countries with charity lotteries (Spain, the Netherlands and Sweden) with those in countries without charity lotteries that fit our definition in the period studied here (1996–2006) (UK, Denmark and Norway).[31] Furthermore, we investigate the relationship between revenue growth of charity lotteries and revenue growth of state lotteries within Spain, the Netherlands and Sweden. Finally, we consider the overlap in participation in state lotteries and charity lotteries on the consumer level in the Netherlands. We use the term 'state lotteries' for all lotteries which are not charity lotteries; the Dutch lotto is atypical because it is a private organization but it is neither a state lottery nor a charity lottery. The term state lottery (a better term would be 'non-charity lot-

[31] These countries are often compared in international comparisons because of their similar institutional context and scale. The term charity lotteries is defined according to our definition as given in section 1.1.1, which means that a lottery without a permanent license is not a charity lottery.

tery') refers in the case of the Netherlands to both the state lottery and the lotto; in section 4.2.2 we make a distinction between the two games.

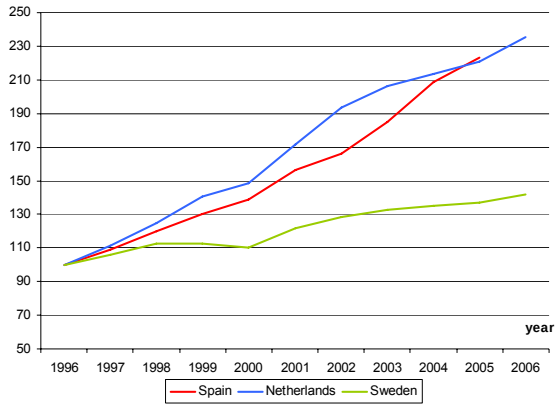


Figure 4.2: Revenue development for state lotteries in countries with charity lotteries (1996=100, corrected for inflation)
Source: SEO Economic Research

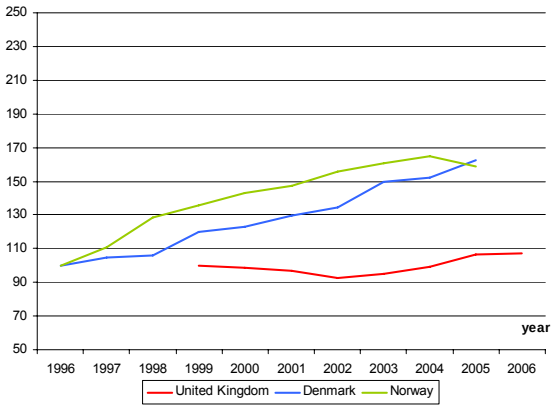


Figure 4.3: Revenue development for state lotteries in countries without charity lotteries (1996=100, corrected for inflation)
Source: SEO Economic Research

There is no evidence that revenue growth for state lotteries in countries with charity lotteries is lower than for comparable countries without charity lotteries. Figures 4.2 and 4.3 show how the revenues for state lotteries have developed over time for the three European countries with charity lotteries (Figure 4.2) and for three comparable European countries without charity lotteries (Figure 4.3). Sweden can best be compared with Norway (although it is not an EU Member State the similarities between both countries in many aspects led us to include this country in our analysis), the Netherlands with Denmark, and Spain with the United Kingdom. We took 1996 as the base year and set the total revenues in 1996 to 100. The developments since then concern real revenue growth, that is, growth corrected for inflation.

The graphs reveal that the state lotteries in Spain, the Netherlands and Sweden have grown in real terms since 1996. For Spain and the Netherlands real revenues have more than doubled. Furthermore, there is even some indication that the state lotteries have grown stronger than in countries without charity lotteries. For example, the Dutch state lottery has grown more than the Danish state lottery, and the Spanish state lottery has grown more fiercely than the UK state lottery. For Sweden we observed the opposite, because the state lottery in its neighbouring country without a charity lottery (Norway) witnessed larger growth. However, the differences are small, and the Norwegian state lottery has recently been in decline, whereas Swedish state lottery revenues are still growing. In sum, the figures above provide support for the proposition that state lotteries and charity lotteries are not substitutes.

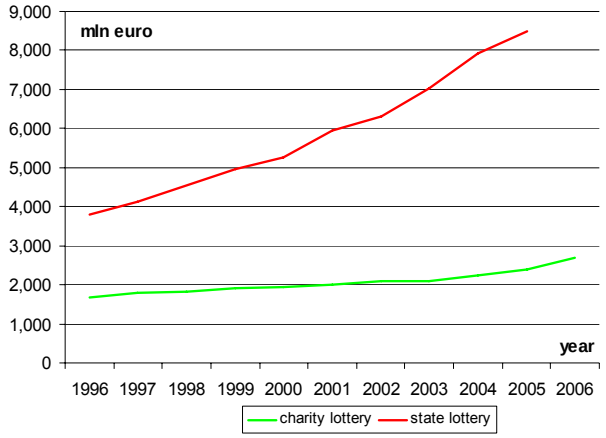


Figure 4.4: Real developments of charity lotteries and state lotteries in Spain

Source: SEO Economic Research

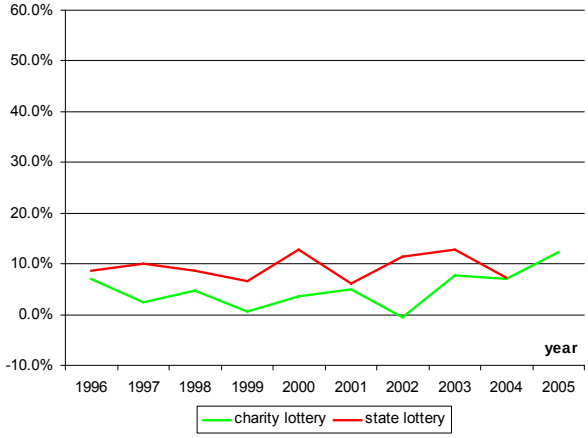


Figure 4.5: Real percentage growth of charity lotteries and state lotteries in Spain

Source: SEO Economic Research

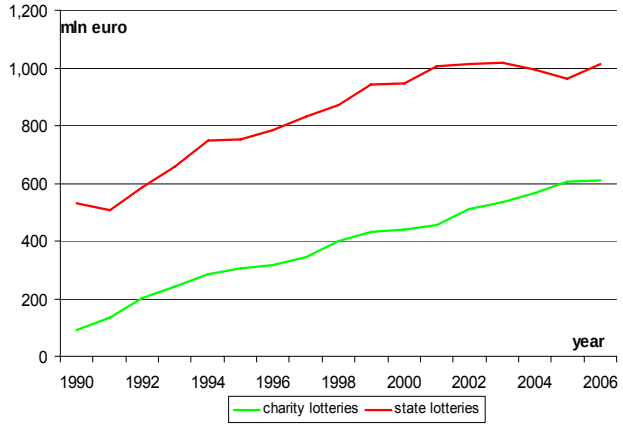


Figure 4.6: Real developments of charity lotteries and state lotteries in the Netherlands

Source: SEO Economic Research

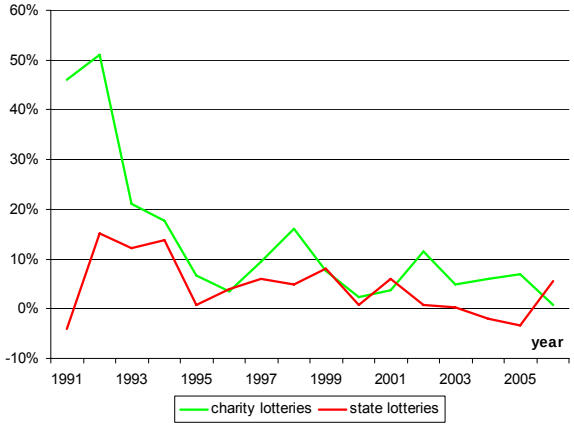


Figure 4.7: Real percentage growth of charity lotteries and state lotteries in the Netherlands

Source: SEO Economic Research

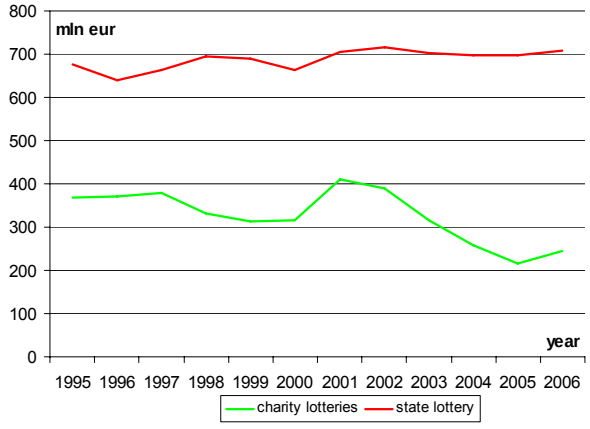


Figure 4.8: Revenues of charity lotteries and state lotteries in Sweden (in 2006 euros)

Source: SEO Economic Research

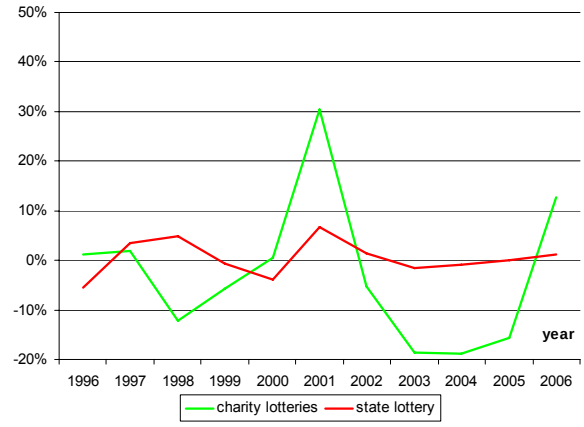


Figure 4.9: Real percentage growth of charity lotteries and state lotteries in Sweden

Source: SEO Economic Research

A visual inspection of the developments of charity and state lotteries in Spain, the Netherlands and Sweden does not indicate that the two lottery formats are substitutes either (Figures 4.4 to 4.9); that is, there do not seem to be counteractive developments for the revenues of state lotteries and charity lotteries in these countries.

In Spain, both the charity lottery and the state lottery have grown practically every year during the past decade (with the exception of charity lotteries in 2002) (see Figures 4.4 and 4.5). In some years the growth of the charity and state lottery accelerated (for example, 1999–2000) or slowed down (1998–1999) together, whereas in other years the growth rates moved in the opposite direction for the state and charity lotteries (2000–2001 and 2001–2002). On average, the growth rate for the state lottery has been higher than for the charity lottery.

In the Netherlands, charity and state lotteries have grown by the same amount. The growth rates of state lotteries and charity lotteries show similar patterns, except for 2005–2006. On average, the charity lotteries grow faster than the state lotteries.

In Sweden, we observe stable revenues for the state lottery and a decreasing market for charity lotteries. In recent years, the growth rates of both have shown similar patterns. A boost is observed for both state and charity lotteries during 2000–2001, followed by steeply decreasing growth rates in the years thereafter. Until 2000, the charity and state lotteries had different growth patterns. From the visual inspection of Figures 4.4 to 4.9, state lotteries and charity lotteries appear not to be substitutes.

To formally investigate whether the revenue growth of charity lotteries affects the growth in revenues for state lotteries (in percentage terms, as graphically depicted in Figures 4.5, 4.7 and 4.9), we conduct a regression analysis. Regression analysis investigates linear relationships between two or more variables. We investigate how the revenue growth of charity lotteries (in percent, corrected for inflation) affects the growth of state lotteries in terms of percentage. In formal terms, we estimate the following model:

$$\frac{REV.SL_t - REV.SL_{t-1}}{REV.SL_{t-1}} = \beta_0 + \beta_1 * \frac{REV.CL_t - REV.CL_{t-1}}{REV.CL_{t-1}} + u_t$$

where:

$REV.CL_t$ = revenues for charity lotteries in period t (corrected for inflation)
$REV.SL_t$ = revenues for state lotteries in period t (corrected for inflation)

Table 4.1 presents the model results. For none of the three countries does the growth rate of charity lotteries affect the growth rate of state lotteries (see Table 4.1); that is, none of the beta-coefficients is statistically significant.[32] This supports the proposition that state lotteries and char-

[32] The statistical significance of a result is the probability that the observed relationship (e.g. between variables) in a sample does not occur by pure chance ('luck of the draw'), and that in the population from which the sample was drawn no such relationship or differences exist. Using less technical terms, one could say that the statistical significance of a result tells us something about the degree to which the result is 'true' (in the sense of being 'representative of the population').
More technically, the p-value represents a decreasing index of the reliability of a result. The higher the p-value, the less we can believe that the observed relation between variables in the sample is a reliable indicator of the relation between the respective variables in the population. Specifically, the p-value represents the probability of error that is involved in accepting our observed result as valid, that is, as 'representative of the population'. For example, a p-value of 0.05 indicates that there is a 5% probability that

ity lotteries are not substitutes, in which case the beta-coefficient would have been significantly negative.

Furthermore, it indicates that the markets for state lotteries and for charity lotteries are relatively independent. The regression analysis does not indicate that a statistically significant relationship between the two exists.

Table 4.1: Regression analysis for state lottery growth

	Netherlands		Sweden		Spain	
	β	*t*-value	β	*t*-value	β	*t*-value
Model coefficients:						
Constant	0.03	1.37	0.007	0.68	0.09	5.76***
CL_t	0.12	1.16	−0.03	1.31	−0.03	−0.94
Model fit:						
R^2	0.09		0.16		0.001	
DW-statistic	1.57		1.89		2.94	

Source: SEO Economic Research

*** p<0.01, ** p<0.05, * p<0.10

We repeat that for the sake of the empirical analysis for the Netherlands we consider both the state lottery and the lotto as state lotteries. The term 'state lotteries' is in fact incorrect for the Netherlands; 'non-charity lotteries' would be a more correct label. To further explore the market relationship between the state lottery, lotto and charity lotteries, a second regression analysis was conducted. In this analysis we explain the growth rate of the 'real' state lottery out of the growth rate of charity lotteries and the growth rate of lotto. The results provide the following striking insights (see Table 4.2).

It appears that charity lotteries have a positive effect on state lotteries, whereas the lotto has a negative effect on the state lottery. When the charity lottery revenues increase by 1%, the model predicts that the revenues for the state lottery (and therefore the money transferred to the treasury) will grow by 0.36%. When the lotto revenues (and similarly the money transferred to good causes) increase by 1%, the model predicts that the revenues for the state lottery (and therefore the money transferred to the treasury) decrease by 0.15%. In other words, this analysis indicates that the lotto and state lottery are substitutes, whereas charity lotteries and state lotteries are complements.

the relation between the variables found in our sample is a 'fluke'. In other words, assuming that in the population there was no relation between those variables whatsoever, and we were repeating experiments like ours one after another, we could expect that in approximately every 20 replications of the experiment there would be one in which the relation between the variables in question would be equal or stronger than in ours. In many areas of research, the p-value of 0.05 is customarily treated as a "borderline acceptable" error level.

Table 4.2: Regression analysis for state lottery growth

	Dependent: state lottery + lotto		Dependent: state lottery	
	β	*t*-value	β	*t*-value
Model coefficients:				
Constant	0.03	1.37	0.04	1.83*
CL_t	0.12	1.16	0.36	3.40***
$Lotto_t$			−0.15	−2.68**
Model fit:				
R^2	0.09		0.55	
DW-statistic	1.57		1.83	

Source: SEO Economic Research

*** p<0.01, ** p<0.05, * p<0.10

Another way to empirically inspect complementarity is to consider consumer level data. Table 4.3 shows the overlap in participation between the charity lotteries and the public lotteries (state lottery and lotto) in 2006 (Motivaction study 2006, 2007). This table reveals that considerable overlap exists in participation between the charity lotteries and the public lotteries. Around 40% of charity lottery participants also play in the state lottery, whereas only 24% of the total population participates in the state lottery. Similarly, for the lotto the penetration is higher for the charity lottery participants (between 19% and 36%) than for the entire population (11%). In other words, participants of charity lotteries are more likely to play in public lotteries than consumers who do not play in charity lotteries. This implies that participation in a charity lottery and a public lottery is not exclusive. This supports our findings that charity lotteries and state lotteries are not substitutes, but rather complements.

Table 4.3: Overlap in NPL lottery and state lottery participation

	Penetration Population	Penetration NPL participants	Penetration BGL participants	Penetration SBL participants
State Lottery	24%	44%	39%	39%
Lotto	11%	19%	27%	36%

Source: Motivation 2007

4.1.3 Policy implications

When state lotteries and charity lotteries are substitutes, the entry of charity lotteries into new markets (countries) is a threat for the state lottery, and therefore for the treasury. However, both theoretically and empirically we do not have indications to assume that they are indeed substitutes. Rather, empirical support exists for the complementarity of charity and state lotteries. Our results indicate that the entry of charity lotteries would lead to an increase in the revenues for state lotteries. The empirical analysis of the Dutch, Swedish and Spanish lottery markets does not provide evidence to support a policy that prevents charity lotteries from entering the market.

In short, charity lotteries that enter a national lottery market do earn market share at the expense of the incumbent state lotteries, but at the same time enhance the total market earnings in such a way that the revenues for state lotteries are increased.

We therefore advise policymakers to open their markets to charity lotteries. Charity lotteries will enhance (consumer) welfare. Based on their popularity in the Netherlands, Sweden and Spain, we may conclude that charity lotteries fulfil certain consumer needs. Moreover, they stimulate welfare by raising funds for good causes.

Furthermore, we advise policymakers in countries where charity lotteries have already entered the market not to be reluctant in giving charity lotteries space to develop and grow. In the worst case scenario, the state lottery is unaffected by charity lotteries' success, but it may very well be that the state lottery and consequently the treasury would even benefit from deregulating the charity lottery market.

4.2 Charity funds maximization through a charity lottery monopoly

4.2.1 Description

Economic theory predicts that total charity funds raised are lower in a market (read: country) with several competing charity lotteries than in a market where there is only one charity lottery supplier (a monopolist). Below we explain this counterintuitive fact that a monopoly would in this specific case be welfare-increasing in comparison to competition.

To explain why a monopoly in the market for charity lotteries is optimal from an economic perspective, we will illustrate and compare two extremes. In the first situation, there is only one supplier, a monopolist. We assume that the monopolist is a private player that aims to operate efficiently. In the case of a public monopolist the incentive to maximize proceeds is weaker, perhaps because other goals come into the equation as well. In the second situation there are *many* suppliers, i.e. a market of perfect competition.

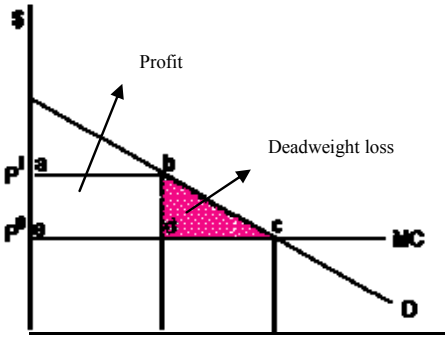
In Spain, the charity lottery supplier is a monopolist. In Sweden, with its many charity lotteries, the market situation converges towards perfect competition. In the Dutch situation, there is one operator (Novamedia) supplying three different brands (lotteries); we will call this a monopolist with a product portfolio.

In a lottery market with a monopolist and no entry possibilities for a second player, the monopolist will set its price according to the demand for lottery tickets. The price in a lottery market is defined as the ticket price minus the average payout in prizes. This can be considered as the (average) price a consumer pays for a lottery ticket. As for most goods and services, the demand for lottery tickets decreases when the lottery prices increase (e.g. when the payout ratio decreases). In Figure 4.10 the lottery demand is depicted by the diagonal D with price (P) on the vertical axis and number of lottery tickets sold (Q) on the horizontal axis. In the lottery market the product of price (P) and number of lottery tickets sold (Q) is equal to the gross gaming revenues. We assume the marginal costs to be fixed[33], and these are depicted by the horizontal line MC. The lottery

[33] The argument becomes even stronger when marginal costs decrease with the number of tickets sold, something that seems realistic for charity lotteries.

proceeds are equal to the difference between the gross gaming revenues and the costs (= marginal costs (MC) * lottery tickets sold (Q)).

Figure 4.10: Demand and supply under a monopoly and perfect competition



Source: SEO Economic Research

In the example a monopolist sets its price at p^1. The monopolist maximizes proceeds by maximizing the area **abde** (which shows the realized proceeds given p^1) in Figure 4.10. It realizes this by setting its price at such a level that a price increase decreases the number of tickets sold to such an extent that the total proceeds decrease, and that a price decrease increases the number of tickets insufficiently to compensate for the price cut. In other words, if the prize payout ratio is too low the lottery supplier makes high proceeds per ticket but too few people purchase a ticket, and at a high payout ratio a lottery operator sells many tickets but makes low proceeds per ticket. Note that the realized proceeds are in fact equal to the money available for good causes. The area **bcd** depicts the deadweight loss, a loss of economic efficiency because some people who benefit more from the product than the marginal cost are not buying the product in the case of a monopoly.

The second situation involves perfect competition with 'many'[34] suppliers. Given that the suppliers compete for market share, prices come under downward pressure. A price increase implies a decrease in the proceeds realized by the lottery suppliers. In the end the market price will be equal to the marginal cost per lottery ticket (shown as p^0 in Figure 4.10). In this situation, revenues just cover the costs of the charity lotteries. This implies that no funds at all are raised for good causes.

A scenario involving two or three suppliers will take a position in between the situation of the monopolistic model and the perfect competition model. The aggregated proceeds of all market players will be between the proceeds of the monopolist and zero. In a market, each additional supplier will decrease lottery proceeds. Because of this reasoning, a monopoly situation for charity lotteries is optimal because it raises maximum funds for charity organizations. Given that charity lotteries transfer all their proceeds to charity organizations, a monopoly raises more charity funds than suppliers in competitive markets do collectively.

[34] What is meant by 'many' depends on the economic situation; the number of suppliers does not need to be high if the market players supply a homogeneous product and face approximately the same costs.

Note that we have been discussing proceeds within the lottery market. A monopolist realizes more proceeds than suppliers under perfect competition collectively by selling fewer tickets but for a higher price. No conclusion can be drawn on the difference in total gross gaming revenues between both scenarios. Total revenues of a monopolist can be both lower and higher than in a market with several suppliers[35]. However, from a fundraising perspective, proceeds are the crucial determinant.

In sum, we propose the following:

Proposition 2: A large supplier in the market for charity lotteries (monopolistic model) is to be preferred over several small suppliers (competition model) because this maximizes total funds raised for charity.

4.2.2 Empirical evidence

Based on proposition 2, we expect that in a concentrated market total funds available for charity lotteries (and thus for charity organizations) will be higher than in a market with several suppliers (a competitive market). To empirically study this relationship, we use the Herfindahl-Hirschman Index as an indicator for market concentration and total gross gaming revenues as an indicator for total charity funds raised.

The Herfindahl-Hirschman Index (HHI) is the squared sum of market shares in a market. The HHI can vary between 0 (perfect competition) and 10,000 (monopoly) (Church & Ware, 2000). For an indication of this measure, consider a market with two suppliers that each have a market share of 50%; the HHI is then 5,000 ($50^2 + 50^2$). When one of the two suppliers is market leader with a market share of 75% and the second supplier has a market share of 25%, the market is more concentrated and the HHI is 6,250 ($75^2 + 25^2$). In the event that there are three suppliers with equal market share (33.3%), however, the market is less concentrated and the HHI is 3,330 ($33^2 + 33^2 + 33^2$).

The HHI for all lotteries and the HHI for the charity lotteries only are depicted in Table 4.4 for the Netherlands, Sweden and Spain. For the Netherlands, the state lottery and lotto have been taken together, because they collectively represent the Dutch public lotteries. In fact, the three charity lotteries the NPL, BGL and SBL should also be considered as one supplier, because they are embedded in one mother organization (Novamedia). Because consumers perceive the three Dutch charity lotteries as independent brands (and most do not know that any organizational relationship exists between the three) we have also calculated the HHI taking each of the three charity lotteries separately. This measure has been placed between brackets. Logically, the concentration is lower when we consider them as independent.

Table 4.4 shows that the lottery market has the highest concentration in Spain and the lowest concentration in the Netherlands. In both Sweden and Spain the state lotteries dominate the

[35] The revenues of the monopolist are smaller than in a market with perfect competition if:
- the marginal costs per ticket are relatively high compared to the monopoly price p^1, and
- the demand curve D is relatively flat, implying that the number of tickets sold is relatively sensitive to price changes.

lottery market. In the Netherlands, the state lottery is market leader as well, but with a lower market share. The Dutch state lottery has higher sales than the charity lotteries, but the number of tickets sold is higher for the charity lotteries. This difference comes from the fact that ticket prices for the state lottery are higher than for the charity lotteries. The HHI for the charity lotteries is lowest in Sweden. Several charity lotteries operate in Sweden, though the Bingolotteriet is the dominant player with almost 50% market share. For the Netherlands and Spain the HHI is 10,000 because there is a monopolist in the charity lottery market. When considering the three Dutch charity lotteries separately, the HHI measure drops considerably (5,465).

Table 4.4: Herfindal-Hirschman Index for lotteries and charity lotteries (2006)

	Netherlands	Sweden	Spain (2005)
Lottery suppliers (market share)	State lottery (61.4%)	State lottery (74.3%)	State lottery (71.7%)
Charity lottery suppliers	NPL (26.6%) BGL (6.3%) SBL (4.6%)	Bingolotteriet (12.2%) Miljonlotteriet (4.6%) Kombilotteriet (3.8%) SPL (5.1%)	ONCE (28.3%)
HHI lotteries	5,311 (4,673)*	5,732	6,563
HHI charity lotteries	10,000 (5,465)**	3,176	10,000

Source: SEO Economic Research

* 5,311 is the HHI based on the market shares of the state lottery and of all three charity lotteries together (Novamedia), while 4,673 is the HHI based on the market shares of the state lottery and of the three charity lotteries separately.

** 10,000 is the HHI based on the market share of all three charity lotteries together (Novamedia), while 5,465 is the HHI based on the market shares of the three charity lotteries separately.

Figures 4.11 and 4.12 show the Herfindahl-Hirschman Index for lotteries and charity lotteries over time. We observe that the HHI in the Netherlands has dropped, mainly because the charity lotteries have gained market share against the dominant state lottery. The HHI for charity lotteries has been more or less constant since 1995. In Spain, the lottery market has become more concentrated, because the state lottery has grown more than the charity lottery. The HHI for charity lotteries is the maximum (10,000) because there is only one supplier (ONCE). For Sweden the HHI increased between 2000 and 2005, but recently the market has become less concentrated. This can be explained by the loss of market share of the charity lotteries (the state lottery becoming more dominant) since 2000, and the recent entrance of the Swedish Postcode Lottery.

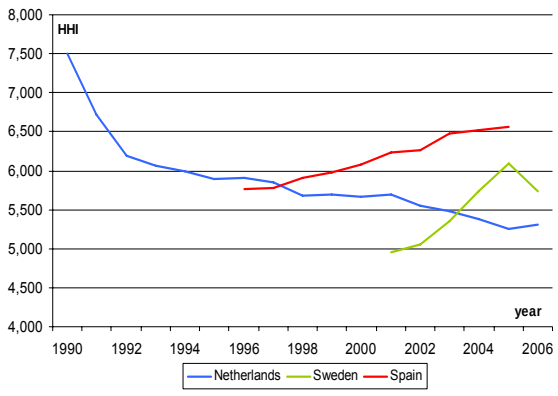


Figure 4.12: HHI for lotteries
Source: SEO Economic Research

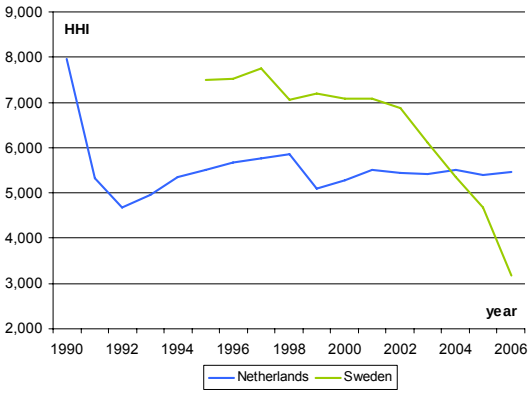


Figure 4.13: HHI for charity lotteries
Source: SEO Economic Research

The Gross Gaming Revenues of charity lotteries are an indicator for the developments in the funds available for charity organizations. Assuming that the cost/revenue ratio is constant, an x-% increase in the GGR relates to an x-% increase in the funds available for charity organizations. The GGR per capita is growing in the Netherlands, relatively constant in Spain, and decreasing in Sweden (Figure 4.14).

A visual inspection of the GGR per capita for charity lotteries provides some support for proposition 2. In the Netherlands and Spain this measure is considerably higher than in Sweden. This is in line with the second proposition, because the charity lotteries in the Netherlands and Spain are monopolists, whereas in Sweden several charity lotteries compete with each other. Furthermore, the decrease in GGR per capita in Sweden since 2000 is compatible with the drop in the HHI for charity lotteries.

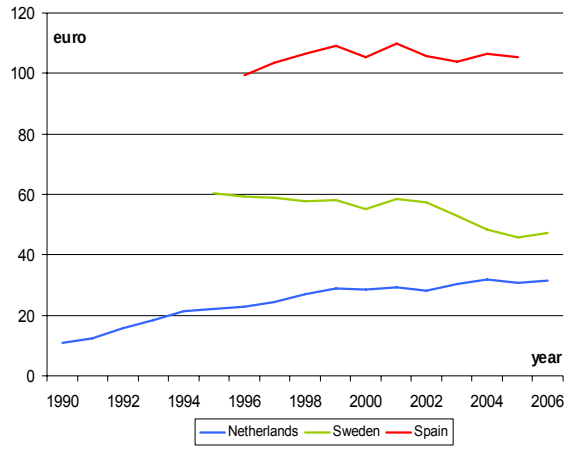


Figure 4.14: GGR per capita for lotteries (corrected for inflation)
Source: SEO Economic Research

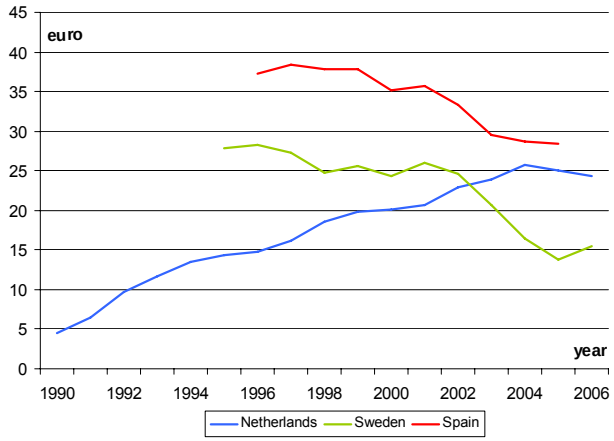


Figure 4.15: GGR per capita for charity lotteries (corrected for inflation)
Source: SEO Economic Research

To formally test the relationship between the HHI and the GGR for charity lotteries we conduct a regression analysis. We investigate how a change of HHI for charity lotteries affects the GGR per capita for charity lotteries. Formally, we estimate the following model:

$$\frac{GGR.CL_t - GGR.CL_{t-1}}{GGR.CL_{t-1}} = \beta_0 + \beta_1 * \frac{HHI.CL_t - HHI.CL_{t-1}}{HHI.CL_{t-1}} + u_t$$

Where:

$GCR.CL_t$ = Gross Gaming Revenues per capita for charity lotteries in period t
$HHI.CL_t$ = Herfindahl-Hirschman Index for charity lotteries in period t

This model could only be estimated for Sweden. The charity lottery markets for Spain and the Netherlands are monopolies during the entire observation period, with a corresponding HHI of 10,000 (see Table 4.4). Because the market concentration is constant during the entire observa-

tion period in Spain and the Netherlands, it is not possible to estimate a model explaining changes over time. This implies that for a formal testing of proposition 2 only the data for Sweden are appropriate. The data for Sweden are analyzed over the period 1996–2005. The year 2006 is excluded from the series because the market entry of the Postcodlotteriet at the end of 2005 caused an imbalance in the market; that is, we believe that the full effects of market entry on GGR per capita will only be visible after several years. Therefore, for testing proposition 2 it is preferable to use a sample in which the number of market players is constant over a number of years. Table 4.5 presents the results of the regression analysis.

The model reveals that the HHI has a significant positive effect on the GGR per capita. The interpretation of the regression is that when the HHI of the (Swedish) charity lottery market increases by 1%, the GGR per capita of charity lotteries increases by 1.35%. In other words, when the charity lottery market becomes more concentrated, the GGR per capita on charity lotteries increases. This in turn implies that a monopoly for the charity lottery market maximizes charity fundraising. The model fit is high; the HHI explains the variation in GGR per capita for 82% (R^2=0.82). This model result reinforces the plausibility of proposition 2.

Table 4.5: Regression analysis for GGR growth in Sweden

	β	*t*-value
Model coefficients:		
Constant	-0.004	-0.22
HHI_t	1.35	5.99***
Model fit:		
R^2	0.82	
DW-statistic	2.75	

Source: SEO Economic Research

*** p<0.01, ** p<0.05, * p<0.10

4.2.3 Policy implications

Both the theoretical and empirical analysis support the proposition that concentration of the market is optimal for a charity lottery market, which aims to maximize charity funds. The theoretical analysis makes plausible that a monopoly maximizes profits of charity lotteries, from which charity funds are derived. The differences in market concentration and charity funds raised (defined as GGR per capita) between Spain, the Netherlands and Sweden support the theoretical analysis. Furthermore, the formal empirical analysis of the Swedish data (regression analysis) supports the theory as well, by finding a positive effect of market concentration on Gross Gaming Revenues.

The policy implication of these findings is that if the lottery market is opened to charity lotteries – which is a welfare-enhancing strategy, as we saw when discussing proposition 1 – it is preferable that only a limited number of suppliers should be able to enter the market. Too many suppliers will decrease the total funds available for charity organizations. This undermines the potential welfare created by charity lotteries for society.

Note that our analysis does not imply a recommendation for a monopoly for state lotteries (non-charity lotteries). Proposition 2 only applies to charity lotteries and not to those lotteries where

the government decides where the proceeds are spent. In those cases we could speak of 'veiled taxation'. Opening the market only entails complementary effects if a charity lottery enters the market and not if a state-controlled lottery enters the market or if the state incumbent markets a new lottery product.

Proposition 2 tells us that competition among charity lotteries is welfare-decreasing (because the total proceeds of the market are not maximized under competition). Still, competition between the charity lottery on the one hand and the state lottery on the other is important because it leads to higher cost efficiencies. The Dutch National Postcode Lottery has less prize money available than the Dutch state lottery. This means that the charity lottery is under constant pressure to keep its costs down in order to have more money left (after the mandatory contribution to charity organizations) to spend on prizes, thereby increasing the payout ratio. After all, demand for lottery tickets is for a large part determined by the payout ratio. To sum up: competition among charity lotteries is welfare-decreasing, whereas competition among charity and non-charity lotteries is welfare-increasing.

This means, for instance, that our proposition does not imply that the UK National Lotteries should have a monopoly position. If the National Lotteries did not have a charity lottery with which to compete there would be too little incentive to achieve cost efficiencies. Moreover, without the entry of a charity lottery, the UK market would miss out on its complementary effects.

4.3 Welfare effects of product differentiation in the charity lottery market

4.3.1 Description

Economic theory reasons that a market with homogeneous products is, from a welfare theoretic perspective, in many cases to be preferred over heterogeneous products. For instance, one of the characteristics of the theoretical benchmark of perfect competition is homogeneity.

The reasoning for this is as follows. When two suppliers differentiate within a given market, this has two consequences. A first consequence is welfare-enhancing. As a result of product differentiation the products are better suited to consumer needs because they are able to serve different segments within the market. Because of this, existing customers find products that better satisfy their needs, and new consumers may be attracted to the market. A second consequence is, however, welfare-decreasing. Product differentiation means that the suppliers obtain a certain degree of market power, because the two products are not completely exchangeable. As a result, prices increase and the quantity of products sold decreases. This leads to a decrease in consumer welfare, known as deadweight loss (see Figure 4.10). This would be an argument for public policy to allow limited flexibility for suppliers to prevent them differentiating from each other.

However, for charity lotteries there are some decisive reasons for preferring a heterogeneous market over a homogeneous market. As discussed, charity lotteries distribute their proceeds to charity organizations. In order to realize proceeds, some differentiation from existing state lotteries is needed. Lotteries must have some flexibility to differentiate in order to realize (monopoly) profits.

We therefore propose the following:

Proposition 3: *Product differentiation for charity lotteries entails positive welfare effects*

4.3.2 Empirical support

Testing proposition 3 is not straightforward. Ideally, we make use of a proxy or indicator of the differences between the state lottery product and the charity lottery product. Unfortunately, no such data are available and directly testing the proposed positive effect of product differentiation between charity lotteries and state lotteries is therefore impossible. However, we can indirectly test the proposition by studying the effects of product differentiation within the charity lotteries in the Netherlands. Novamedia differentiates through operating three charity lotteries within one market. The question is to what extent the three brands of Novamedia (NPL, BGL and SBL) have been able to gain their own share of the Dutch charity lottery market. The HHI of the three Novamedia charity lotteries in the Netherlands is computed and used as a proxy for market segmentation. Market segmentation is nothing less than product differentiation within one supplier. When this product HHI of one supplier is low, we can assume that the supplier successfully segmented its market, enlarged its market power and hence its GGR. Therefore, we estimated the same model as the one in section 4.2.2, but for the different products of the monopolist in the Netherlands (Holding Nationale Goede Doelen Loterijen). We estimated the following regression model:

$$\frac{GGR.CL_t - GGR.CL_{t-1}}{GGR.CL_{t-1}} = \beta_0 + \beta_1 * \frac{HHI.CL_t - HHI.CL_{t-1}}{HHI.CL_{t-1}} + u_t$$

The results, presented in Table 4.6, are striking. The beta of the HHI variable is significantly negative. It predicts that when the HHI decreases by 1% (segmentation more successful), the GGR per capita on charity lotteries increases by 0.98%. We therefore conclude that some empirical support exists for the theory that market segmentation has a positive effect on the GGR per capita of charity lotteries, and thus on charity funds available.

Table 4.6: Regression analysis for GGR growth

	Netherlands	
	β	*t*-value
Model coefficients:		
Constant	-0.10	3.42***
HHI_t	-0.98	-3.21***
Model fit:		
R^2	0.42	

Source: SEO Economic Research

*** $p<0.01$, ** $p<0.05$, * $p<0.10$

4.3.3 Policy implications

Under a policy of strict regulation, charity lotteries should have some flexibility to differentiate themselves from each other. The three Dutch charity lotteries have chosen to donate only to clearly-defined subparts of the charity market. For the NPL this is people and nature, for the BankGiro Lottery culture, and for the Sponsor Bingo Lottery health and well-being. These subparts do not overlap. As such, the permanent charity lotteries do not compete over charities, but maximize the total proceeds of the overall operator (Novamedia). Moreover, Novamedia has an incentive to make sure that all three brands co-exist, because this product differentiation strategy maximizes proceeds. Novamedia as a mother company safeguards the complementary nature of the three brands (rather than substitution). This is clear, for instance, if we look at the growth of the BankGiro Lottery; this lottery only started growing after its acquisition by Novamedia.

In order to promote differentiation, regulation must either differ from the regulation applying to other suppliers or they must have sufficient flexibility to determine their market policy and positioning. Also, as we saw when discussing proposition 1, charity lotteries should be able to differentiate themselves from state lotteries. Because charity lotteries are essentially different from state lotteries, these lotteries are complements rather than substitutes.

This does not mean that a non-level playing field is justified. Regulation must therefore not be unequal but rather different. For example, the Dutch state lottery and lotto distribute through kiosks and shops, whereas the Dutch charity lotteries have chosen to sell subscriptions only through direct channels (telephone, mail and Internet). It is clear that the state lottery and lotto compete with each other because they both distribute through the retail channel (see 4.1.2).

To summarize, in order to maximize charity funding through charity lotteries, the creation of a level playing field between charity lotteries and state lotteries is preferable. However, within this level playing field the regulator should permit possibilities for product differentiation because this allows charity lotteries to optimize their revenues.

4.4 Conclusion

Taking the three propositions together we conclude the following.

We conclude that opening the national markets to national charity lotteries is welfare-enhancing. Opening the market will not harm the incumbent state lotteries. On the contrary: our findings indicate that the entry of charity lotteries is profitable to state lotteries. Because charity lotteries are essentially different from state lotteries, these lotteries are complements rather than substitutes. Charity lotteries that enter a national lottery market do earn market share at the expense of the incumbent state lotteries, but at the same time enhance the total market earnings in such a way that the revenues for state lotteries are increased.

If the lottery market is opened to charity lotteries, we conclude that it is better not to grant too many licenses. From a welfare economic perspective it is better to have one large supplier in the market for charity lotteries (monopolistic model) than to have several small suppliers (competi-

tion model). The entry of many suppliers will decrease the total funds available for charity organizations, which undermines the potential welfare created by charity lotteries for society.

Moreover, we conclude that – if national markets are opened to charity lotteries and governments adhere to the monopolistic model – it is preferable to allow for product differentiation for charity lotteries as this entails positive welfare effects. In order to be able to differentiate, regulation must either differ from the regulation applying to other suppliers or they must have sufficient flexibility to determine their market policy and positioning. Also, charity lotteries should be able to differentiate themselves from state lotteries.

Appendix A Definitions and Abbreviations

Terminology for games of chance

Turnover = total sales

Gross gaming revenues (GGR) = turnover -/- prize money

Proceeds = GGR -/- costs

Proceeds are distributed to good causes, to the treasury or to the operators.

Definitions

Prize payout ratio: percentage of turnover returned to participants in prizes (money or goods).

Charity lotteries: A charity lottery distributes at least 40% of its turnover to good causes (in its maturity), has freedom to determine its beneficiaries and the distribution of proceeds among these good causes, transfers the money to good causes without government intervention, and has a national or regional coverage.

Good causes: a cause of some public interest, with the exception of the mere remittance to the treasury.

Payout ratio to good causes: percentage of turnover distributed to good causes (charity organizations).

Abbreviations

NPL	National Postcode Loterij
BGL	BankGiro Loterij
SBL	Sponsor Bingo Loterij
SENS	Stichting Exploitatie Nederlandse Staatsloterij
SGR	Scientific Games Racing
SNS	Stichting de Nationale Sporttotalisator
WOK	Wet op de Kansspelen (Gambling Act)

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We then verified these numbers using several sources. The additional sources we have consulted in order to construct the international quick scan are presented here for each section.

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