

Study on the competitiveness of the toy industry

Final Report

Client: DG Enterprise and Industry

Rotterdam, 30 August 2013



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**DANISH
TECHNOLOGICAL
INSTITUTE**



Client: DG Enterprise and Industry

Compiled by the following partners of the ECSIP consortium:

- Ecorys Research and Consulting
- Idea Consult
- Danish Technological Institute
- Euromonitor International

Rotterdam, 30 August 2013

"The opinions expressed in this Study are those of the authors and do not necessarily reflect the views of the European Commission."

About ECSIP

The **E**uropean **C**ompetitiveness and **S**ustainable **I**ndustrial **P**olicy Consortium, **ECSIP** Consortium for short, is the name chosen by the team of partners, subcontractors and individual experts that have agreed to work as one team for the purpose of the Framework Contract on 'Industrial Competitiveness and Market Performance'. The Consortium is composed of Ecorys Netherlands (lead partner), Cambridge Econometrics, CASE, CSIL, Danish Technological Institute, Decision, ECIS, Euromonitor, Fratini Vergano, Frost & Sullivan, IDEA Consult, IFO Institute, MCI, and wiiw, together with a group of 28 highly skilled and specialised individuals.

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List of abbreviations

Below, a list of abbreviations used in the text is provided and a description of what they stand for. Separately, an overview of the country abbreviations used in the report is provided.

AQSIQ	General Administration of Quality Supervision, Inspection and Quarantine
ASEAN	Association of Southeast Asian Nations
CIF	Cost-Insurance-Freight
CLP	Classification, Labelling and Packaging Regulation
CN	Combined Nomenclature
COMTRADE	United Nations Commodity Trade Statistics
Cr6+	Lead, Mercury, Cadmium, Hexavalent chromium
CSR	Corporate Social Responsibility
DG ENTR	Directorate General Enterprise and Industry
DG TAXUD	Directorate General Taxation and Customs Union
DoC	Declaration of Conformity
EBIT	Earnings before interest and taxes
EC	European Commission
ECHA	European Chemicals Agency
EU	European Union
FOB	Free-on-board margin
GDP	Gross domestic product
GHS	Globally Harmonised System
HHI	Herfindahl–Hirschman Index
IEC	International Electro-technical Commission
IMF	International Monetary Fund
IPR	Intellectual Property Rights
KLEMS	Productivity in the European Union: A Comparative Industry Approach (EU KLEMS)
NACE	Statistical classification of economic activities in the European Community (Nomenclature statistique des activités économiques dans la Communauté européenne)
OECD	Organisation for Economic Co-operation and Development
PBB	Polybrominated biphenyls
PBDE	Polybrominated diphenyl ether
R&D	Research and Development
R&TTE	Radio and telecommunications terminal equipment Directive
RCA	Revealed Comparative Advantage
REACH	Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals
ROHS	Hazardous Substances Directive
ROW	Rest of the world
SBS	Structural and Business statistics
SCP	Structure-conduct-performance model
SME	Small and medium-sized enterprise
SVHC	Chemical substances of very high concern
TIE	Toy Industries of Europe

TSD	Toy Safety Directive
WEEE	Electrical Waste Directive
WITS	World Integrated Trade Solutions platform

Country abbreviations Eurostat

EU27 - European Union (27 countries)

- BE - Belgium
- BG - Bulgaria
- CZ - Czech Republic
- DK - Denmark
- DE - Germany
- EE - Estonia
- IE - Ireland
- EL - Greece
- ES - Spain
- FR - France
- HR - Croatia
- IT - Italy
- CY - Cyprus
- LV - Latvia
- LT - Lithuania
- LU - Luxembourg
- HU - Hungary
- NL - Netherlands
- AT - Austria
- PL - Poland
- PT - Portugal
- RO - Romania
- SI - Slovenia
- SK - Slovakia
- FI - Finland
- SE - Sweden
- UK - United Kingdom
- NO - Norway
- CH – Switzerland

Country abbreviations WITS - COMTRADE

Country abbreviations	Country
All	All countries All --- All
ARG	Argentina
BRA	Brazil
CAN	Canada
CHE	Switzerland
CHN	China
COL	Colombia
CRI	Costa Rica
DEU	Germany
ESP	Spain
FRA	France

Country abbreviations	Country
GBR	United Kingdom
HKG	Hong Kong, China
IND	India
ITA	Italy
JAM	Jamaica
JPN	Japan
KOR	Korea, Rep.
MEX	Mexico
NLD	Netherlands
OAS	Other Asia, nes
PAN	Panama
PER	Peru
UNS	Unspecified
USA	United States
VEN	Venezuela
ARE	United Arab Emirates
AUT	Austria
BGR	Bulgaria
BLR	Belarus
CZE	Czech Republic
DNK	Denmark
GRC	Greece
HRV	Croatia
HUN	Hungary
IDN	Indonesia
IRL	Ireland
MKD	Macedonia, FYR
MNT	Montenegro
NOR	Norway
PAK	Pakistan
POL	Poland
ROM	Romania
SER	Yugoslavia
SVN	Slovenia
SYR	Syrian Arab Republic
THA	Thailand
TUR	Turkey
VNM	Vietnam
ABW	Aruba
AFG	Afghanistan
AGO	Angola
AIA	Anguila
ALB	Albania
AND	Andorra

Country abbreviations	Country
ARM	Armenia
ASM	American Samoa
ATA	Antarctica
ATF	Fr. So. Ant. Tr
ATG	Antigua and Barbuda
AUS	Australia
AZE	Azerbaijan
BDI	Burundi
BEL	Belgium
BEN	Benin
BFA	Burkina Faso
BGD	Bangladesh
BHR	Bahrain
BHS	Bahamas, The
BIH	Bosnia and Herzegovina
BLZ	Belize
BMU	Bermuda
BOL	Bolivia
BRB	Barbados
BRN	Brunei
BTN	Bhutan
BUN	Bunkers
BVT	Bouvet Island
BWA	Botswana
CAF	Central African Republic
CCK	Cocos (Keeling) Islands
CHL	Chile
CIV	Cote d'Ivoire
CMR	Cameroon
COG	Congo, Rep.
COK	Cook Islands
COM	Comoros
CPV	Cape Verde
CUB	Cuba
CXR	Christmas Island
CYM	Cayman Islands
CYP	Cyprus
DJI	Djibouti
DMA	Dominica
DOM	Dominican Republic
DZA	Algeria
ECU	Ecuador
EGY	Egypt, Arab Rep.
ERI	Eritrea

Country abbreviations	Country
EST	Estonia
ETH	Ethiopia(excludes Eritrea)
FIN	Finland
FJI	Fiji
FLK	Falkland Island
FRE	Free Zones
FRO	Faeroe Islands
FSM	Micronesia, Fed. Sts.
GAB	Gabon
GEO	Georgia
GHA	Ghana
GIB	Gibraltar
GIN	Guinea
GMB	Gambia, The
GNB	Guinea-Bissau
GNQ	Equatorial Guinea
GRD	Grenada
GRL	Greenland
GTM	Guatemala
GUM	Guam
GUY	Guyana
HMD	Heard Island and McDonald Isla
HND	Honduras
HTI	Haiti
IOT	British Indian Ocean Ter.
IRN	Iran, Islamic Rep.
IRQ	Iraq
ISL	Iceland
ISR	Israel
JOR	Jordan
KAZ	Kazakhstan
KEN	Kenya
KGZ	Kyrgyz Republic
KHM	Cambodia
KIR	Kiribati
KNA	St. Kitts and Nevis
KWT	Kuwait
LAO	Lao PDR
LBN	Lebanon
LBR	Liberia
LBY	Libya
LCA	St. Lucia
LKA	Sri Lanka
LSO	Lesotho

Country abbreviations	Country
LTU	Lithuania
LUX	Luxembourg
LVA	Latvia
MAC	Macao
MAR	Morocco
MDA	Moldova
MDG	Madagascar
MDV	Maldives
MHL	Marshall Islands
MLI	Mali
MLT	Malta
MMR	Myanmar
MNG	Mongolia
MNP	Northern Mariana Islands
MOZ	Mozambique
MRT	Mauritania
MSR	Montserrat
MUS	Mauritius
MWI	Malawi
MYS	Malaysia
MYT	Mayotte
NAM	Namibia
NCL	New Caledonia
NER	Niger
NFK	Norfolk Island
NGA	Nigeria
NIC	Nicaragua
NIU	Niue
NPL	Nepal
NRU	Nauru
NZL	New Zealand
OMN	Oman
PCN	Pitcairn
PHL	Philippines
PLW	Palau
PNG	Papua New Guinea
PRK	Korea, Dem. Rep.
PRT	Portugal
PRY	Paraguay
PSE	Occ.Pal.Terr
PYF	French Polynesia
QAT	Qatar
RUS	Russian Federation
RWA	Rwanda

Country abbreviations	Country
SAU	Saudi Arabia
SDN	Fm Sudan
SEN	Senegal
SGP	Singapore
SGS	South Georgia and the South Sa
SHN	Saint Helena
SLB	Solomon Islands
SLE	Sierra Leone
SLV	El Salvador
SMR	San Marino
SOM	Somalia
SPE	Special Categories
SPM	Saint Pierre and Miquelon
STP	Sao Tome and Principe
SUR	Suriname
SVK	Slovak Republic
SWE	Sweden
SWZ	Swaziland
SXM	Sint Maarten
SYC	Seychelles
TCA	Turks and Caicos Isl.
TCD	Chad
TGO	Togo
TJK	Tajikistan
TKL	Tokelau
TKM	Turkmenistan
TMP	East Timor
TON	Tonga
TTO	Trinidad and Tobago
TUN	Tunisia
TUV	Tuvalu
TZA	Tanzania
UGA	Uganda
UKR	Ukraine
UMI	United States Minor Outlying Islands
URY	Uruguay
UZB	Uzbekistan
VCT	St. Vincent and the Grenadines
VGB	British Virgin Islands
VUT	Vanuatu
WLF	Wallis and Futura Isl.
WSM	Samoa
YEM	Yemen
ZAF	South Africa

Country abbreviations	Country
ZAR	Congo, Dem. Rep.
ZMB	Zambia
ZWE	Zimbabwe

Section I: Report

Executive summary

Objective of the study

This study maps the market of traditional toys and games, and the position of the EU toy industry. It aims to give a comprehensive overview of the competitiveness and performance of the EU toy industry in an international context. Specific research questions deal with the production and employment generated by the toy industry, the developments in the market for traditional toys and games, the role of production and design in the global value chain, and the considerations concerning offshoring.

The toy retail market

The EU has the largest single market for goods and services worldwide. This study estimates that the EU market for traditional toys and games, including Croatia, was worth EUR 15.8 bn in 2011 at retail selling prices. In comparison, the US market follows at EUR 14 bn. The Chinese market represented sales of EUR 4.8 bn. and has a high potential if income levels continue to rise.

Several external factors may influence demand for traditional toys. One is the ageing of society in mature markets, witnessed already by a more or less stable number of children in the EU and the US. One-child policy and rising incomes have even led to a sharp decline in the child population in China. Another factor is the increased competition of new ICT products that become close substitutes for traditional toys. Not only video games, but more generally smart phones, tablets and other entertainment products compete for the preference and spending of children in mature and emerging markets. Electronic toys, such as applications for tablets, are direct and cheap substitutes for pre-school toys.

At a macroeconomic level, uncertainty about recovery of the EU and US from the global crisis and implications for demand conditions in emerging economies imply that growth forecasts are highly uncertain. Still, global toy consumption is projected to rise by about 7.5% annually until 2016.

The toy industry

The EU toy industry generates about EUR 5.8 bn. in production value. Our estimate for direct employment in traditional toys is about 51,000 for the EU, including Croatia. Indirect employment, excluding retail, is estimated at about the same total for the EU. The EU exceeds toy production and employment in the US, estimated at EUR 4.4 bn. and 35,000 workers respectively. Most toy production takes place in China, at a production value of EUR 16 bn. The employment estimate provided in this study for China, though uncertain, indicates that some 128,000 employees are involved in production of traditional toys.

Although demand is highly seasonal, with one major and a few localized but somewhat smaller peaks, seasonal employment is not a major issue in production. During peak times, production teams work longer hours. Seasonal employment is, however, more important in retail and warehousing. For offshore production, higher seasonal fluctuations are more likely, according to information from one interview.

An overview of the key aspects of toy markets and the toy industry is provided in the table below.

Country	Consumption in million €	Production in million €	Direct employment (# employees)
<i>EU 28</i>			
EU 28 Total	15,828.40	5,833.61	50,902
<i>Other</i>			
United States	13,971.70	4,382.33	35,037
China	4,802.80	16,011.30	128,012
Japan	5,201.10	2,200.08	17,590

Sources: Eurostat, Euromonitor, and own estimations by Ecorys.

Regulatory and framework conditions

We identified various framework conditions that impact the toy sector. The most important framework conditions are toy safety regulation and counterfeiting.

Toy safety

In Europe, toy safety is governed by the Toy Safety Directive (TSD; Directive 2009/48/EC). The TSD obliges manufacturers, importers and suppliers to ensure that their products meet the requirements in the field of toy safety, including mechanical, physical and chemical safety. Each toy to be placed on the market is submitted to a conformity assessment procedure. When a toy is placed on the market, the manufacturer must draw up an EC declaration of conformity (DoC). By doing so, the manufacturer certifies and assumes responsibility for the compliance of the toy with the essential requirements of the TSD.

Both the conformity assessment procedure and the mandatory DoC incur costs on producers. The additional costs do not distort the competitive playing field between domestic (EU) and foreign (non-EU) producers. However, the increased costs do negatively impact the competitive situation of small toy producers, as the additional costs are more difficult to bear for SMEs, who generally do not have the resources to provide the required documentation and testing in-house and therefore need to seek the required capacity externally, which means increased costs.

Toy safety also impacts the competitiveness of European producers aiming to export outside Europe. The main reason is the existence of local safety requirements in non-EU countries. These safety requirements often also include the need for local testing, which forms one of the major trade barriers for the EU toy industry.

Counterfeiting

The second most important framework condition is the protection of IPR. Toy manufacturers face counterfeit toys. In the period 2010 / 2011, DG TAXUD registered 872 infringement cases for toys with a retail value of € 16 million and 2,585 infringement cases for games with a retail value of € 20 million. The two main countries of origin are China (88%) and Hong Kong (10%). The issue of counterfeiting was identified by various interviewees as a problem, while others hardly see counterfeiting as a serious problem, claiming that IPR-protection works properly in Europe and the degree of counterfeiting is comparable to other industries. A potential issue in IPR protection is the possible lack of financial capacity of SMEs to initiate litigation measures. No extensive information on this issue has been identified.

Regulatory and administrative burdens

Administrative burdens have been acknowledged as relevant issue by several interviewees. One association considered administrative burdens as a huge cost, for SMEs in particular. Others confirm that the administrative burdens have a relatively higher impact on SMEs.

According to the interviewees, the administrative burden has increased due to the Toy Safety Directive. In particular, the new requirements on traceability of inputs and production processes have increased the burden for producers.

Market performance and competitiveness

The traditional toys and games market shows moderate growth rates in Europe and the US and strong growth rates in China and especially in the rest of the world. Growth levels for traditional toys and games sales are higher than for the economy as a whole, offering a positive outlook for the toy sector with opportunities for expansion, especially for European toy producers, who are the second most important toy exporters after China. In 2011, exports of the EU as a whole were worth EUR 5.3 billion, of which intra-EU trade amounted to EUR 4.2 bn.

EU production of traditional toys is cost competitive when transportation costs from China are high. Also in cases where management can better stay in control of production processes by keeping production close to the main markets, several interviewed companies indicate that EU production increases flexibility in serving changing markets and may lower quality assurance costs. Production in the EU includes low priced small plastic items, where order volumes are often below the amount needed to outweigh transport cost from Asia effectively; bulky low weight items such as board games for which transport costs per item would be too high; and wooden toys at the high price end. Toys produced in the EU in highly automated factories can also be price competitive, especially if the relevant inputs can be sourced locally.

Some firms deliberately choose to produce in the EU for these reasons. Examples include LEGO and Playmobil. Other firms choose to design and develop toys close to their home markets, and link up with large Asian production facilities and Hong Kong liaison offices to increase capacity for fast response to changing product specifications, and to implement and further develop technical aspects of the production process and manage quality and safety effectively. Although there are examples of firms re-shoring their production to the EU, interviews with industry do not suggest a definite trend in one or the other direction.

Consumers are fairly price sensitive. In combination with a low concentration in the market, this means that producers face cost and price competition to a significant extent. This competition on costs is reflected in the production strategy of producers, with many producers offshoring and outsourcing production to China to reduce production costs. In toy production, margins in the entire sector are under pressure with long-term profit margins around 6% for the top 100 firms in terms of size. The margins are lower for small and medium sized (SME) firms than for large firms. Also, the profit margin for retail is lower than for manufacturing of toys.

The short product life cycle of toys drives the need for innovation and research and development (R&D). Innovation is widely acknowledged in the sector as essential to maintaining a competitive position. In addition, it allows manufacturers to experience (temporarily) reduced price competition for the innovative toys. Nonetheless, R&D expenditures in the sector may seem modest, with actual R&D expenditure amounting to 0.6% to 2.6% of total turnover. This range, however, is in line with

the R&D intensity of total manufacturing industry in the EU. Also marketing strategies are very important to the toy sector. The key is market research and introduction of novelties.

Market outlook

Competition on price and innovativeness are likely to remain intense in a dynamic market. Despite overall positive growth forecasts, traditional toys and games will face increased competition from video games and the recent trend in the use of tablets and smart phones for entertainment purposes.

Several trends reinforce the outlook of increased competition for traditional toys and games. First, the number of children between 0-14 years in mature markets is likely to stabilize or decrease in the near future. Second, as children mature at earlier age, the playing period will be shorter. Hence, producers will face more competition from substitutes for traditional toys and games such as video games, tablets and smart phones that tend to drive preference more as children mature.

On the positive side, there are developments that warrant the continued outlook of growth for the market of traditional toys and games. First, purchasing power is increasing in emerging markets. For example, the expected growth in the Chinese market is in double digits for the 2012-2016 period. Also in other emerging markets, growth is high. These markets drive the overall expected growth of 7.5% annually until 2016. A second development with high potential for traditional toys and games is the rise of cross-over toys and games, that allow traditional games to be played on electronic platforms and interaction between physical toys and games and applications on tablets and smart phones. Several examples show that EU producers of games and toys are entering these new platforms, often in collaboration with digital entertainment industry. To keep up with the cross-over market and optimize its potential for traditional toys and games, EU toy suppliers will have to keep up with US and Asian competitors in this fast developing field.

In terms of product segments, construction toys and outdoor and sports toys show the highest growth forecast among traditional toys. Board games and puzzles show stable market share forecasts, as they face most direct competition from video games, tablets and smart phone applications. The market for plush toys appears to have low growth forecasts.

Licensed toys remain a large and stable source of turnover in the traditional toys and games industry. They are trendy but also offer stable demand and reduce the risk of successful adoption of new products into the market, due to the link to the established entertainment industry. Moreover, parents may associate licensed toys and other toys under established brand names with high quality and safety.

Trends that provide room for niche markets and may have potential for a position more at the core of traditional toys are fair trade toys and eco-design toys. These toys, often wooden toys, link to the theme of sustainability and its dimensions of labour conditions and the environment. These niches also show potential for linking design and product development in the EU to production offshore, thus combining the best of competitive conditions of the EU and offshore locations.

The main trend in retail of traditional toys and games across the EU is the rise of the online retail outlet channel. Internet sales show double digit growth rates, and reach market shares of almost 20% already in some mature markets. Southern European markets were less oriented to online shopping, but this appears to be changing rapidly.

Policy recommendations

Following the assessment of market performance and regulatory conditions, this study arrives at the following policy recommendations to foster competitiveness of the European toy industry.

Increase transparency in the regulatory framework

The toy sector faces in particular regulation on safety from the Directive on Toy Safety (TSD). This regulation serves an important purpose, endorsed by industry, in ensuring children in the EU can play with safe toys. However, the regulation goes with often complex procedures for implementation of the requirements and shows overlap with other legislation on specific topics. Consolidation of the regulation within the EU, more extensive guidance on the requirements and simplification of the certification procedures can help to increase transparency, avoid testing beyond what is necessary, and reduce risks to producers in developing and introducing new toys.

Introduce measures to reduce administrative costs and compliance costs

While EU procedures are less restrictive because they offer alternative routes to certification beyond industry standards, the various alternatives yield sometimes complex costly procedures that disproportionately affect smaller toy producers. Administrative costs and compliance costs linked to the TSD can be lowered without reducing toy safety levels by simplification of the procedures for certification and developing low-cost testing facilities. To avoid negative impacts on innovation incentives in the industry, the EC could consider offering financial support to innovation initiatives in order to sort out implications following from toy safety requirements.

Harmonisation and mutual recognition

Differences in toy safety regulation between the EU and external markets imply additional costs for producers to launch their products in different markets. In order to reduce market access barriers and market fragmentation, the scope for mutual recognition and harmonisation of legislation should be considered.

Strengthening the enforcement of IPR

Counterfeiting remains a problem for the toy industry. Results in combatting IPR infringements offer direct benefits to the EU toy industry and its ability to innovate and compete.

Other policy issues

Access to finance is critical for the entire toy sector, and in particular toy retail, to deal with the current macroeconomic situation. Access to finance is lower mostly for SMEs, which also tend to show lower profit rates, making it more difficult to (re)finance with retained profit.

The seasonality of the toy market suggests that lower costs of hiring and firing workers would allow toy suppliers and retailers to incorporate more seasonal employment to deal with market peaks. Though not seen as a particular bottleneck, the toy sector would appear to benefit from maintaining or improving labour market flexibility.

1 Scope of the study

1.1 Objectives

The overall aim of the study is as follows:

Carrying out a thorough analysis of the performance and capacities of the European toy sector in order to obtain a clear view on the sector's competitiveness in a global perspective.

In particular, the existing data on the toy industry have been used and supplemented where needed to obtain a clear and global picture of the sector's performance and capacities.

1.2 Scope of the study

The issues that have been identified in relation to the scope of the study include:

- How is the industry organised?
- Is the regulatory regime working for the sector, or experienced as a burden?
- What manufacturing of toys is done in Europe?
- Do SMEs produce their toys in Europe or is only the design located here?
- What explanations are there for companies coming back to the EU from locations in China?

In addressing these issue, the study aims at the following:

- To explicitly look at small and large companies in the toy sector;
- To make an overview of the toy sector and its supply chain, the number of persons employed in the sector;
- To conduct interviews with distribution organisations;
- To exclude video games from the study as they are not included in the toy sector from a regulatory point of view.

The study provides an overview of the toy market and industry in terms of a set of indicators.

- Toy manufacturers;
 - Production:
 - The number of companies involved in toy manufacturing registered in the EU as well as their size;
 - Ranking of EU toy companies and their respective market share (top 10);
 - Total EU and worldwide total production;
 - Total EU and worldwide market at manufacturing and retail;
 - The number of manufacturing facilities in the EU and overseas;
 - Main EU and overseas regions of production;
 - Source of components and raw materials – EU and non EU (in %).
 - Employment:
 - The number of jobs generated by the sector. Detailed information will be given on;
 - The number of full/seasonal employees in the EU and worldwide;
 - The number of indirect employees in the EU and worldwide (if possible to break down into R&D, design, marketing, sales, etc.);
 - Estimation of the number of indirect manufacturing employees in the EU partly dependent of manufacturers.
 - R&D and advertising:

- R&D investment (in millions);
- Marketing investment (in millions). Detail per media (general press, specialised press, TV, etc.);
- Child population aged up to 14 (in millions and in % of total population) as well as the birth rate;
- The contractor will also describe the sector's production and marketing model (e.g. annual or/and seasonal sales, production phases, etc.). He/she will estimate the price advantage, risks and other factors taken into account when deciding to manufacture overseas.
- Imports and export:
 - Value of imports into Europe from non-EU countries (selling price);
 - Value of imports from other EU countries (selling price);
 - Values of exports out of Europe to non-EU countries (selling price);
 - Value of exports to other EU countries (selling price).
- Toy retail market:
 - Distribution channel market share, per channel (e.g. generalists, toy specialists, mail order, internet, others);
 - Value of the retail market in the EU (selling prices).

The data analysis, supplemented by interview and desk research, has been used to assess competitiveness and market performance of the toy industry. The study will include a market outlook and policy recommendations.

The analysis is based on publicly available data sources and interviews with stakeholders.

Data sources used

The main public sources of information that we use are Eurostat and COMTRADE. Relevant industry and product data at Eurostat are available in structural business statistics (SBS), and Prodcom statistics. SBS statistics cover a wide range of indicators of industry size and performance. The Prodcom database zooms in on more detailed products within an industry, but only for production and trade values. As it has worldwide coverage, we use the United Nation's COMTRADE data as the source for trade data. To access and analyse the COMTRADE data, we have used the World Integrated Trade Solutions (WITS) platform. The report makes use of recent data, at least up to 2010.

Interviews conducted

In total 29 interviews were conducted, of which 10 with toy associations, 10 with toy manufacturers and 4 with distributors. Annex I contains the full list of interviewed organisations

1.3 Scope of the industry

1.3.1 Scope of traditional toys and games

This study focuses on the traditional toys and games industry. Several products that are considered to be toys or games are excluded from traditional toys and games because they are outside the scope of the Toy Safety Directive. This applies in particular to video games and video game consoles. We have therefore excluded video games and video game consoles from the figures reported in this report, unless specifically noted otherwise. Traditional toys and games include products such as dolls, infant and pre-school toys, construction toys, outdoor and sports toys, board games and puzzles and arts and crafts toys.

Statistical classification codes used to retrieve figures in this report

The market data in this study are from the Passport database, a proprietary database developed by Euromonitor International. These market data reflect the scope of traditional toys and games defined above. The industry and international trade data are taken from public data sources, Eurostat and COMTRADE. The product categories in these databases are grouped somewhat differently from the market data and also differ from each other. Therefore, we provide more information below that shows how these databases relate to the category of traditional toys and games described above.

Industry data from Eurostat are based on the NACE classification of economic activities. International trade statistics from COMTRADE use the Combined Nomenclature (CN) headings. Consequently, product codes of the used databases have to be matched. A detailed table describing the matching correspondence is given below. This also gives an exact overview of the relevant product classes on the 8-digit level for both CN and Prodcod headings.

The table below shows product code concordances between NACE and CN headings for the toy industry. The NACE 32.40 heading Manufacture of games and toys (henceforth *Games and Toys*) is used in the SBS database, and Prodcod codes are a direct extension of NACE codes. CN headings are used in the COMTRADE database. The sector Games and Toys shows a large overlap with CN heading 9503. NACE 32.40 contains products that do not classify as traditional toys, e.g. billiards and games operated by cash. However, for analysis of industry performance and size that relies on SBS data, we cannot exclude those products as they are all included in Games and Toys totals.

Within the table below the headings that are considered as **traditional toys and games** are marked in bold. The trade data are retrieved via CN headings. Traditional toys and games basically correspond to the 9503 heading, adding only playing cards from the 9504 heading.¹

Table 1.1 Product codes in industry and trade data and their relation²

NACE/Prodcod	CN	Description
32.40	-	Manufacture of games and toys.
32.40.11.00	9503 00 21	Dolls representing only human beings.
32.40.12.00	9503[.00(.41 + .49)]	Toys representing animals or non-human creatures.
32.40.13.00	9503 00 29	Parts and accessories for dolls representing only human beings.
32.40.20.00	9503[.00(.30 + .35 + .39)]	Toy trains and their accessories; other reduced-size models or construction sets and constructional toys.
32.40.31.00	9503 00 10	Wheeled toys designed to be ridden by children (excluding bicycles); dolls carriages.
32.40.32.00	9503[.00(.61 + .69)]	Puzzles.
32.40.39.20	9503[.00(.55 + .70 + .75 + .79 + .81)]	Toy musical instruments and apparatus; toys put up in sets or outfits (excluding electric trains, scale model assembly kits, construction sets and constructional toys, and puzzles); toys and models incorporating a motor; toy weapons.
32.40.39.40	9503 00 95	Other toys of plastics.

¹ The precise CN codes may change from year to year. In our trade analysis, we retrieve data at the 6-digit level of the classification (the first 6 positions in the code) and aggregate up to the traditional toys and games sector. At this level, the classification has not changed over time.

² **Bold** codes are considered as traditional toys and games.

NACE/Prodcom	CN	Description
32.40.39.60	9503 00 85	Toy die-cast miniature models of metal.
32.40.39.90	9503 00 99	Other toys n.e.c.
32.40.41.00	9504 40	Playing cards.
32.40.42.10	9504 20	Articles and accessories for billiards (excluding mechanical counters, time meters and cue racks).
32.40.42.30	9504[.30(.10 + .20 + .90)]	Games operated by coins, banknotes, discs or other similar articles (excluding bowling alley equipment).
32.40.42.50	9504 90 10	Electric car racing sets having the character of competitive games.

Note: video games (Prodcom code 28.99.39.80) and video games consoles (Prodcom 26.40.60.50) do not classify in NACE industry Manufacture of games and toys (NACE 32.40).

When reporting figures in the remainder of the report, we clearly indicate the scope of products that they cover. We explicitly refer to **traditional toys and games** if the data exclusively include traditional toys and games as listed above. If the scope of the data cannot exclude table and casino games that are not considered as part of traditional toys and games, we refer to **Manufacture of games and toys**, or simply **Games and Toys**.

The table gives a summary of the different data sources, the categories that they use, and the sections of the industry and market overview that make use of these sources.

Table 1.2 Scope of data on the toy industry: a concise overview and reading guide

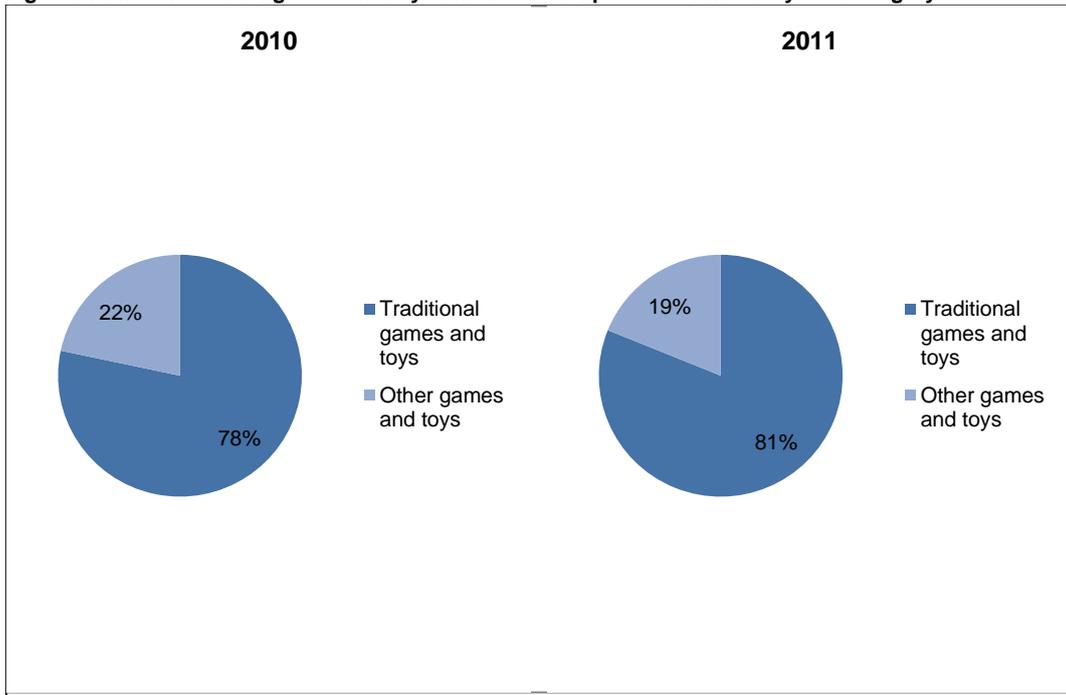
Category	Source	Scope	Section in the text
Traditional games and toys	Euromonitor, COMTRADE	Objects of play such as infant and pre-school toys, dolls, arts and crafts, construction toys, role play, board games and puzzles	2.1.1; 2.1.2; 2.2.1; 2.2.7; 2.3; 3.2.7; 4.1; Annex IV.
Manufacturing of games and toys (Games and Toys)	SBS data, Amadeus	Traditional games and toys, table and casino games	2.2.2; 2.2.3; 2.2.4; 2.2.5; 2.2.6; 2.3; 3.2.5; 3.2.8.
Video games	Euromonitor, SBS data	Video games hardware, video games software and digital gaming, video game consoles	2.1.2.

1.3.2 Rule of thumb to compare traditional toys and games and Games and Toys

The share of traditional toys and games in total production value of Games and Toys in the EU27 is roughly 80%. In EU trade, traditional toys and games represent about 70% of the Games and Toys total. Other games and toys include articles and accessories for billiards (excluding mechanical counters, time meters and cue racks), games operated by coins, banknotes, discs or other similar articles (excluding bowling alley equipment), electric car racing sets having the character of competitive games.³

³ Electric racing cars have been excluded from traditional toys in order to create coherence with the CN headings used to retrieve trade data. In the CN nomenclature, electric racing cars fall under 950490 -- *Articles for funfair/table/parlour games (excl. playing cards), incl. pintables, special tables for casino games & auto. bowling alley equip.* This heading includes bowling alley equipment and tables for casino games, which cannot be considered as traditional toys.

Figure 1.1 Manufacture of games and toys: breakdown of production value by sub-category



Source: Detailed product level information from Eurostat Prodcom.

2 Overview of the EU toy industry in a global context

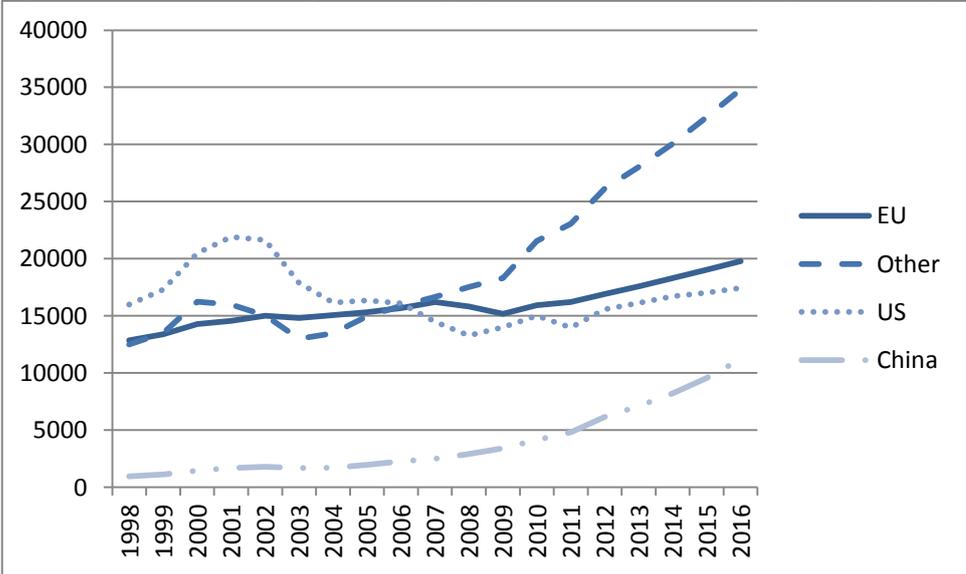
2.1 The toy retail market

This section provides an overview of the traditional toys and games market at retail prices. Relevant market and product data are based on Euromonitor Passport data. Euromonitor covers the largest national markets in and outside of the EU, and provides market size estimates for large regional blocs of countries and the world market as a whole.

2.1.1 Main markets

Total global sales of traditional games and toys reached €58 billion in 2011. The UK, France, Germany, Italy and Spain are the largest toy markets in the EU. Whereas the market for traditional toys and games declined in the early 2000s, growth has picked up again after a few years (Figure 2.1). The US market is the exception to this rule, as it has not returned to its peak of the years 2001-2002. The EU and US markets stagnated over the recent economic and financial crisis years 2008-2011. The EU showed some decline early on and some recovery after 2009 while the US market also declined in 2011. The figures presented below are projections from 2012 onwards. Some of the interviews that we have conducted with companies and business associations in the sector suggest that the market has worsened in 2012 compared to recent years in several EU countries, especially in Southern Europe.

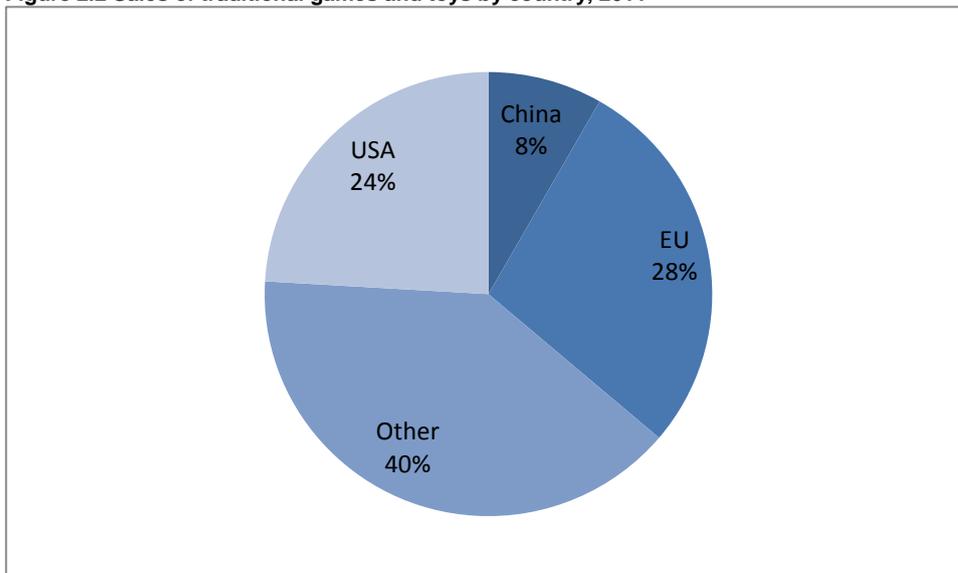
Figure 2.1 Sales of traditional games and toys (in € million; 2012-2016 are projected figures)



Source: Euromonitor estimates and projections. Note: Values for the EU are based on Euromonitor data and own calculations

Even though sales were increasing over time, the EU market share in the global toy market remained stable while the US lost market share after 2001. The EU market currently represents 28% of worldwide traditional toys and games sales (Figure 2.2).

Figure 2.2 Sales of traditional games and toys by country, 2011

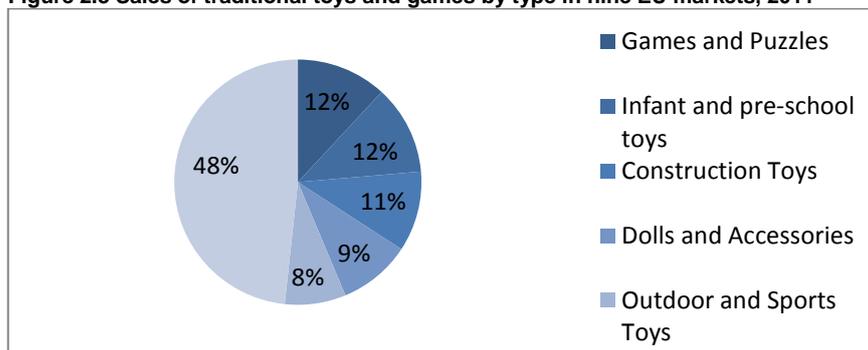


Source: Euromonitor; Ecorys estimates. The EU total here includes Croatia and Switzerland.

2.1.2 Main products⁴

As shown in Figure 2.3, games and puzzles⁵ and infant and pre-school toys emerge as the most popular types of traditional toys and games in the nine main EU markets (EU9) covered by Euromonitor’s Passport database. These top selling categories are followed by construction toys, dolls and accessories, and outdoor and sports toys. Together, these categories make up about half of the total market for traditional toys in the EU9. However, there are differences among the countries. In Italy, for example, people buy mostly outdoor and sports toys, while in Romania plush toys are the most popular type (included in Other Traditional Games and Toys in Figure 2.3). Among traditional toys and games, construction toys were growing fastest in terms of sales in EU countries. However, growth rates from 2010 to 2011 differ substantially among the countries: from 0.4% in Spain to 18.5% in the UK. Toy sales patterns and amounts spent on toys are correlated with purchasing power. In addition, cultural characteristics also have an impact on the toy buying pattern. According to a study by VLI (Van Lotringen International, 2005), Germans plan their toy purchases in advance, while Italians decide more in the moment what to buy.

Figure 2.3 Sales of traditional toys and games by type in nine EU markets, 2011



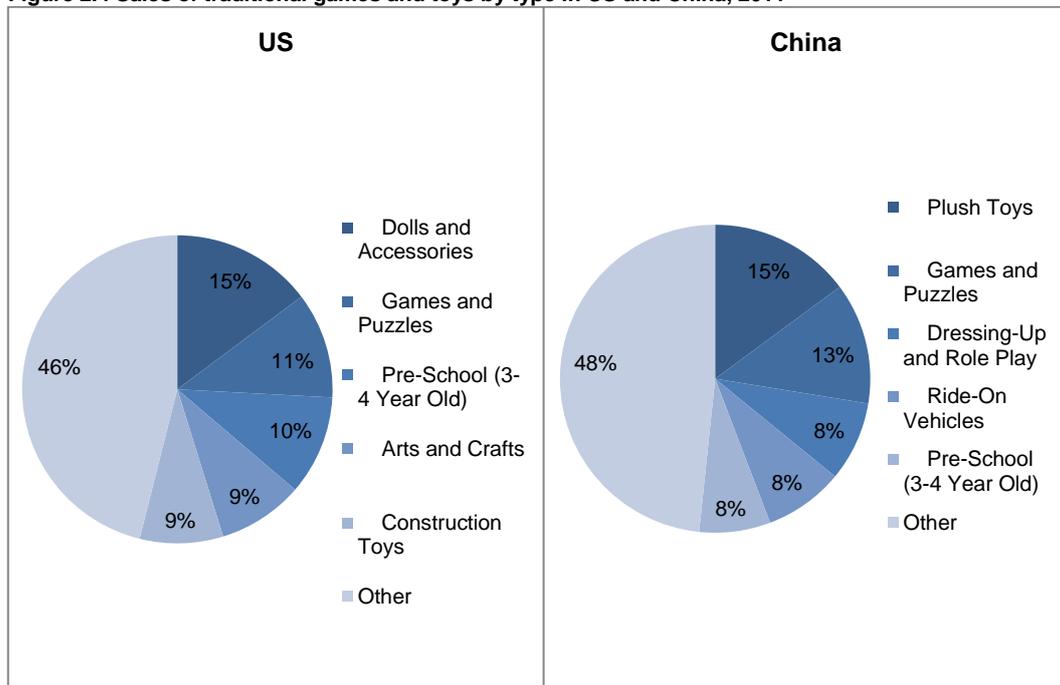
Source: Euromonitor. Note: the nine EU markets represented here are France, Germany, Italy, the Netherlands, Spain, Sweden, UK, Poland, and Romania.

⁴ In this section, the data for the EU are only available for nine Member States that cover the main markets in the EU15 and (post-2004) new Member States, the EU12 (EU13, with the recent accession of Croatia into the EU). These countries are: France, Germany, Italy, the Netherlands, Spain, Sweden, UK, Poland, and Romania.

⁵ The category ‘games and puzzles’ includes puzzles and any indoor equipment designed to engender competitive recreational activity in which participants contest with each other according to a set of rules including board games, any game played using playing cards, dice. It does not include video games.

In the US, the most popular type of traditional toys and games is dolls and accessories. In China plush toys, as a single category, represent most sales. The second most popular group is games and puzzles, in the US as well as in China.

Figure 2.4 Sales of traditional games and toys by type in US and China, 2011



Source: Euromonitor.

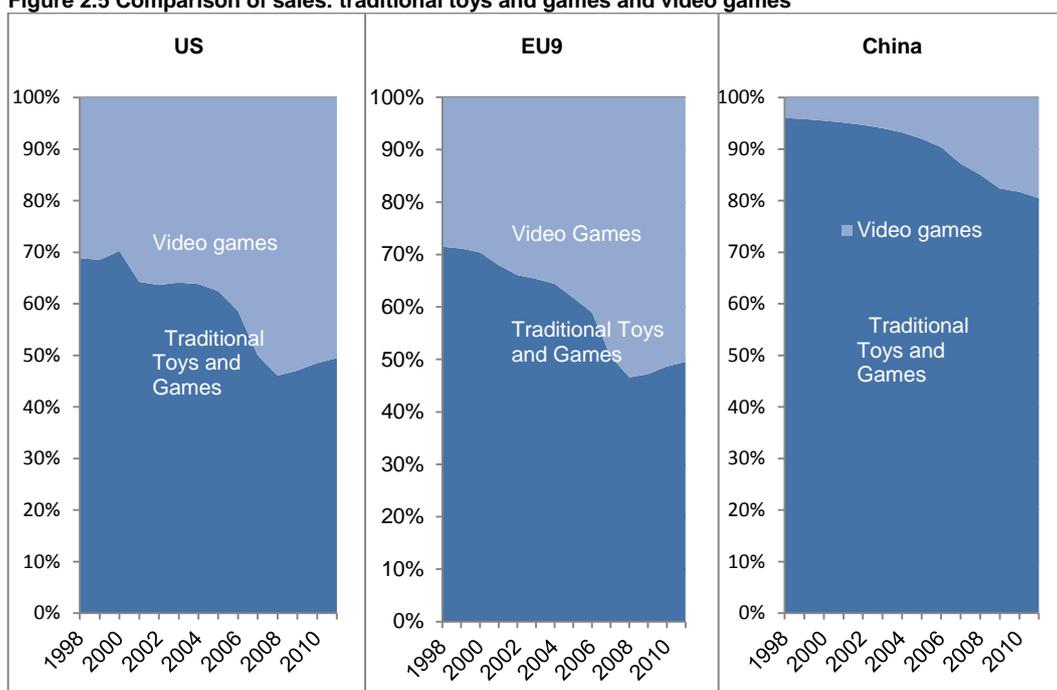
A comparison with the market for video games

Video games are a close substitute for traditional toys, especially when children are a bit older. Separating toys and games in the EU9 markets and the US into traditional toys and games and video games, traditional toys and games represented approximately 50% of the total market in 2011 (Figure 2.5). Following the rapid rise in popularity of video games, the share of traditional toys and games has decreased over the years. In 1998 traditional toys and games represented more than 70% of the total market for toys products, while in 2008 it reached its lowest point of 47%. In recent years, both the US and the EU markets show an increase in the share of traditional toys and games. Partly, this is explained by the larger impact of the economic recession on video games, as supported by information from interviews. The recent rise of cross-over toys that combine video games and mobile games and apps with traditional toys offers new market and technological opportunities for traditional toys and games to benefit from the rise in popularity of modern communication technology.⁶

In China, video games have not reached a market share comparable to the US and the EU yet. The market share of traditional toys and games in China is about 80%. Much of this is explained by the lower purchasing power of consumers.

⁶ For example, see the web article on traditional toys crossing borders with phone applications and video games by Euromonitor's Utku Tansel: <http://blog.euromonitor.com/2011/08/boundaries-blur-between-toys-video-games-and-phone-applications.html> (accessed August 2, 2013).

Figure 2.5 Comparison of sales: traditional toys and games and video games



Source: Euromonitor.

2.1.3 Child population aged 0 – 14: a driver of demand for traditional toys and games

Table 2.1 shows that the number of children up to and including 14 years old has been mostly decreasing in the EU over the past decade. Figure 2.6 reflects that the number of children in the EU showed a consistent decline over the period 2000 to 2007, after which it stabilized. In 2000 the population of children accounted for slightly more than 83 million. Twelve years later this group had fallen to 78.5 million in total for the EU27.

Table 2.1 Growth rate of number of children aged 0-14-years-old

Country	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
France	0.5	0.3	0.2	0.1	0.1	0.1	0.5	0.4	0.7	0.6	0.6	0.4
Germany	-0.9	-1.2	-1.6	-2.0	-1.9	-2.3	-1.7	-1.4	-1.2	-1.0	-0.7	-1.0
Italy	-0.2	-0.1	0.4	0.5	0.8	0.3	0.5	0.5	0.7	0.5	0.4	0.1
Netherlands	1.1	0.7	0.4	0.2	-0.2	-0.8	-0.9	-0.7	-0.4	-0.3	-0.2	-0.3
Poland	-3.8	-3.5	-3.3	-3.3	-3.1	-3.0	-2.7	-2.0	-1.2	-0.8	1.2	-0.6
Romania	-2.7	-4.7	-3.9	-3.8	-3.6	-2.2	-1.2	-1.1	-0.4	-0.3	-0.4	-0.8
Spain	-0.4	0.4	1.5	1.7	1.5	1.6	1.8	2.4	2.1	1.6	1.3	0.8
Sweden	-0.5	-0.7	-0.5	-0.8	-1.0	-1.4	-0.7	-0.5	0.0	0.4	1.0	1.2
United Kingdom	-0.8	-0.8	-0.8	-0.7	-0.6	-0.6	-0.3	0.1	0.3	0.5	0.7	0.8
EU27	-1.0	-1.1	-0.9	-0.9	-0.8	-0.8	-0.5	-0.2	0.1	0.2	0.2	0.1

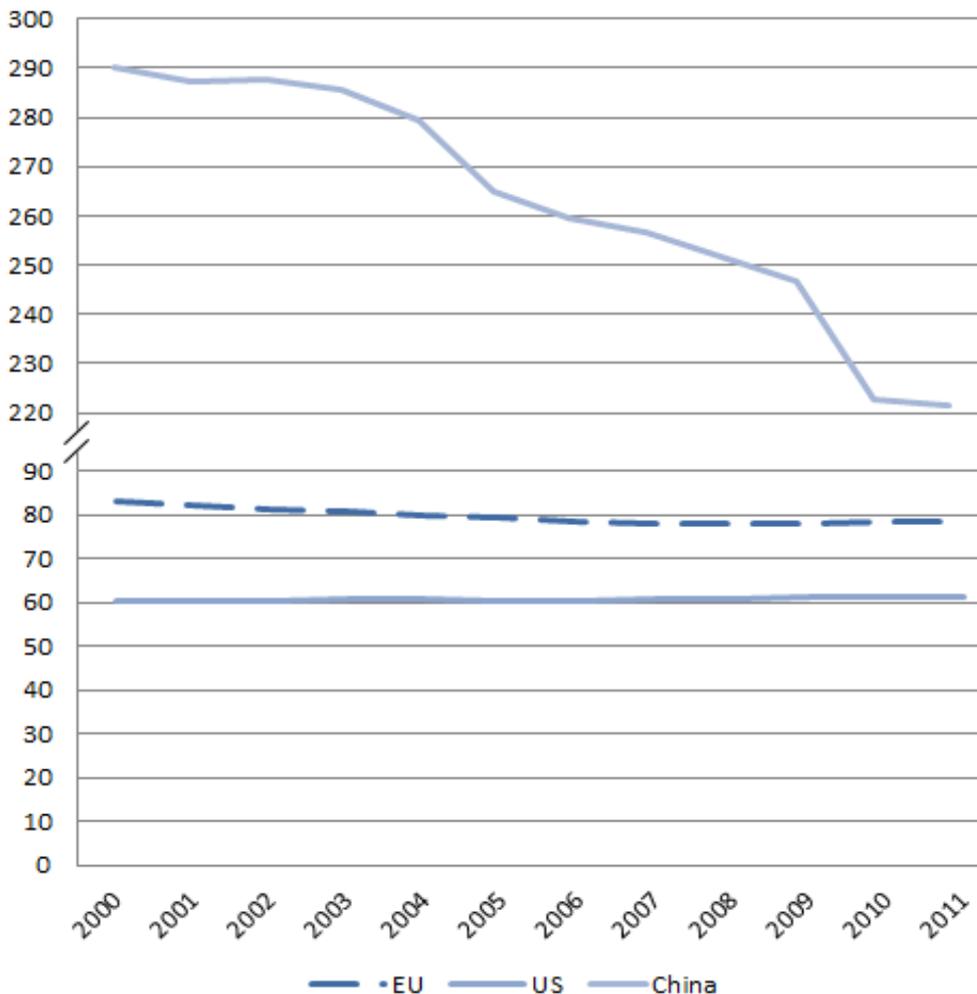
Source: Eurostat.

The 78.5 million children below the age of 15 account for 15.6% of the total EU27 population. As such, the EU child population provides a larger potential traditional toys and games market than in the US, which counts a child population of about 60 million or 16.5% of the total population. The actual difference in size of the market for traditional toys and games between the US and the EU is smaller than predicted purely on the basis of child population. The main explanatory factor for this is

likely to be the difference in average spending power between EU and US citizens. Average income per capita in the US was about €51,750 in 2012, compared to about €27,200 in the EU.⁷

Child population in the EU and US are roughly a factor 3 to 4 lower than the number of children in China. In 2011 the number of children under 15 years old was around 220 million or 19.6% of total population (cf. Figure 2.6). This provides a huge potential for traditional toys and games sales. However, child population in China has declined sharply since 2000. In the long run this could constrain growth in demand for toys and games in China. Current growth of the Chinese market is mostly driven by an increase in purchasing power of parents and teenagers.

Figure 2.6 The number of children aged 0-14 years in the EU, US and China (in million)



Sources: Eurostat, US Census Bureau, National Bureau of Statistics of China.

The future development of market potential is partly determined by birth rates. In the EU-27 birth rates differ significantly between Member States: in Germany in 2011 it was 8.1 per 1,000, while in Ireland 16.3 per 1,000. The average birth rate in the EU27 was 10.4 per 1,000 in 2011.

Birth rates in the US were quite stable until 2009 followed by sharp decrease afterwards, falling to 12.7 per 1,000 in 2011. The increase of about half a million in the number of children between 0 and 14 years in the US from 2006 until 2010 may be related to a decrease in infant mortality rate.

⁷ Sources used to construct GDP per capita in euro at current prices for the EU27 and the US in 2012: Eurostat and US Census.

Another possible reason may be a slight increase in immigration. This growth has flattened out since 2009, reflecting the decline in birth rates.

The adoption of the one-child policy in China has resulted in the dramatically reduced number of children shown in Figure 2.6. The one-child policy also means that birth rates in China are expected to continue falling gradually from 11.9 per 1,000 in 2011 to 10.8 per 1,000 in 2016. However, there are some signs of upcoming changes in policy towards a limited relaxation of the one-child regime. This would likely contribute to a stabilization of the birth rate.

2.2 The toy industry

In order to analyse the economic importance of the toy industry from the supply side, we present indicators for the size of the sector in terms of number of firms, employment and turnover, both in absolute figures as well as relative to manufacturing as a whole. We start with a discussion of the main players active on the global and EU market.

2.2.1 Main players on the market for traditional toys

Traditional toys and games are dominated by global brands such as LEGO, Hasbro and Mattel. In most major EU countries these three companies are market leaders. Their combined market share in the EU9 is almost 27%. However, in terms of sales, Hasbro was ranked as sixth company in Germany, while LEGO was ranked as tenth company in Spain in 2011.

Table 2.2 Top 10 companies active on 9 main EU markets by sales, 2011

Company	€ million	% of total
Mattel Inc	1343.6	10.08
LEGO Group	1108.5	8.32
Hasbro Inc	1084.9	8.14
Private Label	575.2	4.32
Simba-Dickie Group GmbH & Co KG	386.2	2.90
Giochi Preziosi SpA	375.7	2.82
Geobra Brandstätter GmbH & Co KG	316.8	2.38
VTech Holdings Ltd	296.9	2.23
Ravensburger AG	234.1	1.76
Takara Tomy Co Ltd	203.6	1.53
Other	7403.9	55.55

Source: Euromonitor. Companies are global brand owners, except private label companies. Sales under private labels are collected under the heading Private label.

Next to global players there are a number of domestic ones. In Italy there is a strong player Giochi Preziosi Spa which is also present in France. Another strong domestic Italian company, Clementoni Spa, is very active in Italy but not outside the country. Such variation can also be seen when comparing the global and EU markets. A significant player on the world arena in terms of sales, BANDAI NAMCO Group, is not even in the top 10 in the EU.⁸ Another worldwide top 5 company,

⁸ Namco Bandai Holdings Inc. or Bandai Namco Group is a Japanese holding company with its headquarters in Tokyo, Japan.

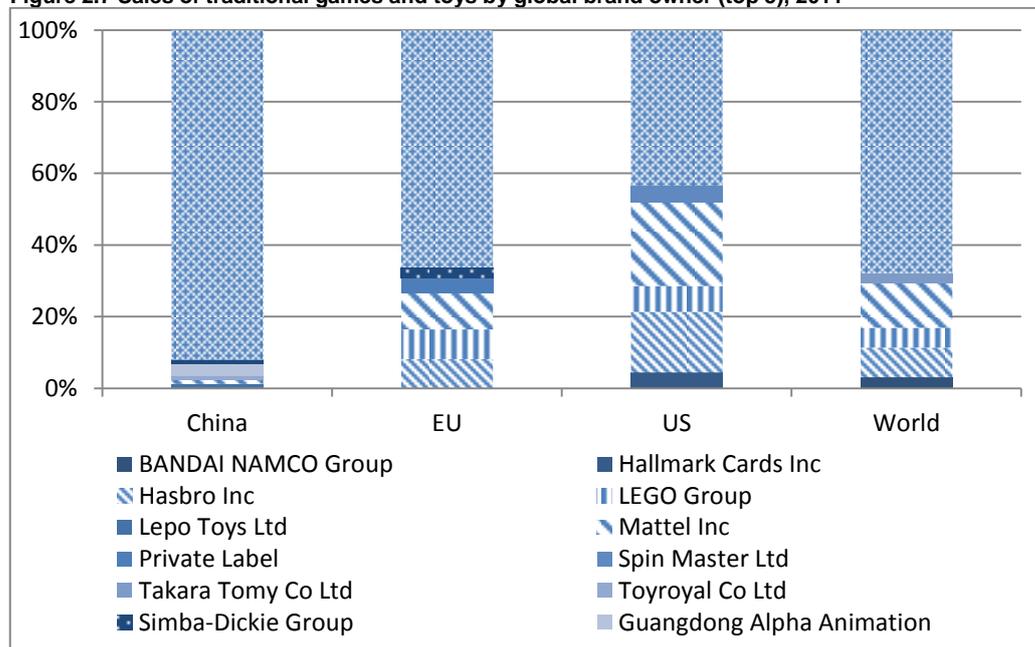
Takara Tomy Co Ltd, just enters the top 10 on the EU market, mainly due to its market presence in the UK.⁹

As shown in Figure 2.7, the top 5 companies in the US have more than 50% of the market. In the US Mattel Inc was the largest manufacturer in 2011 with sales worth almost €3.3 billion, accounting for 23.5% of the traditional toys and games market. Mattel does a majority of its own brand and licensed toy production and manufacturing in China, and then imports the toys for sale in the US. Hasbro ranks second at about 17% of the market, followed by LEGO on third place.

In China each of the top 5 companies individually represents less than 4% of the market, and combined they represent less than 10% of the market in terms of sales. Guangdong Alpha Animation & Culture Co Ltd is an important domestic player in China. It represents 3.2% of the Chinese market of traditional toys and games. It supplies the Chinese market with games and toys from its base in Shantou. This city is a hub for toys and games production in China, with several other companies in the region manufacturing toys for the domestic market and for export. Guangdong Alpha is mainly focused on the domestic market. In addition, it also exports games and toys to the UK and a number of regional and neighbouring markets. The company's overall value share within traditional toys and games increased slightly in 2011.

Mattel, Hasbro and LEGO are market leaders worldwide for traditional toys and games. While Mattel is the leading company in the world in terms of sales, in China it ranks 4th with a 0.8% share (Table 2.3). Likewise, Hasbro represents about 0.8% of the Chinese market but does not rank in the top 5 in terms of sales value in China.

Figure 2.7 Sales of traditional games and toys by global brand owner (top 5), 2011



Source: Euromonitor. Note: EU is represented by the nine markets for which the Passport database covers brand owner shares.

⁹ Takara Tomy Co is a Japanese toy, children's merchandise and entertainment company with its headquarters in Tokyo, Japan.

Table 2.3 Top 5 companies by sales of traditional toys

Rank	China	EU	US	World
1	Guangdong Alpha Animation	Mattel Inc	Mattel Inc	Mattel Inc
2	Toyroyal Co Ltd	LEGO Group	Hasbro Inc	Hasbro Inc
3	Lepo Toys Ltd	Hasbro Inc	LEGO Group	LEGO Group
4	Mattel Inc	Private Label	Spin Master Ltd	BANDAI NAMCO Group
5	Shanghai Yaoji Playing Cards	Simba-Dickie Group	Hallmark Cards Inc	Takara Tomy Co Ltd

Source: Euromonitor.

2.2.2 Key statistics on the EU toy industry

Eurostat estimates for 2010 indicate that the sector Manufacture of games and toys (Games and Toys, NACE 32.4) in the EU27 comprised around 5,300 enterprises and employed around 53,000 persons. Turnover generated by the sector was almost €7.9 billion in 2008 (latest available figure for the EU27). Table 2.4 below summarises some key variables for Games and Toys and how this compares to the manufacturing sector as a whole. The share of Games and Toys in total manufacturing is generally very small, at less than 0.5%.

The sector Games and Toys has a relatively high share of value added share in total production value of its products. This suggests that the activity performed in the EU in this sector offers higher added value compared to the upstream value chain than for the manufacturing sector as a whole.

Compared to 2004, the size of the sector declined when measured in number of enterprises and number of persons employed. However, during the same period the sector's turnover has increased. Over the 2008-2010 period, the activity stabilized with some signs of increase in employed persons and the number of enterprises.

Table 2.4 Manufacture of games and toys: Key indicators for the EU27 – share of manufacturing total in parentheses

Indicator	NACE 2	2004	2008	2009	2010
Number of enterprises	Manufacture of games and toys	6,600 (0.28%)	5,213 (0.25%)	7,846 ¹⁰ (0.38%)	5,330 (0.25%)
Turnover	Manufacture of games and toys	7,000 (0.11%)	7,869.16 (0.11%)	-	-
Number of persons employed	Manufacture of games and toys	67,100 (0.19%)	-	52,000 (0.17%)	53,000 (0.18%)
Value added at factor cost in production value (%)	Manufacture of games and toys (manufacturing total)	35 (28.53)	40 (26)	40 (27)	40 (-)

Source: Eurostat SBS. Notes: '-' means no data available; share in / value of manufacturing total in parentheses.

The sector is dominated by SMEs and self-employed. Table 2.5 below presents results based on SBS data sets. These imply that 99% of the toy manufacturing enterprises have between 0 and 249 employees, providing 61% of the employment of this industry. The share of firms and employment across firms of different size classes is comparable to manufacturing as a whole. The sector is characterised by a prevalence of small companies. About 84% of companies in the sector have between 0 and 9 employees on average in the EU27, and a further 14% of companies have between 10 and 49 employees. While the bulk of firms is micro-sized (0-9 employees) or small (10-49), 66% of employment is still in firms of medium or large size.

¹⁰ The extreme increase of companies from 2008 to 2009 is caused by companies reported for France. Eurostat reports for this country the following number of companies for 2008=489, 2009=3345, and 2010=601.

Table 2.5 Share of employment and number of enterprises by company size class, EU27, 2010

	Manufacturing		Manufacturing of games and toys	
	Number of enterprises	Number of persons employed	Number of enterprises	Number of persons employed
From 0 to 9 persons employed – micro	82%	14%	84%	16%
From 10 to 49 persons employed – small	14%	21%	14%	18%
From 50 to 249 persons employed – medium	3%	25%	2%	27%
250 persons employed or more – large	1%	40%	1%	39%
Total	100%	100%	100%	100%

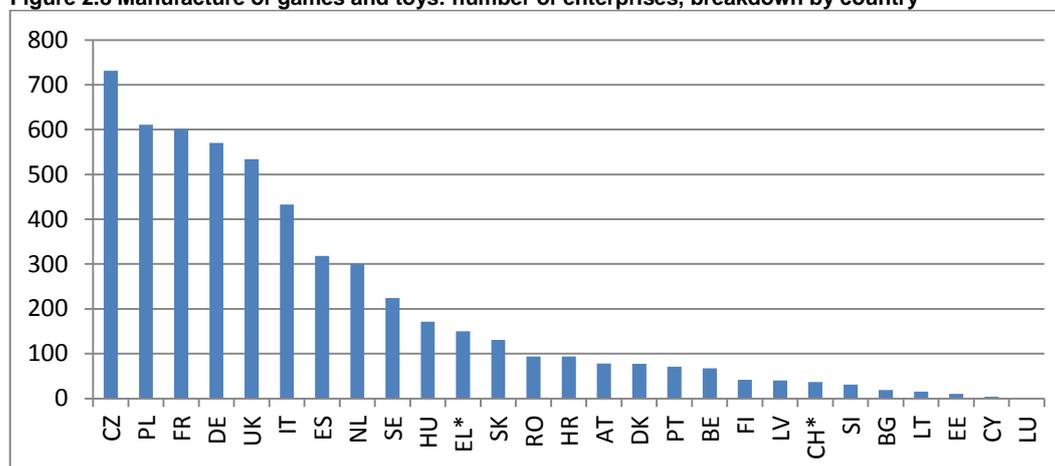
Source: Eurostat SBS; numbers presented may not add exactly to 100% due to rounding. Note: Total number of enterprises in Games and Toys taken from SBS Annual detailed enterprise statistics for industry, for NACE 32.4. Other figures needed for calculations taken from SBS Industry by employment size classes.

2.2.3 Toy industry manufacturing activities in the EU

This section looks at two key indicators for manufacturing activity: the number of enterprises, and turnover. The next section presents an overview for the third key indicator, employment. The focus is on the geographical distribution of the sector across the EU and several neighbouring countries, as far as data allow.

There is a strong geographical concentration of the industry in terms of the number of enterprises, with almost half of the companies located in four countries: Czech Republic (13.4% of all enterprises), Poland (11.2%), France (11%) and Germany (10.5%).

Figure 2.8 Manufacture of games and toys: number of enterprises, breakdown by country

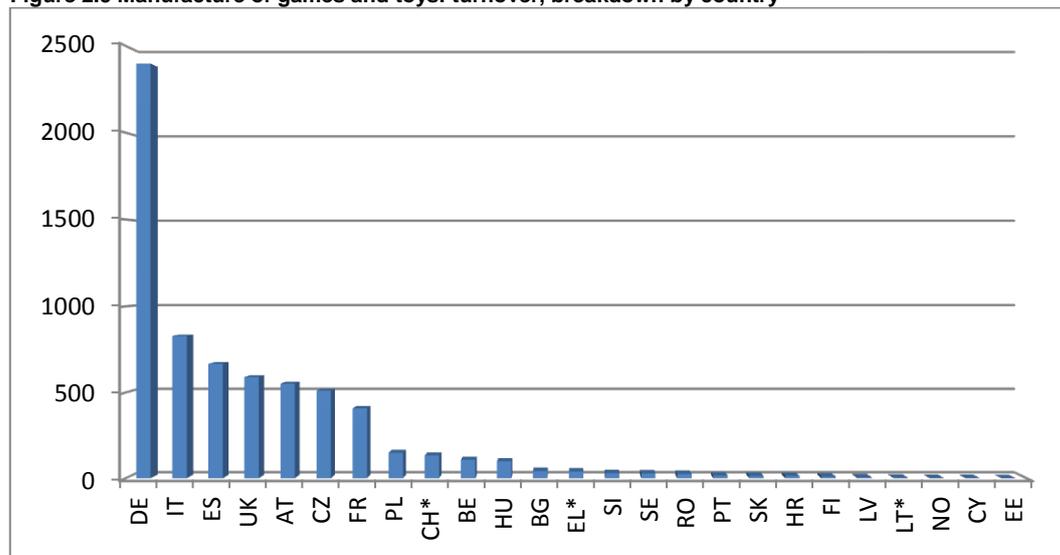


Source: Eurostat SBS. Note: * data for 2009 (EL and CH). Data missing for Malta, Luxembourg, Ireland.

The pattern for turnover across the EU countries looks different (Figure 2.9). Germany, Italy and Spain emerge as the largest toy industries in Europe. Germany stands ahead of the rest. The difference in patterns between enterprises and turnover clearly indicates that SMEs are more prominent in turnover of the toy industries of Poland and the Czech Republic. The relatively high position of Austria in this list is likely affected by activities not related to traditional toys and games.

The Austrian Games and Toys industry includes a world-leading producer of casino games/ arcade cabinets.¹¹

Figure 2.9 Manufacture of games and toys: turnover, breakdown by country



Source: Eurostat SBS. Note: * data for 2009 (EL and CH) or 2008 (LT). Data missing for Denmark, Ireland, Luxembourg, Malta, and the Netherlands.

Within the EU there are a number of regions where toy production is concentrated. Table 2.6 below indicates the main regions that were mentioned in interviews with Toy Industries of Europe (also see TIE Facts and Figures, 2010) and various national associations.

Table 2.6 Main regions of production of traditional toys and games in Europe

Country	Regions
France	Franche-Comté, Jura, Rhône-Alpes
Germany	Bavaria, Baden-Württemberg
Italy	Lombardy, Piemonte, Marche, Veneto
Spain	Valencia, Cataluña, Alicante
Ireland	Waterford
Denmark	Southern Denmark
Malta	
Czech Republic	South Bohemia, Brno
Poland	Silesia
UK	North West, East Midlands, Kent, the Thames Valley/Heathrow Airport

Source: TIE Facts and Figures, and interviews with industry associations and producers.

Toy production in the EU covers specific toys, from for example wooden toys produced in France, to plastic toys produced in Poland, to board games produced in Ireland. The majority of toy production however currently takes place in the Far East, notably China. Several interviewees indicated that the size of production facilities in China is growing and they often serve multiple clients. This is partly to serve the growing Chinese market, and partly to reduce costs to serve the EU, US and other main international markets.

¹¹ Source: communication via e-mail with the Austrian Chamber of Commerce. We are grateful to TIE for pointing out the possible problems in interpreting the high position for Austria in terms of traditional toys and games.

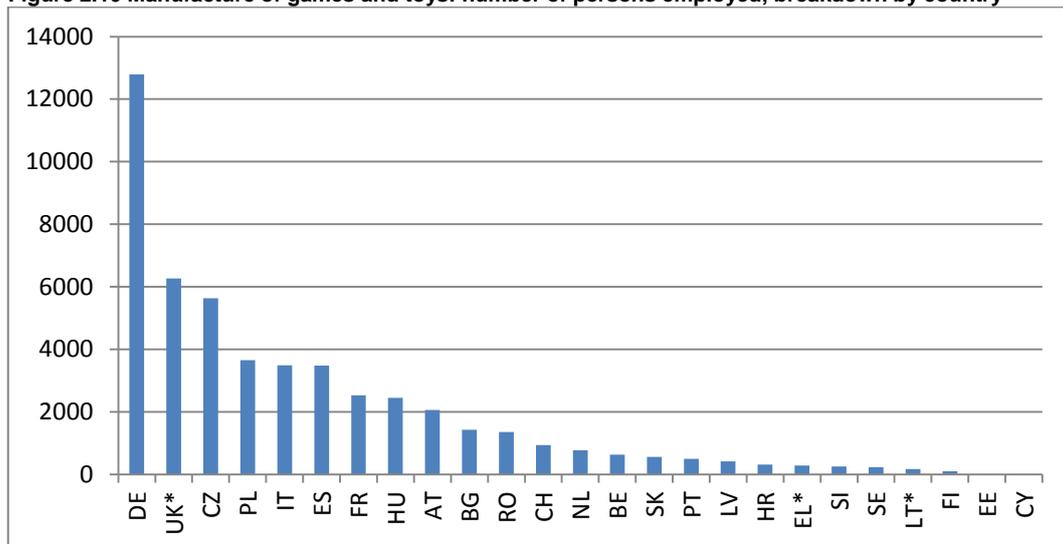
Concrete information on the number of manufacturing facilities both in the EU and overseas is not available. Companies producing in the EU often have warehouse facilities in addition to production locations. Such warehouse activities could be shared however, or may be outsourced to general warehouse and distribution companies, handling more than just toys. Offshore production in China can be either outsourced to Chinese producers or stay in-house by "outsourcing" to subsidiary companies in China.

2.2.4 Employment in the EU toy industry

Direct employment in toy manufacturing

Germany is by far the largest producer in terms of absolute employment and turnover. Germany accounts for a quarter of all people employed in this sector in the EU27. Considering that for example the number of companies in the Czech Republic is much higher, this indicates that the average firm size in Germany is comparably larger. As indicated above, the sector is characterised by a prevalence of small companies. However, only about 34% of direct employment takes place within these micro- and small companies (0 to 49 persons employed) according to calculations based on Eurostat data (Table 2.5 above). The medium- (50 to 250 persons employed) and large (250 persons employed or more) companies account for 27% and 39% of employment, respectively.

Figure 2.10 Manufacture of games and toys: number of persons employed, breakdown by country



Source: Eurostat SBS. Note: * data for 2009 (EL) or 2008 (UK, LT). Data missing for Denmark, Malta, Luxembourg, Ireland.

Interviews have confirmed that manufacturing activity is taking place in EU toy firms, and generally covers most of the EU employment of these companies. Several large companies have substantial employment in production activities in the EU, such as LEGO in Denmark and the Czech Republic, Playmobil in Germany and Malta, and Hasbro in Ireland. Production activity, including assembly, accounts for most of the factory employment. Furthermore, substantial parts of EU employment in traditional toys and games manufacturing companies are in in-house distribution and warehousing activity. Information from our interviewees indicates that product development is also an important source of employment in the EU. This combines marketing activities, design and research. Production and product development activities moreover interact with quality control activity, part of which is also related to regulatory requirements.

Not much quantitative information on the breakdown of activities in manufacturing could be found. Interviews with several larger suppliers suggest that warehousing and distribution employment could be in the order of magnitude of 10-30% of production employment. For SMEs the focus tends

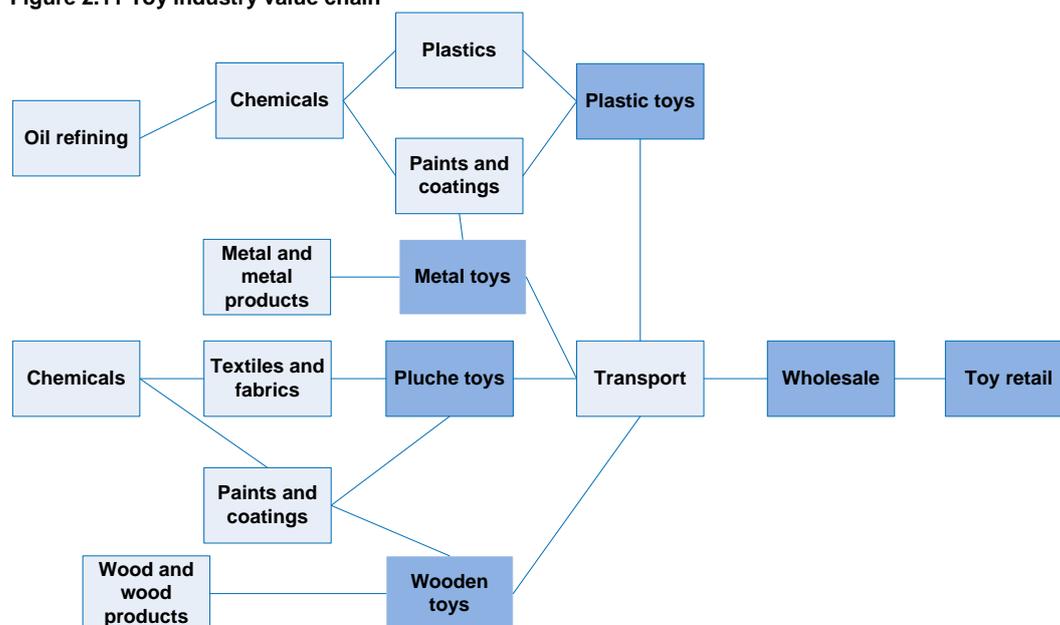
to be more on production for some, while others specialize more in design, or import and distribution of toys. This information stems from interviews with both companies that produce in the EU and companies that have outsourced production to offshore locations in the Far East and act mostly as importers and distributors. Manufacturing, product and process design, and research and development including testing are sources of in-house employment in the EU. In-house testing activities, however, only for the largest companies. Based on mostly qualitative information provided during the interviews, combined employment in market research, design and development within toy companies is however not likely to exceed 10% of total employment, and is often linked to the headquarters or main production facility.

Indirect employment in toy manufacturing

Indirect employment generated by the toy industry is related to the supply of components and raw materials, as well as distribution (wholesale and retail) that is external to the traditional toys and games manufacturing companies. Figure 2.11 below provides an overview of the value chain for the types of toys that are typically distinguished by industry, referring to the main material used (wooden toys, metal toys, plastic toys and plush toys).

The focus of the study is on the segments indicated by the shaded boxes, viz. toy production and toy distribution.

Figure 2.11 Toy industry value chain



Source: Ecorys.

Estimation of indirect employment in raw material and components supply is subject to a high degree of uncertainty. The level of detail of EU27 harmonized input-output statistics that link the steps in the value chain is at a higher level of aggregation including other manufacturing categories such as furniture and musical instruments. An indication can be based on the share of value added in production value in the manufacture of games and toys. This share stands at 40% for the EU27 and is linked to direct employment. The other 60% of production value is linked to the value of raw materials and intermediate components, hence to indirect employment. Some of these materials and components are imported, while others are produced within the EU.

Table 2.7 below shows the typical input sectors for the toy industry within the upstream part of the value chain and their import shares from outside the EU27. Although the input-output structure reflects a more aggregated sector than manufacture of games and toys, the import shares and

domestic (intra-EU) shares of the materials, components and services can be weighted by their importance in intermediate use by this aggregate sector. Some 87% of the value of components, business services and raw materials are produced in the EU27. Thus, as an initial estimate, we consider that indirect employment in the upstream part of the value chain for the toy industry is proportional to the product of these two percentages, 87% times 60% of the production value. The outcome is that slightly less than 50% of production value is linked to upstream indirect employment, while direct employment is proportional to 40% of production value, and the 10% remaining are related to employment outside the EU27.

This would suggest that indirect employment in components, services and raw materials could be 25% higher than direct employment. We have to keep in mind, however, that this estimate is subject to assumptions and data limitations. In practice, indirect employment in the toy industry is not likely to exceed direct employment, as indicated in an interview with a large manufacturer. Hence, our final estimate is that direct and indirect employment in the toy industry value chain are more or less of equal size.

Table 2.7 Source of inputs for manufacturing of games and toys

Input Sectors	Share Imported	Share Domestic
Raw materials and intermediates		
Crude petroleum and natural gas; services incidental to oil and gas extraction excluding surveying	86,1%	13,9%
Textiles	21,3%	78,7%
Wood and products of wood and cork (except furniture); articles of straw and plaiting materials	7,2%	92,8%
Chemicals, chemical products and man-made fibres	17,2%	82,8%
Rubber and plastic products	8,3%	91,7%
Other non-metallic mineral products	7,7%	92,3%
Basic metals	25,2%	74,8%
Fabricated metal products, except machinery and equipment	7,2%	92,8%
Electrical machinery and apparatus n.e.c.	18,3%	81,7%
Secondary raw materials (recycling)	0,0%	100,0%
Services		
Electrical energy, gas, steam and hot water	0,7%	99,3%
Research and development services	4,3%	95,7%
Other business services	5,4%	94,6%
Weighted Average	13,5%	86,5%

Next to indirect employment in input sectors, the toy industry also creates employment in the distribution sector. This sector includes warehousing, wholesale and retail. It should be noted that this employment is related to both production and import of toys. For wholesale and warehousing, no direct data are available that relate to the toy industry. From interviews with industry analysts and companies, we can conclude that larger manufacturers do a substantial part of warehousing and wholesale internally or with dedicated importers on specific markets. The retail sector also provides a substantial part of warehousing and combines retail with wholesale activity. This makes it difficult to assess indirect employment in wholesale and warehousing. Again, it is likely lower than direct employment in these tasks, which stands at between 10% to maximum 30% of production employment according to interviews.

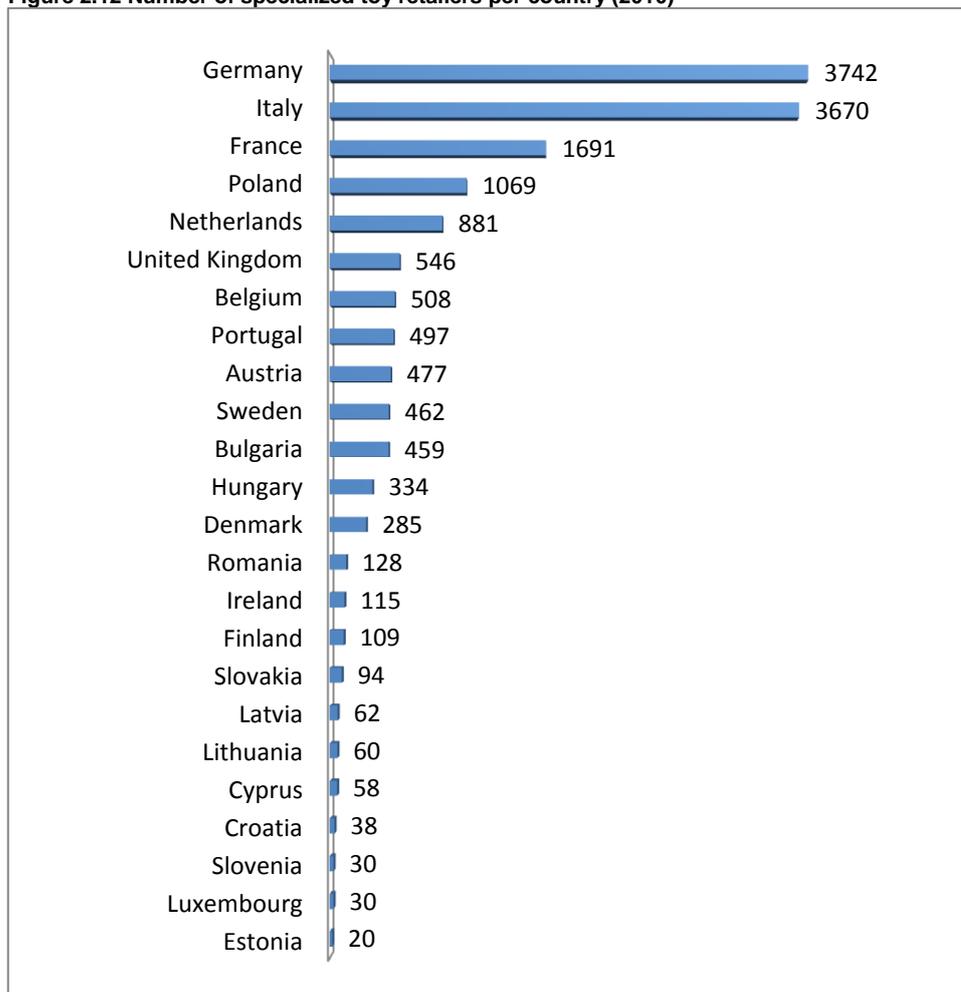
Retail, even more than warehousing and wholesale, is related more to the domestic consumption of toys than to domestic production of toys. Therefore it can be seen as a separate source of employment within the toy industry value chain, rather than a form of indirect employment generated by toy production.

2.2.5 Toy retail services

This section gives a brief overview of the distribution segment of the toys value chain. As such we move further down the chain, hence closer to the final consumption of toys.

In 2010 the retail sale of games and toys in the specialised stores sector in the EU27 consisted of 19,129 enterprises which employed a total of 101,800 employees.

Figure 2.12 Number of specialized toy retailers per country (2010)

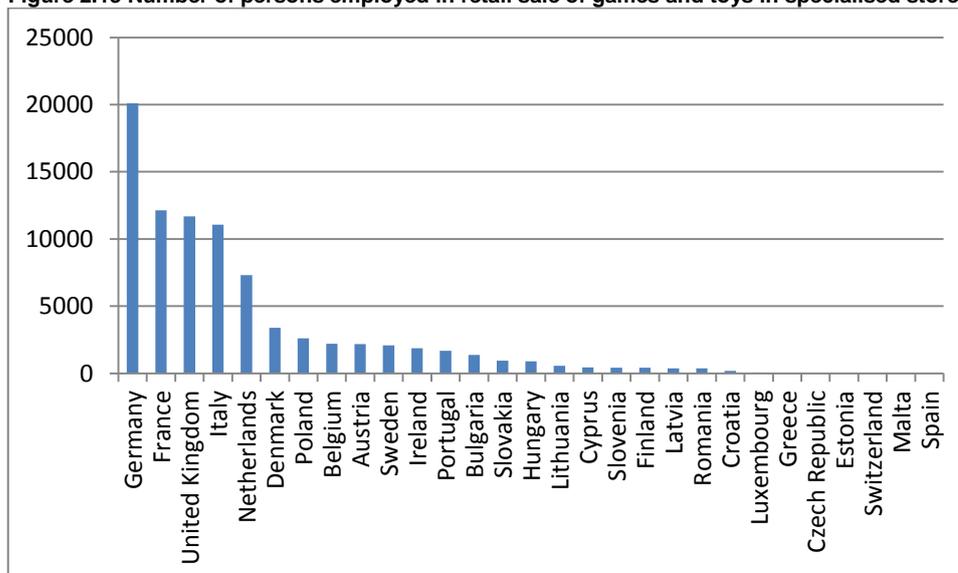


Source: Eurostat. Note: data are missing for Switzerland, Malta, Spain, Czech Republic and Greece.

Looking at the number of distributors by country (Figure 2.12), the main players are Germany, Italy, France and Poland. In some of the main markets, such as the UK and France, retail activity seems less concentrated in specialized stores as their number falls behind Germany and Italy more than would be expected on the basis of market size.

Figure 2.13 shows that Germany has by far the largest specialised toy retail sector in terms of absolute employment. France is next in line, where the sector employs about 60% of the German total.

Figure 2.13 Number of persons employed in retail sale of games and toys in specialised stores, 2010



Source: Eurostat. Note: Data are missing for Estonia, Greece, Switzerland, Czech Republic, Spain, Malta.

The table below provides an overview of the three indicators of specialized toy retail in the EU27, also including turnover. For comparison, the share of specialized toy retail in total retail trade is provided.

Table 2.8 Retail sale of games and toys in specialized stores: Key indicators for the EU27 (share of retail trade in parentheses)

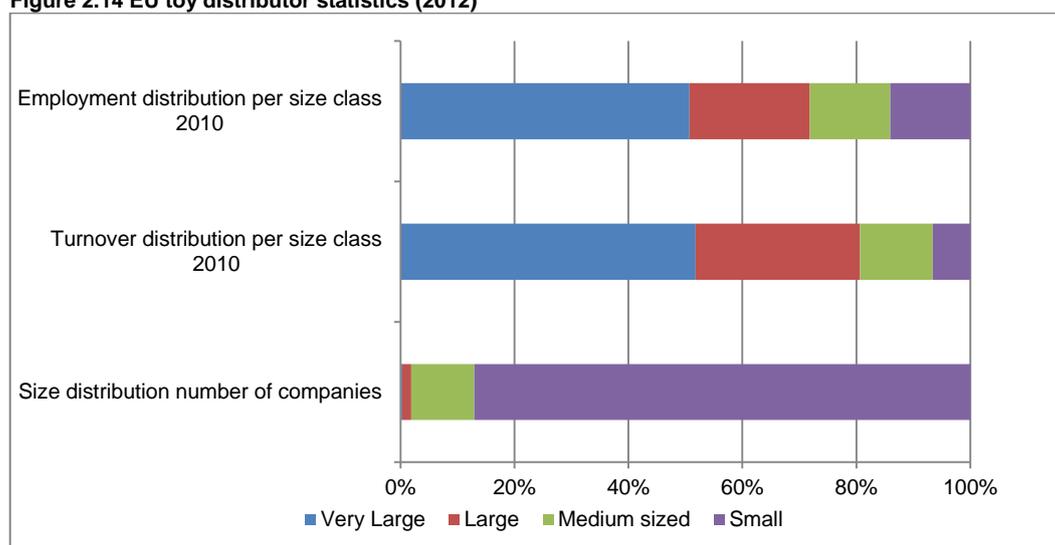
Indicator	NACE 2	2008	2009	2010
Number of enterprises	Retail sale of games and toys in specialized stores	18,485	18,293	19,129
		0.50%	0.51%	0.52%
Turnover (in € million)	Retail sale of games and toys in specialized stores	12,009.56	11,873.35	12,265.11
		0.46%	0.48%	0.47%
Number of persons employed	Retail sale of games and toys in specialized stores	89,600	97,000	101,800
		0.49%	0.53%	0.55%

Source: Eurostat.

Eurostat SBS does not include a breakdown by size class for these indicators. As an alternative, we used information based on the sample of firms collected from the Amadeus database for the relevant NACE code. This information allows a breakdown by company size class, but is based on a sample. The sample moreover includes retail and wholesale activities and as such is not completely comparable to the Eurostat games and toys retail data. Figure 2.14 reports the percentage shares as indicative for EU27 retail of games and toys in specialized stores. Toy distributors are mainly small and medium sized companies. The sample is composed mainly of specialized toy retail shops, but also includes companies with a general wholesale code that are linked to company names active in the toy industry.

As in manufacturing of games and toys, we see that while the percentage share of large and very large companies in the total number of distributors is only 0.3%, they generate more than 80% of turnover. A similar observation can be made regarding employment, sorted per size class for the year 2010, where the large and very large companies together hold 70% of total employment.

Figure 2.14 EU toy distributor statistics (2012)



Source: Amadeus.

Retail channels

Table 2.9 below presents the main retail distribution channels in the key European toy markets for 2011. As can be seen from the table most toys are sold in traditional retail outlets. However, online toy sales are growing rapidly, increasing market shares in many countries. In Europe the main distribution channels still remain the specialised toy shops, while the second place is taken by grocery retailers.

Table 2.9 Retail channel market shares for traditional toys and games in main EU markets, 2011

	UK	France	Germany	Italy	Spain*
Grocery retailers	28,8%	40,7%	12,4%	33,0%	23,1%
Electronics and Appliance specialist retailers	2,2%	n/a	1,0%	n/a	n/a
Mixed retailers	13,4%	1,3%	11,7%	7,0%	25,5%
Leisure and Personal Goods specialist retailers	37,6%	46,5%	46,1%	57,8%	44,0%
- Traditional toys and games store	28,6%	45,4%	41,2%	50,4%	40,0%
- Media product stores	1,8%	n/a	0,6%	1,3%	n/a
- Others	7,2%	1,1%	4,3%	6,1%	4%
Other non-grocery retailers	0,5%	0,6%	6,7%	n/a	2,7%
Vending	0,1%	0,1%	0,4%	0%	n/a
Homeshopping	0,8%	0,1%	1,4%	0,1%	0,4%
Internet retailing	16,1%	10%	15,6%	2,1%	4,0%
Direct selling	0,4%	0,1%	3,5%	0%	0,3%
Other	0,1%	0,6%	1,2%	0%	0%
Total	100,0%	100,0%	100,0%	100,0%	100,0%

Source: Euromonitor (June 2013). Note: n/a stands for not applicable or negligible; *: The share reported for internet retail in Spain was considered too high by the Spanish Toy Association, which indicated that a share of 0.5% is more realistic. This value can also be found in Regiplan (2012), referring to NPD data as source. Upon consultation, Euromonitor indicated that their estimate is based on secondary data for the rise of internet retail in consumer goods, cross checked on the basis of interviews with key actors in the Spanish toy market.

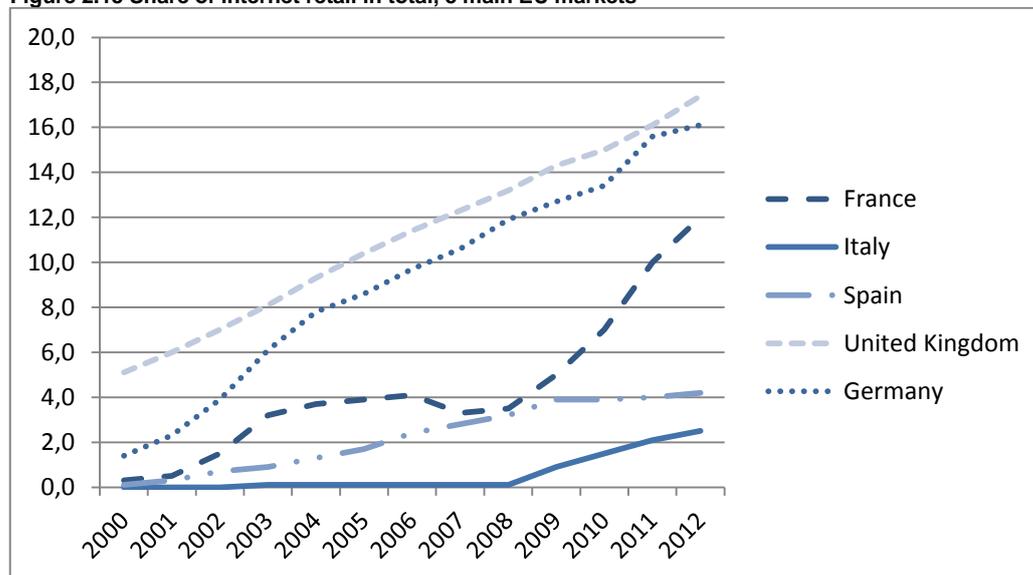
One of the possible explanations why the share of grocery retailers is increasing is that they tend to offer cheaper toys than traditional/specialised toys and games stores (Euromonitor International, 2012a). This was also confirmed in interviews as one of the challenges for traditional toys and games stores. It is important to note that some of the specialised toys retailers started designing

their own products (Wong et. al.,2005), selling under private label. Interviews pointed out that private labels allow retailers to generate a higher profit margin, but several interviews also mentioned that licensed toys, trending toys and branded toys are often selling in larger volumes.

Although most toys are sold in traditional retail outlets, in recent years online sales have attracted more attention. Most retail chains and manufacturers started to invest in online retailing (e-tailing) and most of them have websites for sales (Euromonitor International, 2012a). Moreover, manufacturers also sell via specialized online retailers such as Amazon. Such e-tailing also gives a possibility for small manufacturers to find their way into the toy market, while they usually experience some obstacles getting shelf space in traditional retail channels (Johson, 2001). Moreover, an interview with a UK distributor mentioned that sales via Amazon and similar online retailers allow SME suppliers of toys to sell relatively large volumes quickly due to their improved exposure to consumers. While prices in online shops tend to be lower than in the traditional shops (Euromonitor International, 2012a), this does not always imply a smaller margin for the producers and the online retailer. Saving logistics costs implies more room for profit margins. The rapid rise of online buying behaviour and the online exposure offered by some specialized retailers also implies that they can acquire a higher share of profits.

Figure 2.15 below shows how internet retailing has increased its share over time in the five main markets. While the UK had a head start in internet retailing, the German online retail share has caught up by now. There seems to be somewhat of a North-South gap. France appears to close the gap more quickly than Spain, while online shopping for toys started growing fast in Italy only recently and so far remains low.

Figure 2.15 Share of internet retail in total, 5 main EU markets



Source: Euromonitor.

2.2.6 Innovation: R&D and advertising

Because of the relatively short product life cycles and competition for children's preferences with other products, innovation is an important element in the business models of toy manufacturers. In interviews, the concept of innovation in the toy industry was further illustrated. Innovation focuses on introducing novelties. Novelties can consist of completely new toys that involve a new concept or functionality such as interactive toys. Alternatively, they introduce new themes and updated concepts, such as in board games and toys systems such as LEGO, or Playmobil. Innovation

reflects successful product development which depends on both investments in advertising and in market- and technological research (R&D).

Research and development

Available data on R&D personnel and expenditures are presented in the tables below. Compared to turnover, R&D investments are typically between 0-5%. This was also confirmed during interviews. R&D employment shares are between 0-10%.

Austria scores higher than the other countries for which data are available. Austrian figures for R&D are affected more than other countries by activities not related to traditional toys and games. The Austrian Games and Toys industry includes a world-leading producer of casino games/ arcade cabinets. Moreover, closer inspection of the Austrian data for Manufacture of games and toys reveals that companies with their main activity in this sector are not as specialized in games and toys as in other European countries. They generate about 43% of turnover from other activities. These activities not related to traditional toys and games may be relatively R&D intensive, hence the higher R&D score in Austria.

Table 2.10 R&D employees in Manufacture of games and toys, as percentage of total employees¹²

Country	2007
Czech Republic	0.4 %
Germany	2.8 %
Spain	7.5 %
Austria	14.2 %
United Kingdom	2.2 %

Table 2.11 R&D expenditures in Manufacture of games and toys, as percentage of total turnover¹³

Country	2007
Czech Republic	0.6 %
Germany	1.7 %
Spain	2.6 %
Austria	5.9 %
United Kingdom	1.6 %

Advertising

Although public data on investments in marketing by toy companies are not available, interview information from producers and associations indicate that the investments are small relative to turnover. For very large companies, investments can run in the millions of euro in absolute value. The advertisers focus on TV ads, catalogues, and increasingly social media. Depending on the type of market the distribution can differ a bit. In Malta, for example, direct mail was mentioned by a retailer, while larger companies focus on TV. SME toy suppliers and retailers do not have the financial means to engage in substantial TV advertising. Online sales channels, as mentioned before, offer new ways of advertising for SMEs to increase exposure, such as developing websites, engaging in social media, and gaining access to specialized online retailers. However, the latter possibility may require the ability to sell sufficient volume or a network to gain access via wholesale distributors. Wholesalers and importers, on the other hand also mention toy fairs are relevant for their business to business market.

¹² All other European countries have either zero percent or the statistics are not available.

¹³ All other European countries have either zero percent or the statistics are not available.

2.2.7 International trade in traditional toys

Even though toys are manufactured globally, China is the major exporter of toys in the world. In 2006, imports of toys accounted for 89% of all toys sold in the US, from which 76% came from China (Dannwolf et al, 2011). According to Dannwolf et al (2011), Europe accounted for about 27% of the worldwide toys sales and approximately 85% of toys come from China. Below we provide an update of these figures.

Table 2.12 below shows trade flows between the main markets for traditional toys and games. The value of trade between the main markets in the ASEAN countries, China, EU27, Japan and USA accounts for €21.6 billion corresponding to approximately 90% of the total value traded in this industry.

For interpreting the value of intra-regional trade it is important to note that China in these statistics is comprised of mainland China, Taiwan, and Hong Kong. Most of the intra-China trade takes place between mainland China and Hong Kong with Taiwan only playing a limited role.

Striking is also the large extent of intra-EU trade. €4.2 billion out the €5.3 billion worth of exports are within the EU27 countries. Subtracting intra-EU exports would make the EU block the second biggest exporting region after China and before the ASEAN countries. On the import side it becomes clear that the high income countries/regions EU27, Japan, and USA are the biggest importers. These imports are to a large extent from China.

Table 2.12 Trade flows between main toy markets (in million €)

Trade Matrix 2011								
		Importer						
Exporter		ASEAN	China	EU27	JPN	USA	Other	TOTAL
	ASEAN	18,97	40,74	255,36	76,05	301,22	171,75	864,09
	China	220,41	1.494,17	5.826,66	1.202,85	7.267,73	5.029,30	21.041,12
	EU27	21,15	50,31	4.217,68	63,06	279,79	710,83	5.342,81
	JPN	22,48	41,16	25,64	0,00	29,95	33,28	152,51
	USA	8,74	21,34	88,06	17,27	0,00	211,90	347,31
	Other	3,85	23,70	226,95	13,80	349,17	199,87	817,35
	TOTAL	295,60	1.671,43	10.640,35	1.373,03	8.227,86	6.356,93	22.208,26

Source: COMTRADE.

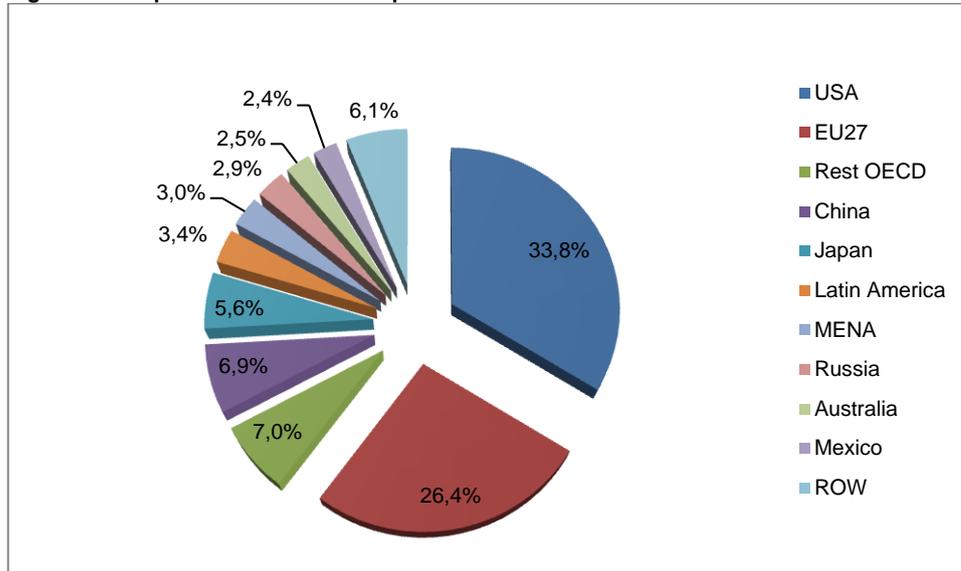
Imports

Figure 2.16 shows the top 10 importing countries/regions as a share in total world imports. As can already be seen from Table 2.12 and Figure 2.16 the EU27 and USA are the biggest importers accounting for roughly 60% of world imports. Please note that for Figure 2.16, the EU27 intra-EU imports have been subtracted. This gives an undistorted picture of the EU's performance as a trading block.

Other significant import markets are Japan, China and Rest of OECD countries, which includes for example Canada, Iceland, Norway, and Chile. Minor shares (2-3%) are taken by Russia, Mexico, and Australia. This also counts for Latin American countries, which have been aggregated into one region and still only account for 3.4% of world imports.

The rest of the world (ROW) includes in this case regions such as South Asia, the ASEAN countries, and Central Asia. Additionally, Turkey and Croatia only take very small shares of world imports, as well, with 1.24% and 0.16%, respectively. For Croatia this would correspond to a total import value of approx. €38 million out of which approximately €10 million is sourced from the EU27 countries. The rest is mainly imported from China.

Figure 2.16 Top 10 shares of world imports

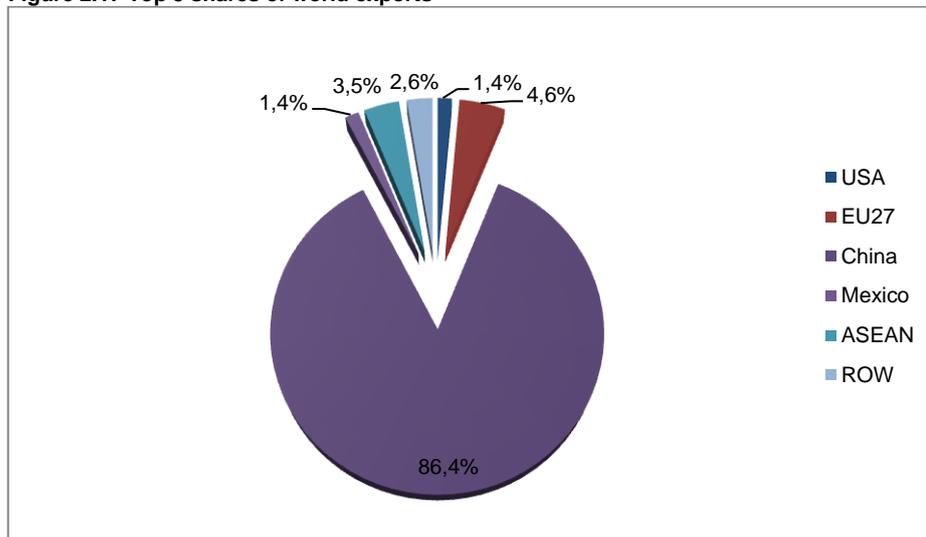


Source: COMTRADE. Note: EU27 trade does not include intra-EU trade; only trade with third countries is included.

Exports

World export shares are not as diverse as import shares. China is the main exporting country accounting for more than 86% of world exports (see Figure 2.17). With 4.6% the EU27 is the second largest exporter of traditional toys. This accumulates to a total EU export value of €1.13 billion in 2011. Similar to Figure 2.15, intra-EU trade has been subtracted. Still, exports are more than three times as large as those of the US. In addition, as a confirmation of what was observed in Table 2.12, the ASEAN region is one of the largest exporters of toy products, too. Another Top 5 exporter is Mexico. Naturally, its most significant export market is the US taking about 79% of Mexico's traditional toy exports.

Figure 2.17 Top 5 shares of world exports



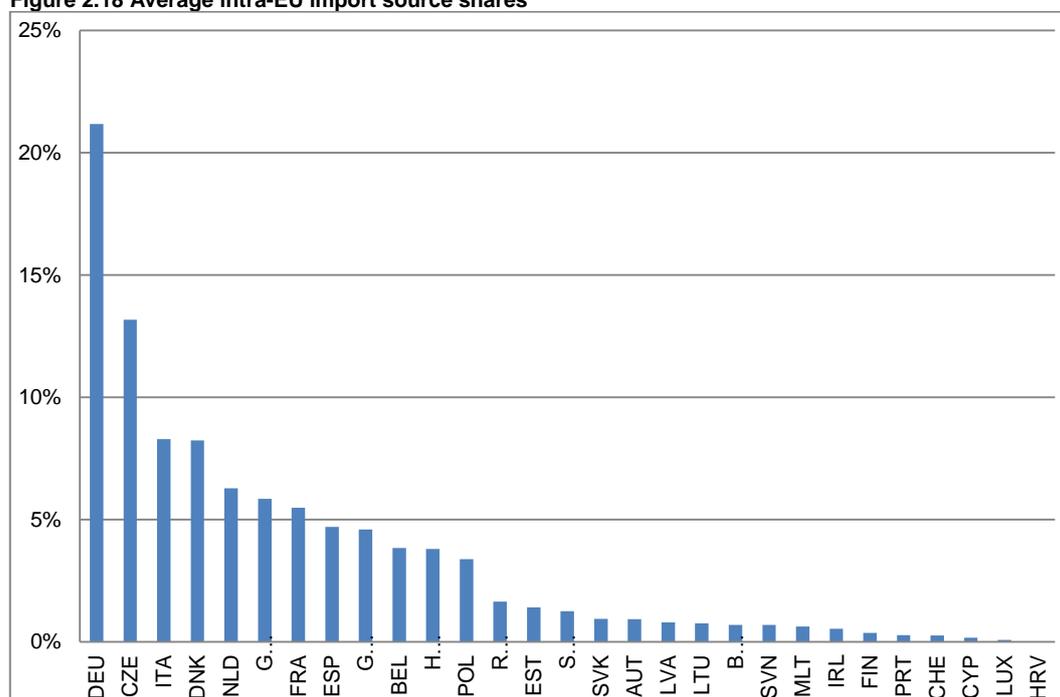
Source: COMTRADE. Note: EU27 trade does not include intra-EU trade; only trade with third countries is included.

Intra-EU trade

As indicated before, intra-EU trade took an overall value of €4.2 billion in 2011. With almost 40% this is a substantial share of the EU's overall toys trade. Figure 2.18 shows the average intra-EU import source shares. This indicates the prominence of individual countries as a sourcing option, or provider of traditional toys, within the EU. For example, Denmark takes on an average share of approximately 8% in European imports of other EU countries (including Croatia). Keeping this in mind, it becomes apparent that Germany, the Czech Republic, Italy, Denmark, the Netherlands, Great Britain, and France are the most important sources of toy products within the EU.

The relative importance of EU toy exports for the Member States differs. The median of the EU exports to GDP ratio is 0.032%. Special cases are the Czech Republic and Malta. There, this ratio equals 0.81% and 2.25%, respectively. This shows that particularly Malta's economy is comparably dependent on European toy exports. However, Figure 2.18 shows that in total terms Malta plays a limited role in intra-EU trade, consistent with the limited size of the Maltese economy.

Figure 2.18 Average intra-EU import source shares



Source: COMTRADE, own calculations.

2.3 Overview of consumption, production and employment estimates

Table 2.13 further below summarises estimates for consumption, production and direct employment of traditional toy manufacturing. These were calculated on the basis of consumption data given by Euromonitor and trade data downloaded from the COMTRADE database. The estimation approach included the following steps.

Consumption estimation:

1. For 9 countries Euromonitor provided us with the retail value of the traditional toy market;
2. GDP data for the countries in question was downloaded from Eurostat;
3. The main underlying assumption to estimate consumption for the countries for which no Euromonitor data was available is that the consumption of toy retail sales takes approximately equal shares in the total GDP of each country. This was confirmed by the 9 sample countries for which consumption data was available;

4. Given the assumption explained in 3.) and the wide availability of GDP data, consumption estimates of the remaining countries could be calculated.

Production estimation:

1. Production was estimated through the following formula:

$$Y = (1 - r) * C - (1 - ciffob) * I + X; \text{ with:}$$

Y: Production;

r: The retail margin, which was assumed to be 40%. This was confirmed by various interview partners;

C: Estimated consumption;

ciffob: Denotes the cost-insurance-freight (CIF) and free-on-board (FOB) margin, which roughly corresponds to the transportation costs. This was assumed to be 15%, which similar to the retail margin was confirmed by interview partners;

I: Imports downloaded from the COMTRADE database valued at CIF price;

X: Exports downloaded from the COMTRADE database valued at FOB prices;

2. With consumption, imports, exports, retail, and ciffob margin given, production was calculated. A common problem with trade data is the dependence of trade flow values on whether the exporter or importer is reporting. Differences between these values is often too large to account for trade costs alone. As such, trade flows reported by either side were taken into account. The result were two production estimates. Since it is difficult to attribute over- or underestimation of trade flows to either side the average of the two production estimates was taken.

Direct employment estimation:

1. Given the production value it is possible to calculate direct employment via the following formula:

$$Em = (Y * pc) / APC; \text{ with:}$$

Y: Production estimates;

pc: Share of personnel costs in production value retrieved from Eurostat for NACE 32.40;

APC: Average personnel costs per employee per year retrieved from Eurostat for NACE 32.40.

As a result of the above-explained estimation exercise, the total EU28 market size is approximately €15.8 billion .The biggest markets for traditional toys are France, Germany, the UK, Spain and Italy. Their combined size takes ca. 73% of the total EU28 market. The smallest markets are Estonia and Cyprus. The largest single country market in the world is the US. There, approximately 14 billion € worth of traditional toys are sold. Other major markets are China and Japan.

In 2011, the EU produced traditional toys worth 5.8 billion €. Production does not necessarily correlate with consumption as trade flows alter the relationship. As such, for example France produces relatively little compared to consumption and therefore is relatively dependent on imports. Their production activities cover ca. 15% of consumption if exports are taken into account. The largest EU28 countries in terms of traditional toy production are the UK and Germany. Compared to its size Malta is a relatively specialized toy producer. Playmobil produces in Malta. Considering that Playmobil is a major toy brand in the EU and that Malta does not have the market to absorb production internally, a major share of Malta's production is exported.

Table 2.13 Estimates of consumption, production and employment for the traditional toys and games sector

Country	Consumption in € million	Production in € million	Direct employment (# employees)
EU 28			
Austria	330.78	161.59	580
Belgium	406.98	278.21	1.622
Bulgaria	42.36	22.31	822
Croatia	48.82	29.18	689
Cyprus	19.78	15.54	190
Czech Republic	171.03	90.53	932
Denmark	264.50	56.47	451
Estonia	17.55	13.19	0
Finland	208.44	111.64	897
France	3,202.10	863.70	6.419
Germany	2,795.30	1,059.41	5.328
Greece	229.38	84.97	679
Hungary	109.80	40.02	1,025
Ireland	174.89	99.72	797
Italy	1,313.40	249.67	931
Latvia	22.23	22.69	1,878
Lithuania	33.89	26.90	215
Luxembourg	46.89	28.64	229
Malta	67.71	56.17	449
Netherlands	771.40	483.08	3,862
Poland	411.70	76.38	1,698
Portugal	188.16	104.06	3,659
Romania	98.50	46.90	2,439
Slovakia	76.02	70.17	2,302
Slovenia	39.79	20.96	192
Spain	1,028.80	312.75	1,681
Sweden	443.50	101.84	704
UK	3,264.70	1,306.90	10,230
EU 28 Total	15,828.40	5,833.61	50,902
Other			
Switzerland	370.10	61.04	488
Australia	1,079.70	327.17	2,616
China	4,802.80	16,011.30	128,012
Japan	5,201.10	2,200.08	17,590
Mexico	1,501.80	788.64	6,305
Russia	1,759.30	771.23	6,166
Turkey	318.50	29.31	234
Ukraine	226.60	93.91	751
United States	13,971.70	4,382.33	35,037

Source: Euromonitor for part of consumption figures. Ecorys estimates based on Euromonitor Passport, Eurostat, and COMTRADE.

Employment generated by the production activities was estimated by comparing the share of personnel costs in production and average personnel costs (a proxy for wages). As a result, we estimate that the traditional toys and games industry of the EU28 employs approximately 51,000 people. Most direct employment exists in the UK, France, and Germany. Countries with low wages generally have more labour intensive production processes, resulting in a higher value of employment per € of output. This can be seen for Slovakia, Portugal, and Poland.

3 Competitiveness and market performance of the EU toy industry

3.1 Assessment of regulatory and other framework conditions

In this section, we examine regulatory and other framework conditions that could affect the competitiveness and performance of the toy industry. In particular, we focus on how the regulation impacts on the sector along the dimensions of the structure-conduct-performance model (see section 3.2).

For the toy sector, we identified the following framework conditions that may play a role in the functioning of the market:

- Labour market regulation;
- Counterfeiting of toys;
- Toy safety;
- Market access;
- Regulatory and administrative burdens.

In the next section, we discuss these conditions more in depth and present collected opinions of interviewees related to these conditions.

3.1.1 Discussion of the framework conditions

Labour market regulation

According to Eurofound, a European Union body to contribute to the planning and design of better living and working conditions in Europe, developments in European labour market regulation range from norms guaranteeing free movement of workers in a Community-wide labour market, to norms providing rights and protection far beyond existing Member State provisions (as in equality between women and men).¹⁴ EU regulation of the labour market has also been used specifically to shape the demographic profile of the labour market. On 3 March 2010, the European Commission has launched the Europe 2020 Strategy to go out of the crisis and prepare EU economy for the next decade.¹⁵ The strategy includes, inter alia, actions aimed to improve flexibility and security in the labour market and improving the quality of jobs and ensuring better working conditions.¹⁶

Comparing labour market regulations of Europe to the 'rest of the world', research of IMF¹⁷ shows that high-income countries, like the European Member States, exhibited fairly limited variation over time, while other countries expand labour regulations more dramatically, albeit from typically low initial levels. This means that companies in high-income countries currently face more obligations following from regulations and thus have a cost disadvantage when competing with companies from low- or middle-income countries. However, this disadvantage is reducing over time. Differences in labour market regulation may demonstrate themselves in the primary labour conditions (wages), but also in secondary labour conditions (including labour circumstances).

¹⁴ <http://www.eurofound.europa.eu/areas/industrialrelations/dictionary/definitions/europeanlabourmarket.htm>.

¹⁵ http://ec.europa.eu/archives/growthandjobs_2009/.

¹⁶ <http://ec.europa.eu/social/main.jsp?langId=en&catId=958>.

¹⁷ IMF, *Labor Market Regulations in Low-, Middle- and High-Income Countries: A New Panel Database*, Working paper 11/154, 2011.

A key topic in the EU labour market regulation is employee safety. According to publications of Eurostat, 3.2% of the workers aged 15 to 64 had an accident at work in the past 12 months in the EU27.¹⁸ Most workers identified difficult work postures, work movements and handling of heavy loads as the main factor affecting physical health. Less often mentioned were risk of an accident, exposure to chemicals, dusts, fumes, smoke or gases, and noise or vibration.

Information from the interviews

Labour market regulation is hardly seen as significant issue for competitiveness within Europe. Manufacturers and associations indicate that this field of regulation does not differ for the toy industry compared to other industries. The traditional tension between the interests of employees and employers is seen also in the toy industry: a more flexible law is better for employers, but can harm incumbent employees as employers have more room for manoeuvre. According to one association, (national) labour regulation makes it difficult for manufacturers to lay off employees, resulting in lack of growth plans.

The main issue is labour market regulation in Europe leading to higher cost than in other regions of the world. One association referred explicitly to cases of child labour in China, something that does not happen in Europe. On the other hand, minimizing labour cost is not *per se* mandatory to be competitive, as illustrated by the statements of one manufacturer that exceeds the standards set in legislation in order to provide additional safeguards for employee health and safety. Despite the higher costs associated with these better labour conditions, this manufacturer has a strong brand and very competitive position in the toy sector.

It should also be noted that the EU toy companies are actively involved in enforcing good practice in labour conditions abroad, including in China, through the International Council of Toy Industries (ICTI) CARE process (which stands for Caring, Awareness, Responsible, Ethical).

Counterfeiting of toys

Counterfeiting has been a well-known problem in the toys industry for years. Already in 1998, the OECD estimated that counterfeit toys accounted for 12% of the European toy market.¹⁹ In the period 2010 / 2011, DG TAXUD registered 872 infringement cases for toys (2.127.300 articles detained with a retail value of € 16 million) and 2.585 infringement cases for games (269.348 articles detained with a retail value of € 20 million).²⁰ In comparison, the total number of infringement cases across all sectors in 2011 was 91.254 (with 114.772.812 articles detained with a retail value of € 1.272 million). The two main countries of origin of counterfeit toys are China (88%) and Hong Kong (10%).

Counterfeiting of toys is slightly different from “normal” trademark infringement. In case of a “normal” trademark infringement, the counterfeiter copies the product and the brand/trademark. In the toys industry, it often happens that the design of the product is copied and sold under a similar, but not identical, trademark. Although this may still count as a counterfeit of the design, the lack of infringement of the brand/trademark makes it harder to combat for the holder of an IPR. After all, only design infringement takes place and especially in Asia design protection is not as strong as trademark protection. The main problem country for the toy industry, according to the same OECD report, is China. Most toy manufacturers have located their production in a few regions in China. These regions are now sources for genuine products as well as counterfeit toys. Another country of concern is Turkey, where there is less production of genuine toys and more of counterfeits.

¹⁸ Eurostat, *Health and safety at work in Europe (1999–2007)*.

¹⁹ OECD, *The Economic Impact of Counterfeiting*, 1998.

²⁰ European Commission, *Report on EU customs enforcement of intellectual property rights, Results at the EU border*, 2011.

Directive 2004/48/EC on the enforcement of intellectual property rights tries to harmonize the approach towards counterfeiting and piracy among Member States. However, a TIE Report on the toy sector and intellectual property rights states a concern that the provisions in this directive do not protect against lookalike toys.²¹

Information from the interviews

The question whether counterfeiting was a problem received mixed views. A majority of the manufacturers that discussed the issue of counterfeiting indicated that the regulatory framework of the EU offers sufficient protection. There are no issues with respect to cost of regulation. The recent changes to legislation, which provide possibilities to start ex-parte procedures²², work quite well in combatting real counterfeits. The regulatory framework of the EU offers sufficient protection, according to these manufacturers. Also, counterfeit is not a larger issue in the toy sector than for other consumer products.

Estimations of the size of the problem by sector representatives are in line with the figures found in studies²³, with an estimated 10% of the annual retail sales value consisting of counterfeit toys.

Other manufacturers do see counterfeiting as a serious problem, and they are supported in their views by some associations and distributors. The organisation indicating counterfeiting as a serious problem refers to lots of counterfeited product reaching Europe, resulting in lost turnover for the manufacturers. Especially China is mentioned as source of counterfeits due to lack of IPR-enforcement. Counterfeiting on the whole is not seen as a serious problem, although one association noted that SMEs may not have the financial capacity to initiate litigation measures. An online retailer indicated that they rely on the importers to assure that imported toys meet the IPR regulations.

In addition to counterfeiting, interviewees also mention the black market as a related problem with products entering the black market as a result of excess production.

Toy safety

The main consumer standards in the toy sector refer to toy safety. Toy safety is addressed in Community legislation.²⁴ Annex III contains a list of relevant legislation and briefly elaborates on them. In this section, we focus on the most important piece of legislation, the Toy Safety Directive (Directive 2009/48/EC; TSD).

The TSD obliges manufacturers, importers and suppliers to ensure that their products meet requirements in the field of toy safety, including mechanical, physical and chemical safety. Key safety requirements relate to the construction of the toys to avoid hazards such as sharp edges, hot parts, risks of entrapment, and the avoidance of toxic substances such as heavy metals, harmful chemicals and allergenic fragrances.

²¹ TIE, *The toy sector and intellectual property rights*, 2013.

²² Ex parte judicial proceedings refers to proceeding where one of the parties is not heard in a judicial matter. Ex parte judicial proceedings are usually reserved for urgent matters where requiring notice would subject one party to irreparable harm. Article 7 of the EU IP Rights Enforcement Directive (2004/48/EC) gives the competent authorities the possibility to remove all copyrighted goods from the market as a provisional measure to preserve the relevant evidence if a patentee presents reasonably available evidence to support its claim that a patent has been infringed or is about to be infringed. Such an order may, if necessary, be obtained without hearing the alleged infringer, in ex parte proceedings, especially when there is a demonstrable risk that evidence might otherwise be destroyed.

²³ Toy Industries of Europe 2012; Toy Industries of Europe 2005.

²⁴ See, for example, http://ec.europa.eu/enterprise/sectors/toys/documents/relevant-legislation/index_en.htm.

In order to safeguard safety, the TSD obliges manufacturers to ensure that their toys can be identified. This can be done by using a type, batch, serial/model number or other element allowing the toy to be identified. The toy must also bear the manufacturer's name and a registered trade name/mark. A single contact point address for the manufacturer must also be provided.

When a toy is placed on the market, the manufacturer must draw up an EC declaration of conformity (DoC). Toys made available on the market shall bear the CE marking according to the TSD (art. 16). By doing so, the manufacturer certifies and assumes responsibility for the compliance of the toy with the essential requirements of the TSD. The DoC needs to be translated into the languages required by the Member States on whose market the toy is placed or made available.

Each toy to be placed on the market is submitted to a conformity assessment procedure. The objective of the conformity assessment procedure is to demonstrate to the manufacturer and the public authorities that a toy placed on the market complies with the legal requirements of the TSD. The manufacturer is required to apply one of two possible procedures depending upon the nature of the toy: Self verification or Third Party verification.

A safety assessment requires the manufacturer to identify the potential hazards that the toy may present, and to assess the potential exposure to those hazards. This procedure is mandatory under the TSD and must be performed before the toy is placed on the market. It covers the various chemical, physical, mechanical, electrical, flammability, hygienic and radioactivity hazards that the toy may present.

The TSD applies to toys, which in the Directive is described as "products designed or intended, whether or not exclusively, for use in play by children under 14 years of age". Examples of what is to be considered a toy, and thus falls under the TSD, are provided in guidance documents supplementing the directive.

Some toys not only fall under the TSD but are also subject to directives not specifically designed for toys. This concerns for example Regulation (EU) No 10/2011 on plastic food contact materials or Regulation (EC) No 1223/2009 for cosmetics. In addition, directives and regulations related to the production processes and the materials used are relevant. As such, Regulation (EC) No 1907/2006 REACH governs the registration, evaluation, authorisation, and restriction of chemical substances. Furthermore, Directive 2008/98/EC on waste deals with waste disposal issues. Summing up, there are regulatory and framework conditions that relate to the (finished) toy itself and others that have an influence on supply chain and production processes. The latter are often industry-generic, meaning not designed for a particular industry.

An evaluation²⁵ of business safety measures in the toy supply chain in 2008 concludes that the toy supply chain consists of different types of actors each playing its own distinct role when it comes to product safety. The way these various actors interact depends largely on their position in the supply chain and a defining characteristic of the way in which toys arrive on the EU market is the amount of control that the different European actors (i.e. Original Equipment Manufacturers (OEMs), retailers and traders) have on this chain.

According to the same evaluation, testing organisations are being used extensively by different actors to assure toy safety, not only through product testing but also for doing risk assessments, giving advice on quality management procedures, undertaking factory audits and inspecting products before shipment. Some of these laboratories have notified body status under the Toy

²⁵ *Evaluating business safety measures in the toy supply chain*, May 2008.

Safety Directive, which gives them a special role in ensuring the safety of toys under the so-called EC type-examination conformity assessment procedure. The main concerns with the functioning of testing organisations, as reported in the evaluation of business safety measures in the toy supply chain, relate to different interpretation of the European harmonised safety standards and test methods between different laboratories, communication difficulties between different branches of the same laboratory and the perceived lack of competence of a number of notified bodies.

Regarding the European enforcement practice, the evaluation of business safety measures in the toy supply chain mentions that some Member State surveillance authorities find it difficult to ensure effective toy safety controls, both due to a lack of resources, as well as a lack of expertise regarding the applicable safety requirements. Moreover, with respect to the notified bodies mentioned above, Member States are also responsible for establishing and carrying out the necessary procedures for the assessment, notification and monitoring of such bodies. The perceived lack of quality at a number of these bodies also reflects negatively on the rigour of the system operated by certain authorities.

Sales of any toys not meeting may be restricted or prevented, to stop (further) sale to consumers. Toys is among the most notified product categories regarding measures taken by Member State authorities, with a second place among most notified products in 2011 and 2012 (behind clothing, textiles and fashion items) and the most notified product category in earlier years.²⁶ The main risks arising when playing with unsafe toys are choking (often associated with the presence of small parts) and reactions to chemicals (often associated with the presence of significant amounts of chemical substances such as certain phthalates, lead and other heavy metals).

Information from the interviews

Toy safety has been mentioned by nearly all manufacturers and associations as the most important regulation in the toys sector. The toy safety regulation, in particular the TSD, sets strict rules to guarantee safety but also increases costs for the producers and retailers.

Interviewees acknowledge the importance of toy safety. As one interviewee mentioned: “*High standards are supported by all stakeholders in order to create credibility*”. According to another interviewee: “*TSD is on one hand difficult for toy companies and on the other hand important. It presents a lot of constraints to doing business in the toy industry, but for understandable reasons*”.

On the other hand, the TSD increases costs of testing and administrative costs. Quantification of the costs is difficult, as safety is interlinked with design and with testing, activities that also are core to the production process. A study on third-party testing of toys²⁷ found that the issue of pricing is quite complex, with wide ranges of costs of testing. The information demonstrates that there is no “average” cost. Based on the examples collected, the authors consider it fair to say that simple tests start at € 150-300, with more complicated tests starting around € 3,000-4,000 and going up to € 8,000-10,000.

The issues of costs accompanying the TSD was also mentioned by the interviewees. The strongest statement was received from a distributor that mentioned: “*The cost involved are huge. TSD has gone overboard*”. Others addressed the issue in milder terms. One association stated that “*relatively high compliance cost and administrative burden are connected to the TSD. This is particularly troublesome for SMEs, that generally have not the capacity to provide the required documentation and have to hire experts who know the details of the regulation (but are very expensive) and have to buy test facilities*”. The strong impact of the TSD on SMEs was also

²⁶ EC, RAPEX 2012 Annual Report.

²⁷ Ramboll, *Study on third-party testing of toys*, October 2008.

identified by another association that stated that the cost for testing under the TSD provided barriers to growth and development for SMEs.

Especially changes in the toy safety regulation were considered as a serious issue. As one manufacturer mentioned, safety regulation changes time after time again and required manufacturers to invest in the education of staff. According to one association, the increased cost of toy safety regulation has reached the limit. Large producers are able to swallow it, but middle sized manufacturers have difficulties coping with the increasing costs of toy safety regulation. For example, some SMEs had to give up two third of their product line according to the association.

Another manufacturer qualified the changing regulation as a tough challenge and remarked that support in the development stage of products, like for example support to understand the required standards and their implications, is currently not provided. On the other hand, TIE has indicated that it provides information on the implications of toy safety regulation on operations to its members in the industry.

In none of the interviews, national legislation on toy safety was mentioned as source for regulatory burdens. However, national enforcement of toy safety was raised in an interview with one of the associations. According to the association: “Each country has different set of priorities and it seems that some targeting is missing in product safety enforcement”. No specific details on existing problems with toy safety was obtained during the interview.

There is little information on costs of recall and negative publicity, which indicates that recalls and publicity are not yet a major issue in the sector. The interviewed parties did not experience any major recalls for products produced or distributed by them.²⁸ The only qualification of the costs of recalls was ‘marginal’.

Market access

With respect to EU market access, different regulatory regimes and resulting non-tariff measure barriers are the main point of focus. The toy value chain stretches beyond the borders of the EU. In order to facilitate international trade and market access, also in the toy area the EU has initiated dialogues with China and the US. Since 2002, the Toy Working Group under DG Enterprise and Industry and AQSIQ, a Chinese ministerial administrative organ in charge of, inter alia, national quality and entry-exit commodity inspection, have worked on alignment issues between the EU and China to enhance toy safety. This resulted in an agreement signed in 2006, where an action plan was established. As a result, the Marco Polo project was launched in 2007. Coordinated by DG SANCO, it entailed an evaluation of current practices in China. As a result of the Marco Polo project, stakeholders (including TIE) signed voluntary agreements with the Commission in order to act on and improve the safety of toys. Similarly, since May 2008 DG ENTR in cooperation with DG SANCO engage in regulatory cooperation with the US Consumer Product Safety Commission (CPSC). The goal is an alignment of safety standards and, by this, removing unnecessary barriers to trade.

The removal of trade barriers increases the global level playing field, meaning that producers with a comparative advantage (either in cost or in quality) are able to compete more successfully.

Information from the interviews

In the interviews with producers and associations, different regulatory regimes between countries were mentioned by some interviewees as making market access more difficult. According to producers and associations, it is difficult for SMEs to know the legal and regulatory situation in other

²⁸ Or their members in case of associations.

markets than their home market. No issues within Europe were mentioned, implying that within Europe a level playing field seems to exist. All interviewees referred to trade barriers when exporting to third countries.

Some interviewees pointed out the role of transport costs as a factor that reduces competitiveness of overseas trade, both import to Europe and export from Europe. Especially the shipping times by boat between China and Europe are quite long (up to a few months). In addition, bulky items are uneconomic to ship, because they take up relatively more space in a container. This means producers exporting to other continents may always remain at a competitive disadvantage (unless they open local factories).

Regulatory and administrative burdens

Reducing administrative burdens so as to improve the business environment in the EU has been a high priority for the European Commission in recent years.²⁹

Administrative costs are defined as:³⁰

the costs incurred by enterprises, the voluntary sector, public authorities and citizens in meeting legal obligations to provide information on their action or production, either to public authorities or to private parties. Information is to be construed in a broad sense, i.e. including labelling, reporting, registration, monitoring and assessment needed to provide the information. In some cases, the information has to be transferred to public authorities or private parties. In others, it only has to be available for inspection or supply on request.

The administrative costs consist of two different cost components:

1. Business-as-usual costs which correspond to the costs resulting from collecting and processing information which would be done by an entity even in the absence of the legislation; and
2. The administrative burdens which stem from the part of the process which is done solely because of a legal obligation.

The EU Standard Cost Model assesses the 'net cost of information obligations imposed by EU legislation'. This means that the 'administrative burdens' only cover the costs related to meeting the legal obligations to provide information on actions or production in excess of the business-as-usual costs. More popularly phrased, this refers to 'unnecessary paper work'.

The concept of administrative burdens can be broadened to all costs related to market regulation ('regulatory burden'). This broader definition covers both the administrative burden for producers and all the costs and resources involved in the process of safeguarding toy safety by authorities assigned with the task to guard toy safety.

The toys sector was not one of the 13 Priority Areas listed in the Commission's Action Programme for Reducing Administrative Burdens in the EU. However, the results of the public consultation of the European Commission on the top-10 most burdensome legislative acts for SMEs show various policy areas and regulations that are related to the toy sector.³¹ Among the regulations relevant for the toy sector, the most burdensome EU legislative acts are REACH (listed as number 1 in the overall ranking with 22.8% of all SMEs considering this a source of administrative burden), Packaging and packaging waste (ranked as number 8 overall with 9.4% of the SMEs considering

²⁹ EC, *Action Programme for Reducing Administrative Burdens in the EU*, 2012.

³⁰ EC, *Impact assessment guidelines*, 2009.

³¹ European Commission, *Results of the public consultation on the TOP10 most burdensome legislative acts for SMEs*.

this a burden) and the Toys Safety Directive (overall ranked number 13 with 7.6% of the SMEs indicating this as a source of administrative burden).

Information from the interviews

Administrative burdens have been mentioned by one interviewee, considering it as a huge cost for SMEs in particular. According to the interviewees, the administrative burden has increased due to the Toy Safety Directive. In particular, the new requirements on traceability of inputs and production processes have increased the burden for producers. This increased burden may especially prove problematic for SMEs. According to one interviewed toy producer one may question whether all players in the market are able to comply with the requirements of the TSD.

3.1.2 Assessment of the framework conditions

The most important framework condition impacting the sector is toy safety regulation. The increased costs resulting from the TSD affects the competitive situation between large and small toy producers, as the additional costs are particularly troublesome for SMEs, who have limited resources in terms of employees and therefore have to resort to using external testing, which means increased costs.

Toy safety regulation also impacts the competitiveness of European producers aiming to export outside Europe. The main reason is the existence of local safety requirement in non-EU countries. These safety requirements often also include the need for local testing, which forms one of the major trade barriers for the toy industry. Examples of countries with this kind of barriers mentioned by interviewees were the USA and Indonesia. Mutual recognition of safety requirements may improve the possibilities of European toy manufacturers to sell abroad. Of course, to maintain a sufficient level of toy safety of toys sold in Europe, the foreign safety standards should at least meet the European safety levels.

In reverse, mutual recognition would also provide opportunities for foreign producers, located in countries that have high enough domestic toy safety requirements to achieve mutual recognition, to sell in Europe. Given the strong position of Europe as the second largest toy producing region in the world, the benefits of mutual recognition with specified regions, most notably high-income regions, might offer room for improved sector competitiveness.

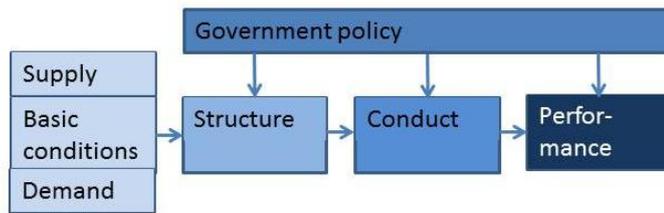
The second most important framework condition is IPR, in particular counterfeiting and slavish copying. Counterfeiting reduces companies' revenue and ability to innovate, while innovation and new product development is key to remaining competitive in the toy industry due to the short product cycles.

3.2 Assessment of market performance and competitiveness

In this section, we conduct a structured analysis of the performance and competitiveness of the toy market. As analytical framework for market performance, we use the structure-conduct-performance (SCP) model. This model makes a distinction between characteristics related to market structure, characteristics related to the conduct of market participants and the performance of the market as a whole.

The SCP model states that within a framework of certain basic conditions, the structure of a market determines the conduct of its participants (buyers and sellers); which in turn influences its performance. A schematic overview is presented in figure 3.1 below.

Figure 3.1 Structure-conduct-performance paradigm



Later research demonstrated that the causal relationship is not unidirectional, but sometimes also works in the opposite direction. For example, performance may influence structure and conduct, while conduct may sometimes lead to changes in structure. Nonetheless, the value of the model as a market analysis tool still stands.

3.2.1 Indicators

The structure of the market consists of, inter alia, the number and size distribution of firms in relation to the size of the market, the degree of horizontal and vertical integration, and the presence or absence of barriers to entry faced by new firms. Conduct refers to the behaviour of firms, for example, service policies, research and development activities and strategic actions. Performance is commonly measured in terms of productive and allocative efficiency.³² In addition, innovation and quality of the good provided can be considered as performance indicators.

In the table below, we present the selection of indicators we have identified. For some indicators, we identified proxies to be used.

Figure 3.2 Indicators for assessment of market structure, conduct and performance

Elements SCP-model	Indicator	Proxy
Basic condition	Size of the market	Total turnover
Structure	Number, size and concentration of firms	Herfindahl–Hirschman Index
	Barriers to entry	Size of sunk costs
	Vertical integration	Outsourcing
Conduct	Pricing behaviour	Price levels
	Production strategies	Share of labour costs, degree of outsourcing
	Marketing strategies	Spending on marketing
	Innovation	Spending on R&D
Performance	Productivity	Labour productivity; profitability
	Efficiency	Profit margins

In the sections below, we discuss the various elements of the toy sector in more detail.

3.2.2 Basic conditions

Basic conditions refer to characteristics that are often exogenous to the market (e.g. infrastructure or legal and policy environment) but may also be endogenous (e.g. available technology, product durability or purchase methods). Basic conditions can be subdivided in ‘demand conditions’ and ‘supply conditions’. Basic condition indicators include consumer demand, production, elasticity of

³² Allocative efficiency is an economic concept, referring to the maximization of the sum of consumers’ and producers’ surplus. In non-economic terms this can be translated as an absence of above-normal profits.

demand, technology, substitutes, raw materials, seasonality, rate of growth, product durability, location, lumpiness of orders, scale of economies, method of purchase, scope economies.

As shown in Chapter 2, the sales of toys is still increasing globally with moderate growth rates in Europe and the USA and strong growth rates in China and especially the rest of the world. Currently, toy sales are somewhat affected by the economic and financial crisis, but sales are projected to improve. Growth levels for toys sales are higher than for the economy as a whole. This offers a positive outlook for the toy sector with opportunities for expansion, especially for European toy producers, who are the second most important toy exporters after China.

No information on elasticity of demand in the toy sector could be found. From the interviews, we received information that consumers are fairly price sensitive.

The toy industry experiences a short product life cycle, which typically varies from six months to two years. This requires periodic renewal of the product range. Demand for toys also has a seasonal character with the most important toys sales peak being the pre-Christmas period with 70% of toy sales taking place before, during and just after the Christmas period (EC, 2008). Since the toy market is highly unpredictable and volatile, the toy market actors face high risks in terms of costs of obsolete inventory and markdowns.

3.2.3 Market structure

The structure of a market is defined by the size and number of (potential) sellers (and buyers); i.e. by the level of concentration of market share. The market structure as such is mainly determined by the extent to which entry barriers are present. Structure indicators include number of buyers and sellers, barriers to entry of new firms, product differentiation, vertical integration and diversification.

For **toy production**, we obtained information on market shares of producers in a selection of European countries: UK, France, Germany, Italy, Spain, Netherlands, Sweden, Poland, Switzerland, and Romania. Based on this information, we calculated the Herfindahl–Hirschman Index (HHI), a measure of the level of concentration in the market.³³ The results are presented in the table below.

³³ The Herfindahl–Hirschman Index consist of the sum of the squared market shares of each of the producers. The possible range varies from 0 to 10,000 where:
A HHI index below 1,500 indicates a low concentration in the market.
A HHI index between 1,500 and 2,500 indicates moderate concentration.
A HHI index above 2,500 indicates high concentration.
As not all market shares are known, a bandwidth is calculated for maximum HHI value and minimum HHI value, based on the assumption that all undefined producers have a market share equal to the smallest known producer (maximum HHI) or a market share of approximately zero (minimum HHI).

Table 3.1 Herfindahl–Hirschman Index for toy producers

Country	HHI - minimum	HHI - maximum
UK	214	368
France	203	393
Germany	381	738
Italy	516	832
Spain	575	708
Netherlands	598	864
Sweden	596	753
Poland	262	435
Switzerland	467	728
Romania	316	500

As can be observed from the table, the toy production sector has an HHI well below 1,500, which qualifies as a lowly concentrated market (see footnote 28). This suggests a competitive market.

Entry barriers seem to be low. Although manufacturing requires capital investment, the size of the investment seems to be limited³⁴, implying that there are no sizeable sunk costs involved in toy production. Lack of entry barriers adds to the competitive pressure in the toy production sector. High operational costs, like compliance with the TSD, diminishes sector profitability, but doesn't necessary exclude entry. However, if these costs turn out to be excessive over a longer period of time, small companies may decide to exit the market, reducing competitive pressure.

Vertical integration between toy producers and wholesalers/retailers (downstream integration) or resource suppliers (upstream integration) has not been observed much, although some major toy manufacturing companies have in-house warehousing capacity.

For the **toy retail** market, detailed information on the market structure is rather limited. Market shares of the retailers are not available.

With regard to power-asymmetry, the toy market players usually follow the major players such as Mattel, Hasbro, and Lego. In practice, smaller manufacturers are restricted by higher manufacturing costs and struggle to successfully bring their products through mainstream channels (Johnson, 2001).

3.2.4 Conduct

The conduct of market participants is generally interpreted as being focussed on maximising profits. In the most general form, profit maximisation entails pricing strategies, product strategies, etc. Conduct indicators include advertising, research and development, pricing behaviour, plant investment, legal tactics, product choice, collusion, mergers and contracts.

In the **toy production**, we see various strategies. First of all, producers face cost competition as a result of significant competition in the sector and price sensitivity of the consumers. This competition on costs reflects itself in the production strategy of producers, with many producers outsourcing production to China to reduce production costs. Among the small toy manufacturers, in practice, a majority have outsourced all of their activities.

³⁴ No detailed figures on the cost structure of toy manufacturers are available. The best available proxy is the labour-capital ratio for manufacturing from the KLEMS database. The data indicate that capital cost forms 20% of total cost of production.

The short product life cycle of toys, in combination with a wish to escape some of the price competition, drive the need for innovation and research and development (R&D). Innovation is widely acknowledged in the sector as essential to maintain a competitive position. Nonetheless, R&D expenditures in the sector are relatively modest, with actual R&D expenditure amounting to 0.6% to 2.6% of total turnover.³⁵ For comparison, in the EU27 the range of R&D expenditure compared to turnover for total manufacturing industry is between 0.02% and 3.1% (Eurostat SBS data).

The need to escape cost competition also shows itself in the importance of marketing strategies. Traditional advertising still plays an important role and significant investments are undertaken with respect to this marketing channel. However, the landscape is changing and digital product offering is becoming more important.

For the **toy retail** market, no detailed information on the conduct of market players is available. Price competition is strong, as firm level data from Amadeus show lower financial health scores for retail than for manufacture of games and toys. Outsourcing and innovation hardly play a role in the toy retail sector. Marketing is one of the major strategies in the retail sector.

3.2.5 Performance

Performance is commonly measured in terms of productive efficiency and profits. In addition, innovation and quality can be considered as performance indicators.

In **toy production**, margins in the entire sector are under pressure with long-term profit margins of the top 100 companies at around 6% (see Figure 3.9, page 71). This is lower than for the top companies outside of the EU.³⁶ The margin is lower for SME than for large producers, as the median profit rate in the industry hovers around 2.5%. The financial situation for SMEs is worse than the sector average, as shown by firm level data from the Amadeus database. SMEs are more vulnerable than large companies in the sense that access to finance is relatively more costly to them. Consequently, they rely more on own working capital and current income flows. This is evidenced by a relatively higher current ratio, yet also by relatively lower profit rates, both of which reinforce each other. The low profit levels are in line with strong competition with a focus on price.

In **toy retail**, profit levels are lower than in toy production, as shown by lower financial indicator scores based on the firm level database Amadeus. The median profit rate was about 1.1% in 2010. Although small firms had very low profits and even suffered losses in 2010, medium sized firms performed more or less in line with large firms. The relatively higher financial stress in toy retail was also mentioned in several interviews. Retail companies faced lower margins and shorter peak sales periods. As a result, producers experienced more problems with late payments of their shipments of toys. Part of this can also be related to more cautious banks and insurance companies, which do not engage in pre-financing of transactions or do not provide insurance of credit as before the crisis. This makes conditions for distribution and trade of toys more difficult across the entire toy value chain.

No figures on efficiency are available for either the toy production or the toy retail sector.

³⁵ Exception to this range is Austria with 5.9% of total turnover spent on R&D. As this figure significantly differs from the other figures, we consider Austria as outlier.

³⁶ For example, for the American sectors, an average profitability of 7.84% is calculated (http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/margin.html). A comparable overview for European sector was not found during the study.

Offshoring and outsourcing

In a setting of high cost competition, toy companies have moved substantial parts of their production to low cost locations in the Far East, notably China. Since toy manufacturing is a labour intensive process that usually requires manual assembling, outsourcing to low labour cost countries is a common strategy in order to reduce the production costs. Not only does outsourcing provide production cost reduction for major toy players, it also enables smaller companies to enter the toy business with little manufacturing experience or up-front investment (Johson, 2001). Outsourcing can only address part of the cost-base of toy manufacturers. Other costs, like compliance costs, remain.

In order to respond to market changes, outsourcing provides a possibility to increase manufacturing capacity within a relatively short time span. In practice, the majority of small toy manufacturers have tended to outsource all of their production activities. In comparison, large toy manufacturers tend to employ a mixed production model, outsourcing and/or offshoring mass-production toys to Asia while keeping the production of innovative toys in Europe or America (Wong et al., 2005). For example, Hasbro outsources most of its production, but it has continued up to today to manufacture its board games in the EU (see for example Johson, 2001). The material being locally available, lower transport costs to market, and high automation of production enable production to remain competitive. Toy companies also outsource logistics activities (Johson, 2001).

Recent examples exist of European toy companies that bring their manufacturing facilities back to Europe (Regioplan Policy Research, 2012)³⁷. Interviews indicated that this trend is partly associated with increasing wages of Chinese workers, but also particular market access issues can drive relocation from China to the actual sales market, as Foreign Direct Investment sometimes allows better access to a market than trade. Rising wages as such would rather cause relocations towards other countries such as Vietnam, Thailand and Indonesia. At the same time, the strong Euro, excellent logistics infrastructure in coastal regions of China, increasing capacity to guarantee consistent quality and the ability to cope with new designs keep China attractive as a location for production. The possibility of direct access to the Chinese market should also not be ignored for that matter. Based on interviews, there is no clear trend changing the offshoring landscape from the EU perspective, as companies have made and will make different choices based on their specific product range and context.

3.2.6 *Linking performance to the regulatory framework*

As described in the section on the regulatory and other framework conditions, toy safety plays an important role in the market. With toy revenues limited due to price sensitivity of consumer demand, cost reduction becomes key for toy manufacturers and retailers in order to improve – or at least maintain – profit levels. Meanwhile, the TSD adds to the cost of production by requirement in the field of testing and administration, reducing producers' and retailers' margins. Although a part of the costs would have been incurred by the producers anyway in order to achieve the company's desired quality levels (business-as-usual costs), the remainder of the costs of the TSD should be considered as additional costs that would not have been made by the producer if the TSD was not in place.

Meanwhile, toy producers could use a higher margin to invest in marketing and R&D in order to remain competitive. Possibilities to reduce cost related to toy safety testing and administration could allow European producers more space to improve their competitiveness.

³⁷ The report is not publicly available. This report was made available for this study, only for internal use, by Toy Industry Europe. For examples, see <http://edpressagency.blogspot.com/2011/11/meccano-toys-moves-back-to-northern.html>; <http://www.toynews-online.biz/news/read/first-made-in-britain-trunki-rolls-off-production-line/033144>.

Even more important than the lowering of costs resulting from European legislation is the reduction of costs of export by harmonization of testing requirements. With European producers currently facing a competitive disadvantage to local non-European producers who are more familiar with the local requirements, harmonization of toy safety regulation with third countries would improve the possibilities of European toy manufacturers to export their goods.

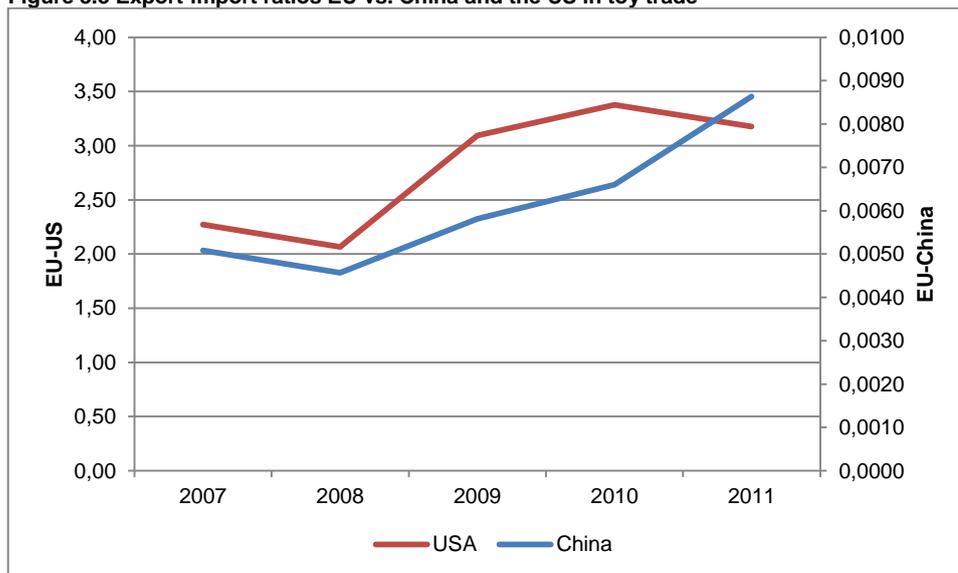
3.2.7 Trade analysis

EU vs the US and China

China, the EU and the US are the most important players in toy trade albeit in different roles. Whereas China is the main exporter of toy products, the EU27 and the US have a significant share of the total world imports. Despite the economic crisis the EU27 has enhanced its trade performance over the past 5 years within this triangle. A good indicator for this is export-import ratios plotted in Figure 3.3. Since 2008 this ratio has improved significantly vis-à-vis both trading partners.

The improvement in the EU-US export-import ratio is mainly driven by an increase in EU exports, which have increased from €247 million in 2007 to €280 million in 2011. On the other hand, EU imports from the US have fallen by €20 million in the same period. Overall, this signals that the US is a stable export market for traditional toy products even in times of economic downturn.

Figure 3.3 Export-import ratios EU vs. China and the US in toy trade



Source: COMTRADE, own calculations.

Due to the role of China as the “toy factory” of the world, the EU-China export-import ratios are relatively small. In 2011 imports from China were approximately 116 times higher than exports to China. However, in 2007 imports from China were as much as 196 times the exports from the EU to China. Consequently, there seems to be a continuous trend of a trade balance appreciation in the traditional toy sector. Table 3.2 confirms that this trend is driven by increasing exports to the Chinese market. Overall, exports to China have almost doubled over the past 5 years and are now worth €50 million. This points in the direction that European toy manufacturers are slowly but surely developing this market.

Table 3.2 Export and import trends of EU trade with the US and China³⁸

Year	Partner	EU Exports	EU Imports
2007-2008	China	-	+
	USA	-	-
2008-2009	China	+	-
	USA	+	-
2009-2010	China	+	+
	USA	+	+
2010-2011	China	+	+
	USA	-	-

Note: A “plus” sign indicates a rise in EU exports or imports, whereas a “minus” sign indicates a decline in EU exports or imports, respectively.

Specialisation patterns

In order to assess which European economies are specialized in toy production the Revealed Comparative Advantage (RCA) indicator is used (for an explanation see Box 3.2). Figure 3.4 plots the RCA scores³⁹ for the EU27, US, China, and a selection of strong performing EU27 member states. It confirms the competitive position of China as the main producing and exporting country of toy products in the world. It shows that the share of toys in China’s export portfolio is approximately six times higher than the share of toys in total world trade. This clearly signals a comparative advantage. However, China’s RCA score has deteriorated slightly over the past 5 years.

Box 3.1 Revealed Comparative Advantage (RCA)

‘The RCA index of country *i* for product *j* is measured by the product’s share in the country’s exports in relation to its share in world trade:

$$RCA_{ij} = \frac{\frac{x_{ij}}{X_{it}}}{\frac{x_{wj}}{X_{wt}}}$$

Where x_{ij} and x_{wj} are the values of country *i*’s exports of product *j* and world exports of product *j* and where X_{it} and X_{wt} refer to the country’s total exports and world total exports. A value of less than unity implies that the country has a revealed comparative disadvantage in the product. Similarly, if the index exceeds unity, the country is said to have a revealed comparative advantage in the product’. (WITS, 2011).

Furthermore, RCA scores for EU27 and the US reflect what has been described before, namely that both regions are to a large extent importing toy products. Consequently, the toy industry does not play such a prominent role in the export portfolio of both regions. In fact, toy exports are relatively small compared to other sectors. Average RCA scores of the past 5 years are 0.32 for the EU27, and 0.16 for the US, respectively. Given the small size of the toy sector and China’s relatively dominant role on the world market these results are not surprising.

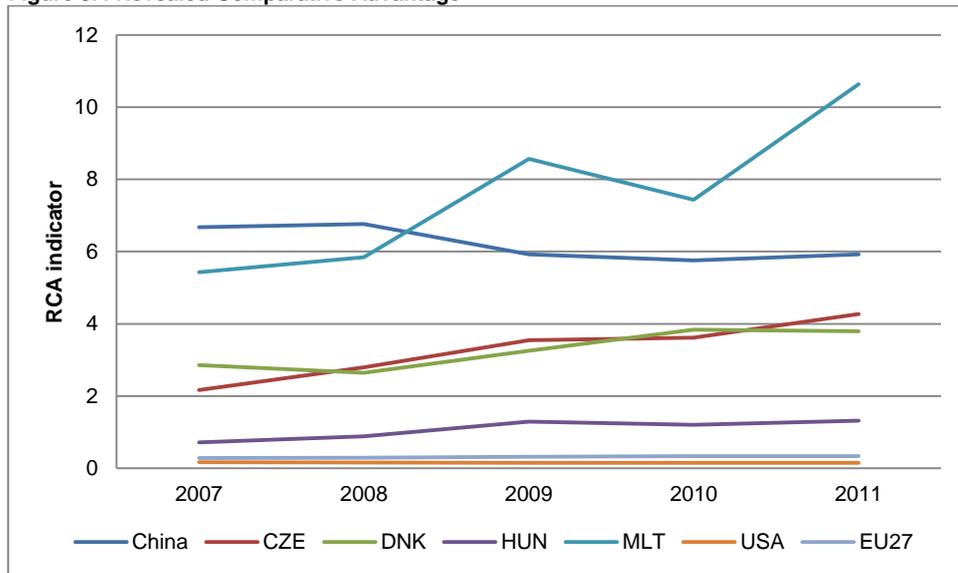
The EU27 average is based on EU27 exports excluding intra-EU trade. In fact, the 2011 EU27 RCA score including intra-EU trade would be 0.58 compared to the 0.34 without intra-EU trade. This highlights the significance of intra-EU trade in this sector. Scores for selected EU countries in Figure 3.4 include exports to its EU partners in order to give a better indication of the importance of toy exports for these countries. EU countries that score above average are the Czech Republic, Denmark, Hungary, and Malta. Especially for Malta, toy products play a very prominent role in their

³⁸ Combining Figure 3.3 and Table 3.2 makes it possible to draw conclusions on what drives changes in the export-import ratios.

³⁹ For a complete representation of RCA scores of the past 5 years see Annex IV.

export portfolio. In 2011, toy exports took 3% of its total exports. This is a relatively high share given that world toy trade only takes 0.2% of total trade.

Figure 3.4 Revealed Comparative Advantage



Source: COMTRADE, own calculations.

3.2.8 International comparison of performance of the top 100 toy industry using company-level data

This section compares performance of the top 100 internationally active toy companies located in the EU and in the rest of the world (RoW). Such a comparison is based on consolidated company accounts of major firms and includes both production and wholesale distribution activities. As such, we get an idea of the relative performance of the major toy companies in various regions of the world, which are probably also the most internationalized in their activities and markets. The top 100 does not include SMEs. Nevertheless, the overview covers the firms most exposed to international competition that are market leaders in their home markets as well. Outcomes therefore provide an indication of the relative performance of the industry in the EU and in the rest of the world.

Figure 3.5 and 3.6 show respectively the number of top 100 toy companies of EU27 and the top 100 toy companies of the rest of the world sorted per country for the year 2012, based on operating revenue. France is leading the rank for Europe, followed by the United Kingdom and Germany. Side note here is the fact that France was actually number 7 regarding the number of Manufacturers in Europe, and number 3 for the Distribution segment. Given this, it can be concluded that there are comparably a lot of large companies in France.⁴⁰ In Figure 3.5 France is number 1 regarding the top 100 toy companies.

Considering the rest of the world, the main countries are USA and Japan, where together 50% of the top 100 toy companies of the rest of the world are situated.

⁴⁰ This conclusion is based on Amadeus data. Eurostat data presented in Chapter 2 suggests otherwise, namely that France's toy industry is to a large extent composed of small companies. As a side note here, it has to be mentioned that Amadeus only reports data for those companies that have to publish financial data. These are typically larger companies.

Figure 3.5 Number of top 100 toy companies EU27 per country (2012)

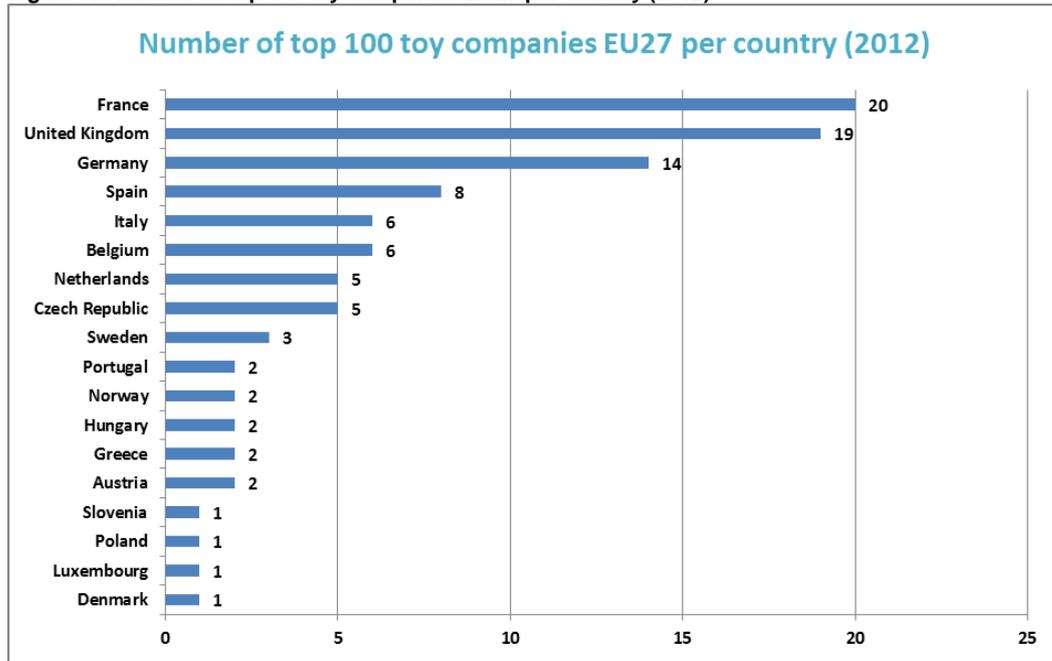
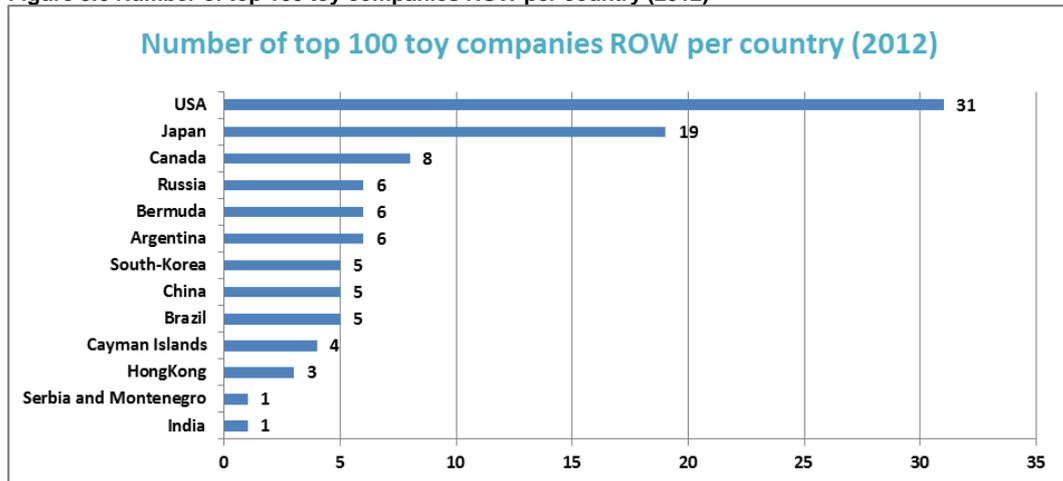
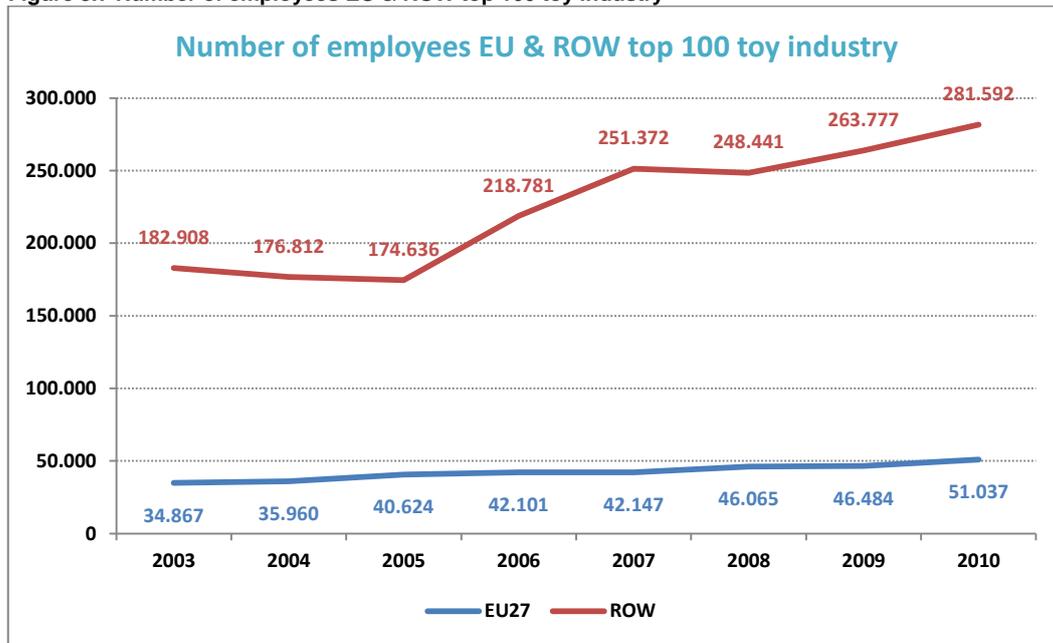


Figure 3.6 Number of top 100 toy companies ROW per country (2012)



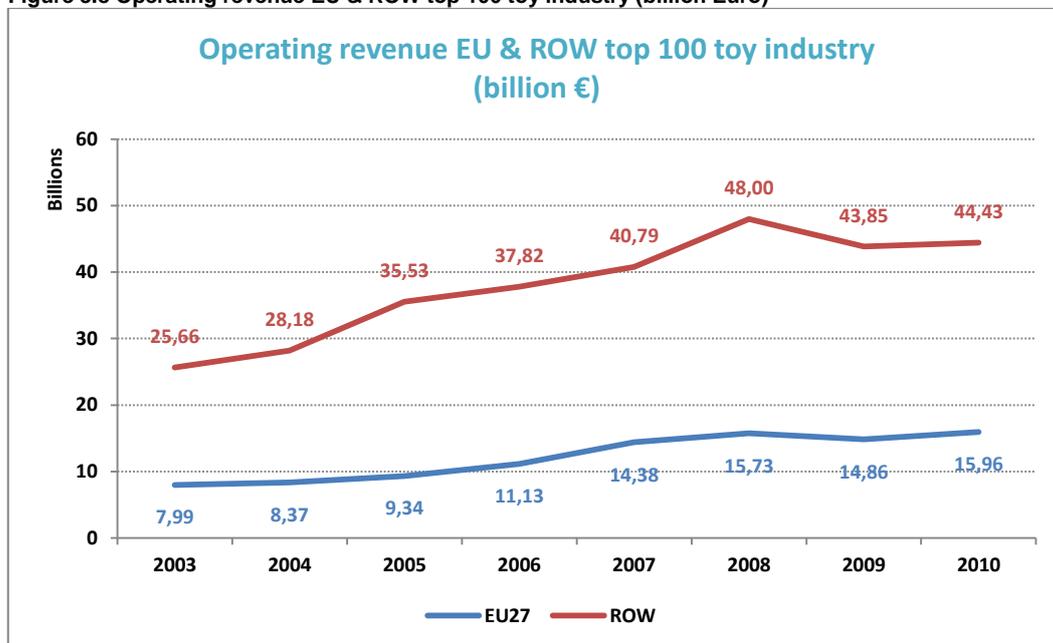
The number of employees of the top 100 toy industry differs substantially between the EU- and the RoW-based companies (Figure 3.7). In the period 2004-2010 the European toy industry employs 5 times less employees than the total of the ROW, with a mean of 43,448 persons compared to in total 230,778 persons on average for the rest of the world. These employment figures represent the total of manufacturing and distribution activities consolidated under the company accounts of the top 100 companies. In addition, for the same period the number of employees increased by 59.3% in the toy industry of the rest of the world compared to 41.9 % for Europe. This increase in employment most likely not only reflects growth in demand but also a growth in size of the top 100 companies due to consolidation in the industry.

Figure 3.7 Number of employees EU & ROW top 100 toy industry



To compare the European toy industry with the toy industry in the rest of the world, the accumulated operating revenue of the top 100 can show a first general picture of the competitiveness based on the companies' performance (Figure 3.8). Regarding this indicator, a gap can be observed between the operating revenue, where the EU earns in total three times less operating revenue over every single year in the period of 2004-2010. However, the operating revenue increased within this period by 90.8% for Europe, while the rest of the world experienced a growth of 57.7% over these 8 years.

Figure 3.8 Operating revenue EU & ROW top 100 toy industry (billion Euro)



In addition to the total amount of operating revenue, the ratio of operating profit with the operating revenues gives an indication of the percentage of sales which the company actually keeps as earnings (Figure 3.9). Except for a sudden peak in 2006 for the EU industry, the profit margin for the EU top 100 toy industry increases especially during the last three years of the observations,

which results in an average growth of 42.9% for the period 2004-2010. The gap is narrowing because over the same 7 years the profit margin for the rest of the world decreased by 10% to a mean absolute value of 8.86.

The same trend can be seen in the EBIT margin for the European top 100 toy industry, which indicates the percentage of each euro of sales revenue that is left after all expenses are removed (Figure 3.10). During the period 2004-2010 a positive percentage change of 52.2% can be observed. In the meantime the rest of the world shows a positive 12.2% change for their average EBIT margin, but there is still a gap between the absolute mean values.

Figure 3.9 Profit margin EU & ROW top 100 toy industry (mean - in %)

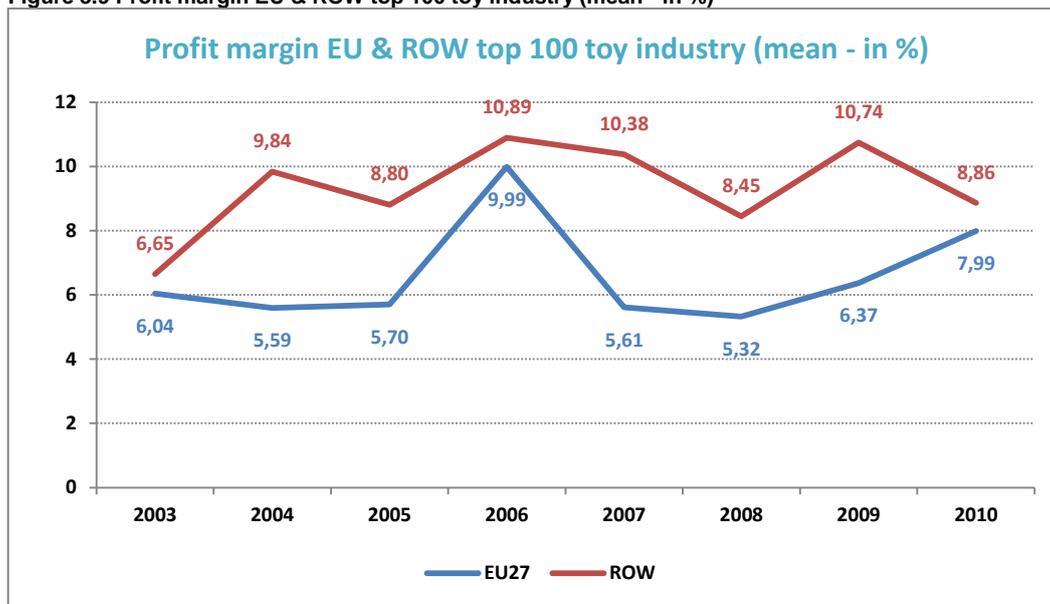
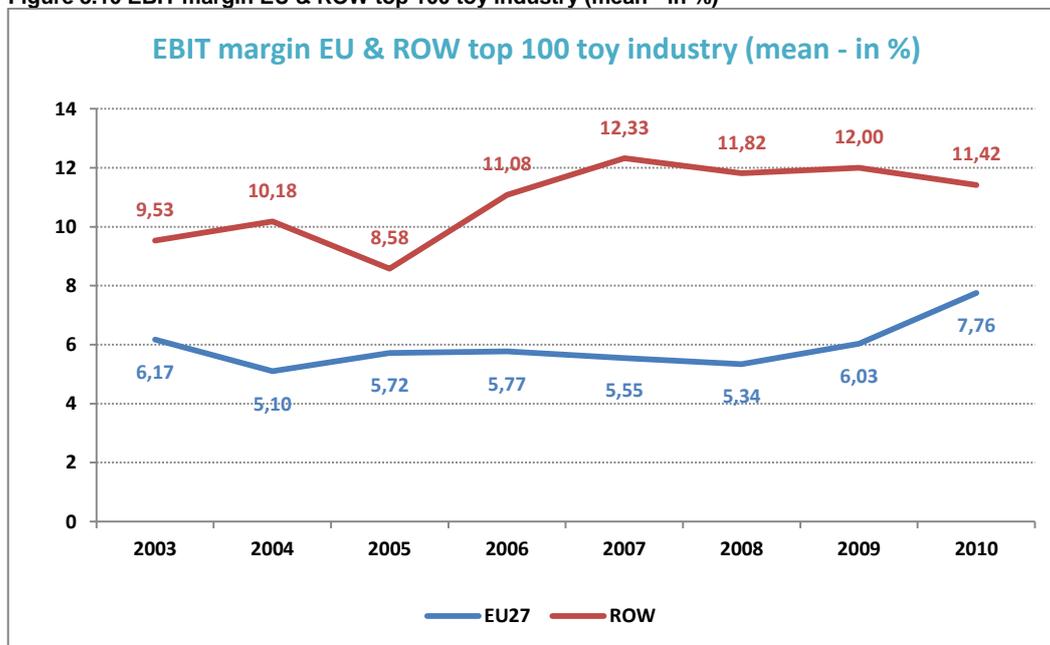


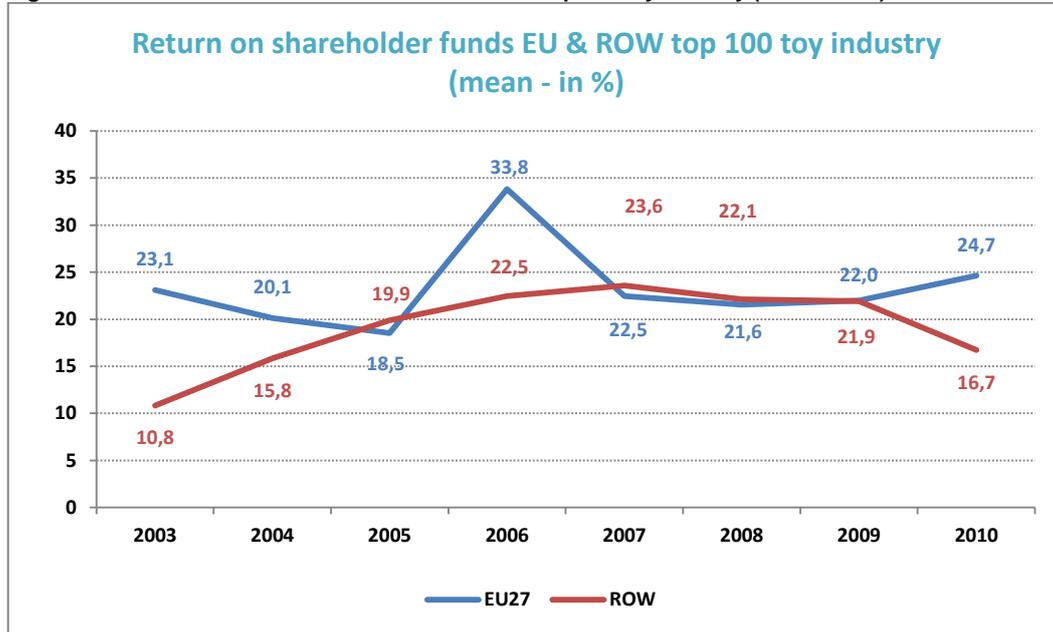
Figure 3.10 EBIT margin EU & ROW top 100 toy industry (mean - in %)



The return on shareholders' funds shows the picture more from the point of view of the shareholders, since it indicates the profits in relationship with the resources invested (Figure 3.11). Except for a sudden peak in 2006 for the EU toy industry, overall the means are close to each

other, notwithstanding the divergence in 2010 when the European top 100 toy industry showed a positive development while for the rest of the world returns went down. This leaves the European top 100 toy industry at a 50% higher return on investment than the rest of the world in 2010.

Figure 3.11 Return on shareholder funds EU & ROW top 100 toy industry (mean - in %)



The current ratio⁴¹ (Figure 3.12) of the EU toy industry shows more or less the same pattern as the solvency ratio⁴² (Figure 3.13). When looking at the value chain within Europe, the mean and trend are more or less the same, and since the values are between 1.5 and 2 this can be regarded as healthy. The rest of the world has in the period 2004-2010 at every year a higher absolute mean value for their current ratio, where in the last years the difference became even larger. More or less the same development can be observed when looking at the solvency ratio. The values for the EU top 100 toy industry and the rest of the world got closer during 2005 to 2008, but the gap widened again during the last years of the period. Since the mean of the EU top 100 toy industry hovers around 45%, in general this indicator would not suggest any financial problems for the top 100 firms.

⁴¹ Formula = current assets/current liabilities. The current ratio, also known as liquidity ratio, measures the company's ability to pay back its short-term liabilities (short-term debts, payables) with short term assets (cash, inventory, receivables). Ratio values under 1 are considered as problematic.

⁴² Formula = (shareholders' funds / (non-current liabilities + current liabilities)) *100. The solvency ratio measures the company's ability to meet its long-term obligations. Values below 20% are considered as problematic.

Figure 3.12 Current ratio EU & ROW top 100 toy industry (mean)

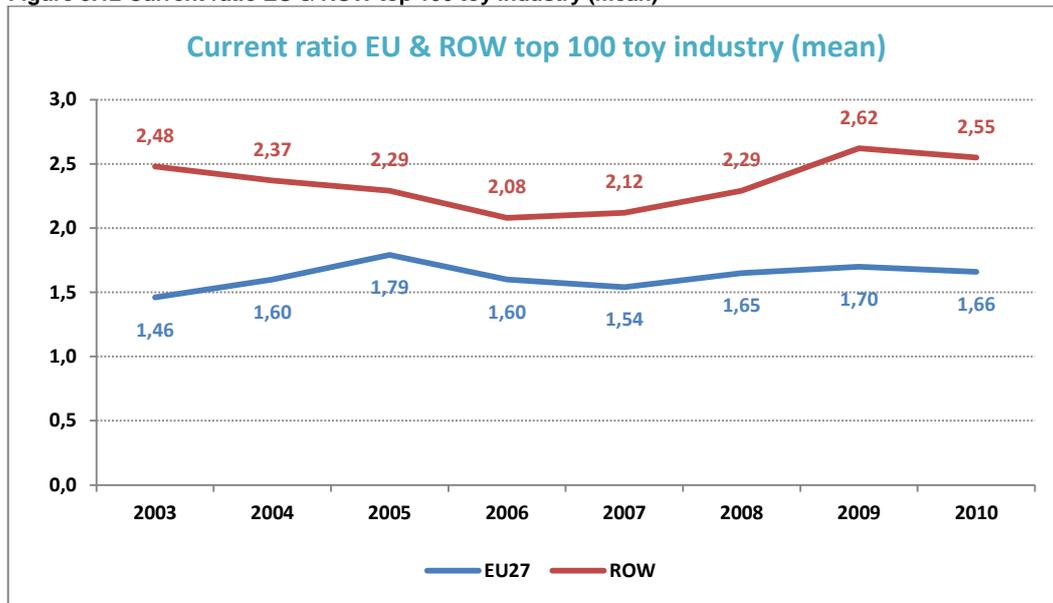
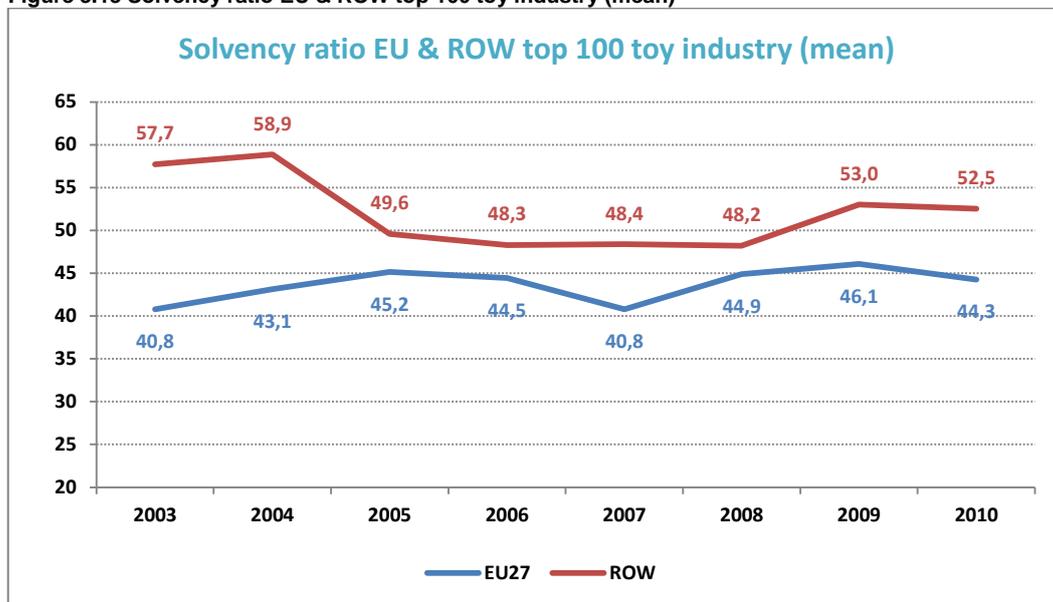


Figure 3.13 Solvency ratio EU & ROW top 100 toy industry (mean)



For the period 2004-2010 the access to finance can be analysed with regard to the top 100 companies of Europe (Figure 3.14) and of the rest of the world (Figure 3.15). For the European top companies the shareholder funds remained almost the same over the period, while the proportion of current and non-current liabilities made some changes in between. The rest of the world top companies kept more or less the same distribution over the years, however more interesting is the difference with Europe, which shows that the rest of the world has overall a higher distribution of shareholder funds while it depends much less on current liabilities. This indicates that the top-100 companies in the ROW use relatively more equity finance compared to their EU counterparts that depend more on bank loans. In times of a financial and banking crisis, this leaves the EU companies at a relatively more vulnerable situation than the top-100 ROW firms. It is also noteworthy that since the start of the economic crisis the share of long-term liabilities significantly decreased for the EU top-100 companies compared to the pre-crisis year 2006, which reflects the uncertainty on the financial markets since 2008.

Figure 3.14 Distribution of shareholder funds and liabilities in the top 100 EU27 toy companies

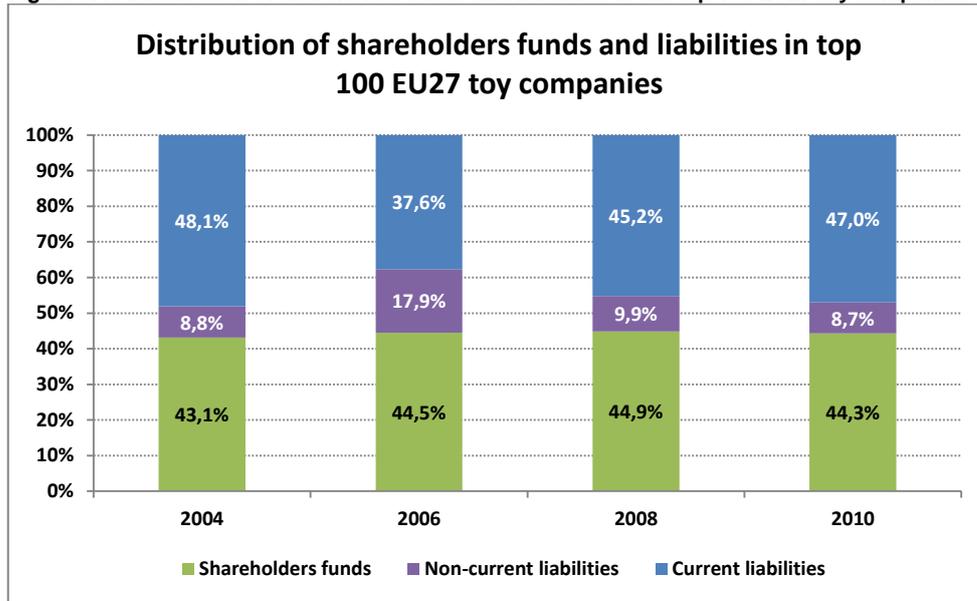
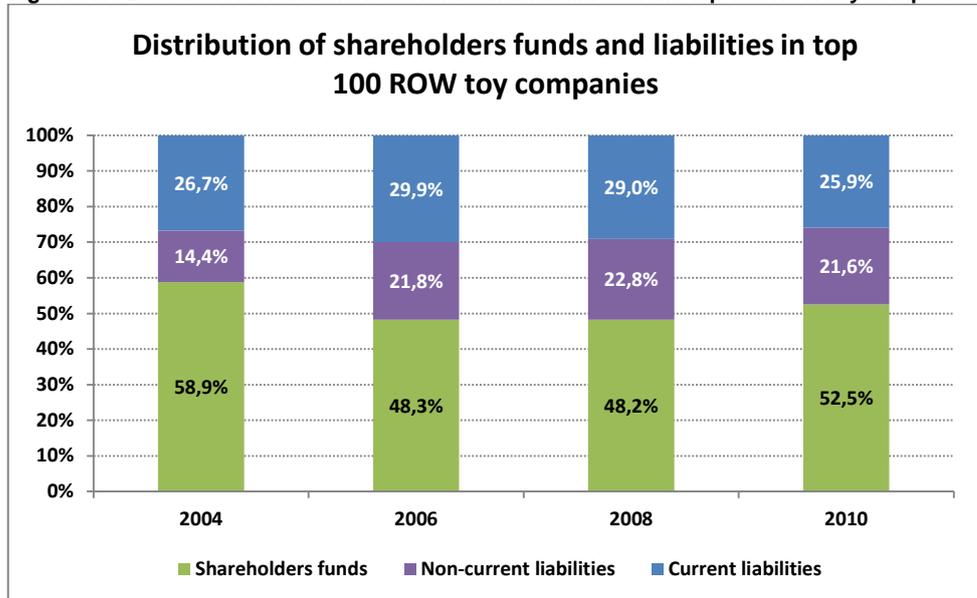


Figure 3.15 Distribution of shareholders funds and liabilities in the top 100 ROW toy companies



4 Market forecast and policy recommendations

4.1 Market forecast

General market trends

The toy industry is very dynamic and experiences intensive competition on innovation and pricing (Wong et al., 2005). Recently, the traditional toys and games industry has experienced increasing competition from video games, which will remain the biggest challenge to the development of traditional toys and games (Euromonitor International, 2012c). Also the increasing demand amongst consumers for toys with electronic components puts more pressure on the traditional toys and games industry. A similar trend is the rise of tablets and smart phones, which both provide competition for attention and preference of children and teenagers and a platform for interactive electronic toys.

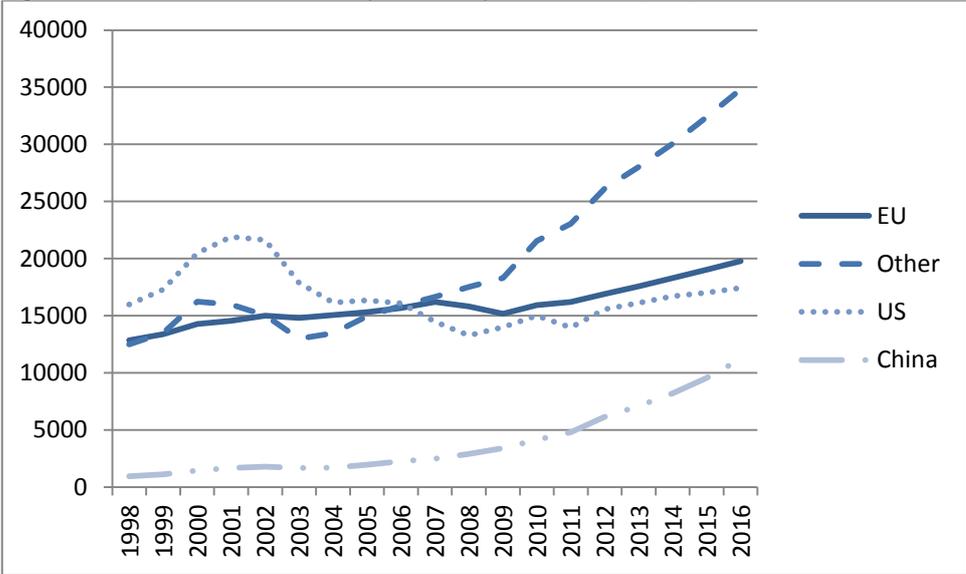
The toy industry faces some developments that may limit market growth prospects:

- The number of children has been stable in the US and shows a declining trend in the EU since the early 2000s;
- Children are maturing at an earlier age implying that the playing period is shorter, which will negatively affect the potential market (Van Lotringen International, 2005);
- Children switch at younger age from traditional toys and games to toys and video games (Wong et al., 2005).

An external factor that positively affects the outlook for the traditional toys and games market is that the purchasing power per kid is increasing, especially in emerging markets such as China.

Despite the slowdown due to the current financial and economic crisis (Figure 4.1), projections by Euromonitor still show a trend of growth expected for the 2012-2016 period in the main markets for traditional toys (Table 4.1).

Figure 4.1 Market size and forecast (in € million) till 2016 for EU, US, China and the rest of the world



Source: Euromonitor, Ecorys estimations.

Table 4.1 Expected annual growth rates of the toy market in the EU, US, China and the rest of the world

Country	2012	2013	2014	2015	2016
EU	4.31%	3.99%	4.16%	4.02%	3.98%
US	11.33%	3.74%	3.48%	1.90%	2.44%
China	28.07%	15.48%	15.83%	16.11%	17.14%
Other	12.42%	6.94%	6.95%	7.31%	7.24%

Product segments on the market

At the level of market segments of traditional toys and games, construction toys have shown the highest growth and are expected to continue to do so. This may be related to the importance of a toy's play value for parents. Parents continue to be an important factor in the choice of toys. Construction toys are considered to stimulate the creativity and can be used differently each time a child plays with them. Also outdoor and sports toys are expected to show high growth due to parents' growing concerns about child obesity and other health problems. At the same time, indoor games such as board games and puzzles tend to have a rather stable market share. During several interviews, plush toys were mentioned as a segment with low growth prospects. As a response to the competition and shifting demand towards electronic toys, traditional toy manufacturers started to investigate possibilities to create toys connected with electronic gadgets (Euromonitor International, 2012a).

The current development in the toy market puts more pressure on the toy industry to search for different profitable ways to manage demand uncertainty through marketing, licensing, and innovation. The shift to hand-held and tablet technology, and wireless communication that is evident in consumer goods gives incentives to traditional toy manufacturers to investigate combining traditional toys with electronic gadgets. For instance, Mattel has been trying to gain some market power in the video games market by acquiring Radica Games (Euromonitor International, 2012a). In 2012, Mattel launched Apptivity, an active touch technology that allows physical toys to interact with iPad. One of Mattel's main competitors, Hasbro, has also aligned with Electronic Arts in order to upgrade its traditional games such as Monopoly into video games (Euromonitor International, 2012a). European producers of puzzles board games, such as Ravensburger and Jumbo are also offering traditional games on electronic platforms or add electronic accessories to their traditional products. As a final example, Lego has created an iPhone app that challenges kids to quickly build small models with physical blocks. Hence, cross-over toys, which allow physical toys to interact with technologies, are one of the niches that have recently caught the attention of traditional toys and games manufacturers and that might potentially allow traditional toy manufacturers to generate new markets and make demand more stable. Moreover, not only established producers, but also a lot of SME start-ups are involved in developing toys that match the best of the physical and digital world. Possible future developments may result in the traditional toys and games industry forging more links with digital entertainment, software and phone app producers (Euromonitor, 2011).⁴³

Licensed toys are an important source of profits for the toy industry. The licensing business in the toy sector accounts for 20-25% of the toy market, according to a toy specialist that we have interviewed. Disney is the largest licensor, the right owner who assigns contracts to toy manufacturers that have a worldwide network of dealers. In 2011, licensed toys accounted for 26% of US traditional toys and games sales (Euromonitor International, 2012a). As early as in 2005, licensed toys and games accounted for 25% of all EU toy sales (CBI Market Survey, 2007). This does not only apply to mature markets: according to Euromonitor, in 2011 licensed toys accounted for about 17% of all traditional toys and games sales in Poland.

⁴³ See <http://blog.euromonitor.com/2011/08/boundaries-blur-between-toys-video-games-and-phone-applications.html>.

Toy manufacturers are able to reduce seasonality and new products adoption risk through licensed toys, which is due to the popularity of the entertainment industry. Furthermore, according to country reports by Euromonitor for Poland and Russia, toys and games bearing brands linked to the entertainment industry such as licensed toys are expected by consumers in these countries to be of high product quality and safety (Euromonitor International, 2012c). Since parents are becoming more concerned about the safety of toys, this may imply that parents will choose such branded or licensed toys more often.

Another emerging segment in the toy industry is fair trade toys. Based on the information derived from survey on EU market information and EU market access requirements (VLI - Van Lotringen International, 2005), this segment could provide additional opportunities for games and toys market as it offers specific distribution outlets and usually professional or monetary support as long as companies comply with the demands which are defined as fair trade in terms of environmental matters and human resource management. Still this niche is rather new and small in the EU toy market.

A different dimension of sustainability that can do well in terms of appealing to a segment of parents and establish a market niche is eco-design. This is especially applicable to wooden toys. The use of wood from well managed forests, water based ink, and recycled packaging or instruction manuals signals high quality and responsible production processes and products and also provide the added value of a lower environmental impact. Interestingly, wooden toys also market themselves by other statements such as e.g. “designed in France, made in China”. The image of quality and eco-friendly manufacturing can do well hand in hand with production activities in the Far East.

Retail trends

The most prominent trend in retail is the rise of internet retailing of toys (Table 4.1). This development is likely to put further pressure on profit margins in traditional toy retail, as large generalist retailers already offer strong competition to traditional channels according to one interviewed toy producer. Volumes of sales via platforms such as Amazon are an attractive feature for producers, explaining why such online retailers may be able to ask a higher margin per product compared to traditional shops, as suggested by one interviewed toy distributor.

Table 4.2 Growth in internet retail compared to overall retail market

Country	Internet Retail - Average	Total Retail - Average
	percentage growth 2000 – 2011	percentage growth 2000 – 2011
France	50.7 %	2.1 %
Germany	27 %	0.5 %
Italy	13.7 % ⁴⁴	1.9 %
Netherlands	46.7 %	1.7 %
Spain	58.8 %	4.7 %
Sweden	23.8 %	2.5 %
Switzerland	32.5 % ⁴⁵	0.2 %
Turkey	112.1 %	15 %
United Kingdom	12.8 %	2.2 %
Poland	18.1 %	7.3 %
Romania	42.5 %	14.5 %
Russia	78.3 % ⁴⁶	20.5 %
Ukraine	86 % ⁴⁷	14.8 %
USA	31 %	0.3 %

Source: Euromonitor.

4.2 Policy recommendations

In the assessment of the market performance and the regulatory assessment, we have identified some restrictions to improved competitiveness of the European toy industry.

Increase transparency in the regulatory framework

The toy sector faces many regulatory requirements, most prominently from the Directive on Toy Safety. The impact of these regulations on companies can be substantial according to our interviews with some producers. For example the Toy Safety Directive has led to complex procedures for the implementation of the requirements, while also overlap with legislation on specific topics can be observed, such as the chemical requirements under REACH. Harmonisation of the regulation will provide toy producers with clarity, reducing regulatory uncertainty.

Widening of the scope and tightening of requirements due to new scientific insights also leads to increased complexity of regulation. The complexity negatively impacts toy production as producers have to adjust production processes when requirements change. In addition, new toys that consist of many small particles, may have to meet many different requirements. Reduction of complexity, for example by providing more extensive guidance on requirements and on classification of new toys, reduces risk and additional costs for the producers.

Despite well-designed principles to reduce burden and cost to companies, simplification of the certification procedures to avoid for example double or redundant testing required by various actors in the value chain could be further improved. Both the complexity of costly procedures and the overlapping requirements of legislation make it more difficult for producers to innovate, while innovation is essential for sector competitiveness.

⁴⁴ For the period 2003 – 2011.

⁴⁵ For the period 2001 – 2011.

⁴⁶ For the period 2001 – 2011.

⁴⁷ For the period 2005 – 2011.

With respect to especially SMEs, the argument could be valid that they are at a disadvantage not only because of the scale economies and fixed costs involved but also because of their reliance on external testing. Mitigation strategies may help SMEs overcome costs. Examples are innovation support policy and support policy for business networks that aim at SMEs joining forces in sharing costs of product development, such as testing facilities.

Reducing administrative costs and compliance costs of the Toy Safety Directive

The Toy Safety Directive brings along administrative costs (linked to the declaration of conformity and keeping the technical documentation for a period of 10 years) and compliance costs (for the conformity assessment procedure). A reduction of these costs without reducing the toy safety levels that are required by the applicable legislation would benefit the toy industry, in particular the smaller toy producers. Cost reduction may be achieved in several ways, for example by simplification of the procedures, developing low-cost testing facilities for toy producers or offering financial support to innovation initiatives. Further cost reduction may be achieved by lowering the toy safety levels within Europe, but this requires a (political) choice between consumer protection and industrial policy.

Harmonisation of toy safety requirements and mutual recognition

Differences in toy safety requirements and lack of mutual recognition of toy safety labels provide added costs for toy producers, which in some case can be considered full-blown non-tariff trade barriers. In order to reduce these trade barriers for EU (and non-EU) toy producers, harmonisation of toy safety requirements with third countries and mutual recognition of safety labels should be considered.

Strengthening the enforcement of IPR

Counterfeiting remains a problem for the toy industry. Results that can be achieved in combatting IPR infringements offer direct benefits for the European toy manufacturers and their ability to innovate and compete.

Other issues

Like any other sector, access to capital is an important issue for the toy sector. While the toy sector suffers less than other sectors from the recent economic downturn, small toy producers still experience difficulties in gaining access to capital.

As a sector with a distinct seasonal demand, the toy sector – and in particular the toy retail sector – makes use of seasonal employment, and might do so more if the costs involved due to labour market regulation would be lower. Although current regulation of labour flexibility does not form a particular bottleneck for the sector judged by interviews, maintaining (or even improving) current labour market flexibility is essential.

Section II: Annexes

Annex I List of interviewed organisations

No.	Name of organization	Category	Country
1	British Toy and Hobby Association and Toy Fair	Toy Association	UK
2	Deutscher Verband Der Spielwaren Industrie (DVSI)	Toy Association	Germany
3	Fédération Française Des Industries Jouet-Puériculture (FJP)	Toy Association	France
4	The Nordic Association of Toy Manufacturers (NATM)	Toy Association	Nordic countries
5	Hong Kong Toy Council	Toy Association	Hong Kong
6	Regioplan	Policy Research	Netherlands
7	Toy Industries of Europe (TIE)	Toy Association	EU / Brussels
8	NPD	Market Research	Europe
9	Spielwarenmesse eG	Toy Fair	Germany
10	www. 220.lv	Retailer	Latvia/Lithuania
11	Lego Company Limited	Manufacturer	Denmark
12	Ravensburger	Manufacturer	Netherlands
13	Hasbro	Manufacturer	Netherlands / UK
14	PBM Express	Retailer/wholesaler	Netherlands
15	Smoby	Manufacturer	France
16	Spanish Toy Association	Toy Association	Spain
17	Playmobil	Manufacturer	Germany / Malta
18	The Toy Company	Manufacturer	Germany / Hong Kong
19	MPK Toys	Distributor	Czech Republic
20	Bandai	Manufacturer	
21	KAMI	Toy Association	Czech Republic
22	PTA	Toy Association	Poland
23	JumboDiset	Manufacturer	Netherlands / Spain
24	The Model Shop	Distributor	Malta
25	Game Movil	Manufacturer	Spain

No.	Name of organization	Category	Country
26	Babe Equip	Distributor	UK
27	Sdruzeni Hracky	Toy Association	Czech Republic
28	Polskie Stowarzyszenia Branży Zabawek i Artykułów Dziecięcych	Toy Association	Poland
29	Z.P. Alexander	Manufacturer	Poland
30	ADAR Agencja Handlowo-Uslugowa	Distributor	Poland

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Annex III Regulation of toy safety

We identified the following legislation as relevant to the toys production and retail sector:⁴⁸

- Toys Safety Directive (2009/48/EC);
- REACH (EC 1907/2006);
- CLP Regulation (EC 1272/2008);
- Packaging and package waste Directive (94/62/EC);
- Waste Framework Directive (2008/98/EC);
- Food Contact Materials Framework Regulation (EC 1935/2004);
- Plastics Implementing Measure (Regulation EU 10/2011);
- Cosmetics Directive (76/768/EEC);
- Battery Directive (2006/66/EC);
- Hazardous Substances Directive (2011/65/EU);
- Low Voltage Directive (2006/95/EC);
- Electromagnetic Compatibility Directive (2004/108/EC);
- Electrical Waste Directive (2002/96/EC);
- R&TTE Directive (1999/5/EC).

Below, we describe the main elements of these Directives and Regulations and highlight the relevance for the toy sector. The Toys Safety Directive has already been extensively discussed in the main report and will not be discussed here anymore.

Some Directives and Regulations are only relevant for part of the toy sector. For example, regulation on electrical components, like the Low Voltage Directive and the Electrical Waste Directive, only apply to toys using electricity and not other toys like dolls and wooden toys.

The Directives and Regulations presented below are presented in order of relevance for the toy sector with the most important Directives and Regulations discussed first. This order is not based on a quantitative analysis, but on estimations of the researchers.

REACH

The Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)⁴⁹ addresses the production and use of chemical substances. REACH applies to all chemicals imported or produced in the EU, with specific attention paid to chemical substances of very high concern (SVHC) because of their potential negative impacts on human health or the environment.

REACH requires all companies manufacturing or importing chemical substances into the European Union in quantities of one tonne or more per year to register these substances with the European Chemicals Agency (ECHA). Some uses of SVHCs may be subject to prior authorisation from the European Chemicals Agency.

⁴⁸ Source: Website European Commission, Toys - Relevant Union legislation, http://ec.europa.eu/enterprise/sectors/toys/documents/relevant-legislation/index_en.htm.

⁴⁹ Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

CLP Regulation

The Classification, Labelling and Packaging Regulation⁵⁰ (CLP) contributes to the United Nations Globally Harmonised System (GHS) aim that the same hazards will be described and labelled in the same way all around the world. By using internationally agreed classification criteria and labelling elements, it is expected to facilitate trade and to contribute towards global efforts to protect humans and the environment from hazardous effects of chemicals.⁵¹

Packaging and package waste Directive

The Packaging and package waste Directive⁵² sets essential requirements for packaging. This includes minimisation of packaging volume and weight. It also includes requirements on the design of packaging to permit its reuse or recovery. The Directive applies to all packaging placed on the Community market.

The Directive also sets targets for the recovery and recycling of packaging waste in the form of a maximum percentage of packaging flowing into the waste stream. It also requires the implementation of measures to further reduce packaging waste in addition to the obligations already set in the Directive.

Waste Framework Directive

The Waste Framework Directive⁵³ sets a waste hierarchy, setting a priority order in waste prevention and management. The five steps of the waste hierarchy are:

- Prevention: prevention of waste being generated;
- Reuse: assure that products receive a second life before they are considered waste;
- Recycle: recovery of waste materials and reprocessing them into products or materials⁵⁴;
- Recovery: for example, energy recovery by means of incineration;
- Disposal: disposing of waste, for example by means of landfilling and non-energy related incineration.

The European Waste Hierarchy is legally binding except in exceptional cases where specific waste streams may depart from the waste hierarchy.

Food Contact Materials Framework Regulation

The Food Contact Materials Framework Regulation⁵⁵ sets rules on materials that come into contact with food. The Regulation requires, inter alia, that food contact materials are safe, do not transfer their components into food in quantities that could endanger human health, change food composition in an unacceptable way or deteriorate its taste and odour, are manufactured according to good manufacturing practice, and are traceable throughout the production chain.⁵⁶

⁵⁰ Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

⁵¹ EC, Chemicals - CLP legislation, guidance and archives, <http://ec.europa.eu/enterprise/sectors/chemicals/documents/classification/>.

⁵² European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste.

⁵³ Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives.

⁵⁴ Recycling includes composting. Recycling does not include incineration.

⁵⁵ Regulation (EC) 1935/2004 of the European Parliament and of the Council of 27 October 2004 on materials and articles intended to come into contact with food and repealing Directives 80/590/EEC and 89/109/EEC.

⁵⁶ EC, Food Contact Materials - Framework Regulation http://ec.europa.eu/food/food/chemicalsafety/foodcontact/framework_en.htm.

Plastics Implementing Measure

The Plastics Implementing Measure⁵⁷ restricts the use of monomers⁵⁸ and additives in plastics that come into contact with food. The Regulation also contains rules on contact times, temperature conditions, and simulants.

Cosmetics Directive

The Cosmetics Directive⁵⁹ defines which chemicals or products are banned, restricted or permitted for use in cosmetics. Restricted chemicals or products are for example only permitted for certain types of cosmetics, or in certain concentrations, or subject to warning labels.

Battery Directive

The Battery Directive⁶⁰ regulates the manufacturing and disposing of batteries in the EU. The Directive limits the amount of mercury and cadmium in batteries and requires that initiatives should be undertaken to reduce the use of heavy metals in batteries and to increase the collection and recycling of batteries.

Hazardous Substances Directive

Hazardous Substances Directive⁶¹ (ROHS) restricts the use of six substances: Lead, Mercury, Cadmium, Hexavalent chromium (Cr6+), Polybrominated biphenyls (PBB) and Polybrominated diphenyl ether (PBDE). For each of these substances, the ROHS sets maximum permitted concentrations for any part of a product that could (theoretically) be separated mechanically. The directive applies to a large range of products, including the category 'Toys, leisure, and sports equipment'.

Low Voltage Directive

The Low Voltage Directive⁶² sets objectives for safety regulation, so that electrical equipment approved by any Member State can be safely used in other Member States. The Directive covers electrical equipment with a voltage at input or output terminals between 50 and 1000 volts for alternating current (AC) or between 75 and 1500 volts for direct current (DC). The Directive does not set specific technical standards, but refers to technical standards of the International Electro-technical Commission (IEC). Conformity is asserted by the manufacturer.

Electromagnetic Compatibility Directive

The Electromagnetic Compatibility Directive⁶³ aims to ensure the functioning of the internal market by requiring equipment to comply with Certain essential requirements (Annex I of the Directive). These requirements include, inter alia, sufficiently low electromagnetic disturbance as not to disturb radio and telecommunications equipment and immunity to electromagnetic disturbance from other sources.

⁵⁷ Commission Regulation (EU) No 10/2011 of 14 January 2011 on plastic materials and articles intended to come into contact with food.

⁵⁸ A monomer is a molecule that may bind chemically to other molecules to form a polymer.

⁵⁹ Council Directive 76/768/EEC of 27 July 1976 on the approximation of the laws of the Member States relating to cosmetic products will be replaced by Regulation (EC) No 1223/2009 as of 11 July 2013.

⁶⁰ Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC.

⁶¹ Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (ROHS).

⁶² Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits.

⁶³ Directive 2004/108/EC of the European Parliament and of the Council of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC.

Electrical Waste Directive

The Electrical Waste Directive⁶⁴ (WEEE) sets targets for the collection, recycling and recovery for all types of electrical goods. The directive imposes the responsibility for the disposal of waste from electrical and electronic equipment on the manufacturers or distributors of such equipment. Similar to the ROHS, one of the product categories to which the WEEE applies is the category 'Toys, leisure and sports equipment'.

R&TTE Directive

The R&TTE Directive⁶⁵ sets a regulatory framework for the placing on the market, free movement and putting into service of radio equipment and telecommunications terminal equipment.⁶⁶ The R&TTE Directive lays down mandatory essential requirements that strongly relate to the requirements set in the Low Voltage Directive and the Electromagnetic Compatibility Directive, such as the protection of the health and the safety of the user and any other person, and electromagnetic compatibility requirements such as non-disturbance of radio and telecommunications equipment and immunity to electromagnetic disturbances from other sources. In addition, the Directive requires radio equipment to be constructed in such a way that it effectively uses the spectrum allocated to terrestrial/space radio communication and orbital resources so as to avoid harmful interference. In addition, the Directive prescribes additional requirements for certain types of equipment.

⁶⁴ Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003 on waste electrical and electronic equipment (WEEE). Note: the Directive will be replaced by Directive 2012/19/EU as of 15 February 2014.

⁶⁵ Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity.

⁶⁶ EC, Guide to the R&TTE Directive 1999/5/EC, http://ec.europa.eu/enterprise/sectors/rtte/files/guide2009-04-20_en.pdf.

Annex IV RCA scores for traditional toys

	2011	2010	2009	2008	2007
AUT	0,17	0,19	0,19	0,23	0,18
BEL	0,30	0,33	0,31	0,29	0,27
BGR	0,79	0,93	0,99	0,95	0,93
China	5,93	5,76	5,93	6,76	6,67
CYP	0,44	0,26	0,21	0,20	0,12
CZE	4,27	3,61	3,55	2,80	2,16
DEU	0,45	0,41	0,44	0,41	0,36
DNK	3,79	3,84	3,25	2,65	2,86
ESP	0,56	0,53	0,50	0,50	0,48
EST	0,29	0,26	0,34	0,33	0,29
FIN	0,05	0,04	0,04	0,05	0,04
FRA	0,28	0,26	0,28	0,26	0,28
GBR	0,30	0,24	0,26	0,29	0,31
GRC	0,82	0,75	0,55	0,44	0,34
HRV	0,14	0,03	0,03	0,08	0,04
HUN	1,32	1,20	1,29	0,88	0,72
IRL	0,16	0,26	0,19	0,18	0,18
ITA	0,40	0,39	0,40	0,38	0,41
LTU	0,14	0,16	0,20	0,17	0,48
LUX	0,23	0,14	0,20	0,31	0,09
LVA	0,22	0,19	0,16	0,13	0,15
MLT	10,64	7,44	8,56	5,84	5,43
NLD	0,58	0,47	0,55	0,55	0,52
POL	0,43	0,29	0,28	0,26	0,20
PRT	0,20	0,17	0,18	0,20	0,16
ROM	0,40	0,41	0,42	0,40	0,45
SVK	0,41	0,30	0,39	0,27	0,24
SVN	0,47	0,10	0,13	0,19	0,19
SWE	0,15	0,10	0,11	0,11	0,13
USA	0,15	0,15	0,15	0,16	0,17
ROW	0,14	0,14	0,15	0,13	0,14
<i>Regions/Countries</i>					
CHN	6,04	5,85	6,00	6,85	6,81
EU27 (incl. intra EU)	0,58	0,52	0,52	0,47	0,43
HKG	3,00	3,36	3,93	4,52	3,44
Intra EU27	0,71	0,61	0,62	0,55	0,49
Export EU27	0,34	0,34	0,32	0,29	0,29



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