

SCREENS FOR CARTEL DETECTION

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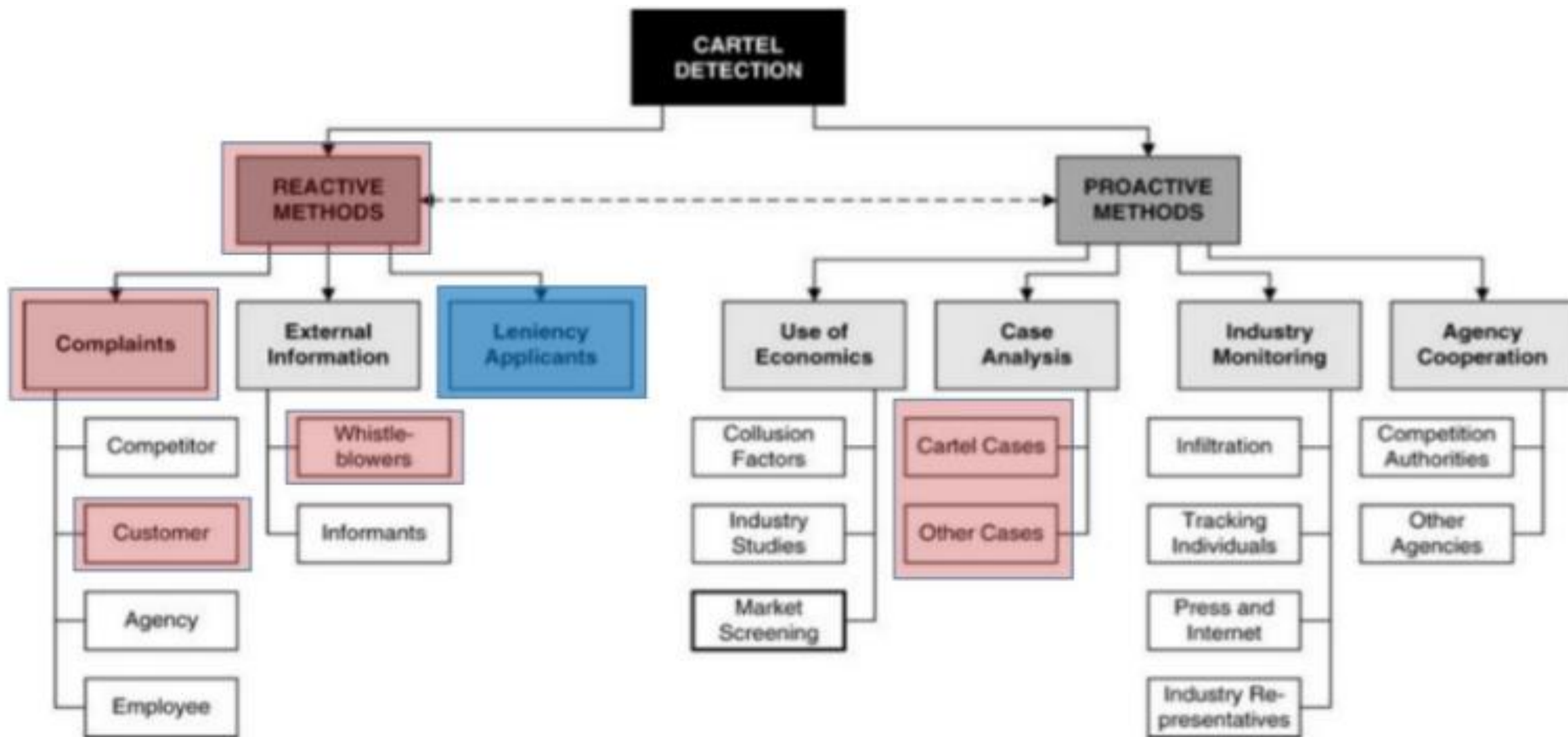
Outline

- Introduction
- Screens for Cartel
- Internationally Recognised factors
- CCI Experience
- The way forward: Digital Screens

Introduction

- Cartels most egregious violation of competition law
- Significant gains from combating cartels - particularly for developing countries
- Challenges for young jurisdictions – developing detection toolkit, low awareness, policy legacies
- Increased use of combination of Reactive and Proactive methods
- Large number of investigations undertaken in India into cartels

Sources of cartel inquiry



Source: Hüscherlath (2010), based on ICN (2010).

What are Screens ?

- An economic, statistical or behavioural tool for identifiable anti-competitive behaviour.
- By using data points such as prices, production details, bids, market shares, screens serve to identify patterns indicative of anti-competitive behaviour.
- Thereby, giving ability to raise red flags in case of potential cartel behaviour.

Why Screens for Cartel detection ?

- Screens are proactive method
- Deterrence effect
- Limitations in Reactive methods
- Over-reliance on amnesty/ leniency programs may undermine the very effectiveness of leniency programmes.
- A combination of tools including both proactive and reactive detection measures be the most effective.
- 02 general screening approaches: 1) **Structural approach** and; 2) **Behavioural approach**

Structural Screens

- Include analysis of **structural** and **product** characteristic of a specific market or industry that make successful collusive strategies more likely.
- Based on what economic theory and empirical research tell us about the relationship between market characteristics and the likelihood of collusion occurring in markets.
- Involves a cross-industry or cross-market search for those characteristics which are known to facilitate cartelisation, or which have been exhibited in cartelised industries in the past. Useful in creating an initial list of industries requiring further scrutiny and may also complement reactive detection measures.
- Factors identified for stability of cartels and collusion: **structural** (small number of competitors, high entry barriers, frequent interactions and market transparency); **supply related** (mature stage of an industry, the low pace of innovation, symmetry and commonality of costs and product homogeneity) and **demand related** (stable demand conditions, low demand elasticity, buying power, and the absence of club and network effects.)
- However, structural screens require readily available data which may not be possible in most of the industries. Structural screens only point at markets which exhibited a propensity for collusion rather providing agencies with preliminary evidence of collusion.

Behavioural Screens

- Indicate whether or not collusive behaviour of firms has in fact affected a specific market.
- Whether behaviour of markets and their participants is likely to be consistent with collusion or competition.
- Involves **outcome-based analysis** founded on variety of variables such as prices, quantities, market shares, bidding decisions *etc.*

Arbantes Metz suggests that

- Improbable or unusual events can be a sign of manipulation or of a cartel conspiracy if these events cannot be explained but for industry co-ordination; and
- Comparing behaviour of individuals or groups in similar situations may reveal that one group's behaviour is subject to manipulation or conspiracy

- **Abrantes-Metz** further identifies six factors for developing and implementing a good behavioural screen:
 - (i) an understanding of the market at hand;
 - (ii) a view of the likely nature of cheating;
 - (iii) a view of how cheating will affect market outcomes;
 - (iv) a set of statistics that can capture both the implications of cheating as well as ordinary, natural relationships between key market variables;
 - (v) empirical or theoretical support for the screen; and
 - (vi) the identification of an appropriate non-tainted benchmark against which the evidence of cheating can be compared.
- As compared to structural screens, behavioural screens are more flexible and case-based approach.

Internationally Recognised Factors

Structural Screens

- High concentration
- High entry barriers
- Frequent interaction among competitors
- Price transparency
- Low demand elasticity
- Product homogeneity
- Mature market
- Low innovation
- Symmetry of market share
- High buyer power

Behavioural Screens

- Increased price and more uniform price
- Series of steady price increases preceded by steep declines
- Prices rise but imports decline
- Firms prices strongly positively correlated
- Reduced variance of price
- Periodic switching between high and low price levels (structural shifts)
- Discontinuing of discounts that were previously common

Signs of Suspicion in Public Procurement

- Signs to look out for, in a bid-rigging cartel:
 - Suspicious:
 - i. high prices;
 - ii. inconsistent prices;
 - iii. big differences in prices;
 - iv. similar prices;
 - v. boycott;
 - vi. few bids;
 - VII. similar bids;
 - VIII. patterns;
 - IX. subcontracting arrangements;
 - X. careless tenders;
 - XI. wording and;
 - XII. joint bids

Challenges posed by implementation of cartel screening programmes

- Screens do not provide sole and sufficient proof of cartelisation.
- Screens can generate Type I error (false positives) and Type II error (false negatives).
- Screens fail to distinguish explicit from tacit collusion.
- A Data-intensive activity.
- A Resource-intensive activity.
- Risk: Firms may evade screen detection.
- **Need for Plus Factors**

Examples of Screens in Foreign Jurisdictions

- **Korean Fair Trade Commission** : has an institutionalised a programme for bid rigging known as **BRIAS (Bid Rigging Indicator Analysis System)** It calculates probability of bid rigging by giving weighted values to various indicators (e.g. bid-winning probability, the number of bidders, bid prices, competition methods etc.).
- **The Federal Economic Competition Commission (CFCE) Mexico**: CFCE's screenings more of behavioural approach like identification of price rises and import decline; low price variance; price subject to regime switches; market shares highly stable over time *etc.*
- **Swedish Competition Authority (SCA)** : uses a combination of proactive and reactive detection tool. Analysis carried out such as screening of winning bids; deviation from optimal bids; percentage differences between winning and losing bids and patterns in submitted prices. It also has guidance tools for procurement officials.
- **Russia**: Combination of traditional methods and innovative methods based on use of Unified Electronic Information System (**UEIS**)
- **Brazil (CADE)**: Development of analytical tool **CEREBRO** incorporating results of data mining and economic screens.
- **U.K. (CMA)**: Developed Digital Cartel Screen in the form of an Open Government License (OGL) software tool to help identify and detect suspicious tenders based on the parameters such as 3 bidders or fewer; only 1 bidder; very high text similarity in losing bids; low effort of losing bid; made up prices and outlier *etc.*

CCI Experience

- CCI commissioned several market studies to assess market conditions and competitiveness.
- CCI has extensively used screens during preliminary inquiry and investigations to understand the vulnerability of the market to anti-competitive conduct.
- While dismissing allegations at *prima facie* stage, screens were often used to observe market is not conducive to collusion or the conduct is not anti-competitive.
- Screens in conjunction with evidences were used to determine contraventions.
- Certain factors are unique to India, arising from the unique economic, cultural and regulatory landscape of India, which have led to structural endemic structural inefficiencies. This led to India-specific screens being considered.

CCI Experience

Contd.

Structural Screens

- Presence of strong trade associations
- Informal Service Sector with high degree of self-regulation
- Low value of individual transactions

Behavioural Screens- Price Based

- Increased price and more uniform price
- Series of steady price increases preceded by steep declines
- Firms' prices strongly +ve Corr.
- Reduced σ^2 of Price
- Periodic switching between high and low price levels
- Discontinuing of discounts

Behavioural Screens- Non-Price Based

- Market share consistent over time
- Reduced - production/capacity utilisation/capacity even when demand increased
- Abnormal increase in profits without increased demand

Use of Specific Screens

Orders	Section 27	Section 26(6)	Section 26(2)
1. Structural screens – Internationally Recognised			
1.a. Small number of competitors / high concentration	21%	35%	38%
1.b. High entry barriers	16%	23%	5%
1.c. Frequent interaction among competitors (bidding / cooperation agreements / contractual agreements)	41%	23%	33%
1.d. Market transparency	13%	4%	9%
1.e. Low demand elasticity / predictability of demand	13%	19%	5%
1.f. Product homogeneity	25%	23%	11%
1.g. Low innovation / mature industry	5%	4%	4%
1.h. Symmetry	25%	0%	11%
1.i. High buyer power	0%	23%	0%
2. Structural screens – India specific			
2.a. Presence of strong trade associations	57%	27%	5%
2.b. Informal service sector	0%	0%	2%
2.c. Low-value of individual transactions	2%	0%	2%

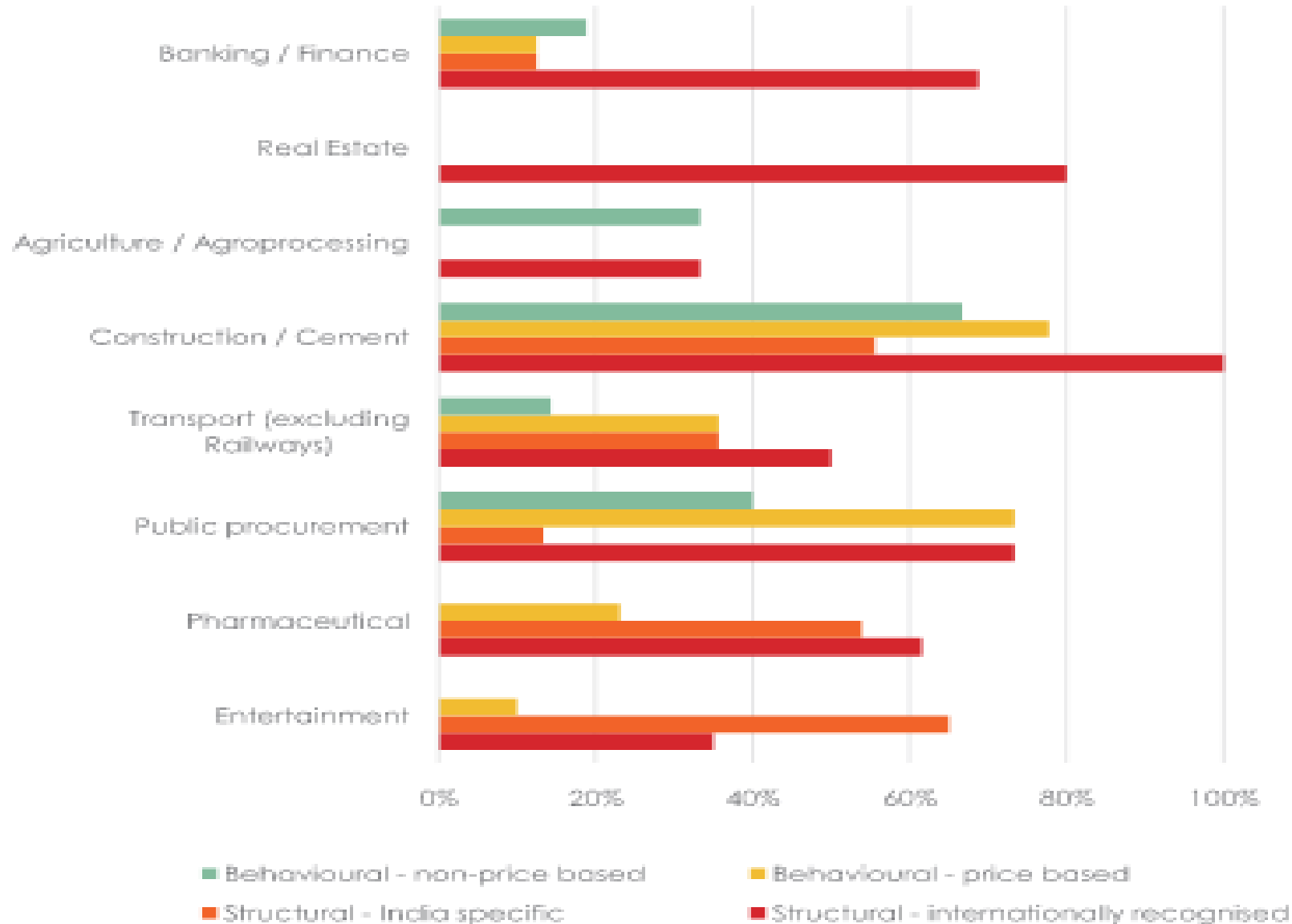
Source: Cartel enforcement and competition ICN Special Project 2018

Use of Specific Screens

Orders	Section 27	Section 26(6)	Section 26(2)
3. Behavioural screens – price based			
3.a. Increased price and more uniform price	32%	27%	9%
3.b. Series of steady price increases preceded by steep declines	7%	12%	0%
3.c. Prices rise but imports decline	0%	4%	0%
3.d. Firms prices strongly positively correlated	18%	50%	4%
3.e. Reduced variance of price	16%	8%	0%
3.f. Periodic switching between high and low price levels (structural shifts)	7%	4%	0%
3.g. Discontinuing of discounts that were previously common	0%	4%	2%
4. Behavioural screens – non-price based			
4.a. Market shares consistent over time	7%	38%	4%
4.b. Reduced production / capacity utilisation / capacity even when demand increased	13%	19%	2%
4.c. Abnormal increase in profits / increase in price without increase in cost	16%	35%	2%

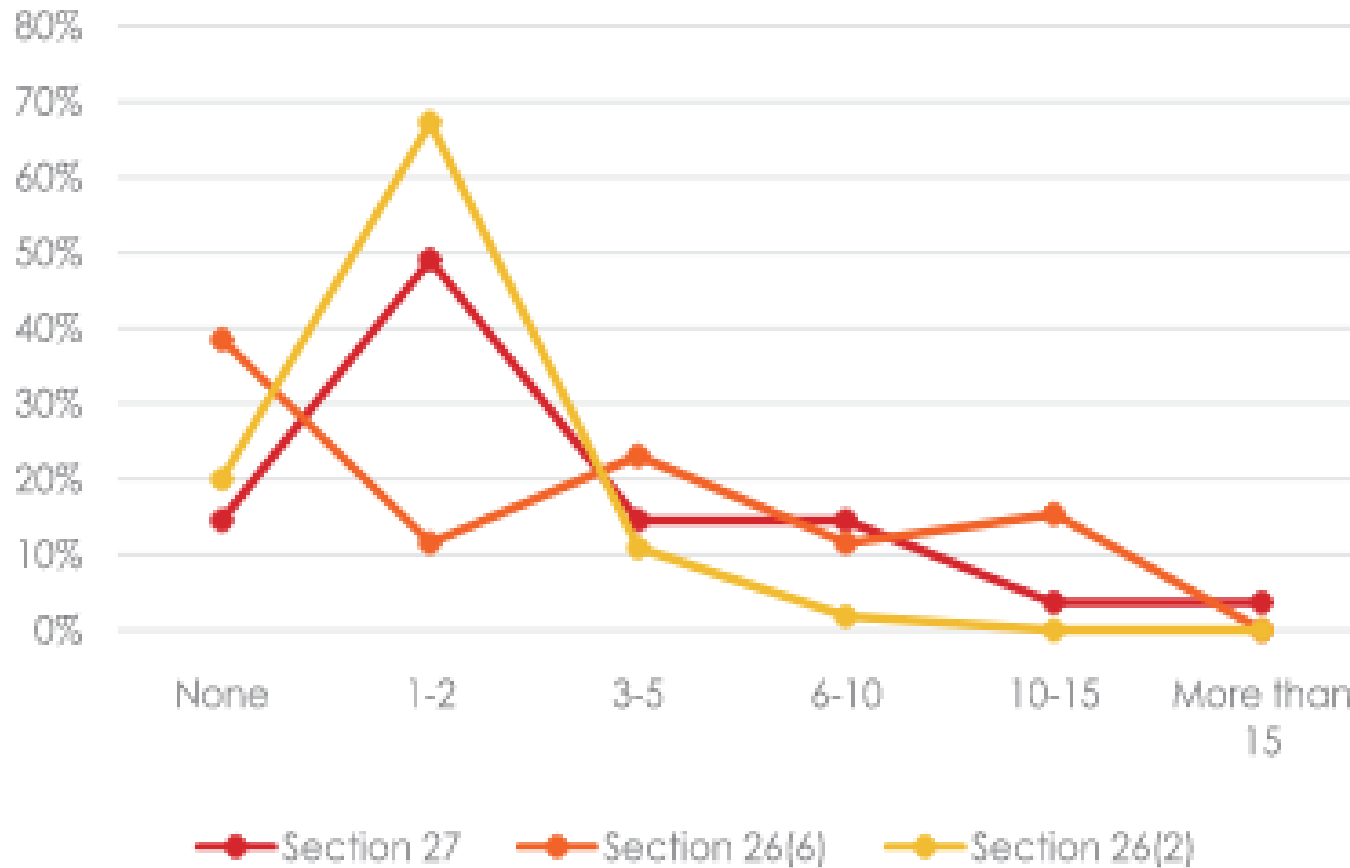
Source: Cartel enforcement and competition ICN Special Project 2018

Usage of Screens by sector



Source: Cartel enforcement and competition ICN Special Project 2018

Number of Screens used



- Total Cases under study – 136
- Section 26(6) – in 40% cases no screens were used
- Section 26(2) – in about 22% cases, 6 or more screens were used.

Source: Cartel enforcement and competition ICN Special Project 2018

Use of screens in Public Procurement

- The literature review on implementation efforts made internationally reveals that public procurement is the most suited area for deploying data of such procurement is readily available
- contribute to overall cartel deterrence: the system dissuades companies from entering into bid rigging schemes by signalling to the market that the tenders are being screened
- Possibility of applying Digital screens as oppose to physical analysis

e.g. Korea -BRIAS

calculates the probability of bid rigging by giving weighted values to various indicators

CMA- a software tool that tests procurement data with tender bids against agreed criteria for signs of potential cartel and bid rigging activity

Brazil-Cerebro Behavior of colluded companies in real cartel cases, was retrospectively analyzed and translated into an algorithm that search for the patterns of collusion in the databases of public procurement.

test run on parameters like 3 bidders or fewer, only 1 bidder, very high text similarity in losing bids, winning bid is an outlier, prices look made up, same authors, low effort of losing bid, similar prices across bids and similar text.

Public Procurement in India - case for developing screen based cartel detection

- Huge Public Sector presence in areas such as healthcare, railways
- Public Procurement accounts for around 30% of GDP
- E-Procurement being progressively used
- Mandatory use of GeM by Central and State Govts
- Considerable impact resulting in efficient utilization of public exchequer
- Reform in Public Procurement is also one of the top priorities of the present Government
- screen based cartel detection exercise can be undertaken both manually and using software.
- Government of India has on 5th April 2017 issued a new GFR 2017 (F/A) which distinctly mention of need to be proactive in stopping cartels and report the matter to CCI
- underlying legal and structural framework and data required to support screen based cartel detection system is already in place in India

The Way Forward- Digital Screens

- Digital screens is a new technique, which have ability to raise red flags of potential cartel behaviour by capturing empirical and behavioural data, digitally.
- CMA, Brazil, Russia, South Korea have successfully deployed
- Particularly useful for public procurement agencies
- PPAs can report suspicious behaviour to competition agencies
- Further investigation by Competition Regulatory Authority of these red flags to examine probable cartel behaviour.
- CCI is also exploring the possibility of developing digital screens to detect collusion in public procurements
- Carry out formal screening exercises periodically to identify sectors prone to cartelisation.

Thank you