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# ILLICIT MARKETS- A THREAT TO OUR NATIONAL INTERESTS

## THE COMPUTER HARDWARE INDUSTRY

# About this report:

This report has been prepared by Thought Arbitrage Research Institute (TARI) for FICCI Committee Against Smuggling and Counterfeiting Activities Destroying the Economy (CASCADE).

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FICCI CASCADE

# ILLICIT MARKETS- A THREAT TO OUR NATIONAL INTERESTS

## THE COMPUTER HARDWARE INDUSTRY

# Foreword

Product counterfeiting puts consumer safety at a great risk. Counterfeit, fake and smuggled goods are no longer just about luxury items. Today, almost all sorts of products are being copied and smuggled, which not only negatively impacts consumers but can also infringe national safety and security systems.

FICCI has been at the forefront of advocating policy framework on various aspects affecting the industry. In 2012, a FICCI CASCADE study titled "Socio-Economic Impact of Counterfeiting, Smuggling and Tax Evasion in Seven Key Indian Industry Sectors" was released which was the first ever compilation of facts and figures on counterfeiting, smuggling and tax evasion in seven key industry sectors in India. After the earlier comprehensive study, which not only estimated the size of the grey market in the select industry sectors, but also highlighted the losses to the industry in sales and Government in revenue, we have now gone a step further and developed 10 sector specific reports on 'Illicit Markets - A Threat to Our National interests'. This report is specific to the computer hardware industry and aims at updating the estimates of grey markets in this sector, projecting the resultant losses to the industry and assessing its impact on innovation and investment.

I would like to thank and congratulate all the committee members and stakeholders who have contributed towards this project, particularly Thought Arbitrage Research Institute (TARI). It is hoped that this study would provoke further debate on the extent of this problem and ways and means to mitigate the challenge.

I wish FICCI-CASCADE success in its future initiatives.

**Dr. A. Didar Singh**
Secretary General
FICCI

# Chair's Message

I am pleased to present the report on 'Illicit Market: A Threat to Our National Interest' which is specific to the computer hardware industry.

Illicit markets have broad economy-wide effects on trade, foreign investment, employment, innovation, criminality, environment, and on the safety and security of the consumers. Over and above, it also has a negative impact on the brand image and loss of revenue for industry and governments.

Computer hardware is one of the fastest growing industry sectors around the world. Growing income levels, increasing awareness and compulsory computer education are playing an important role in the growing demand for computer hardware. Since use of IT hardware is widespread in offices, defense equipment, telecom, airplanes etc., computers (desktop and laptop) and other hardware systems are highly prone to counterfeiting and piracy. Even smuggling of computer components is rampant. Counterfeit and smuggled equipment can cause information systems to fail or be vulnerable to virus attacks, leading to loss of personal and confidential data and security violations jeopardizing national security.

At a time when India is emerging as one of the fastest growing IT market places, grey market operations will prove to the biggest hurdle to the growth of this industry. Sale of counterfeits and fakes items in the market will reduce profitability for legal industries, impacting business efficiency for the consumers and draining the national exchequer.

This report has estimated the size of the illicit market; its adverse impact on innovation and investment in the computer hardware industry. I am certain that the findings from this report would increase consumer awareness, drive support from policy makers in tax related reforms and step up the industry for greater investment in R&D and encourage innovation.

I hope that this research will be useful for all stakeholders including consumers, industry, policy makers and researchers on the issues in the computer hardware industry, and the challenges ahead if concerted efforts are not taken to curb this twin menace of smuggling and counterfeiting.

**Anil Rajput**
Chairman
FICCI CASCADE

# Table of Contents

# Executive Summary

In the study titled "Socio-Economic Impact of Counterfeiting, Smuggling and Tax Evasion in Seven Key Indian Industry Sector" (FICCI CASCADE Study) sales loss to industry and tax losses to the government due to the operation of the grey market in India was estimated for the years 2008 and 2010 using Government of India published data on production and consumption for those years. Two years have elapsed since the last study and since an accurate assessment of the real costs of counterfeiting, smuggling and tax evaded goods is vital to convincing decision-makers that strong action is necessary to curb the growth of the illicit markets, this study takes off from the earlier one, and sets out to ascertain the percentage of illicit markets in these sectors based on the latest government published data of 2012 as well as losses to the industry in 2014. FICCI's Committee Against Smuggling and Counterfeiting Activities Destroying the Economy (CASCADE) has commissioned the present study to also assess the impact of grey markets/counterfeit products on investments, innovation and tax arbitrage. This report is specifically for the computer hardware industry, while other industries are covered in separate industry specific reports similar to this one.

**COMPUTER HARDWARE**

GREY MARKET ESTIMATES INDUSTRY & GOVERNMENT LOSS

**IMPACT ON:**
- Innovation
- Investment
- Inter-State Tax Arbitrage
-Terrorism

## Size of the Illicit Market in the Computer Hardware Industry

The computer hardware industry also known as IT- hardware industry can be segregated into computers, peripherals, network hardware, hardware support and hardware maintenance. It is

the largest segment in global IT-BPM industry contributing around 45% of the total industry.[1] The market size of the Indian hardware industry is estimated to be around US$ 13 billion during FY14, or 11% of total IT-BPM Industry.[2]

Growing income levels, increasing awareness and compulsory computer education are increasing the demand for computer hardware.

The computer hardware industry has one of the highest illicit market percentages amongst all the industries under review of FICCI-CASCADE. For 2012 this report has estimated the illicit markets to be 27.9% up from the estimated 26.40% in 2010.

For 2014, the loss to the industry has been estimated at ₹ 7,344 crores. When compared with 2012 this represents an increase of 55%.

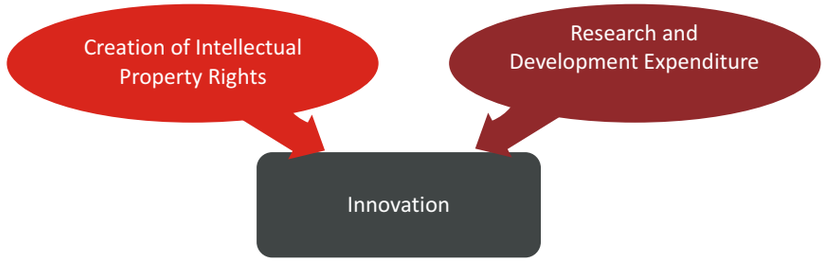
| Industry | Grey Market %age | | Loss to Industry (₹ crores) | |
|---|---|---|---|---|
| | 2012 | 2010 | 2014 | 2012 |
| Computer Hardware | 27.9% | 26.4% | 7,344 | 4,725 |

The total loss to the government estimated for 2014, on account of the illicit markets in the computer hardware industry is ₹ 1,923 crores, up from ₹ 1,234 crores in 2012.

Thus while the extent of illicit markets has increased only marginally over a two year period due to the increase in demand and the growth of the industry, the loss to the industry has grown quite significantly. Some of the primary reasons for the existence and increase of these markets includes weak enforcement of existing laws, easy availability, lower manufacturing costs, resultant low market price of counterfeited goods, lack of awareness about consequences of counterfeiting, etc.

## Impact of Illicit Markets on Innovation

Two proxies were used to measure innovation:




Our research did not yield any clear results with regard to creation of intellectual property rights. An overall assessment of patent applications (filed, examined and granted) in the country reveals that in the last 5 years there has been a declining trend in the number of patents

granted by the Patent Office for this sector. According to a Thomson Reuters report the patent applications filed by the computer/electronics industry in India from 2007-08 to 2011-12 has fallen from approximately 5,000 to almost 4,000 *(refer graph in section "Impact of Illicit Markets on Innovation")*. One of the possible reasons for this could be that innovators apply for patent protection in other countries rather than in India, which in turn could indicate lower perception of IPR protection in India.

In terms of research and development expenditure, this industry is expected to have a high R&D over operating expenditure ratio. At an average of 0.95% per year over the six year period from 2008-13, this industry has the one of the largest percentages among the industries under FICCI CASCADE review. However, absolute R&D expenditure over the same period has been quite low falling from ₹ 210 million in 2008 to ₹ 169 million in 2014 after peaking at ₹ 445 million in 2009.

This clearly indicates, that as the size of the illicit markets is increasing, the scope and incentive for innovation in this highly innovation driven industry is decreasing. In order to encourage innovation, industry and government need to work towards strengthening the law enforcement process. This will discourage IPR infringement and encourage more innovations through rigorous R&D. ***Returns on successful R&D need to be large enough to compensate for the high proportion of R&D that is bound to turn out to be unsuccessful.***

## Impact of Illicit Markets on Investments

The following ratios have been used to assess the impact (if any) of illicit markets on investments in the computer hardware industry:

- Gross value added (GVA) as a percentage of total output.
- Ratio of imported and indigenous inputs and imports of goods over total production.
- Sales over capital employed.

These proxies will assess whether Indian companies are investing in capacity enhancements or process improvements as warranted by increasing consumer demand rather than simply relying on imports of goods.

The numbers in the table below indicate the industry is slowly moving towards better capacity utilisation and lower input costs. In consideration of a substantial increase in imported inputs, perhaps a shift towards indigenisation of the manufacturing process is called for as the use of local raw materials will help in increasing the value added in the manufacturing process.

| Sector | 2010 | | 2012 | |
|---|---|---|---|---|
| | GVA as % age of Total | Grey Market %age Output | GVA as %a ge of Total Output | Grey Market %age |
| Computer Hardware | 21.93 | 26.4 | 22.71 | 27.9 |

It is observed in the table above, that the grey market percentage has not increased significantly even though it continues to have one of the largest illicit markets among the sectors under review.

This industry is clearly dependent more on imports as observed from the use of indigenous and imported inputs in the production process. Over 60% of the raw materials used in this industry are imported. This dependence has been gradually growing over the past few years. A high dependence on imports and the consequent high grey market presence results in low gross value added as a percentage of total output. Although low, the use of imported finished goods as a percentage of total production is also increasing in this sector. In fact, (other than mobile phones), this sector shows the highest import of finished goods.

The computer hardware sector shows the least average ratio i.e. 0.4, of sales over average capital employed, among all the sectors under FICCI-CASCADE review. This sector also shows a high percentage of imports over total production and the average percentage of gross value added over the total output is 21.27%. This implies that the sector depends more on imports for sourcing its requirement of goods on and a lot more needs to be done such as increasing investment in indigenous manufacturing capability and utilising assets more efficiently.

## Impact of Inter-state Tax Arbitrage within India

Considering the low rates of tax on computer hardware and the fact that there is no significant variation between tax rates of different states, we concluded that there is no scope for inter-state tax arbitrage in this sector.

## Illicit Markets, Terror Organisations and Criminal Networks

While statistical data is available for the number of terrorist attacks that have taken place in India, it is difficult to directly correlate it to the grey market data in the absence of sufficient information and research, which are lacking at present, especially in the Indian context.

Furthermore, despite the existence of requisite laws in India and arrests of suspected criminals by the police, the scale of illicit markets is huge and the criminal networks and illicit markets organisations continue to thrive. Clearly, the existing laws and police operations are not resulting in the desired outcome and do not act as a deterrent. This could be due to the low conviction rates in India.

***The lack of adequate data based on search and seizure in India makes it difficult to link the increase in illicit markets to terror funding. Establishment and determination of the extent of such a link calls for strategic intelligence gathering and preparation of robust databases,***

***which are clearly missing at present. Given the security implications, if not outright financial considerations, there is little to argue against carrying out such exercises. This would be the first step to contain counterfeiting and its corollary, terror and ensure that genuine business interests do not suffer.***

## Conclusion & Way Forward

Our study has been able to reasonably establish a relationship between the existence and growth of illicit markets and its impact on innovation and investment. The grey market percentage in this industry is one of the largest among all industry sectors under FICCI CASCADE review. The increase from 2010 however is not very large.

Innovation in the industry is quite low, with a declining trend in patent applications filed (in the computer/electronics sector) during the period 2007-08 to 2011-12. R&D expenditure - another important indicator of innovation - has been falling in this industry over the years remaining at an average of 0.95% (the second highest among all sectors covered) of total operating expenditure over the six year period from 2007-08 to 2012-13. In a technology driven industry like the computer hardware sector, this is not a particularly good sign.

For evaluating the impact of illicit markets on investment three proxies were evaluated. While GVA to total output of the computer hardware sector is somewhere in the middle among all sectors under review it has shown a gradual increase over the years (which is a positive sign); an indicator that the industry is slowly moving towards better capacity utilisation and lower input costs. The industry also shows a lower ratio of average sales over average capital employed i.e. 0.4. The increasing dependence on imports, represented by the use of imported inputs and finished goods in the computer hardware sector however implies that value (and jobs) is being created overseas rather than domestically. The sector is increasingly depending more on sourcing its requirement from imports. There is an urgent need, therefore, to invest in indigenous manufacturing capability and utilise assets more efficiently.

Illicit markets as a source of terror funding is also a matter of grave concern. If the threat of terrorism is to be nipped, access to funding has to be choked. Many countries do not possess the legal and operational wherewithal and technical expertise needed to zero in on terrorist financing sources and initiate prosecution. India is no different.

It is imperative therefore to build a framework for prevention of terrorist financing which tracks financing hubs and also acts as a deterrent to ultimately bring down the threat of terrorism. Such a framework will include training and capacity building among enforcement agencies, use of technology to detect and track sources of finance and increasing consumer awareness to empower consumers to take more informed decisions.

While stringent enforcement of laws and raising awareness on counterfeiting and piracy can combat the growth of illicit markets, the supply chain of such manufacturers needs to be curtailed. This will encourage investment in R&D and development of new manufacturing processes and products, limiting the need for legitimate manufactures to source their requirements for inputs and finished products from abroad, thus adding value domestically.

***According to a recent Dun & Bradstreet report,[3] rising income levels coupled with increase in the young working-age population will lead private final consumption expenditure to grow steadily over the years, averaging around 7.0% during FY15-FY20.***

Domestic manufacturing of high quality products will lower costs and enable accessibility of genuine products to the burgeoning Indian middle class with increasing disposable incomes. Educating consumers about ill effects of buying counterfeited products will yield best results only when there is adequate availability of quality and affordable genuine products.

# Objective of the Study

In the study titled "Socio-Economic Impact of Counterfeiting, Smuggling and Tax Evasion in Seven Key Indian Industry Sector" (FICCI CASCADE Study) sales loss to industry and tax losses to the government due to the operation of the grey market in India was estimated for the years 2008 and 2010 using Government of India published data on production and consumption for those years.

Two years have elapsed since the last study and since an accurate assessment of the real costs of counterfeiting, smuggling and tax evaded goods is vital to convincing decision-makers that strong action is necessary to curb the growth of the illicit markets, this study takes off from the earlier one, and sets out to ascertain the percentage of illicit markets in these sectors based on the latest government published data of 2012 as well as losses to the industry in 2014.

FICCI's Committee Against Smuggling and Counterfeiting Activities Destroying the Economy (CASCADE) has commissioned the present study to also assess the impact of illicit markets products on investments, innovation, terror funding and tax arbitrage. This report is specifically for the computer hardware industry.

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**IMPACT ON:**
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Grey market percentages are currently ascertainable for 2012, as reliable government data from the Ministry of Statistics and Planning Implementation (MoSPI) of the Government of India is available for 2012. This data includes the Annual Survey of Industries for 2012 which provides data on factory production across the country and National Sample Survey Organisation's National Sample Survey 68th round, which provides household consumption data across the country for the year 2012.

Loss to the industries concerned in 2013-14 has then been ascertained by extrapolating the industry size determined for 2011-12 based on assumptions about the growth of the industry over the two year period between 2012-13 and 2013-14. These assumptions are obtained from industry reports and discussions with industry experts. Assuming that the grey market percentage remains constant over this two year period, it is applied to the market size so estimated to arrive at the loss to the industry for 2013-14.

As indicated in several studies including the 2012 FICCI CASCADE study, by their very nature, since counterfeiters operate outside the law, estimating the extent of counterfeiting and piracy and the harm these activities cause is extremely challenging. Illegal businesses do not report information on their activities to any government agency; therefore measuring their size must be done using indirect methods.[4]

## Industry Coverage

Taking off from the 2012 FICCI CASCADE study this sector study quantifies the extent of grey markets and estimates of losses due to illicit markets in the computer hardware industry, as well as various aspects of the illicit markets and their impact on factors like investment, innovation, tax arbitrage, consumers, etc. Other sectors are covered in separate sector reports similar to the present report.

This study is perhaps the first quantitative study in India on the impact of illicit markets on various economic aspects. Depending on the quality and credibility of data available, it has quantified different types of impacts on various sectors. The study uses latest Government of India data on consumption and production, which is available for 2012 (released in 2014).

# Literature Review

We have reviewed past studies and published research on the subject of grey markets including counterfeiting, smuggling and tax evaded goods and their impact on innovation, investment, tax arbitrage and funding terrorist activity.

This review included global studies commissioned by public institutions and agencies of repute, industry associations working on anti-counterfeiting endeavours, academia and major corporates. Such works were reviewed to analyse the scope of research, methodology adopted, analysis techniques and results.

Extracts from some of the significant reports are reproduced in Annexure I to give a broad understanding of global thinking on the subject.

# Computer Hardware - Industry Profile in India

## Introduction

Various industry studies or reports and government reports club the computer hardware industry under different sector categories. For instance, NASSCOM includes it under the IT-BPM (Information Technology-Business Process Management) industry while, the Department of Electronic and Information Technology of the Government of India clubs it under the electronics hardware sector. Irrespective of where and how it is presented it is quite apparent that computer hardware is an essential extension of our daily lives now and that of most other industries and that the software industry would redundant without the hardware to operate it.

As per NASSCOM's 2014 Strategic Review,[5] the Indian IT-BPM industry is divided into four major segments -

a) IT services.

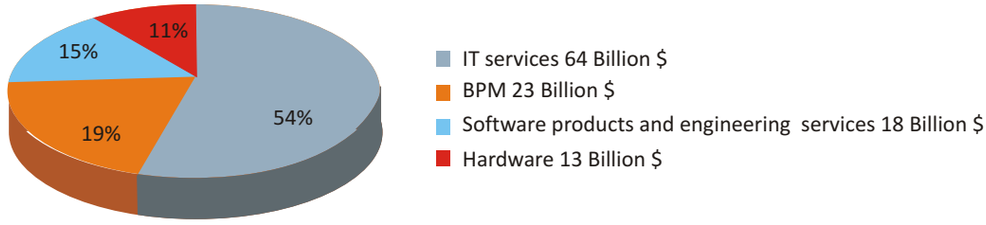
b) Business process management (BPM).

c) Software products and engineering services.

d) Hardware

Computer hardware is the largest segment in global IT-BPM industry. It contributes around 45% to the total IT-BPM Industry.[6] The Indian computer hardware market share is much lower than the global market. The market size of the Indian hardware industry is estimated to be around US$ 13 billion during FY14, or 11% of total IT-BPM Industry.[7]

**Revenue 2014**




As per Indian Brand Equity Foundation, the computer hardware segment contributes 12% in Indian electronic goods production.[8] The total market capitalisation of the industry is approximately ₹ 15,000 crores (as on September 18, 2014).[9]

Computer hardware industry also known as IT- hardware industry can be segregated into the following broad areas:

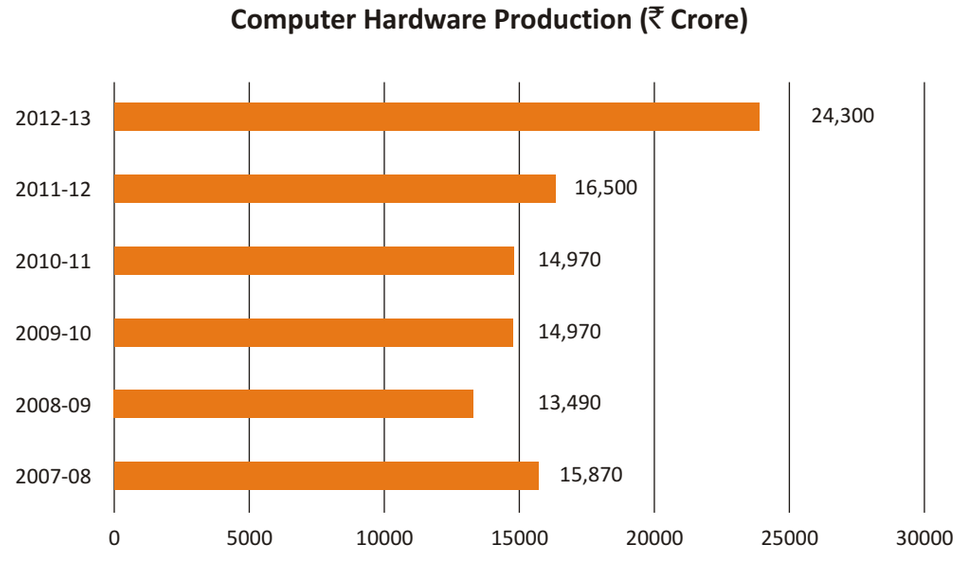
- Computer
- Peripherals
- Network hardware
- Hardware support
- Hardware maintenance

Monitors, laptops, printers, scanners, mouse, routers, hard drives, pen drives, motherboards CD-ROMs, network interface cards and other related items are covered form part of the IT-Hardware industry.

Growing income levels, increasing awareness and compulsory computer education are playing an important role in the increasing demand for computer hardware. An increase in volume, is expected to therefore reduce prices of PCs. The Department of Electronic and Information Technology (DeitY) expects a decline in average price of about 4% and 6% for desktops and notebooks respectively.[10]

Indian PC sales have experienced significant growth in the past few years for the reasons explained above. However, PC penetration is still very low in comparison with some other comparable economies. As per a KPMG study households equipped with PCs are only 10% in India vis-à-vis more than 45% in countries such as Brazil, Malaysia, Russia, Saudi Arabia and Turkey.[11] As per DeitY's 2012-13 annual report, personal computers recorded (PC) a sales of 12 million units during F.Y. 2012-13. The growth of this market is expected to be driven by the

household segment, contributing around 56% of total computer hardware. The Indian PC market is growing at a CAGR of 6% in 2013. In FY 2012-13 the tablet PC recorded phenomenal growth of 424%.[12]




Export of computer hardware has recorded around US$ 300 million during 2012 - only 3.2% of total export of electronic hardware.

## Investments

The core competencies and strengths of Indian IT have placed it on the international canvas, attracting investments from major countries. According to data released by the Department of Industrial Policy and Promotion (DIPP), the computer software and hardware sector attracted foreign direct investment (FDI) worth ₹ 61,707 crores (US$ 13.15 billion) between April 2000 and July 2014 approximately 5.76% of total FDI in India.[13]

## Government Initiatives

Deity, through numerous industry promotion programs continues to give a fillip to the electronics hardware sector (which as stated earlier includes computer hardware). Some of the major promotional activities include the following:[14]

- Creating the right infrastructure in the country that is conducive to growth, broaden the markets and create a level playing field.
- Provide R&D expertise and training programmes, assist in building a better business management capacity and strengthening competitiveness of organizations.

- Providing latest information on industry trends, management models, market and advanced technologies.

A few broad initiatives are:

- Infrastructure Support
- R&D Promotion
- Tax Incentives
- Prioritisation of Electronics Hardware Manufacturing
- Task Force

The Government of India has played a key role with public funding of a large, well trained pool of engineers and management personnel who could forge the Indian IT industry. The Central Government and the respective State Governments are expected to collectively spend US$ 6.4 billion on IT products and services in 2014, an increase of 4.3 per cent over 2013, according to a study by Gartner.[15]

Some of the major initiatives taken by the Government to promote the computer hardware sector in India are as follows:[16]

- The Government of Bihar has unveiled 20 km free Wi-Fi zone in Patna, the longest across the planet.
- The Governments of Maharashtra and Tamil Nadu are in talks with NASSCOM to set up 'start-up warehouses' for incubation of start-ups. The centres are expected to come up in Mumbai and Chennai and are likely to be operational by December 2014.

Recently the government has also initiated a “Make in India” programme to promote manufacturing activities in India; this is expected to give a further push to manufacturing in the country, including computer hardware.

# Counterfeiting in the Computer Hardware Industry

Generally, products of high demand are manufactured in the illicit markets with the similar design and packing. These goods can be sold in illicit market or, even introduced into illicit market. Due to lesser overheads counterfeit hardware can be priced much lower than the original product to earn a greater profit. Counterfeit products are either smuggled through various channels from other countries or manufactured in-house. A lax regulatory system and lack of awareness about counterfeiting help in the growth of illicit markets. Some of the more common methods of counterfeiting in this industry include:

- Packing of poor quality products as branded by using name of similar well-known products
- Smuggling of computer components
- Use of the counterfeit component in place of original at the time of repairing

# Factors Driving Illicit Trade in Computer Hardware


As per a UNDOC study, counterfeiting is a hugely lucrative business, with criminals relying on the continued high demand for cheap goods coupled with low production and distribution costs. The illegal activities related to counterfeiting take advantage of unwitting consumers and bargain-hunters, exploiting people's appetites for cut-price brands or simply their financial position.[17]

There are many factors that encourage the counterfeiting of computer hardware. Some of these are:

- Lower cost of production
- Higher profit margins as compared to originals due to low cost of production
- Lack of awareness of potential losses due to counterfeit product
- Limited reach of original products in small towns
- Replacement of counterfeit products is cheaper and easy

# Size of the in the Computer Hardware Industry

## Data Sources

In order to ascertain the grey market percentage for 2011-12, the gap between supply and demand will be calculated. Listed below are the various sources of information that have been used to arrive at these numbers.

For ascertaining supply and demand we have to determine the different kinds of products that have to be considered under each industry category. They remain the same as in the earlier FICCI CASCADE study, which were identified separately for each sector through literature reviews, consultation with FICCI-CASCADE members and industry representatives.

This study has used a combination of data analytics on Government of India statistics, corporate information from data aggregators and industry validations to estimate the extent and level of grey market operations. The key data sources are the Annual Survey of Industries (ASI) and National Sample Survey (NSS) published by the Ministry of Statistics and Programme Implementation (MOSPI) of the Government of India. This has been supplemented with data from the Directorate General of Commercial Intelligence (DGCIS) under the Ministry of Commerce and Industries and Ministry of Micro, Small and Medium Enterprises (MSME) and information extracted from PROWESS database for companies.

## Supply Side Estimation

***ASI - Gross Sales Value:*** The Central Statistical Organisation (CSO) of the MoSPI collects national data on manufacturing activity for each district (rural and urban) to compile the Annual Survey of Industries statistics. Gross Sales Value (GSV) in ASI data includes product cost, excise duty, sales tax and other distribution expenses.

GSV data of selected products identified for domestic sales was for 2012 as well. The data (after taking the multiplier effect as suggested by CSO) covered the ASI survey for the financial year 2011-12. 13.33 lakh data points were analysed. Data was extracted from Block A and Block J. Details are provided in the following.

***Table: ASI Data Points Analysed***

| Particulars | Description of data series | Data Points evaluated |
|---|---|---|
| Annual Survey of Industries 2011-2012 | Factory wise details of manufacturing activities pan India for the period April, 2011 to March 2012. | Block A and Block J, gross sales value, multiplier, NPCMS Code etc. |

ASI 2011-2012 has changed its coding structure and now uses the NPCMS code structure for product classification and industry grouping which is a 7 digit classification. The previous FICCI CASCADE study used ASICC code classification (5 digits) to determine the product classification under various industry heads.

In order to maintain consistency and comparability with the previous FICCI CASCADE study results, a similar product classification has to be followed to under the NPCMS code structure. Hence NPCMS codes have been mapped with ASICC codes and then allocated to 10 industry sectors. Additional NPCMS codes identified post mapping with ASICC codes have been further deciphered to allocate to the industry sectors concerned.

***Annual Production Amounts of MSME:*** ASI data captures production of units registered under the Factories Act. Broadly according to the Factories Act, 1949, a factory means any premises where ten or more people are working where manufacturing process is carried on with the aid of power or otherwise where twenty or more workers are working.

There are also a large number of micro, small and medium enterprises (MSME) in the sectors covered in this study. As per the MSME Development Act, a micro enterprise is one where investment in plant and machinery does not exceed ₹ 25 lakhs, while in a small enterprise the limit is between ₹ 25 lakhs to ₹ 5 crores and medium enterprises are those which have investment values between ₹ 5 crores to ₹ 10 crores.

Comparing these definitions it can be assumed that small and medium enterprises would have been covered by ASI. Accordingly annual production of micro enterprises that are engaged in manufacturing activities has been extracted from the MSME annual production.

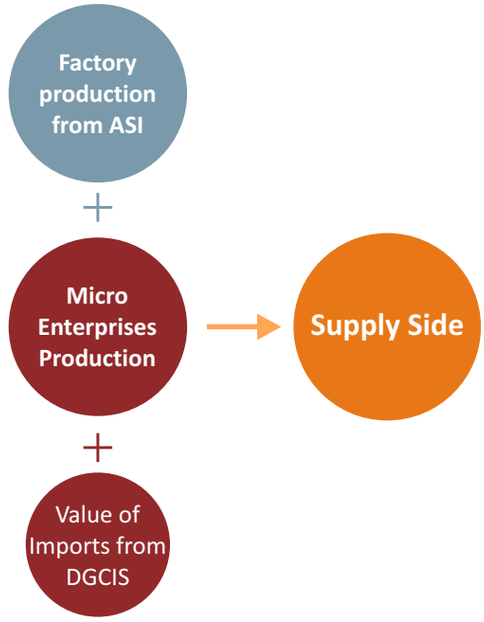
Out of the total 24.01 lakh units surveyed in 2006-2007 as a part of the MSME Census, only 22.48 lakhs were found relevant to MSME of which 15.64 lakh units were found working, 4.96 lakh units were closed and 1.88 lakh units were not traceable. The survey results give details of the registered units, segregate such units into micro, small and medium enterprises and map their products into National Industry Code (NIC) classification.

In this study, the value of the goods manufactured from registered micro enterprises and supplied to the selected industry sectors has been estimated by taking inputs from MSME

Census of 2006-2007 and the Annual Report of the Ministry of MSME for the year 2011-2012. These estimates supplemented the GSV obtained from ASI data.

***Value of Goods Imported:*** The value of goods imported into the country has been taken from the data published by the Directorate General of Commercial Intelligence and Statistics (DGCIS) under Ministry of Commerce and Industry. For this study, we have used the eight digit code classification import data for the year 2011-2012. Import value data was extracted to supplement the production figures obtained from factories and micro-enterprises to arrive at the total of the supply side for domestic consumption.

ASI 2012 uses NPCMS code classification whereas import data uses ITC HS codes. It is not possible to map NPCMS and ITC HS codes. Import data follows the harmonic system code for classification and for 2010-2011 a total of 10,032 codes were scrutinised up to an 8 digit level. MSME data is based on the 2 digit classification of NIC 2004.




## Consumption/Demand Estimation

The National Sample Survey Organisation (NSSO) of MOSPI conducts a survey on household consumer expenditure and employment and unemployment covering the entire country. This National Sample Survey (NSS) is one of the largest sample surveys of its kind and collects data on household characteristics such as household size, principal and secondary occupation, household type, land ownership/ possessed/ leased, land cultivated, land irrigated, primary source of energy, household ownership, etc.

For this study, data was analysed from NSS's 68th round survey, covering the period July 2011 to June 2012. Consumption expenditure data for the last 30 days / 365 days (as the case may be) for the country, was arrived at after giving effect to the multiplier suggested by NSSO. Approximately 123.35 lakh data points were analysed for NSS 68th round where the codes were assigned to the respective industry sectors and then mapped to find the related consumption values. The blocks and codes of NSS 68 from which data was extracted for this study are given in the table below.

***Table: NSS Data Points Analysed***

| Particulars | Description of data series | Data Points evaluated |
|---|---|---|
| National Sample Survey (Round 68) | Household consumer expenditure for the period July 2011 to June 2012. | Block 5, 9, 10, 11 and 12; Item code, subsample code, consumption value, multiplier, weight to be applied, NSS/NSC code. |

## Estimating the Illicit Markets-Methodology

Using the data obtained from the sources listed in the previous section we have ascertained the grey market percentage in 2012. The grey market percentage has been arrived at using the following formula:

$$\textit{Grey Market \%age} = \frac{\textit{Total Consumption - Total Supply}}{\textit{Total Consumption}} \times 100$$

The difference between total consumption and total supply can primarily be attributed to the following:

- Goods produced or imported and sold in the country by evading taxes.
- Sale of domestically produced counterfeited (either deceptive or non-deceptive) goods.

## Computer Hardware-Data Analytics

Despite complexities in their manufacture, computer hardware is highly prone to illicit markets. Apart from loss of brand value and revenue for legitimate manufacturers, illicit markets of computer hardware has other serious consequences such as risks to military and security systems, financial and banking data, medical and other records maintained by the healthcare sector or rendering information systems vulnerable to virus attacks, etc.

In ascertaining the grey market in the computer hardware industry in India we have determined the consumption expenditure on computer and peripherals from NSS 68th round and the production/supply from ASI 2012 data.

Consumption includes computers and peripherals purchased for household consumption and that used in corporates, industries, other businesses, governments, etc. NSS provides consumption expenditure of households on purchase of first-hand and second-hand computers. Reliable data on consumption expenditure of others, i.e. institutions (businesses, governments, etc.) is not available. Hence we have been able to use only household consumption expenditure. NSS code 622 under the 68th round provides the total household expenditure on computers, i.e. PCs, laptops, other peripherals and software - separate expenditure has not been provided for software (as this relates to software loaded in computers the cost of which cannot be segregated).

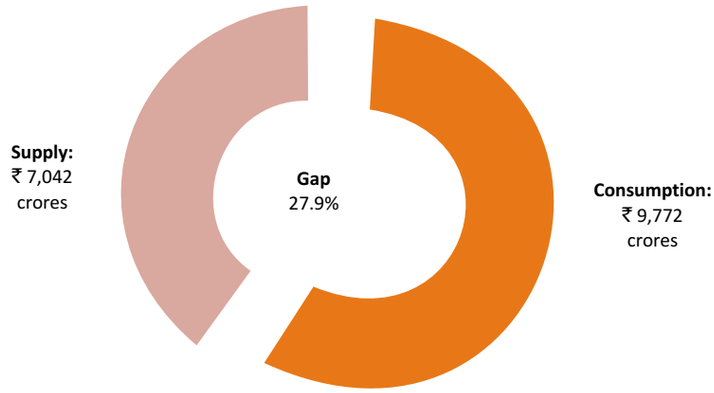
*Total consumption expenditure on computer hardware (including software) amounts to ₹ 9,772 crores.*

This has been compared with production figures of computer hardware. ASI data for domestic production of computers includes 17 NPCMS codes (eg: laptops, PCs, and peripherals like keyboards, CPUs, hard disk drives, micro-processor chips, etc.). According to the DeitY annual report, growth of the PC market is expected to be driven by the household segment which contributes about 56% of the total PC market.[18] Based on this it was determined that in 2011-12, 50% of all domestically produced personal computers, laptops and peripherals are sold in the retail market, the balance 50% constituting institutional sales. After these adjustments, the total domestic production of computers has been determined to be ₹ 6,776 cores.

With respect to imports of computer hardware discussions have indicated that supply of 75% of the imported hardware is meant for institutions and the balance 25% is for the retail market, or household consumption. Hence only 25% of the DGCIS data extracted for these products has been considered for our calculations - i.e. ₹ 266 crores.

As in previous years there is no specific code in the MSME category for computer hardware, therefore we have not assigned any supplies from micro enterprises for our calculations.

**Computer Hardware Supply vs Consumption Gap 2012**



**The difference between total consumption and supply of computer hardware in the country amounts to ₹ 2,730 crores, or a grey market percentage of 27.9%.**

***Summary***

To conclude, based on the analysis of reliable data published by government sources for the year 2011-12, it is clear that illicit markets continue to thrive in the Indian computer hardware industry. The results of the analysis are summarised below:

₹crores

| Industry | 2012 | | Grey Market | | |
|---|---|---|---|---|---|
| | Total Supply* | Total Consumption* | 2012 | | 2010 |
| | | | Total Loss | %age | %age |
| Auto Components | 7,042 | 9,772 | 2,730 | 27.9% | 26.4% |

**Based on NSSO/ASI/DGCIS data for 2012*

While the grey market is quite large in this industry based on the percentages calculated above, it can be reasonably concluded that the increase vis-à-vis 2010 is not alarmingly large – i.e. 1.5%

# Impact of Illicit Market-Estimating Loss to the Computer Hardware industry


The grey market percentage has been established above for the year 2011-12. For the purpose of arriving at the loss to the industry in 2013-14, we have assumed that grey market percentage will remain constant over 2012-13 and 2013-14. Industry size for 2013-14 has been arrived at with reference to expected and actual growth rates for the past two years provided by industry reports or analysts. These growth rates have been used to extrapolate the industry size established for 2011-12 to 2013-14. Industry size for 2011-12 is taken as the domestic factory production of the industry, ascertained from ASI 2012 data.

Thus loss to the industry (purely in terms of sales) has been established as follows:

***Estimated Loss of Sales to Industry*** *= Size of Industry in 2013-14 X Grey Market Percentage (2011-12)*

## Estimating the Loss for 2013-14

It has already been established that in 2011-12 the size of the computer hardware industry was ₹ 6,776 crores. However this value was limited to make a comparison with household consumption (refer section on grey markets above), based on which the grey market percentage was determined. As loss due to grey markets for the year 2013-14 is being determined for the industry as a whole (which produces for retail as well as institutional sales) we have considered the industry size of 2011-12 as determined in the previous FICCI CASCADE report.

Industry size estimates for 2012 were calculated as a summation of domestic production net of exports and the value of imports. Domestic production data (excluding exports) was obtained from the 2011-2012 annual report of DeitY for the year. The value of imports was obtained from DGCIS data. Accordingly the computer hardware industry size was estimated at ₹ 17,901 crores for 2012.

According to the DeitY 2012-13 annual report[19] the Indian IT hardware industry is projected to witness a double-digit growth of 15% in 2012-13 over 2011-12. On a conservative basis we have considered the growth from 2012-13 to 2013-14 in this industry at 13%.

For the year 2013-14 therefore we have estimated that the market will grow to approximately ₹ 26,291 crores. Applying the grey market percentage calculated for the computer hardware industry (i.e. 27.9%) to this market size, the grey market for 2013-14 is estimated to be approximately ₹ 7,344 crores.

**Fig: Estimated Loss to Computer Hardware Industry in 2013-14**

| Estimated Size of Industry in 2013-14 X Grey Market Percentage (2011-12) = Estimated Loss of Sales to Industry |
|---|
| ₹ 26,291 crores X 27.9% = ₹ 7,344 crores |

The estimated loss to the sector is tabulated below

**Fig: Loss of Sales to Industry 2013-14**
**(in ₹ crores)**

| Industry Sector | 2014 | 2012 |
|---|---|---|
| Computer Hardware | 7,344 | 4,725 |

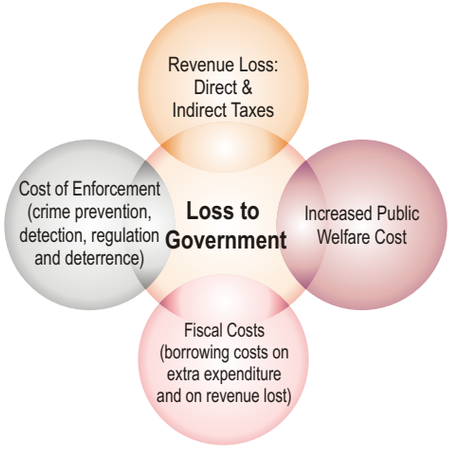
The loss to the industry has increased by around 55% due to the operation of illicit markets.

# Estimating Illicit Markets - Loss to Government

Apart for resulting in loss to the industry concerned, the operation of the illicit markets results in losses to the government in the form indirect taxes and direct taxes. Illicit markets cause losses to the original right holders in the form of reduced sales, lower profits, brand value, reputation, consumer distrust, etc. Governments lose tax, incur higher expenditure on public welfare, insurance and health services. Ultimately corporates shy away from making investments (as established in an earlier section) due to limited/no protection of rights, resulting in loss of employment opportunities.

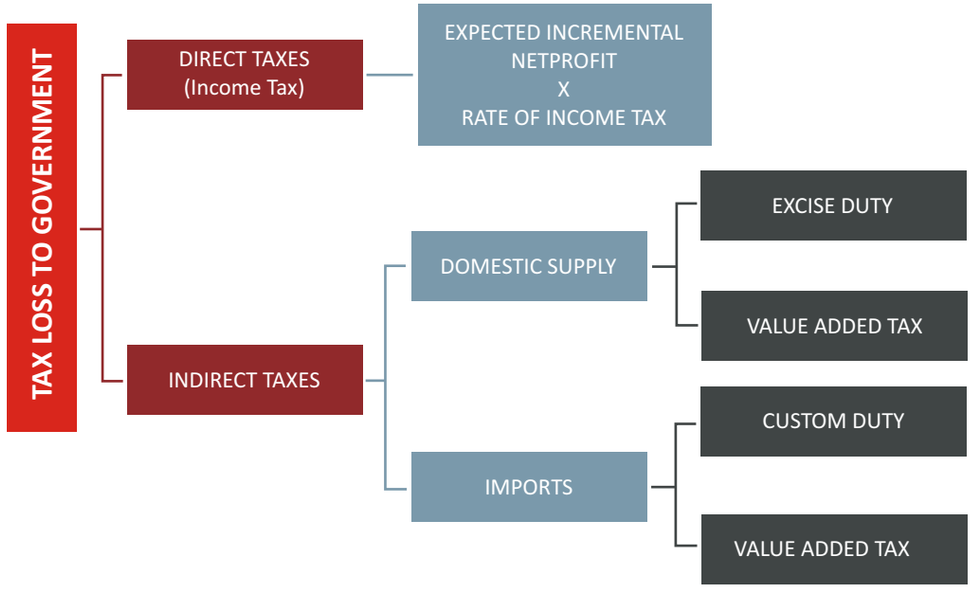
Governments that lose taxes will find it difficult to function and will be unable to provide quality and timely public services. They will be unable to deliver their legislative programmes, provide public goods or redistribute wealth.

This section aims to estimate the loss to the government of India on account of the illicit markets in the computer hardware industry. It is imperative to develop an estimate of the challenge to the National and State exchequers with the objective of introducing strong regulatory measures.



## Methodology

There is very little data on the global economic impact of counterfeiting and the losses to public revenues, employment, investment and innovation.[20] This study aims to project only the consequential tax loss to government on account of counterfeiting and the presence of grey markets in India. As in the 2012 FICCI CASCADE study, the methodology used in this report is derived from the economic model used in the BASCAP report that analyses the negative impact of counterfeiting and piracy on government receipts and expenditures.




The Tax loss to government has been estimated as loss of direct taxes (income tax) and indirect taxes (value added tax, import duty and excise duty).

**Revenue Loss to Government =** Loss on account of Direct and Indirect taxes in case entire gap is met by the legitimate manufacturers or importers

For calculating the loss in income tax and indirect taxes (excise/customs/VAT), the following approach was followed:

## Direct Taxes (Income Tax):

To determine the loss attributable to income taxes, this study analysed annual reports of a sample/representative companies in the industry concerned to determine the weighted average net profit before taxes over sales. This percentage was applied to the sales loss to the industry determined in the previous section ("Size of the Illicit Market in the Computer Hardware Industry"). The resultant figure is the incremental net profit that would have accrued

to the industry had legitimate industry been able to fulfil sales lost to the grey market. The number so determined is multiplied by the income tax rate to arrive at the income tax forgone by the government. Additional profit will be taxed at the highest income tax slab rate, hence the tax rate considered is 33%.

Income tax lost by the government due to the operation of the illicit markets in the computer hardware industry is tabulated below:

**Loss of Direct Tax Revenue to Government (₹ Crores)**

| Industry Sector | Net Profitability Percentage | Direct Taxes Loss | | Change | |
|---|---|---|---|---|---|
| | | 2014 | 2012 | ₹ crores | %age |
| Computer Hardware | 3.0 | 73 | 47 | 26 | 55% |

## Indirect Taxes (On Domestic Manufacture and Imports):

Loss of indirect taxes to the government on account of illicit markets has already been ascertained. This loss comprises loss on domestic production and loss on imports. The gap in consumption and supply is assumed to be met through legitimate domestic factory and registered MSME production, as well as imports, in the same ratio using 2012 ASI, MSME and DGCIS data.

Indirect tax loss in case of domestic production (ASI & MSME) arises on account of loss of excise duty and VAT. In case of imports the loss arises on import duty (basic and countervailing duty) and VAT.

Based on the principle of conservatism we have considered the following rates of indirect taxes for the computer hardware industry. The table also shows the proportion of sales loss met by domestic production and imports:

| Industry Sector | Loss to Industry met by .. (₹ crores) | | | Duty Rates (percentage) | |
|---|---|---|---|---|---|
| | Total | Domestic Production (ASI + MSME) | Imports | Excise Duty + VAT | Import Duty + VAT |
| Computer Hardware | 7,344 | 7,066 | 278 | 25 | 30 |

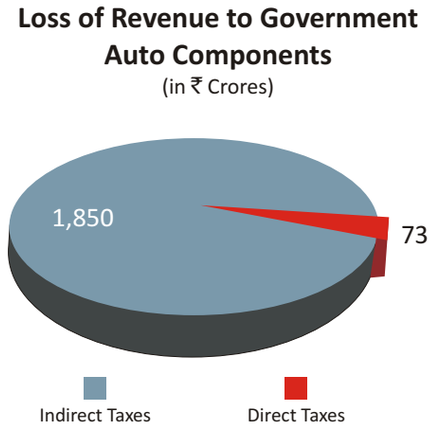
These rates of tax were applied to the sales loss to the industry ascertained earlier, to arrive at the loss to the government on account of indirect taxes.

**Loss of Indirect Tax Revenue to Government (₹ Crores)**

| Industry Sector | Excise Duty + VAT | Import Duty + VAT | Total Indirect Taxes Loss - 2014 | Total Indirect Taxes Loss - 2012 | Change | |
|---|---|---|---|---|---|---|
| | | | | | ₹ crores | %age |
| Computer Hardware | 1,767 | 83 | 1,850 | 1,187 | 663 | 56% |

## Conclusion:

Thus, the total loss to the government estimated for 2014, on account of the illicit markets in the computer hardware industry is ₹ 1,923 crores, up from ₹ 1,234 crores in 2012. As stated earlier, it needs to be highlighted, that this loss is only on account of tax revenues. We have not estimated the incremental costs incurred by government on account of welfare measures, enforcement and legislation and interest costs.



# Anti-Counterfeiting Measures

## Laws and Regulations:

There are many existing laws in India that deal with patents, copyrights, and trademarks and their infringement. The problem lies in their implementation. Statistics of the National Crime Records Bureau, Ministry of Home Affairs, shows that the number of persons arrested in India under IPC crimes for counterfeiting[21] in 2012 was only 2,814, 0.1% of the total number of people arrested for various crimes, marginally up from the number of arrests in 2011 which was 2,130. Conviction rates are also alarmingly low in India, especially for crimes like counterfeiting. Hence, even if arrested, the probability of those arrested being let off easily is high and therefore does not act as a deterrent.

Anti-counterfeiting provisions in some regulations include:

- The Indian Panel Code, 1860 provides for a penalty of imprisonment up to seven years for counterfeiting of device or mark. (Sec. 476)
- The Trademarks Act, 1999 provides for the registration of trademarks and statutory protection of registered trademarks. Section 29 of the Act provides protection in cases of infringement of registered trademarks. In addition, Section 27 (2) clarifies that suits for passing off in respect of both Registered and Unregistered Trademarks can be maintained irrespective of infringement action. The provisions a penalty of 6 months to 3 years of imprisonment in addition to a fine of minimum ₹ 50,000 /- for selling or applying false trademarks, trade descriptions, etc. (Sec. 103)
- A notification under the Intellectual Property Right (Imported Goods) Enforcement Rules, 2007 read with a notification under the Instructions for Implementation of Intellectual

Property Rights (Imported Goods) Enforcement Rules, 2007 issued by the Central Board of Excise and Customs empowers the Customs authorities to seize counterfeit goods.

Apart from legislations various industry bodies are also working to combat counterfeiting and piracy. These include:

- Federation of Indian Chambers of Commerce and Industry (FICCI)
- IT Anti Counterfeit Coalition of India (IACC)
- National Association of Software and Services Companies (NASSCOM)

## Industry Initiatives:

To protect the interests of customers, companies are doing their bit to educate the consumer on the issue of counterfeiting. Companies are disclosing their initiatives either on their websites, annual reports or sustainability reports. Some of these initiatives include:

- Mobile applications to identify the originality of the bar codes affixed on products.
- Detailed FAQs related to fraud and counterfeit goods on websites for the awareness of consumers.
- Complaint boxes on website where complaints about fake products can be registered.
- Images of comparisons between original and fake products on company websites. Holograms affixed on certain secret places that distinguish an original product from fakes.
- Online stores provide the anti-counterfeiting policies on their websites stating.
- "Piracy" sections on company websites explaining to customers how to protect themselves from piracy.

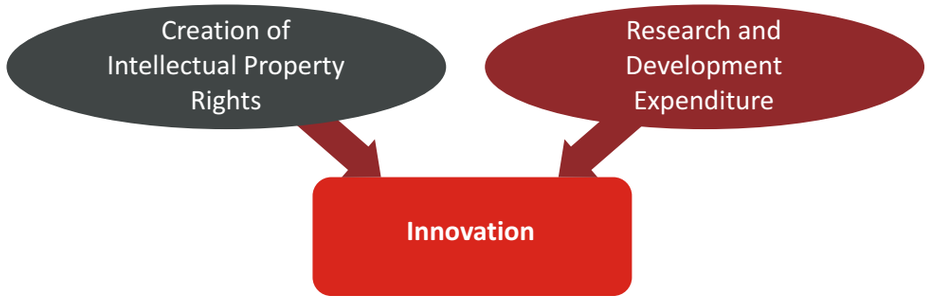
# Impact of Illicit Markets on Innovation

Innovation entails the process of design, invention, development and/or implementation of new or altered products, services, processes, systems, organisational structures, or business models for the purpose of creating new value for customers and financial returns for the firm.[22]

In this section of the report we aim to look at the plausible relationship between illicit markets and innovation using qualitative and quantitative tools. Our study establishes a link between industries characterised by high levels of illicit markets and lower expenditure on innovation. Among all the sectors covered in this series of studies, computer hardware has the third largest grey market percentage - 27.9%, ranking after auto components (33.7%) and FMCG-Personal Goods (31.6%).

For companies, the risks related to innovation activities are grossly accentuated in case these products can be easily copied to produce imitations whereby the profits of the original innovator get transferred to the counterfeiter.

To establish the link between illicit markets and innovation this study used the following proxies to measure innovation:



On the basis of the literature reviewed, and our discussions with subject matter and industry experts, we have identified the following proxies for measuring innovation:

| Creation of Intellectual Property Rights |
|---|
| • Types of IPR's in India - patents, copyrights and trademarks<br>• Analysis of trends in the number of patents filed/examined/granted over the financial years 2007 to 2012<br>• Analysis of fields, sectors and institutions with higher concentration of patents over the financial years 2007 to 2012<br>• Data related to patents was collected from the Office of the Controller General of Patents, Designs, Trademarks and Geographical Indication; data pertaining to copyrights, trademarks was not available |

| Research and Development Expenditure |
|---|
| • Analysis of R&D and operating expenditure for a sample of companies over a period of 6 financial years<br>• Analysis of ratio of R&D and operating expenditure over a period of 6 financial years for each sector<br>• Data was extracted from the Prowess database for a sample of public and private companies in India over the sample period |

## Intellectual Property Rights Created

Innovation results in the creation of intellectual property rights (IPR) in the form of patents, trademarks, copyrights, etc. The number of patents owned by a company has often been used as one of the main indicators for determining its innovation intensity. In addition, patents are also used as a measure of output of innovation.[23] A patent is an IPR for inventions and is the grant of exclusive right, for a limited period, provided by the Government to the patentee, in exchange of full disclosure of the invention, for excluding others, from making, using, selling, importing the patented product or process producing that product for those purposes.

The Patent Office under the Department of Industrial Policy & Promotion, Ministry of Commerce & Industry, performs the statutory duties related to the grant of patents for new inventions and registration of industrial designs.

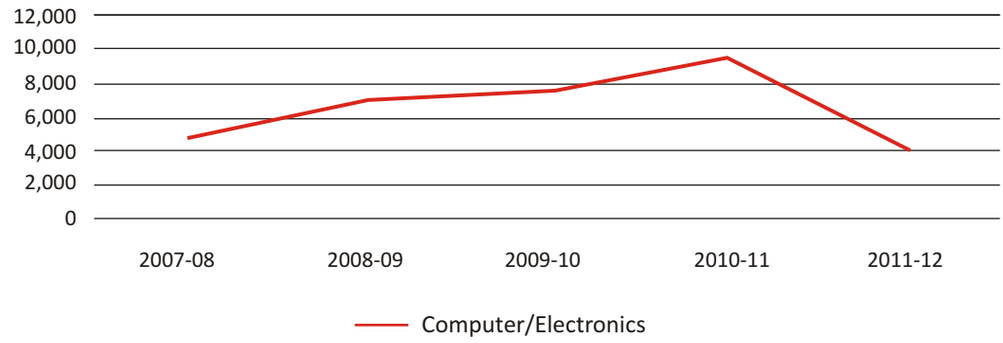
For this study we have reviewed the Annual Report of the office of the Controller General of Patents, Designs, Trademarks and Geographical Indication to understand the type and number of patents filed in India.

Patent applications (filed, examined and granted) of the last 5 years show a declining trend in the number of patents granted by the Patent Office. The number of patents granted between 2008 and 2012 has fallen by almost 70%, though the number of patent applications filed has increased by a modest 22.65% during the same period.

**CSIR** or the Council of Scientific & Industrial Research has filed the largest number of patents in India and abroad. However based on our review of the patents filed, none related to the computer hardware industry; the top ten industries in which CSIR's patents are in force constitute almost 81% of their patents and computer hardware was not among this 81%.

A Thomson Reuters report titled 'Research and Innovation Performance of the G20'[24] which examines research and patent information to study the scale and impact of innovation in the G20 countries states that an average of 5,900 applications **are filed in India per annum**, equal to that of Australia and UK. However, as many as two-thirds of those applications are of foreign concerns seeking protection in the Indian market. Domestic innovation has remained stable at 29% since 2005. The contribution of computer/electronics industry in fact has **fallen** as depicted in the graph below

**Number of Patent Application Filed in India from 2007-08 to 2011-12 Under Various Fields**




## Research and Development Expenditure

Research and Development (R&D) expenditure data is often used by researchers as one of the most significant inputs in estimating the level of innovation.

Christopher M. Kalanje, WIPO, has demonstrated the use of expenditure on research, development and information on innovation as indicators of innovation measurement to understand the role of intellectual property in innovation and new product generation.[25]

## Methodology

Based on various research reports, this study has developed the following approach with the objective of understanding the relationship between the presence of illicit markets and

organisations' decisions to undertake expenditure on activities such as research and development.

R&D expenditure is one of the main inputs towards a series of activities resulting in an innovation and has been taken as a proxy for innovation. Our sample size comprises the public and private limited companies operating in India and belonging to the computer hardware. Financial details of these companies have been extracted from the annual reports compiled by the CMIE, Prowess database.

There are a total of 27,650 companies whose information is available in the public domain. These details were examined to ascertain the nature of products/ services produced/ rendered by them. The companies were classified into relevant industry sectors covered in this study on the basis of the major kind of products being produced and the industry group they belong to.

A total of 2,706 companies pertaining to industry sectors under the review of FICCI-CASCADE were found and information relating to the following parameters was extracted for the year period 2007-08 to 2012-13:

- Research and development expenditure (both on capital and current account)
- Operating expenditure

Data was collected for this six year period to ensure that a complete economic cycle of low, medium and high level of business activity is captured. Based on the literature review and discussions with subject matter experts, a comparison was made of the percentage of R&D expenditure over operating expenditure, across the industry sectors under consideration, for the stated period of six years.

$$\frac{\text{Research and Development Expenditure*}}{\text{Operating Expenditure**}} \times 100$$

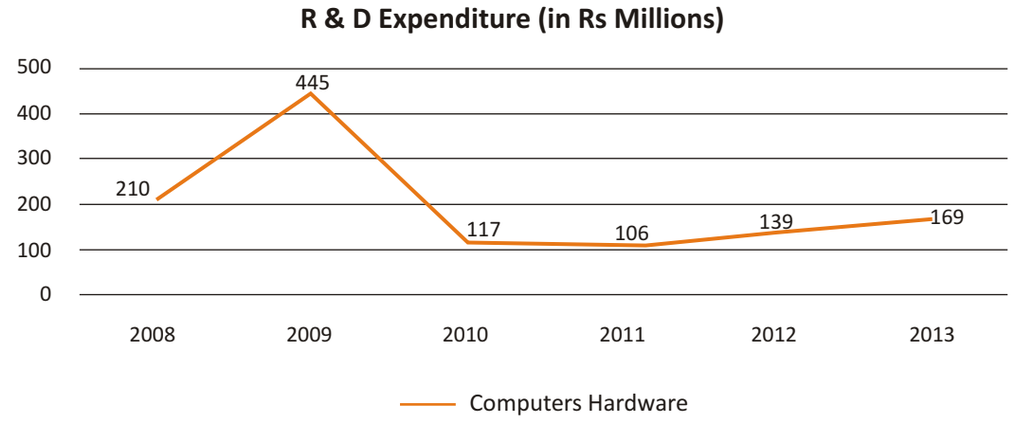
* R&D expenditure includes both capital and revenue expenditure as it appears in the financial statements of the company
** Operating expenditure includes all types of expenditure on raw materials, labour, selling and distribution etc

## Data Analytics Results

The computer hardware industry is expected to have a higher R&D over operating expenditure ratio. Data indicates that industry spends on an average (over the six year period) 0.95% of operating expenditure on research and development, which is second highest in all sectors under the review of FICCI CASCADE. The ratio peaked in 2009 then steadily fell in the subsequent years to 0.67% in 2012, after which it increased to 1% in 2013. The R&D expenditure incurred by companies in the computer hardware sector, in absolute terms, has also shown a similar pattern over the same period.

***Table: R&D Expenditure as a %age of Operating Expenditure***

| Industry | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | Average %age |
|---|---|---|---|---|---|---|---|
| Computer Hardware | 1.10 | 1.99 | 0.55 | 0.42 | 0.67 | 1.00 | 0.95 |




Thus, as suggested by the data, the ratio of R&D expenditure over operating expenditure in the computer hardware industry, despite being one of the highest relative to the all sectors under FICCI-CASCADE review is very low. There seems to be no incentive for companies to spend money on research and development. This could be due to the following reasons:

- Lack of patent protection
- Uncertainty of return due to higher risk of counterfeiting, smuggling and piracy

The increase in grey markets and the fall in R&D expenditure clearly establish this link.

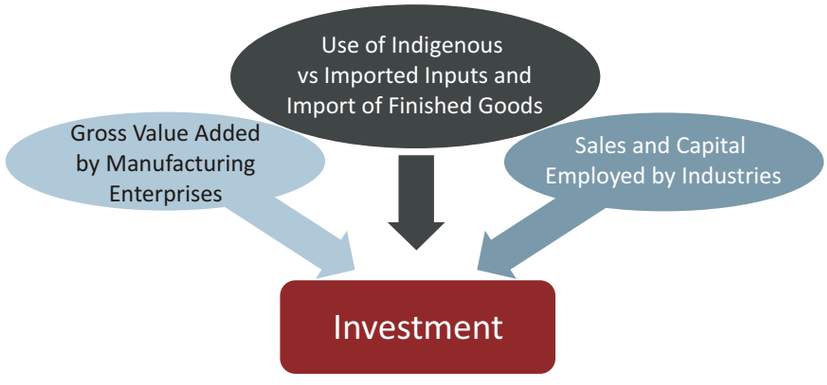
# Impact of Illicit Markets on Investments

This section will analyse the level of investments, particularly the level of domestic investment by Indian companies' in the country, and whether the presence of illicit markets has any bearing on investments.

The level of domestic investment in the country will be measured through three proxies -

- Gross value added by Indian companies.
- Percentage of imported and indigenous inputs and imports of goods over total production.
- Sales over capital employed.

These proxies will help to understand whether Indian companies are investing in capacity enhancements or process improvements as warranted by increasing consumer demand rather than simply relying on imports of goods. They will also reflect the efficiencies achieved in manufacturing capacity over the period of the investment cycle.



## Gross Value Added by Indian Companies

GVA measures the contribution to the economy of each individual producer, industry or sector in an economy. It is also referred to as the productivity metric that measures the difference between output and intermediate consumption. Gross value added provides value for the amount of goods and services that have been produced, less the cost of all inputs and raw materials that are directly attributable to that production.

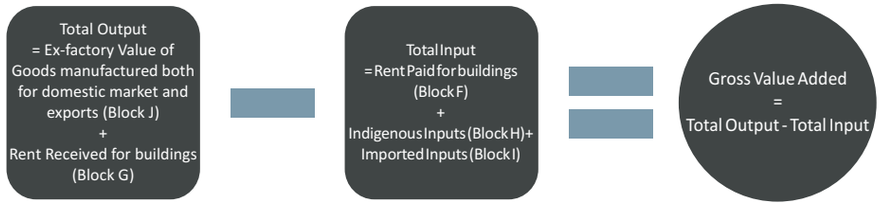
This measure is an important indicator against which the presence of illicit markets can be measured to understand whether this could be a contributing factor for the sector to be shying away from making enough investments for charting the course for long-term and sustainable growth.

## Methodology

The GVA by companies has been calculated by using ASI data for the years 2007-08, 2009-10 and 2011-12. A total of 13.32 lac data points have been analysed (covering all the sectors under FICCI CASCADE review).

These sample manufacturing units have been further examined in detail to understand the value of GVA during the manufacturing process. A time series analysis for the three years 2008, 2010 and 2012 has been done to ascertain whether there is an increasing or decreasing trend towards value addition in the manufacturing process.

The formula for calculating the Gross Value Added[26] is as follows –




## Data Analytics Results

GVA is expected to show an increase when there is optimum capacity utilisation or lower input costs. The factors relating to increase in consumer demand or higher rate of profitability may also contribute to increase in GVA.

## Percentage of Gross Value Added over Total Output

For the present study, the proxy used to measure the value addition made by companies in the production cycle is the ratio or percentage of the gross value added over total output. GVA in absolute rupee terms is not a comparable indicator across all sectors as each sector is at a different tier of output generation, and hence cannot be used as a stand-alone indicator. The total output principally measures an industry's sales or receipts and is dependent on the demand and other pertinent characteristics of a particular industry. To make a like-to-like

comparison, it is important to take into account how the industry dynamics for each sector plays out. Hence, the ratio of the gross value added as a percentage of total output is a far more representative figure.

A low percentage of gross value addition to the total output raises questions regarding the degree to which the output sold by the manufacturers represents the actual production within the country. In the present age of globalisation, countries attracting substantial amounts of foreign direct investment often have to grapple with concerns regarding the manufacturers depending on foreign sources for inputs in the manufacturing process which results in increase in imports. This also impedes the development of the indigenous suppliers through backward linkages. Hence, the value addition may actually be taking place abroad from where the inputs are imported. In such a scenario, the domestic manufacturing segment would function merely for intermediate or final assembly operations.[27] That is clearly not a desirable situation for a developing country like India.

The following table shows gross value added as a percentage of total output for the years 2007-08, 2009-10 and 2011-12 in the computer hardware industry:

| Sector | 2008 | 2010 | 2012 | Average |
|---|---|---|---|---|
| Computer Hardware | 19.16 | 21.93 | 22.71 | 21.27 |

Gross value added as percentage of total output for the computer hardware sector has, on an average, remained at 21.27% in the last five years. The total output has increased by 56% over the same period and total input has increased by 49%. However, the indigenous inputs have only increased by 40.8% during the five year period under review whereas imported inputs have significantly increased by 89.5%.

The industry as such is slowly moving towards better capacity utilisation and lower input costs. In consideration of a substantial increase in imported inputs, perhaps a shift towards indigenisation of the manufacturing process and the local raw materials will help in increasing the value added in the manufacturing process.

## Use of Indigenous and Imported Inputs and Imports of Goods into the Country

The key elements being examined here are the impact of illicit markets on investment and innovation, both of which are very closely linked. For analysing both, studying imports of inputs and goods into the country is critical. This section presents the results of the data analysis exercise to show how import of inputs and finished goods plays out with respect to investment and innovation in the country.

Imports of goods can be broadly classified into the following -

- Inputs to be used in the manufacturing process by Indian companies.
- Finished goods to be sold directly in the domestic market.

As businesses develop technology there is a replacement of imported technology with indigenous technology. The level of sophistication in domestic production processes can be estimated by the increased use of domestic/ indigenous raw materials as compared to imported raw materials. Businesses that develop their own technology tend to be less dependent on imported raw materials or inputs reduces. The underlying objective of most R&D projects is to enhance business efficiency thereby reducing production costs. By substituting imported raw materials with indigenous raw materials, businesses can hope to reduce their costs in the medium to long term.

## Methodology

The World Economic Forum in their Global Competitiveness Report 2013,[28] points out that import as a percentage of Indian GDP is 33.7%, which is fairly high in comparison with other countries. However, import of crude oil and some metals form a large percentage of such imports. India ranks at 107th position among 148 countries on imports as a percentage of GDP and at 52nd position in the production process sophistication ranking with a score of only 4.1 out of 7. Considering these results, this study looked at the following proxies:

- Ascertaining the percentage of indigenous raw materials and imported raw materials used in production by Indian manufacturing units
- Comparing the above ratio over a period of five financial years to examine whether there has been any import substitution with indigenous raw materials
- Analysing import of finished products as a percentage of total production over a period of five financial years

The proxy used for examining the above hypothesis is the following:-

$$\frac{\text{Imported raw materials consumed}}{\text{Total raw materials consumed*}} \times 100$$

*Total raw materials consumed is the sum of imported and indigenous raw materials

This section uses production data from ASI and data on imports from DGCI&S to assess the level of dependence on imports against the total production. To quantify the level of reliance on imports and for a relative comparison, a proxy which serves this purpose and seems to capture the trend over years is imports as a percentage of total production.

For the purpose of our study we have used the data series provided by ASI 2007-08, ASI 2009-10 and ASI 2011-12 contained in the following blocks:

| # | Block | Particulars extracted |
|---|---|---|
| 1 | Block A | • Factory ID (DSL Number), Multiplier (as posted on the data) |
| 2 | Block J | • Type of Goods Produced (ASICC/NPCMS Codes for product description) |
| 3 | Block H | • Value of indigenous inputs consumed for production |
| 4 | Block I | • Value of imported inputs consumed for production |

## Data Analytics Results

The manufacturing sector has been stagnant or declining for years, with a meagre contribution of 16% to the country's GDP[29] while India's share in the world's manufacturing sector is just 1.8%. India has for decades, not managed to revive or provide an impetus to its domestic manufacturing sector. The results specific to the computer hardware sector as below:

**Use of Indigenous and Imported Inputs**

Total raw materials consumed in manufacturing comprise indigenous and imported raw materials. A trend has been observed across all sectors under FICCI-CASCADE review that over a span of five financial years, the use of imported raw materials has increased in comparison with indigenous raw materials.

This is true for the computer hardware industry as well, where indigenous raw materials were 46% of the total raw materials used in 2007-08. This reduced to 35% in 2010 subsequently increasing to 39% in 2012. The percentage of imported raw materials to total raw materials used has increased substantially from 54% in 2008 to a high of 65% in 2010, then reducing to 61% in 2012. The use of imported raw materials has increased by almost 90% between 2008 and 2012 while during the same period indigenous raw materials usage increased by only 41%.

The table below depicts a steady increase in use of imported components in computer assembly or other peripherals as compared to use of indigenous materials, indicating a low growth of the indigenous computer manufacturing sector. Given the fact that the services sector is a major contributor to the overall GDP growth, for the Information Technology sector to grow and develop in the long run, government policy must ensure lower dependence on foreign technology and inputs. Specific steps need to be taken in this regard to encourage sourcing of components from local manufacturers rather than just assembling imported components in their manufacturing units.

**Table: Inputs consumed by Sample factories (DSL) – Computer Hardware**

| Source | Type | 2007-08 | | 2009-10 | | 2011-12 | | %age increase in the sample period |
|---|---|---|---|---|---|---|---|---|
| | | Amount in ₹ Mn | %age | Amount in ₹ Mn | %age | Amount in ₹ Mn | %age | |
| Block H | Indigenous | 45,902 | 46.2 | 42,911 | 35.4 | 64,614 | 39.0 | 40.8 |
| Block I | Imported | 53,416 | 53.8 | 78,184 | 64.6 | 1,01,223 | 61.0 | 89.5 |
| | **Total** | **99,318** | **100** | **1,21,095** | **100** | **1,65,838** | **100** | |

**Imports of Finished Goods over Total Production**

In this section we assess the extent of imports of finished goods over total production to estimate the level of production capacity within the country. An increasing trend would show that value (and jobs) is being created outside the country while a lower trend would show greater value being retained/generated within the country.

The following table shows the trend in the percentage of imports of finished goods over the total production in the computer hardware sector.

| Industry Sector | 2008 | 2010 | 2012 | Trend |
|---|---|---|---|---|
| Computer Hardware | 4.0 | 2.35 | 3.78 | Increasing after a dip |

On the whole, imports as a percentage of total production seem to be low across all industry sectors reviewed for FICCI CASCADE (except for the mobile phones sector which is almost completely dependent on imports). While most other industry sectors reviewed show a continuously increasing trend in use of imported finished goods, in the computer hardware industry it fell from 4% in 2008 to 2.35% in 2010, increasing thereafter to 3.78%. It is pertinent to note here that this sector shows highest import of both inputs and finished products.

Higher import content in the value of inputs is clearly not encouraging growth of intermediate manufacturers in India. It has also proven to be a disincentive towards undertaking quality innovation initiatives.

## Capital Employed over Sales

This section will analyse the relationship between capital employed and the sales. The ratio between sales and capital employed indicates that sales or revenues are 'x' times the money used in the business. This ratio helps to understand what level of sales are being generated by each rupee worth of assets invested in the business. The objective of this section is to address the following questions -

- Is the pace at which sales are generated higher than the amount of capital employed in business?
- If so, are such increased sales attributable to investments or to imports?
- Are Indian companies shying away from making investments?

For this purpose a comparison between the year on year percentage change in sales and capital employed is analysed over a period of six financial years. The ratio of sales to average capital employed of six years has also been calculated. The ratio of sales by the average capital employed reflects a company's ability to generate sales revenue from efficient utilisation of assets.

## Methodology

The following approach has been adopted in this section -

- Comparison between year on year percentage change in sales and capital employed over a period of six financial years
- Ratio of sales over average capital employed is used as a proxy for capturing the relationship between the two

Using the CMIE Prowess database, data pertaining to financial details of companies like assets, liabilities, etc., has been extracted for a period of six years, 2008-2013. Our sample size comprises public and private limited companies operating in India. There are a total of 27,650 companies whose information is available in the public domain; this was examined in detail to ascertain the nature of products/ services produced/ rendered by them. Companies were classified into the relevant industry sectors on the basis of the major kinds of products and the industry group they belong to.

A total of 2,706 companies were selected pertaining to the industry sectors under review and information relating to following parameters was extracted for a period of six years from financial year 2007-08 to 2012-13:

- Fixed Assets
- Current Assets
- Current Liabilities
- Sales

More than seven lac data points were analysed to understand the trend in sales and capital employed over the last six years across the selected sectors. Data was collected for a period of six years to ensure that a complete economic cycle of low, medium and high level of business activity is captured.

The formula for calculating the capital employed is as follows -


Average Capital Employed = $\frac{\text{(Opening Capital Employed + Closing Capital Employed )}}{2}$

The percentage change in the average capital is then calculated and compared with the percentage change in sales for a period of six financial years.

The other metric used is the ratio of sales over average capital employed. This captures the ability of a company to efficiently use its assets to generate sales revenue. This ratio of sales over average capital employed is calculated for a period of six financial years.

## Comparison of Percentage Change in Sales and Capital Employed

Though a higher year on year percentage change in sales over capital employed implies utilisation of the assets to generate sales, a huge difference will imply either over-utilisation of assets or generation of sales revenue by sourcing through import of products instead of domestic production and is characterised by a low level of investment. However, if the year on year percentage change in capital employed is much greater than that of sales, then this means that the quality of investment is low and use of assets is inefficient. In such a scenario, the investments made by the companies are not generating the desired level of sales.

In the computer hardware sector the percentage change in sales and capital employed have been the lowest among the sectors covered in the study for all the six years. However, for all the years except 2011-12, the percentage change in capital employed is higher than the percentage change in sales.

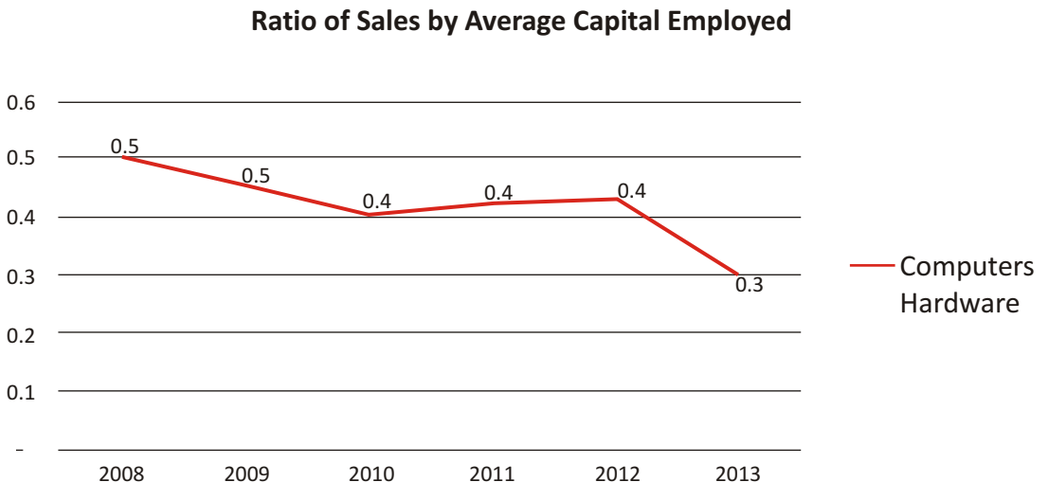
| Computer hardware | %age change in sales | %age Change in capital employed |
|---|---|---|
| 2009 vs 2008 | 2 | 12 |
| 2010 vs 2009 | -4 | 0 |
| 2011 vs 2010 | 8 | 10 |
| 2012 vs 2011 | 4 | -4 |
| 2013 vs 2012 | -30 | 8 |

This is a significant deviation from all the other sectors covered in this study where the opposite is seen to be true. As seen in the previous sections, the computer hardware industry has one of the highest percentage of imports over total production. Also, the previous section on innovation shows that in this sector the percentage growth in consumption of imported inputs by the sample factories is a little more than twice that of indigenous inputs between 2007 and 2012. This implies that the sector needs greater investment or greater efficiency in utilisation of assets as the present level of capital employed by the sector is not generating proportionate revenues from sales. The gestation period for recovering the investment through sales appears to be large.

## Ratio of Sales by Average Capital Employed

The ratio of sales over average capital employed measures the management's efficiency in generating revenue from the net assets at its disposal. It depicts the amount of sales revenue generated for every rupee of capital invested in the business. The higher the ratio, the more efficient the business is in utilising the net assets and generating sales revenues.

The computer hardware sector shows the least average ratio i.e. 0.4 among all the sectors under review of FICCI-CACADE. As seen in the previous sections in this study, the computer hardware sector also shows a high percentage of imports over total production and the average percentage of gross value added over the total output is 21.26%. This implies that the sector depends more on sourcing its requirement of goods on imports and needs to invest in indigenous manufacturing capability and utilise its assets more efficiently.



# Impact of Inter-state Tax Arbitrage within India


It is often claimed, that higher tax rates, stringent entry barriers and excessive regulatory compliances tend to exacerbate the illicit markets of a country. A significant reason for higher tax rates giving a fillip to the illicit markets is the fact that high tariffs and taxes create opportunities for those involved in illicit markets to step in and supply 'reduced' versions of the original product at lower prices.

The purpose of this section of the report is to attempt to establish a relationship between high taxes and availability of illicit products. However, this study covers sectors which command a relatively higher rate of tax, determined within a range of 20%-25%.

We observed that in case of computer hardware, tax rates for excise and custom were lower than 20-25%. VAT rates for these products did not vary significantly from state to state ranging from 4% to 5% in most of the states. It was therefore concluded that there is very limited scope for inter-state tax arbitrage in this sector. Accordingly analysis of tax arbitrage for this industry is not relevant for this part of study.

# Illicit Markets, Terror Organisations and Criminal Networks

## Terrorism in India

Terrorism, in all its forms, constitutes a grave threat to peace and security of a nation. Those indulging in it use disruption and violence as the weapons of intimidation against the civilian population, the government to influence public policies or even effect a regime change. By its very nature, terrorism is against the established order of the day. There is, however, no universally accepted definition of the word. Different countries fighting the menace define it differently. In India, the Unlawful Activities (Prevention) Act of 1967, amended in 2004 to fight terrorism, uses the word "unlawful activity" instead of terrorism and defines it as "any action...intended, or supports any claim, to bring about, on any ground whatsoever, the cession of a part of the territory of India or the secession of a part of the territory of India from the Union, or which incites any individual or group of individuals to bring about such cession or secession; and which disclaims, questions, disrupts or is intended to disrupt the sovereignty and territorial integrity of India.[30]

## Terrorist Attacks and its Financing: Need for Funding & Costs Incurred

Running a terrorist organisation requires substantial financial resources which are transferred to the groups through clandestine and often illegal channels. Terror expert Jean-Charles Brisard argues that 90 per cent of terror financing goes toward general maintenance of cells and equipment. Less than 10 per cent actually finances the execution of operations.[31] Costs incurred by terrorist organisations include materials such as bombs, vehicles, weapons and communication equipment and those related to planning and execution of attacks and expenses for running terrorist outfits.

While it is relatively easy to provide historical data citing an observational link between counterfeiting and terrorism, it is much less so to analyse the aggregate effects of the illicit markets industry on terror crimes in general. ***Moreover, lack of reliable data on terrorist financing leads to an enormous mismatch between the costs of a single attack and the supposed costs of running and maintaining a terror organisation***. At the same time, estimates of actual financial flows among the parties involved in terrorist activities appear rather preliminary. However this information is essential in order to develop a sound cost benefit analysis of anti-terrorist measures associated with terror funding.

***It is important to note that while statistical data is available for the number of attacks that have taken place in India, it is difficult to directly correlate it to the grey market data in absence of sufficient information and research, which are lacking at present, especially in the Indian context.***

Furthermore, despite the existence of requisite laws in India and arrests of suspected criminals by the police, the scale of illicit markets is huge and the criminal networks and illicit markets organisations continue to thrive. Clearly, this means that the existing laws and police operations are not resulting in the desired outcome and are unable to act as a deterrent. This could be due to the low conviction rates in India.

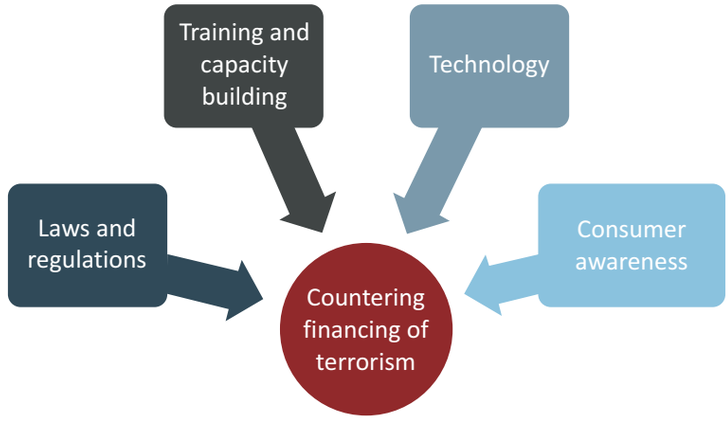
The scenario in other jurisdictions is not very different, although, credible data on seizures may be more easily available. The UK government in their Report of October 2014, has estimated that they lose about 1.3 % of their total tax collection due to criminal networks, mainly from smuggling.

A number of international studies have been conducted in the past which highlight the involvement of counterfeiting and piracy in financing of terrorist activities, for example, Al Qaeda[32] has been linked to the counterfeit industry through the sales of fake perfumes and shampoos. Also, Al Qaeda training modules recovered in 2002 reveal recommendation of sale of fake goods as a means to raise funds for cells.

The illicit markets have grown exponentially across the world, not only costing the industry and governments dear but also promoting criminal enterprises and generating funds for terror activities. Inadequate laws, poor governance and information gaps have aggravated the problem. It is, therefore, crucial to tackle the menace on a global footing in which all countries share information and join forces in creating a legal and regulatory framework, backed by effective enforcement.

***So far as India is concerned, lack of adequate data based on search and seizure makes it difficult to link or correlate the increase in illicit markets to terror funding. Establishment and determination of the extent of such a link calls for strategic intelligence gathering and preparation of robust databases, which are clearly missing at present. Given the security implications, if not outright financial considerations, there is little to argue against carrying out such exercises. This would be the first step to contain counterfeiting and its corollary, terror and ensure that genuine business interests do not suffer.***

It is therefore imperative to build a framework for prevention of terrorist financing which not only tracks down their financing hubs but also acts as a deterrent for them to ultimately bring down the threat of terrorism. The framework must deal with financing of terrorism from the following perspectives:



# Impact on Consumers

Counterfeiters and pirates are major enemies of economic development and social health, security and safety. Their methods are sophisticated, their reach is far and their crimes claim victims every day. The scourge of counterfeiting and piracy has assumed epidemic proportions. Counterfeiting and piracy have gone from being a business infraction at the local level to a global problem touching all industry sectors and consumers.

Listed below are some of the ways in which the use of computer hardware acquired from the illicit markets can impact the consumer:[33]

- A counterfeit computer system may result in loss of files or entire databases
- System failure and downtime
- Unsafe for short circuit and over voltage
- Unsafe power cords can cause fire and may be life threatening
- Counterfeit hardware can be easily hacked and are prone to virus attacks
- Software can be tampered with by using counterfeit hardware
- Life cycle of counterfeit products are short
- Higher repairing cost

# Conclusion & Way Forward

IT- hardware is a rapidly growing industry. As per the 2012-13 DIETY annual report, it recorded a growth of 15% in 2012-13 over 11% in 2011-12. This trend is expected to continue.

The illicit market in this industry is also growing. It has increased from 26.4% in 2010 to 27.9% in 2012. Computer hardware acquired from the illicit markets may result in loss of important personal and confidential data and allow breach of security systems. Sub-standard components also have serious consequences on the health and safety of end users. Grey markets also affect employment in the industry. It is reasonable to conclude that the work environment in counterfeit industrial units is far poorer than legitimate units that value their employee's health and safety and who are subject to laws ensuring employee welfare.

According to a recent Dun & Bradstreet report titled "India 2020 Economic Outlook",[34] rising income levels coupled with increase in the young working-age population will lead private final consumption expenditure to grow steadily over the years. As per D&B's projections, growth in private final consumption expenditure is expected to average at around 7.0% during FY15-FY20.

Given the expected growth in the industry, collaborative efforts are required between all stakeholders to curb the rising illicit markets which threaten such growth, reducing business efficiency, profitability and overall development.

## Data Collection and Analytics

As a significant and first step stakeholders must work in tandem to improve information sharing which will enable collation of credible statistics. Credible statistics will help to draw up and implement action plans that could undermine the activities of the perpetrators of this crime. Improving information sharing would entail:

- Systematic data collection;
- Comparability across sectors and across borders; and
- Comprehensive-drawing from multiple sources.

Quality information would provide a solid basis for establishing the scope of illicit markets and form a key input in assessing its magnitude and effect.

There are several initiatives that industries may also undertake which may include:

- Supporting research and analysis of issues related to illicit markets;
- Conducting awareness programmes for retailers and consumers; and
- Innovations in products or packaging to combat illicit markets.

## Encouraging Innovation & Investments and Enhancing Regulations

Innovation in the computer hardware industry is quite low, with a declining trend in patent applications filed (in the computer/electronics sector) during the period 2007-08 to 2011-12. R&D expenditure - another important indicator of innovation - has been falling in this industry over the years, remaining at an average of 0.95% of total operating expenditure (the second highest among all sectors covered) over the six year period from 2007-08 to 2012-13. In a technology driven industry like this sector, this is not a particularly good sign. .

For assessing the impact of illicit markets on investment three proxies were evaluated. While GVA to total output of the computer hardware sector is somewhere in the middle among all sectors under review it has shown a gradual increase over the years which is a positive sign, an indicator that the industry is slowly moving towards better capacity utilisation and lower input costs. The industry also shows a lower ratio of average sales over average capital employed i.e. 0.4. The increasing dependence on imports, represented by the use of imported inputs and finished goods in the computer hardware sector however implies that value (and jobs) is being created overseas rather than domestically. The sector is increasingly depending more on sourcing its requirements, on imports, and therefore needs to invest in indigenous manufacturing capability and utilise its assets more efficiently.

Current regulations do not provide for suo moto action by Government or Government agencies. The Contract Act, Sale of Goods Act, Consumer Protection Act and Intellectual Property laws have different focus, intent and purpose. If counterfeiting was made a cognizable non-bailable offence, the government administrative machinery could take suo moto action against the offender.[35]

Raising awareness on counterfeiting and piracy issues is also an essential tool to combat the growth of the grey markets. Greater consumer awareness should be built on the negative effects of using products purchased from the grey market as well as on the losses to legitimate manufacturers and the government. To this end, various programmes and studies have been organised to spread mass awareness on counterfeiting.

FICCI has submitted to DIPP, a policy paper on anti-smuggling and counterfeiting, which suggested, that public-private partnerships be initiated to bolster awareness levels amongst consumers, youth, the general public, policy makers and judicial, police and customs officials. Through a series of pan India awareness building seminars, youth festivals and other creative public campaigns, the risks of trading in counterfeit and pirated products on society and the economy, was proposed to be publicised.

The Ministry of Consumer Affairs, Government of India is, through a programme "Jaago Grahak Jago" providing awareness for combating counterfeiting. Many companies are also doing their part by providing information on how to identify original goods and how to avoid piracy.

## Countering Financing of Terrorism

With regard to funding terror organisations, owing to the extensive research carried out globally on terrorism and its links to proceeds from illicit markets, it is possible to state with certainty that illicit markets are instrumental in providing the much required funding to such organisations. In addition to the FBI, the former US Customs Service also brought attention to the link between the sale of fake goods and terrorism and has noted that the events of September 11, 2001 "changed the way American law enforcement looks at intellectual property crimes."[36]

Terrorist groups need financial resources to train and support members, maintain and sustain logistics, and meet operational costs. Therefore, if the threat of terrorism is to be nipped, the access to funding has to be choked. The truth is that many countries do not possess the legal and operational wherewithal and technical expertise needed to zero in on terrorist financing sources and initiate prosecution.

It is imperative therefore to build a framework for prevention of terrorist financing which not only tracks down their financing hubs but also acts as a deterrent for them to ultimately bring down the threat of terrorism. Such a framework will include training and capacity building among enforcement agencies, use of technology to detect and track sources of finance and increasing consumer awareness to empower consumers to take more informed decisions.

***While stringent enforcement of laws and raising awareness on counterfeiting and piracy can combat the growth of illicit markets, the supply chain of such manufacturers needs to be curtailed. This will encourage investment in R&D and development of new manufacturing processes and products, limiting the need for legitimate manufacturers to source their requirements for inputs and finished products from abroad, thus adding value domestically. A robust framework to block finances to terrorist activities will also bring down the threat of such heinous acts. Domestic manufacturing of high quality products will lower costs and enable accessibility of genuine products to the burgeoning Indian middle class with increasing disposable incomes.***

# Annexures

## Annexure I: Academic Literature Review

- **OECD** estimates international trade in counterfeit and pirated products could have been up to USD 200 billion in 2005 excluding domestically produced and consumed counterfeit and pirated products and the pirated digital products being distributed via the internet. The magnitude and effect of counterfeiting are of extreme significance and warrants strong, sustained and coordinated action from government, industry and consumers. Counterfeit and pirated products are infiltrating legitimate supply chains other than informal markets. The Internet has provided counterfeiters/pirates with a new and powerful means to sell their products via auction sites, stand-alone e-commerce sites and email solicitations. [37]

- **OECD** further states that the effects of counterfeiting and piracy on government come in the form of (i) lower tax revenues, (ii) the cost of anti-counterfeiting activities, including responding to public health and safety consequences and (iii) corruption. … Tax revenues. Tax collection is presumed to be far more effective from rights holders and their licensees than from counterfeiters and pirates. Potential losses include corporate income taxes, sales or value added taxes, excise taxes, import tariffs and social insurance charges. The revenue losses are particularly high in sectors such as tobacco and alcohol, where excise taxes are high and smuggling of counterfeit products to avoid those taxes is widespread.[38]

- **BASCAP** estimates that the total value of pirated and counterfeited products impacting G20 economies for 2008 is $455 to $650 billion and has been projected between $1,220 to $1,770 billion for 2015 including international trade, domestically produced goods and pirated digital products distributed via internet. The impact of counterfeiting and piracy on government tax revenues, legitimate employment, increased costs of crime, economic costs on consumer health and safety and downward pressures on FDI flows has been estimated at $125 billion per annum for G20 countries. Employment loss has been estimated at 2.5 million jobs for G20 countries excluding secondary impact on employment in the supply chain.[39]

- **International Anti-Counterfeiting Coalition, Inc.** (IACC) professes that low risk of prosecution and enormous profit potential has made criminal counterfeiting an attractive enterprise for organized crime groups. There are connections between intellectual property theft and terrorist groups and terrorists can use intellectual property crimes not only as a source of funding but also as a means of attack.[40]

- **GAO** states that it is difficult to quantify the economy wide impacts of counterfeiting because of varying assumptions on substitution of legitimate products with the pirated goods across industries. Hence each method of costs estimation has limitations on account of data

availability and underlying assumptions and no single method can be used across industry sectors.[41]

- **UNODC** says, "The ramifications of counterfeiting affect everyone, with Governments, businesses and society being robbed of tax revenue, business income and jobs. The flood of counterfeit and pirated products creates an enormous drain on the global economy by creating an underground trade that deprives Governments of revenue for vital public services and imposes greater burdens on taxpayers. It also leads to more public resources being spent on fraud-detection methods by public sector authorities and larger intelligence and policing budgets being needed to counter sophisticated schemes and networks. Counterfeit goods also undermine employment, as products are copied and produced illegally, thereby displacing sales of original merchandise and reducing the turnover of legitimate companies. Fraudulent medicines also have a direct impact on increased medical costs due to prolonged treatment periods and medical complications in the spread of treatment-intensive diseases. The prices of products also go up because companies increase security systems to counter organised criminal activities and have to invest more in research and development."[42]

- **A WIPO** study talks about the how intellectual property rights or their protection plays a role in the innovation process, emphasising that technological innovation is a principal determinant of successful firm performance. The study also indicates that small and medium sized enterprises (SMEs) prefer to use trade secrets rather than patents as a form of protecting their inventions to stay competitive. The main reasons given by SMEs for shying away from patenting their inventions include high costs and complexity of the patent system.[43]

- **Nam D. Pham** lays emphasis on the impact of innovation and the role of IP rights in his study. The study brings to the fore, the critical importance of allocating resources to innovation in sustaining long-run economic growth in both developed and developing countries. The author argues that countries with the highest technological capacity are better able to enhance the efficiency of their production methods and exploit new market opportunities. The study states that the protection and enforcement of IP rights are imperative for creating strong incentives for innovation and safeguarding it from counterfeiting, piracy, and other forms of IP theft. It concludes that with the growing importance of knowledge as a driving force for innovation and economic expansion worldwide, the protection of property rights has attracted greater attention and concern. The counterfeiting and piracy of products are rising exponentially and are costing the global economy hundreds of billions of dollars a year in lost revenues and thousands of jobs. The challenge for policymakers is therefore to continue encouraging investment in R&D and human capital in order to promote innovation while at the same time developing the policy instruments and frameworks to better protect intellectual property rights.[44]

- **A Harvard University** study delves into the relationship between counterfeit sales and financing of activities of terrorist organisations using a number of economic controls to analyse the effect of two proxies of annual counterfeit sales on two measures of international terrorism namely RAND database and DOS database. It states that while the societal and economic costs of counterfeit products are largely incontrovertible, one final effect of this crime industry is less definite: its support of international terrorism. Anti-counterfeiting organizations and luxury goods manufacturers are quick to suggest that counterfeit product revenues are directly funding terrorism. There is, however, only a small amount of hard data in support of this claim. The study conducts an inquiry into the purported causal link between measure of counterfeiting and terrorist incidents in a given year through a regression model but suggests that the empirical analysis fails to provide a conclusive relationship between the two.

- **A University of Wellington study** on cross border tax arbitrage states that in most cases, cross-border tax arbitrage increases the tax payable in one jurisdiction and decreases the tax payable in the other jurisdiction. The decrease must be larger than the increase for the arbitrage to be worthwhile for the taxpayer. Tax arbitrage, therefore, redistributes resources not only from government treasuries to taxpayers, but often from one government treasury to another. The study says the direct consequence of cross-border tax arbitrage is to distort individuals' and corporations' investment decisions, and to reduce the revenue raised by governments. Although cross-border tax arbitrage may augment the coffers of one government's treasury, this augmentation is likely to be more than offset by a reduction in the revenue raised by the other government's treasury (otherwise the arbitrage is unlikely to be advantageous from a tax perspective).[45]

A significant anti-counterfeiting measure undertaken in recent times is the Anti-Counterfeiting Trade Agreement (ACTA). It builds on the Trade-Related Aspects of Intellectual Property Rights (TRIPS), but has been negotiated outside WTO (World Trade Organization) framework. The draft ACTA calls for increased use of criminal and civil penalties against people using copyright circumvention technologies and those accused of copyright infringements, and also for ISPs to have more responsibilities with regards to removing infringing material. **ACTA has been rejected by the European Union in July 2012.**

ACTA binds negotiating states and creates a new international standard which is likely to be imposed on third countries in future trade agreements. The current draft threatens fundamental rights in countries such as the right to freedom of expression and information, right to protection of personal data and fair trial/due process issues related to other fundamental rights. It was negotiated in unwarranted secrecy, without adequate input from civil society or parliamentarians, but in close cooperation with major IP right holders. It has resulted in disproportionate protection to big business.[46]

## Annexure II: Items considered as part of operating expenditure

| S. No. | Components of Operating Expenditure |
|---|---|
| 1 | Raw material expenses |
| 2 | Power & fuel |
| 3 | Water charges |
| 4 | Salaries & wages |
| 5 | Repairs & maintenance of buildings |
| 6 | Repairs & maintenance of plant & machinery |
| 7 | Repairs & maintenance of vehicles & others |
| 8 | Communications expenses |
| 9 | Travel expenses |
| 10 | Selling & distribution expenses |
| 11 | Printing & stationery expenses |
| 12 | Donations |
| 13 | Social and community expenses |
| 14 | Environment and pollution control related expenses |
| 15 | Subscriptions and membership fees |
| 16 | Research & development expenses |
| 17 | Other miscellaneous expenses |
| 18 | Miscellaneous expenditure |

# Abbreviations

| | |
|---|---|
| ASI | Annual Survey of Industries |
| CASCADE | FICCI's Committee Against Smuggling and Counterfeiting Activities Destroying the Economy |
| CII | Confederation of Indian Industry |
| CSIR | Council of Scientific & Industrial Research |
| CSO | Central Statistical Organisation |
| D&B | Dun & Bradstreet |
| DeitY | Department of Electronics & Information Technology |
| DGCIS | Directorate General of Commercial Intelligence and Statistics |
| DIPP | Department of Industrial Policy and Promotion |
| FICCI | Federation of Indian Chambers of Commerce & Industry |
| FMCG | Fast Moving Consumer Goods |
| GDP | Gross Domestic Product |
| GST | Goods & Services Tax |
| GSV | Gross Sales Value |
| GVA | Gross Value Added |
| IACC | IT Anti Counterfeit Coalition of India |
| IPR | Intellectual Property Rights |
| IT-BPM | Information Technology-Business Process Management |
| MoSPI | Ministry of Statistics and Planning Implementation |
| MSME | Micro Small and Medium Industries |
| NASSCOM | National Association of Software and Services Companies |
| NIC | National Industry Code |
| NSS | National Sample Survey |
| NSSO | National Sample Survey Organisation |
| R&D Expenditure | Research and Development Expenditure |
| TARI | Thought Arbitrage Research Institute |
| UNODC | United Nations Office on Drugs and Crime |
| VAT | Value Added Tax |
| WIPO | World Intellectual Property Organisation |

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## About FICCI

Established in 1927, FICCI is the largest and oldest apex business organisation in India. Its history is closely interwoven with India's struggle for independence, its industrialization, and its emergence as one of the most rapidly growing global economies. FICCI has contributed to this historical process by encouraging debate, articulating the private sector's views and influencing policy.

A non-government, not-for-profit organisation, FICCI is the voice of India's business and industry.

Federation of Indian Chambers of Commerce and Industry

www.ficci.com

## About FICCI CASCADE

In the recent past India's economic growth story has attracted world's attention bringing new challenges for the domestic economy. One of the challenges currently faced is the growing illicit trade in counterfeits, pass offs and smuggled goods. These activities are also threatening brands not only in every region of the country but across the globe.

Contraband and counterfeit products hurt the integrity of the brand, further diluting the brand owner's reputation. This not only results in erosion of sales of the legitimate product but further [CASCADE]s onto affect the consumers in the form of health and safety hazards.

With the above insight the Federation of Indian Chambers of Commerce and Industry(FICCI) took the initiative to dedicate a forum by establishing the Committee Against Smuggling and Counterfeiting Activities Destroying the Economy - CASCADE on 18th January, 2011 at FICCI Federation House, New Delhi.

FICCI Committee Against Smuggling and Counterfeiting Activities Destroying Economy (CASCADE)

www.ficcicascade.com