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# EDITORIAL NOTE

- *Editors*

Every contemporary event, movement or development presents an opportunity to examine the same from a Law and Economics view point. As we delve into the forthcoming edition of the Journal of Law and Economics, we are presented with an array of research papers that illuminate the intersection of law and economics with the contemporary dynamics of our society. The given issue for Volume VI presents a set of 6 papers which seek to give a fresh perspective on a gamut of contemporary legal and social issues across the spectrum. These areas include taxation, mental health, criminal justice, data protection and judicial governance, through the lens of Law and Economics. These selected papers also look into welfare economics and assess the socio-economic efficacies of various measures taken by the government using both macro and microeconomics tools. It also moves into the statutory laws and legal system of India to reach more objective and scientific solutions.

The first paper, titled **"Economic Analysis of Cyber Risk for Financial Institutions",** authored by Dr. Chitra Saruparia, Dr. Arun Kumar Giri, and Avisha Gupta presents a multi-sectoral approach to dealing with cyber risk for financial institutions by studying multi-sectoral cyberattack patterns. The paper further delves into formulating a robust insurance model and standardization of associated risks and definitions. The paper further offers a quantitative assessment with an aim to develop a industry-level cyber security risk index. Concluding with recommendations for faster response and recovery.

The paper titled **"Economic Analysis of Community-Based Interventions in India's Mental Health Laws and Policy Frameworks: Resources Allocation and the Efficiency"** authored by Sarah, presents a discourse on community-based mental health interventions underscores the integral role of socio-economic factors in shaping public health outcomes. As we confront the challenges of resource allocation and policy implementation, it is imperative to recognize the profound impact of legal frameworks on mental health services. Through a comprehensive analysis, this paper offers valuable insights into harnessing the potential of community interventions to achieve efficient outcomes.

The next paper, titled **"Taxation of Cryptocurrencies: The Indian Faux Pas"**, authored by Vedika Chawla and Vasushrava Mahipal, presents an analysis of the taxation of cryptocurrencies on the intricacies of data protection legislation; each paper encapsulates the profound impact that legal decisions have on economic outcomes, and vice versa. The depth

of analysis presented within these pages reflects a profound understanding of the challenges and opportunities inherent in navigating the legal and economic landscape of India. The examination of India's tax policy on cryptocurrencies underscores the delicate balance required to foster innovation while ensuring regulatory compliance. As the digital economy continues to expand, policymakers face the daunting task of crafting tax policies that encourage growth without stifling market potential. Through rigorous analysis and thoughtful recommendations, this paper offers valuable insights into achieving such equilibrium.

Furthermore, the paper titled **"Justice Delayed, Prosperity Denied: An In-Depth Economic Analysis of Judicial Backlogs in India"**, authored by Nileena Banerjee, examines India's judicial system and highlights the far-reaching consequences of judicial delays on economic growth and societal well-being. As case backlogs persist, the urgency of systemic reforms becomes increasingly apparent. This paper serves as a clarion call for decisive action to ensure swift and efficient justice delivery, thereby fostering an environment conducive to economic progress.

The fifth paper, titled **"Data Protection in India: Privacy, Personal Data, and The Saga of a Legislative and Economical Approach"**, authored by Acharaj Kaur Tuteja and Digvijay Singh, scrutinizes India's Data Protection Bill, 2022, sheds light on the critical importance of safeguarding privacy rights in an increasingly digitized world. As data becomes a cornerstone of economic activity, the need for robust legislative frameworks that uphold individual liberties is paramount. This paper calls attention to the gaps in current legislation and advocates for stronger data protection measures to preserve societal trust and confidence.

Finally, the paper titled **"The Empirical Analysis of the Applicability of Becker's Model of Crime: A Case Study of Rape, Traffic Violations and Corruption in India"** authored by Chinmayee Hegde and Anuradha S Pai explores crime through the lenses of economic theory andbehavioural economics challenges conventional wisdom, urging us to reconsider our understanding of criminal behaviour. By acknowledging the influence of emotional and societal factors, this paper enriches our comprehension of the complex motivations behind criminal acts, paving the way for more nuanced policy interventions.

In conclusion, the papers featured in this edition of the Journal of Law and Economics offer a compelling narrative of the symbiotic relationship between law and economics in India. As we navigate the complexities of a rapidly changing world, may these insights serve as a guiding beacon for policymakers, scholars, and practitioners alike.

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# ECONOMIC ANALYSIS OF CYBER RISK FOR FINANCIAL INSTITUTIONS

- *Avisha Gupta[1], Dr. Chitra Saruparia[2] , Dr. Arun Kumar Giri[3],*

## ABSTRACT

*Cyberattacks have surged rapidly during the previous five years, and cybersecurity experts anticipate one attack every 11 seconds by 2023. Financial stability is under risk owing to the ease with which attackers can cause massive upheaval to the IT infrastructure technology systems utilised by banking firms. Cyberattacks and data breaches have risen from being an IT unit concern to being a key risk management issue for all financial institutions. The importance of safeguarding information systems to maintain commercial and financial activity in a firm has grown in the wake of the COVID-19 pandemic. By analyzing the 10-K filings of the US-listed firms and statistics on cybercrimes, the objective of this study is to propose a novel cyber risk measure for publicly traded US firms. According to our analysis, the financial sector is unprepared for such attacks, and the international community is responding in a disjointed fashion. Our measure's time-series properties correlate with cyberattacks, as indicated by a 0.83 positive correlation between our measure and the annual cyberattack percentage. The study is a step towards developing a standardized global cyber risk measure for the banking industry.*

***Keywords***: *Cyber-incidents, Operational risk, Basel Committee, SEC Edgar, Advisen data, Cybersecurity risk measure, National Cyber Security Index, Banking industry, Technology advancement, Cyber risk insurance.*

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## 1. INTRODUCTION

Any potential for monetary loss, disruption, or damage to an organization's reputation due to the malfunction, unauthorized use, or inadvertent misuse of its information systems is considered a cyber risk. As the number, scale, and sophistication of cyberattacks on the world's financial institutions increase, the threat they pose can no longer be dismissed as media hype. Cybersecurity experts predict that in 2023, there will be a cyberattack every 11 seconds, which has exponentially increased since the last five years. Private data of several clients has been exposed due to hacks of major banks, credit bureaus, and government entities. When financial institutions use third-party service providers, any data breaches on the part of those suppliers pose a serious threat to the privacy and proprietary information of the institutions. The advent of globalization of economies, the use and widespread acceptance of rapidly evolving technologies, the extensive interdependences and interrelations between the financial sector and the IT infrastructure, the increasing sophistication of malicious actors, and the fundamental nature of banking institutions' businesses and services all contribute to the cyber risk that these organisations face. However, the financial sector's ability to assess and analyze cyber risk has not yet developed to the level at which it can be regularly monitored against business risk sensitivities or assessed from a system-wide standpoint. In consequence of this, entities' collective and individual preparedness to deal with system-level cyber threats is diminished, as is the effectiveness with which such risk is measured and managed.

Another significant source of cyber risk for financial institutions is the “dark web”, a web of anonymous activity and hidden pages that cannot be followed. This is due to the fact that businesses desire complete anonymity in the event that an incident does occur, as they do not prefer for it to be reported in the media, and moreover, they may be victims of dark web activity without even realizing it. Information such as bank statements and card numbers can be posted as a link and exploited in this setting. Many businesses have a hard time tracking down thieves because of how simple it is to gain access to the dark web and how little evidence their actions leave behind. A crucial observation to make here is that this is something of a murky area, since targeted financial institutions are typically reticent to disclose how they learned of the attack, which might occasionally be through reconnaissance of the dark web. It's important to note that

banks and other financial institutions aren't slacking off when it comes to managing cybersecurity risks; in fact, they're taking a more nuanced approach than many businesses in other industries, particularly the retail sector.

The objective of this study is to conduct an economic analysis of cyber risks and propose a novel cybersecurity risk measure for US-listed firms based on a textual analysis of firms' disclosures and available data on cyber-attack incidents. A significant issue that most organizations face while disclosing the operational risks involved is the absence of a standardized definition and classification of cyber risks. Cyber risk can be defined in a variety of ways depending on the setting. Cyber risk, as defined by the ORX's Cyber and Information Security Risk project, is the potential for monetary or other types of loss as a result of cyber incidents that have either an external or internal source.[1] Cyberthreats and their inherent causes would be easier to comprehend with a standardized description and classification. Data sharing and proper collaboration in managing cyber risks might be facilitated even more by a unified set of definitions and an agreed upon understanding across the finance industry, both among regulatory authorities and private entities. So, we base our definition off of what the Basel Committee for Banking Supervision has proposed, which is stated in the following section. Our analysis also presents different patterns of cyber-attacks each industry faces and provides measures for a faster response and recovery. The final section of the report mentions existing campaigns and programs that strengthen the cybersecurity infrastructure and raise awareness among organizations. Moreover, the section suggests policies and strategies that can be put in place to improve response to and recovery from the cyber-attack.

## 2. RATIONALE OF ECONOMIC ANALYSIS OF CYBER RISK FOR FINANCIAL INSTITUTIONS IN LEGAL LANDSCAPE

Financial institutions are frequently targeted by hostile individuals causing disruption since they hold enormous volumes of sensitive financial data. In the financial sector, cyber-attacks can have a negative impact on the economy through direct financial losses, reputational harm, operational

[1] Luke Carrick et al., *An emergent taxonomy for operational risk: capturing the wisdom of crowds*, 15 Journal of Operational Risk (2020).

implications, insurance concerns, regulatory compliance costs, systemic risk, and long-term effects on shareholders and investors. Consequently, the legal context's economic analysis of cyber risk for financial institutions entails a comprehensive investigation of the direct and indirect expenses linked to cyberthreats as well as various strategies for mitigating such costs. In globalized world, financial institutions must constantly adapt and invest to protect their reputation and financial viability due to the ever-evolving nature of cyber threats. In this way from the lens of economics we can say that cybercrimes and attacks are market failures which cause huge cost to the society; that can be mitigated by investments in cyber security. Such investments lead positive externalities to the society and exhibit characteristics of public good. Laws and legal framework can play a conducive role to correct market failure in ensuring cyber security. Hence there is justification for discussing the economic analysis of cyber risk for financial institutions in the legal landscape. In addition to this, intersection of law and economics of cyber security is considered to be as a fertile ground for contributions to cyber security. Given the complexity and prevalence of cyber risks in the digital era, financial institutions must undertake an economic analysis of cyber risk. However, little research is done on economic analysis of cyber risk but relatively there are very few research on the role of law and legal institutions in the economics of cyber security. Our research was carried out with the objective of developing a novel cybersecurity risk measure, describing the numerous cyberattack patterns that are specific to each industry, as well as the strategies that can be put in place to ensure an efficient response and recovery from any attacks.

## 3. REVIEW OF LITERATURE

Bank risks are multifaceted, and system errors, frauds, legal suits, and operation disruptions are just some of the hazards that have historically been associated with operational failures in the banking sector. These dangers have always existed in the banking industry. According to the FDIC's article, one of the great challenges in systematically managing these types of risks is that operational losses can be quite diverse in their nature and highly unpredictable in their overall financial impact.[2] The conventional banking tools used[1] to counteract operational risks are not

[2] Operational risk management: an evolving discipline, FDIC (Mar. 12, 2024, 13.55PM) https://www.fdic.gov/regulations/examinations/supervisory/insights/sisum06/sisummer2006-article01.html

enough with the evolving complexity in the finance industry. Operational risk management has grown as a discipline to become of paramount importance with several large operational losses and a changing capital regime in recent years.

When Basel I was adopted in 1988, it lacked a charge specifically for operational risk. It could be argued that operational risk and other risks were implicitly accounted for in the calibration of the minimum ratio thresholds for the various Prompt Correction Action categories, but they are not considered in determining a bank's capital ratios.[3] With increase in the number and amount of operational losses in financial institutions, the need for a fundamental strengthening of the existing framework had become apparent. Thus, the Basel II accord was proposed, incorporating operational risk into regulatory capital, and the Basel Committee for Banking Supervision established the following definition:

*"Operational risk is defined as the risk of loss resulting from inadequate or failed internal processes, people, and systems or from external events".*[4]

Under this framework, firms (both mandatory and opt-in) were required to include an operational risk charge in their risk-weighted assets calculation alongside credit risk and market risk charges.[5] This led to operation risk exposure for a firm, directly affecting its risk-based capital ratio. Following are the three different approaches to determining operating risk capital charges laid forth in the Basel II accord, with increasing levels of sophistication and risk sensitivity between them: Basic Indicator Approach (BIA); Standardized Approach (SA); and Advanced Measurement Approach (AMA). Under the BIA, banks simply have to keep in the form of capital at least 15% of their revenues, while in the SMA calculation, this percentage is not fixed at 15% but varies according to the different business lines. The AMA applies external and internal data to value-at-risk methods that have to be validated by the supervisory authority.[6]

Further, the Basel Committee has identified seven operational risk event types: internal fraud, external fraud, employment practices and workplace safety, clients, products, and business practices; damage to physical assets; business disruption and system failures; execution, delivery,

[hereinafter "Operational Risk, FDIC"].

[3] *Id.*

[4] Basel committee on banking supervision, *Principles for Sound Liquidity Risk Management and Supervision (September 2008),* https://www.bis.org/publ/bcbs144.html (last visited March 13, 2024).

[5] *Id.*

[6] Basel Committee on Banking Supervision, *Basel II: International Convergence of Capital Measurement and Capital Standards: a Revised Framework* (June 2004) http://www. bis. org/publ/bcbs.html (last visited March 13, 2024).

and process management.[7] These are considered Level I loss categories, which are generally used by many studies while conducting empirical analysis. Moreover, Basel II also provides a subdivision of each loss category into further event types (Level II), which studies[8] also consider as a proxy for cyber-related events.

During 2008 and the years that followed, new understanding was obtained on the importance of operational risk management to the banking industry as well as the most effective strategy to manage these risks. It put forth the weaknesses of the banking sector, which had too much leverage and inadequate liquidity buffers to cover systematic risks that are derived from huge credit losses and were accompanied by poor governance and risk management.[9] According to Berger's research, operational risk at big bank-holding businesses in the United States is empirically linked in a favorable way to traditional metrics of financial systemic risk.[10] The great financial crisis thus led to the formulation of the Basel III accord, which streamlines the operational risk framework by proposing AMA and the existing three measuring strategies to be replaced by a single, risk-sensitive, standardized measurement strategy (SMA).[11]

In response to more risks rising from evolving bank operating models, a BCG article[12] presents increased spending on OR (operational risk) management by banks by more than 50% since 2010. However, the effectiveness of these investments by the boards and executive teams seems obscure. Further, the article lays down some steps for institutions to help them build a leading operational risk program that involves creating clarity around OR goals, addressing critical obstacles to achieving the bank's OR goals, and building a set of OR competencies.

Aldasoro et al. (2020)[13] observe a decrease in operational losses in recent years after a sharp

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[7] Basel committee on banking supervision, *QIS 2 - Operational Risk Loss Data (May 2001)* https://www.bis.org/bcbs/qisoprisknote.pdf (last visited March 13, 2024).

[8] Operational Risk, FDIC, *supra* at 2; Aldasoro, I., Gambacorta, L., Giudici, P., & Leach, T., *Operational and cyber risks in the financial sector*, BIS Working Paper No. 2020/840 (2020). [hereinafter "Aldasoro"].

[9] Abdullah Ahmed Aloqad et al., Operational Risk Management in Financial Institutions: An Overview, 8(2) Business and Economic Research (2008).

[10] Bergera, A. N., Curtib, F., Mihovb, A., & Sedunovc, J. (2018). Operational Risk is More Systemic than You Think: Evidence from US Bank Holding Companies. Allen N. Berger et al., *Operational Risk is More Systemic than You Think: Evidence from US Bank Holding Companies,* Journal of Banking & Finance (2021).

[11] Penikas, H., *History of banking regulation as developed by the Basel Committee on Banking Supervision 1974-2014*. Banco de Espana 1, 9-47 (2015), https://www.semanticscholar.org/paper/History-of-Banking-Regulation-as-Developed-by-the-Penikas/740846b42fe110a77d17e3ad9345e93b247e8e9d.

[12] Bickford, J. K., Grüter, M. D., Le Boulay, G., Martin, D., & O'Malley, B., *The five practices that set operational risk leaders apart*, BCG (Mar 11, 2024, 4.24 PM) https://www.bcg.com/publications/2016/financial-institutions-operations-five-practices-operational-risk-leaders-apart. [hereinafter "Bickford"]

[13] Aldasoro, *supra* note at 8.

increase after the global crisis in 2008. The study conducts a cyber incident-level cross-country investigation to record the evolution and characteristics of operational risk in financial institutions worldwide. This study contributes to the current body of research by conducting an analysis on the interdependencies of the macroeconomic variables and operational risks involved. In order to accomplish this, it complements the data on operational risk with data from other sources. This data demonstrates that bigger operational losses occur following booms in the business cycle and favorable monetary policy. The paper puts forward evidence that, on average, operational losses take more than a year to be discovered and recognized in the books. Also, it finds heterogeneity in the time of discovery and recognition of losses and states the reason for that to be inconsistency in the implementation of the Basel framework across regions.

Cyber risks can be viewed as a subset of operational risks. When it comes to the regulation of cyber risk in the banking industry, Kashyap and Wetherilt (2019) present some concepts that regulators should take into consideration. In addition, the Basel Committee has developed regulations for financial institutions concerning the best practices for managing cyber risk. In March 2017, the G20 Finance Ministers and Central Bank Governors noted that "the malicious use of information and communication technologies (ICT) could disrupt financial services crucial to both national and international financial systems, undermine security and confidence, and endanger financial stability".[14]

In addition, Aldasoro et al. (2020) present an estimate of losses caused by cyber events. They do this by developing a substitute for cybercrimes based on the classification of various instances in the ORX database.[15]

According to the findings of the article, although cyber losses make up a relatively insignificant portion of total operational losses, they are nonetheless responsible for a sizeable portion of the total value that is at risk.

According to a cross-industry study conducted by Romanosky, S. (2016), 51% of the recurrent victim firms of cyber attacks belong to the finance and insurance sectors.[16] The study also contends that despite the fact that businesses in the financial sector are subject to stringent

[14] G20 Information Centre, http://www.g20.utoronto.ca/2017/170318-finance-en.html (last visited at Mar 13, 2024).
[15] Bickford *supra* at, 12.
[16] Romanosky S., *Examining the costs and causes of cyber incidents*, 2(2) JOURNAL OF CYBERSECURITY 121-135, (2016). [hereinafter "Romanosky"].

regulations regarding the controls they must implement to ensure data security, these businesses do not appear to be able to withstand cybercrime or minimize the losses in a monetarily superior manner compared to businesses in other industries. However, a limitation to this argument is that the study doesn't take into account how severe the attacks were that were waged against the companies in the business. Further, the study demonstrates that the total expenditures of the breaches only account for 0.4% of the company's revenues, which is a substantially lower percentage than the losses that are incurred as a result of other factors such as fraud, theft, corruption, or bad debt.[17] This lends credence to the idea that public issues concerning the rising frequencies of cybersecurity incidents and law suits may be exaggerated in comparison to the relatively little financial consequences that these occurrences have on the companies that are affected by them.

Bouveret, A. (2018)[18] recognizes cyber risk as one of the primary threats to financial stability by documenting different types of cyber attacks on financial institutions around the world and identifying their patterns, while also presenting a quantitative framework to assess these risks. The paper outlines the three factors that make financial institutions more vulnerable to cyber risks - high threat levels due to proxy organizations[19] and monitoring of communications carried out by unauthorised persons, increased opportunities for malicious activity on the internet because of dependencies on densely interconnected networks; potentially significant repercussions as a result of these accidents due to the immaterial nature of financial activity, which is primarily dependent on technological advancements. Further, it presents an empirical analysis yielding estimates and distribution of aggregate financial system losses due to cyber-attacks. The study analyzes ORX News data on cyberattacks to assess immediately incurred financial losses; nonetheless, damage to the firm's reputation due to a cyber incident is not addressed because it is customarily omitted from the risk disclosure and then adjusted for inflation to make it comparable across time. A primary limitation of this framework was the absence of complete data and differences in the definition of cyber risks across countries. An article by McKinsey also mentions that the distinguishing definitions of the roles of the operational-risk function and other oversight

[17] *Id.*
[18] Bouveret, A., Cyber risk for the financial sector: A framework for quantitative assessment. IMF Working Paper No. 2018/143 (2018).
[19] Kopp, E., L. Kaffenberger, C. Wilson, *Cyber Risk, Market Failures, and Financial Stability*, IMF Working Paper No. 2017/185 (2017).

groups—especially compliance, financial crime, cyber risk, and IT risk—have been fluid. But this constraint has been lifted in recent years with granular data and measurement on operational processes, employee activity, customer feedback, and other sources of insight widely available.

## 4. DATA AND METHODOLOGY

### 4.1 Constructing Cyber Security Risk Measure (US-listed firms)

As businesses have become more reliant on IT infrastructure, the threat posed by cybercriminals has grown in tandem. Companies in the US are obligated by the SEC Regulations to disclose the impact on their operations posed by cybersecurity risk in the "Item 1A. Risk Factors" section of their 10-Ks. The SEC published explicit rules in 2011 and 2018 requiring public businesses to inform their investors in a timely, comprehensive, and accurate manner about significant cybersecurity risks and incidents.[20] The guidelines apply to both firms that have been attacked and those that face major cybersecurity threats but have not yet been attacked. To draw a textual analysis of the cyber-related incidents, we used Python to download every 10-K form filing from SEC Edgar[3], except revised papers, and filter the cybersecurity risk disclosures from "Item 1A. Risk Factors". Further, it is implicit that the extracted information will have terms representing cybersecurity risk directly as well as indirectly. So, in the first phase of data processing, we develop and deploy a list of terms that directly represent cybersecurity risk. We then look for other relevant or irrelevant keywords within the same sentence to decrease the noise caused by the key terms and phrases in the disclosures that are unrelated to the risk associated with cybersecurity. Companies may address their security precautions, confirmed data disclosures, and the effects a cyberattack could have in indirect references. We then construct a new list of oblique keywords and phrases to locate the relevant lines, classified based on the potential legal and financial impacts. Organizations usually mention explicit cyber risk mitigation measures, and discuss the risk associated with a potential cyber attack along with its cybersecurity risk exposure in cybersecurity risk disclosures. Moreover, the information included in these disclosures fails to account for firm-specific,

[20] U.S. Securities and Exchange Commission, https://www.sec.gov/news/public-statement/statement-stein-2018-02-21 (last visited Oct 13, 2024); U.S. Securities and Exchange Commission, https://www.sec.gov/divisions/corpfin/guidance/cfguidance-topic2.html (last visited Oct 13, 2024).

nonsystematic risk, which financial markets may not have the ability to value. As a result, constructing a measure of cybersecurity risk at the business level is challenging, and thus we constructed a sample that only included companies that had suffered a severe cyberattack. In order to measure vulnerability to cyberattacks, we plan to estimate how closely each company's disclosure of cybersecurity risk resembles those of companies in the constructed sample, which also allows us to focus.

We used the extracted textual information to build the cybersecurity risk indicator. The metric considers how closely each company's disclosure of cybersecurity risk matches previous disclosures by companies in our training sample. It is anticipated that companies whose perceived risk and its mitigation employ comparable strategies are similarly susceptible to cyberattacks. We used separate word vectors to store the text rather than the actual words themselves after removing words that are irrelevant to our analysis (like stopwords, nouns, and pronouns). We then use this vector of 4,120 words to calculate the degree of similarity between any two 10-K filings by measuring the number of times each keyword occurs in the text.

Next, we compute the most common similarity measuring metrics, Jaccard and Cosine similarity, for each year for every company with all $N_{t-1}$ disclosures of companies that were hit by cyberattacks in the year leading up to the reporting date for that particular firm and year in our training sample.

Jaccard similarity is calculated by dividing the intersection of two vectors by their union.

$$\text{Jaccard Similarity} = \frac{A \cap B}{A \cup B} \qquad \text{----- 25]}$$

Cosine similarity is a measure of how closely two vectors are aligned, based on the cosine of the angle between them. This is calculated as:[21]

$$\text{Cosine Similarity} = \frac{A \cdot B}{||A||\,||B||} = \frac{\sum_{i=1}^{n} A_i B_i}{\sqrt{\sum_{i=1}^{n} A_i^2}\sqrt{\sum_{i=1}^{n} B_i^2}}$$

The significant difference between the two-similarity metrics is that Jaccard similarity accounts

[21] Sanket Gupta, *Overview of Text Similarity Metrics in Python*, TOWARDS DATA SCIENCE (Mar 11, 2024, 12.08 PM) https://towardsdatascience.com/overview-of-text-similarity-metrics/.

only for unique words in the word vector, while the cosine similarity method considers the total length of the word vector. Thus, Jaccard serves as a good measure where we do not consider repetition of words, while cosine similarity accounts for the duplication.

$$\text{Cybersecurity Risk Measure (i, t)} = \sum_{n=1}^{N} \frac{Cosine\ Similarity\ (i,n,t)}{N_{t-1}}$$

Similarity values for the Cosine and Jaccard methods are in the set [0, 1], with higher scores indicating a closer similarity in the disclosures. Since we do want to consider the repetition of the words in the similarity metric, we characterize the level of cybersecurity risk for each firm and year as the average cosine similarity across all $N_{t-1}$ similarities as shown above.

### 4.2 Descriptive Cyber Loss Data for Cross Country Analysis

Advisen, a for-profit American firm that compiles and redistributes loss and event data to the commercial insurance sector on a wide variety of corporate loss types, has compiled a dataset of cyber occurrences.[22] The cyber loss data offered by Advisen presents a historical perspective on more than 90,000 cyber events, which include conflict occurrences, and was compiled using trustworthy and publicly verified sources. Each occurrence has been traced back to its parent business and possesses one or more of the following characteristics: case type, its status, source and type of loss, loss amount, and details of the affected company.[23]

Factiva was used to verify the cyber occurrences and narrow them down to those that were covered by major news articles throughout the world.

## 5. RESULTS AND DISCUSSION

### 5.1 Cybersecurity risk Measure for US-listed Financial Firms

As a result of growing public awareness of the dangers posed by cyber incidents, it can be seen that leaders and regulators around the globe have taken measures to reduce cybersecurity risks at

[22] Romanosky, *supra* at 17.
[23] Advisen Limited, https://www.advisenltd.com/data/cyber-loss-data/ (last visited Mar 10, 9.58 PM).

financial firms, such as improving resilience capabilities and formulating policies for impactful recovery and response from cyberattacks. Furthermore, it is not wrong to anticipate that firms with greater cybersecurity risk exposure will take concrete measures to actively manage that risk, and buying cyber insurance is one of those measures. Thus, in our textual analysis, we actively searched the word "insurance" and found a significant share of 9.24% of all the companies collectively in our sample. We also validated our assumption by verifying that approximately 77% of the firms had a cybersecurity risk measure (calculation done as described in Section 3.1) way above the median.

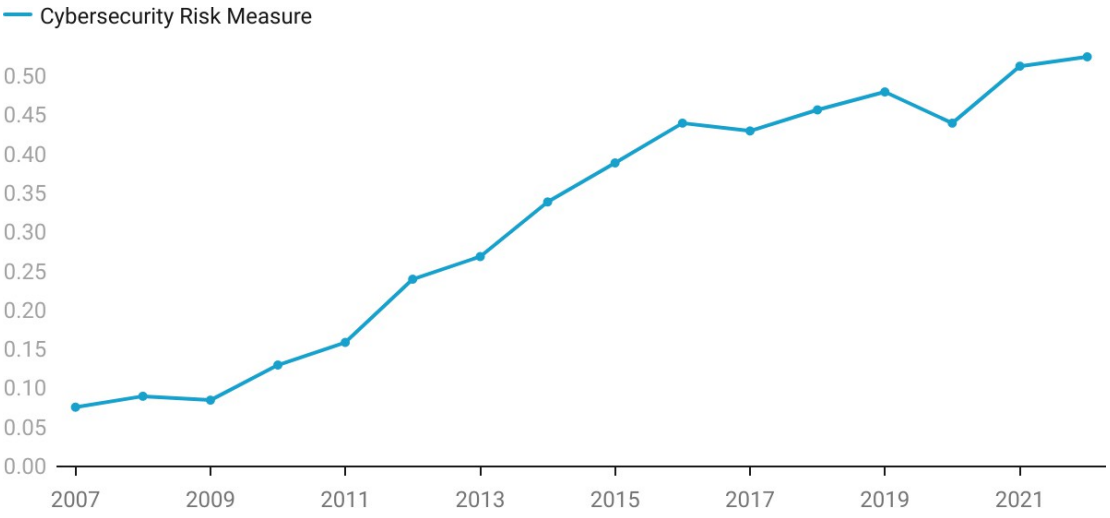



Fig. 1. Time Trend of Cybersecurity Risk Meaure (US-listed financial firms).
Source: Author's construction.

The accompanying chart (Fig. 1) presents the yearly trend of the constructed cybersecurity risk measure for the financial firms listed in the US. Positive trends over time are evident from the figure, with a sharp rise after 2011. This is because the SEC asked US firms to disclose their cyber risk exposures in 2011. Additionally, in the same year, 51.23% of the firms showed no cybersecurity risk, while only 11.95% of them did in 2021. Increased cyber threats during this time period can be traced back to the several successful cyberattacks that have been launched against publicly traded companies. A positive correlation of 0.83 between our measure and the annual cyberattacks percentage suggests that our measure's time-series features correlate closely to the count of cyber.

### 5.2 Cross-Industry Analysis (US-listed firms)

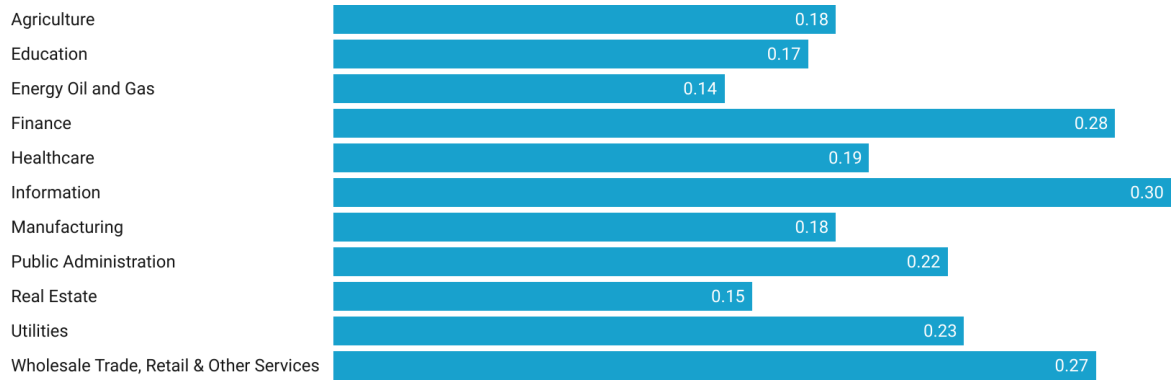



Fig. 2. Cross-industry analysis of Cybersecurity Risk Measure (US-listed financial firms). Source: Author's construction.

The above figure presents the calculated cybersecurity risk measure for the US-listed firms, categorized and averaged on the basis of the industry they belong to. It is evident that the finance and information industry ranks top across industries. Further, after analyzing the data points over the years, we find that the IT, retail, and financial sectors have been representing the greatest risk over the years, whilst the health and educational services sectors have some of the lowest risks. The results are also consistent with the Advisen data, which comprises the number of cyber attacks and data breaches, where the finance industry reported the highest number of cybercrimes among industries, along with the manufacturing and education sectors. This might be because of their shared reliance on IT; all of these sectors are particularly susceptible to cybercrime. The sophistication of cybercrimes as well as firms' exposure to this risk are rising, and it can be inferred that businesses in sectors that are more dependent on IT are more vulnerable to cyberattacks.

### 5.3 Identifying Patterns of Cyber Attacks

This section talks about the focus areas of cyber security incidents and puts forth a breakdown of around 5,000 verified cyber incidents and data breaches for a better analysis of the parameters involved. Because no two industries are the same, cyber incidents and breaches are classified by

industry. The study is based on the fact that the types of assaults suffered by a specific industry will depend heavily on the infrastructure they rely on, the data they manage, and the manner in which their customers, employees, and other stakeholders engage with them. For example, a huge corporation whose business strategy is based solely on mobile devices and whose consumers use an app on their smartphones will face different dangers than a small mom-and-pop store with no internet presence that uses a point-of-sale provider to manage its systems. Thus, the infrastructure and, conversely, the attack surface determine the risk to a great extent, which cautions people not to jump to conclusions about the security posture solely based on the number of reported breaches or incidents.

Before moving on to the analysis, it is important to realize that despite the close relationship between security incident and breach, they are distinct security terms. A security incident is any lapse in an organization's security measures, while a security breach is when an outsider gains access to otherwise secure areas of an organization and uses that access to commit fraud or expose private information. In many cases, incidents and data breaches go hand in hand, with the majority of breaches occurring after an incident. Consequently, preventing this transition is critically important for the success of a security plan, where it is implicit that organizations with more safeguards in place to stymie or halt an attack have a better security posture. The graphs below (Fig. 3, 4) show trends in cyber-incidents and breach rates, as well as provide an overview of different industries.

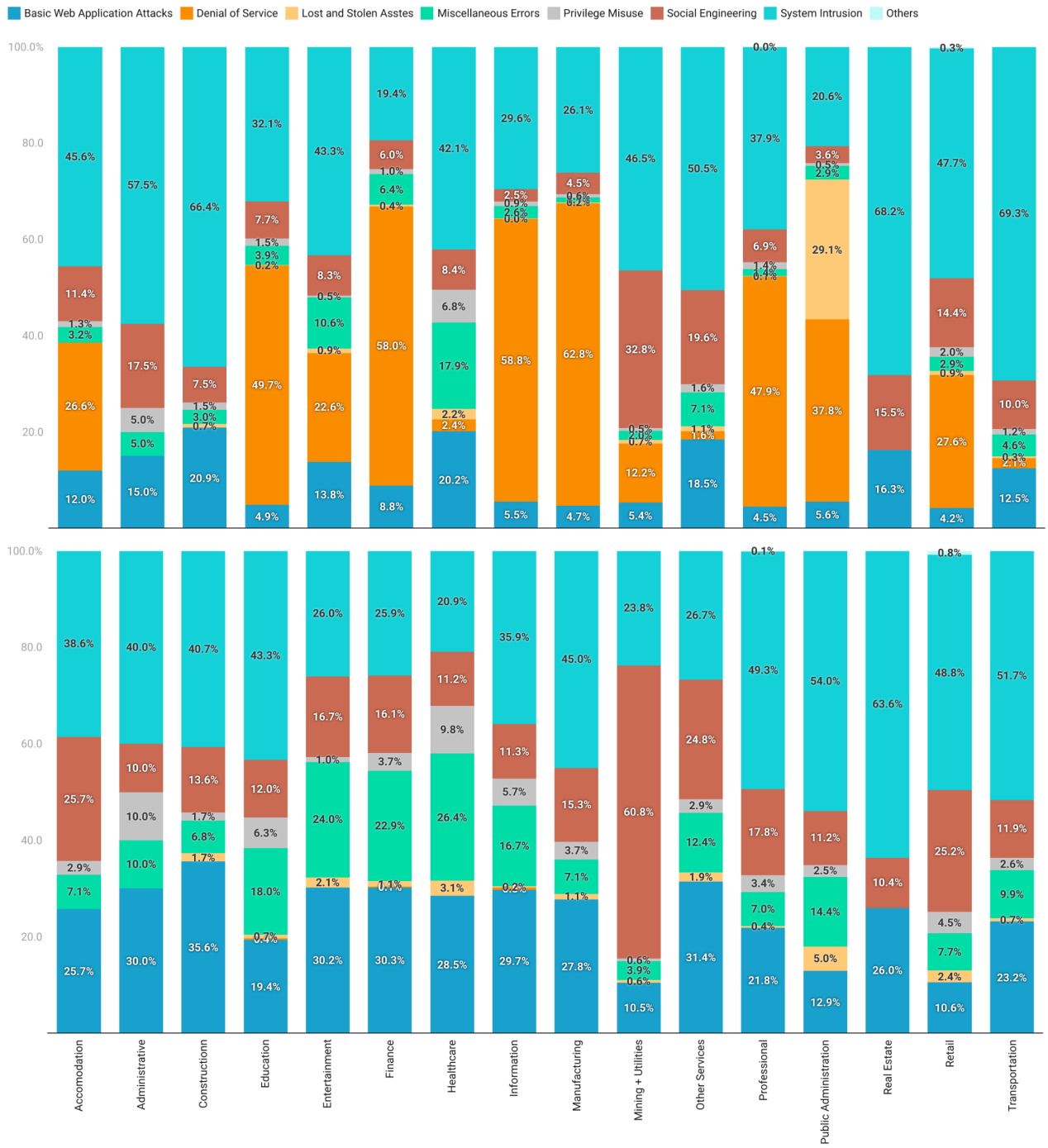



Fig. 3. Patterns of Cyber Incidents Fig. 4. Patterns of Cyber Breaches

Source: Advisen Data, Author's construction.

It is evident from Fig. 3 that basic web application attacks and system intrusions are the top patterns, accounting for 60% to 90% of the cyber-related incidents and breaches across all

industries. Financial institutions are no different except the comparatively higher percentage of miscellaneous errors, commonly as misdelivery of sensitive information to wrong clients, which has been on the rise over the years. A report by the Data Breach Investigations Report 2022 states that they estimate misdelivery to be approximately three times higher in the financial institution vertical than in other industries.[24] The study also boils down system intrusion to two main factors ransomware and DoS attacks; in the finance industry, personal data is compromised approximately three times as often as banking information.[25] The finance industry ranks fourth in terms of the number of the cyber attacks (2007-2022 Q2; *data source*)[26], and continues to be affected by financially (10.57% of incidents and 13.23% of breaches related to cyber security across industries) motivated organised crime, typically via phishing, hacking, and malware attacks.

### 5.4 Cross-Country Analysis

This section examines the world's regions in accordance with the United Nations M49 standards[4], and the data on the incidents and breaches used (Fig. 7) in the study comes from the following regions:

[24] Mansfield-Devine S, *Verizon: Data Breach Investigations Report*, (2022) https://www.verizon.com/business/resources/reports/dbir/.
[25] Id.
[26] *supra* at 24.

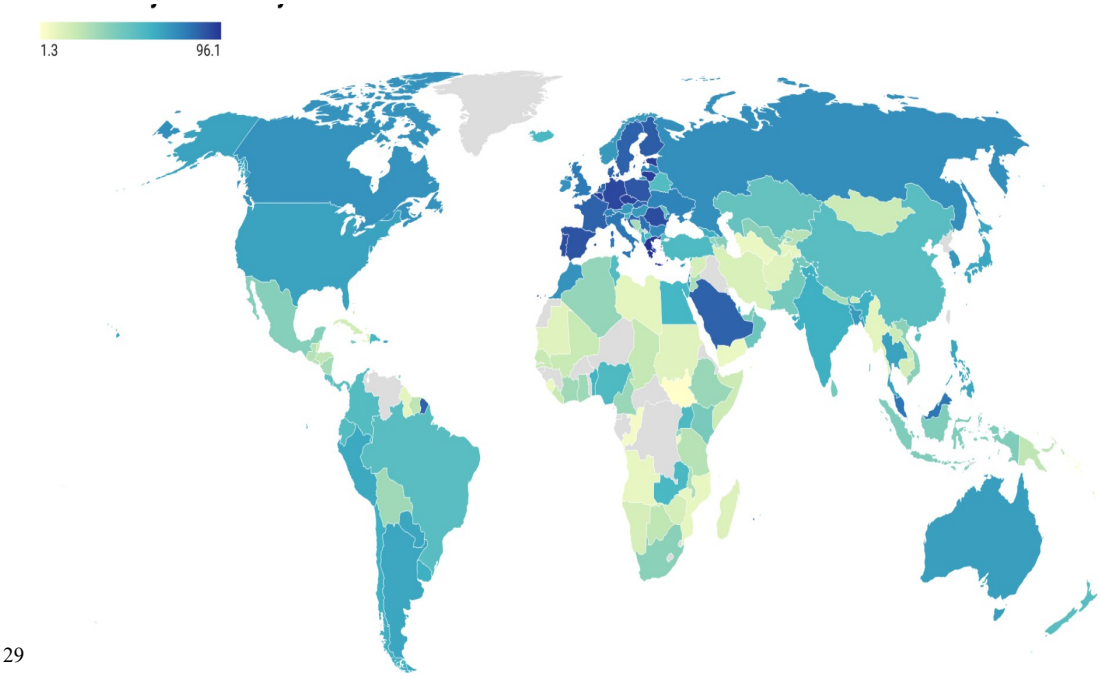
**Table 1. World's Regions (United Nations M49 standards)**

| World Region | Countries |
|---|---|
| Asia and the Pacific **(APAC)** | Southern Asia, South-Eastern Asia, Central Asia, Eastern Asia, and Oceania |
| Europe, Middle East and Africa (**EMEA)** | North Africa, Europe and Northern Asia and Western Asia |
| Latin America and Caribbean (**LAC)** | South America, Central America and Caribbean |
| Northern America (**NA)** | Majorly United States and Canada |

Table 1: World's Regions (United Nations M49 Standards)[27]

The map below (Fig. 5) demonstrates the variation in cybersecurity practices among nations, plotted with a global live index, the National Cyber Security Index, which measures countries' cyber security capacities that are implemented by their central governments. In other words, it measures the preparedness of countries to prevent cyber threats and manage cyber incidents.[28] The index is based on a variety of indicators: cyber security policy, education, and professional development; protection of digital and essential services; personal data; e-identification and trust services; cyber incident response; and cyber crisis management.

[27]United Nations Statistics Division, *Methodology: Standard country or Area codes for area codes (M49)*, https://unstats.un.org/unsd/methodology/m49/
[28] National Cyber Security Index, https://ncsi.ega.ee/methodology/ (last visited Mar 10, 2024).




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Fig. 5. National Cyber Security Index.[30]

From the above map of the world, it is evident that the NCSI is highest in the western part of Europe, where Spain, the Czech Republic, France, Portugal, Poland, Belgium, and many other countries have NCSI values of more than 85. Accompanying these countries are French Guiana, which is located on the northeastern coast of South America; Saudi Arabia in western Asia; and Malaysia in southeastern Asia. On the other hand, a major part of Northern Europe and Northern America have the index values slightly above the median, while the countries below the median include most parts of northern and southern Africa along with some parts of Asia: Mongolia in eastern Asia; Myanmar, Laos, and Cambodia in south-eastern Asia; and Turkmenistan, Tajikistan, Afghanistan, and Iran in southern Asia.

Even though NCSI is a descriptive indicator of a country's cyber security development, it does not present a complete picture. A limitation to this measure is that it fails to account for the development of the IT infrastructure of a country, which plays a significant role in the scale and sophistication of cyber attacks. Thus, we calculate a development index for each country based on

[29] *Id.*
[30] National Cyber Security Interest, https://ncsi.ega.ee/ncsi-index/

the ICT Development Index[5] and Networked Readiness Index[6] indices.

$$\text{Development Index} = \left(\frac{NRI + IDI}{2}\right) \times 100$$

The difference between NCSI and the development index presents evidence of a country's cyber security development in accordance with its IT infrastructure development. The below map is plotted with the difference of the two indices, and the analysis differs vividly. Countries in the western Europe still presents more development in cyber security area than than its digital counterpart. On the other hand, the parts of northern and southern Africa, which were earlier on the lower end of the range of NCSI, show a positive measure when
digital development is considered. Moreover, India, Pakistan, and Bangladesh also depict that their cyber security is way ahead of the country's IT development. Libya in North Africa; Iran and Mongolia in Asia; Suriname and Guyana in South America remain on the lower range of the index, indicating poor cyber development.

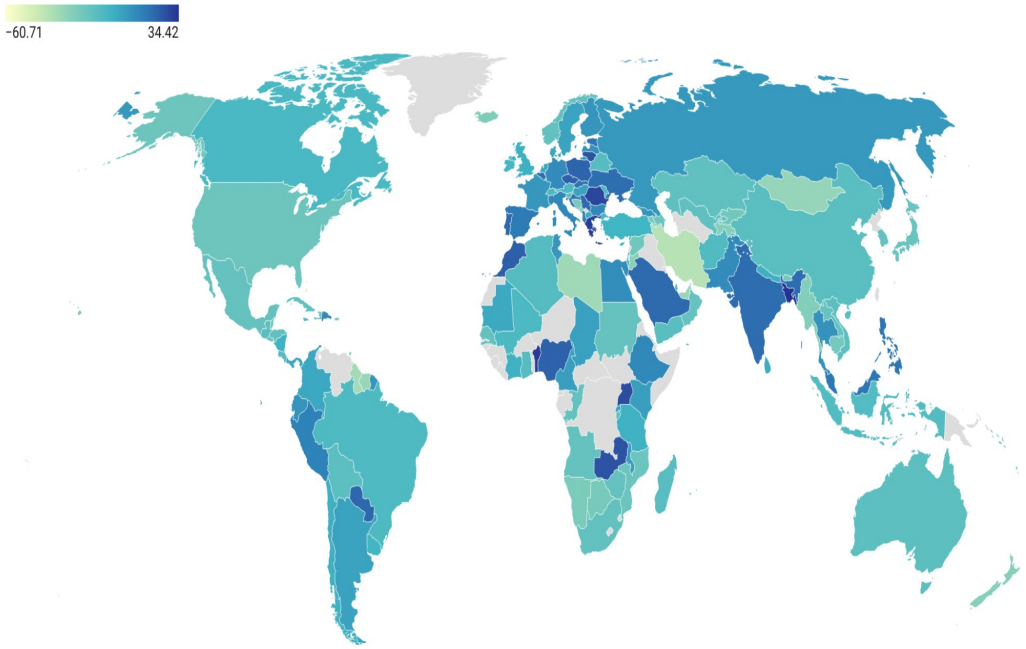



Fig. 6. Development Index.

Source: Author's construction[31].

[31] *Id.*

### 5.5 Identifying Patterns of Cyber Attacks

Our analysis of the Advisen data revealed some patterns in cyber security incidents and breaches, which are depicted in the charts below.

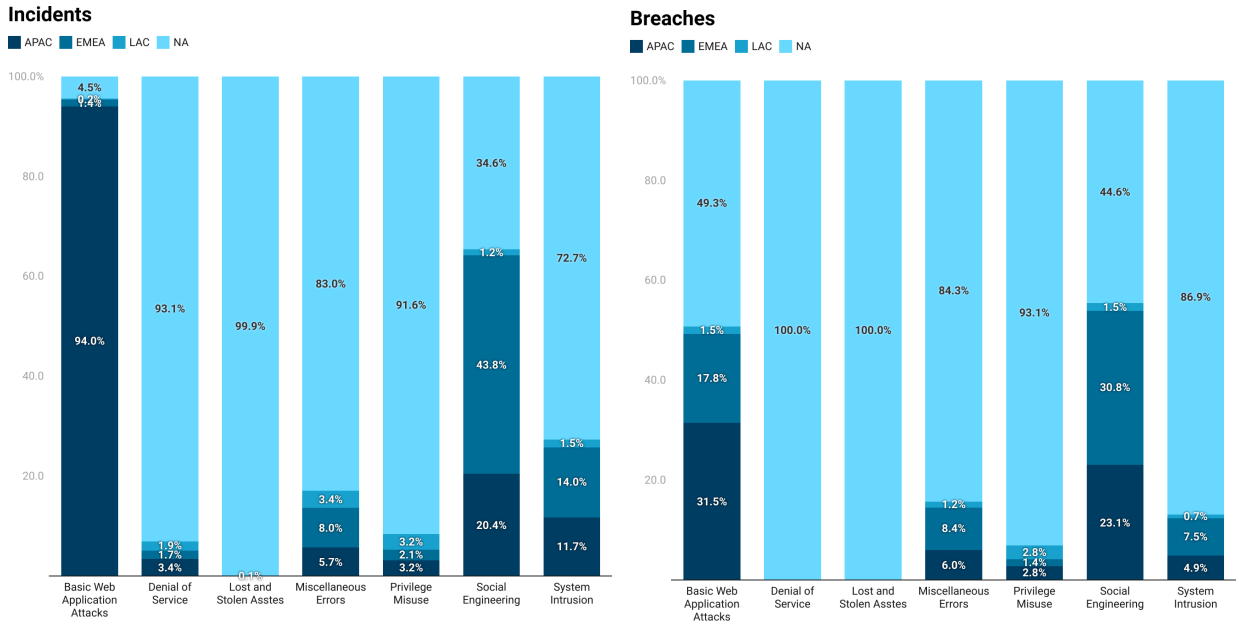



Fig. 7. Patterns of Cyber Incidents and Breaches (Cross-UN Regions).

Source: Advisen data, Author's construction.

There are relatively fewer countries in Asia with no proper records of cyberattacks than in Africa and Northern America. It is quite evident that APAC and EMEA mostly face basic web application attacks along with social engineering and system intrusions, while LAC suffers from miscellaneous errors that primarily take place in the finance industry. Even though around 94% of the basic web application attack incidents happen in the APAC region, rarely do they convert into a cyber security breach (<30%). An important point to note here is that even though Northern America has a good NSCI, it faces the highest number of cyber-related incidents and breaches. This indicates a very high bias in the database, which is due to robust breach disclosure laws in North America and better record coverage in the region. Further, a report by the DBIR team mentions that around 90% of the cyber attacks have a financial motive, which leads us to find a quantitative measure for the cyber risk involved in the banking industry across countries.

**5.6 Risk Insurance**

From the earlier sections, there is no denying that cybercrime is on the rise and financial institutions are frequently targeted by cybercriminals. According to an article published by the Mercator Advisory Group, ransomware attacks on the banking industry increased by 1,382% year-over-year in the first half of 2021.[32] Cybercriminals view banks as lucrative because they can earn money through a variety of methods, such as the sale of customer data, the theft of credit card numbers, and the commission of fraud. According to IBM's 2022 Cost of a Data Breach report,[33] the financial sector has the second highest average total cost of a data breach in 2022, averaging $5.97 million (much more than the average cost of other industries, and thus the report includes the financial services vertical under critical infrastructure organizations). It also finds that about 28% of the financial firms experienced a destructive or ransomware attack, while 17% experienced a breach because of a business partner being compromised.[34] Thus, these institutions also tend to employ increasingly sophisticated security measures to safeguard their high-value assets in response. However, there is another aspect to eliminating the risk: the question for institutions is not "if" they will be victimized by cybercrime, but "when".[35] Immediately following a data breach, businesses often find themselves in a flurry of activity as they try to assess the situation, determine what information was compromised, identify who gained access to it, determine if any individuals are at risk, and take corrective measures as soon as possible. In a situation that is already stressful, organizations must be ready to fulfill their legal responsibilities to victim clients and the regulatory bodies, which can be challenging. This can be systematically handled when the businesses are cyber-risk insured. In the event of a data breach involving sensitive information or a disruption to an organization's secured network, cyber insurance can help cover the costs associated with repairing the damage and restoring service. Although it does not prevent a hack itself, it does provide assistance before, during, and after one.[36] Insurers can assist businesses in assessing their

[32] Kimberly Johnson, *The Impact of Cyber Insurance on the Financial Sector*, PAYMENTS JOURNAL (Mar 11, 2024, 11:24 AM), https://www.paymentsjournal.com/the-impact-of-cyber-insurance-on-the-financial-sector/ [hereinafter "Kimberly"]
[33] IBM, https://www.ibm.com/downloads/cas/3R8N1DZJ (last visited Mar. 11, 2024).
[34] *Id.*
[35] Tyler Anders, *The Ever Increasing Threat of a Data Breach in 2021*, JD SUPRA (Mar 11, 2024, 11:22 AM) https://www.jdsupra.com/legalnews/not-if-but-when-the-ever-increasing-8569092/
[36] Kimberley, *supra* note 30

current risk profile. As a result of the unprecedented increase in risk since the pandemic's start, cyber premiums increased by more than 25 percent in Q2 of 2021.

Even though insurance has helped reduce the financial impact of cyberattacks, it has also led to questions and disagreements between financial institutions and their insurers when an attack leads to multiple types of losses. The majority of the world's insurance markets cover businesses, their assets, and their legal obligations. Unfortunately, cyber risk is not typically covered by insurance policies because they focus instead on protecting physical assets. Moreover, the relevance of cyber incidents to the terms of a contract may also be unclear. Since

the judge's decision and legal fees are clouded by this uncertainty, insurers face a greater financial risk. Accordingly, insurance companies work to clarify the terms of contracts in two ways. The insurer may revise its coverage either by explicitly excluding such risks from its standard policies and instead offering new, stand-alone policies or by including such risks and charging higher premiums. The American market is significantly more developed than its equivalent on the European continent. This is largely attributable to the fact that, for a number of years, the United States has enforced stringent disclosure rules for cyber attacks and that those who violate these rules face stiff consequences. When it comes to insurability challenges with cyber risk, Biener et al. (2015) identify three significant points. Firstly, there is no guarantee that losses will be independent and predictable, so risk pooling may not always be effective. Informational inequities are another major problem. In the wake of a devastating cyberattack, businesses are more likely to purchase insurance, leading to adverse selection as a result of the heightened competition among insurers.[37] Insurers mitigate the negative effects of selection via screening methods like upfront audits, underwriting questionnaires, and signaling. Lastly, there is the possibility of moral hazard, which occurs when policyholders alter their behavior as a result of having insurance.[38]

Given the policy's lengthy exclusions and the ever-changing nature of internet hazards, the actual coverage provided by the insurance plan is not quite apparent. Furthermore, there is no industry-wide terminology for insurance, making it a herculean task to compare different insurance policies. The insurance market has already begun seeing entrants that aim at collecting data. With an increased capacity and rise in the number of competitors in the insurance market, reduced

[37] Shackelford, S. J., *Should your firm invest in cyber risk insurance*?, 55(4) BUSINESS HORIZONS, 349-356, (2012).
[38] Eling, M., & Schnell, W, *What do we know about cyber risk and cyber risk insurance?,* THE JOURNAL OF RISK FINANCE 1526 (2016).

insurance rates are implicit. Moreover, this will lead to uniform market policies and product standardization. Conclusively, it is also crucial to focus on establishing industry-wide definitions and standards associated with cyber risk insurance.

## 6. FUTURE WORK

Due to the lack of a global quantitative assessment of cyber risk for the banking sector, we propose to construct a cybersecurity risk measure based on media coverage. The idea is to perform a textual analysis (similar to the one performed for the US) of verified newswires and articles that talk about cyber risks for each country. Furthermore, an approximate indirect measure can be calculated using the following approach:

$$\frac{Number\ of\ articles\ about\ cyber\ risk\ in\ financial\ sector}{Number\ of\ articles\ about\ cyber\ risk\ across\ all\ industries}$$

The aim is to formulate an industry-level cybersecurity risk index that is relative.

## 7. CONCLUSION AND POLICY RECOMMENDATION

Over the past five years, the number of cyberattacks has been increasing at an exponential pace, and specialists in the field of cybersecurity anticipate that by the year 2023, one incident will occur approximately every 11 seconds. Because of security lapses at numerous government organizations, credit bureaus, and large financial institutions, the personally identifiable information of a number of customers has become accessible to the general public. In the past, operational failures in the banking industry have been related to a wide variety of dangers. These risks include, but are not limited to, flaws in the system, fraudulent activity, legal action, and disruptions in the operations of the firm. As a result of a number of severe operational losses and a shifting capital structure, operational risk management has evolved as a discipline and become of the utmost importance. This is due to the fact that operational risk management has become of

the utmost importance. According to the findings of the Basel Committee, the Basel II accord outlines a total of seven possible approaches that might be taken in order to compute the operating risk capital charges. When compared to the sensitivities associated with business risk, the capacity of financial institutions to evaluate and assess cyber risk has not yet reached the level at which it can be consistently monitored. A textual analysis of the US-listed firms' disclosures and available Advisen data on cyber attack incidents were used in this research, with the end goal of developing a novel cybersecurity risk measure that can be applied to publicly traded companies in the United States.

Due to the sophisticated nature of today's cyberattacks, financial institutions must take precautions. Regardless of the fact that certain financial firms had formerly efficiently insured themselves with regard to cyberattacks, they are beginning to look to the commercial industry and the skills of analysts to aid them in better managing their risks.

To effectively disclose and address cyber-related dangers and occurrences, the following considerations should be taken care of by leaders and regulatory organizations:

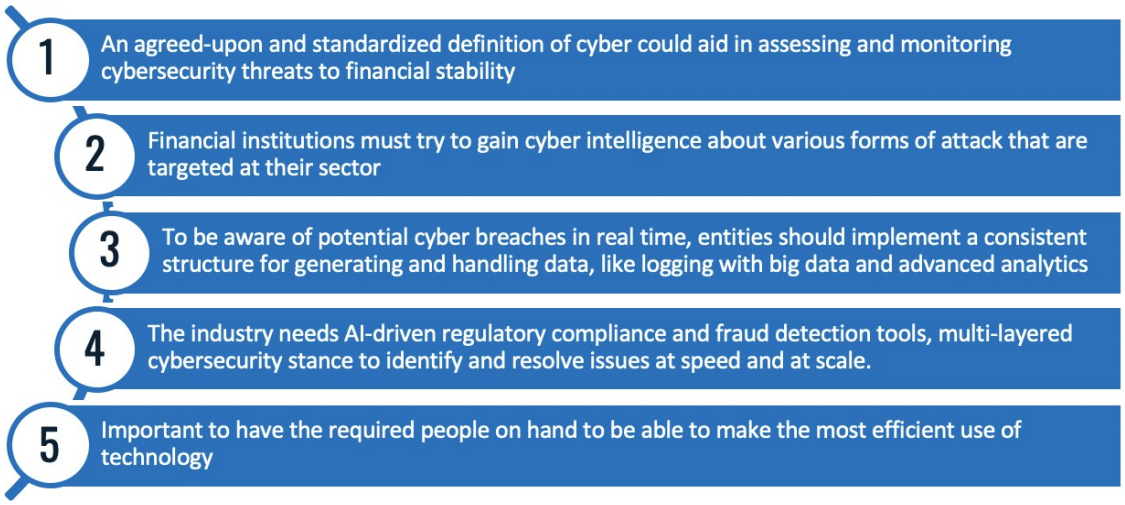



Fig. 8. Recommendations for faster response to and recovery from cyber attacks, as well as better reporting of cybercrimes by the institutions.

Source: Author’s construction

The right corporate culture is just as important as using the relevant tool set when it comes to mitigating cyber risk and putting in place regulations that are necessary. This entails making the protection of sensitive data a priority in each and every department of the company. The development of a robust cybersecurity posture provides visibility into potential risks and assists in maintaining compliance with regulatory requirements.[39]

[39] IBM, https://www.ibm.com/in-en/industries/banking-financial-markets/cyber-security (last visited Mar. 11, 2024).

# ECONOMIC ANALYSIS OF COMMUNITY-BASED INTERVENTIONS IN INDIA'S MENTAL HEALTH LAWS AND POLICY FRAMEWORKS: RESOURCE ALLOCATION AND THE EFFICIENCY

*Sarah*[1]

## ABSTRACT

*Although there has been an increase in the provision of funds for mental health in India, the prevalence of suicide and mental disease remains a significant burden. This study utilizes a law and economic analysis to evaluate the effectiveness of community-based interventions in the mental health ecosystem. The study aims to harmonize laws and policies with community-based viewpoints, bridge existing gaps, and optimize the allocation of resources for efficient interventions. The objective is to provide information for the purpose of implementing policy changes, empowering communities, and improving economic efficiency within the legal and economic systems of India. Significant inquiries are made concerning the capacity of community-based interventions to provide efficient interventions for suicide prevention, and resource allocation for the same.*

***Key words:*** *Mental health, community-based intervention, resource allocation*

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## 1. INTRODUCTION

The global initiatives addressing infectious and chronic diseases have substantially improved life expectancy worldwide, with the average age rising from 52 years in 1960 to around 72 years in 2020. [2]However, these endeavours have not adequately tackled the issue of untimely death caused by suicide and physical health issues linked to mental disorders. Individuals afflicted with mental health disorders suffer from a lower life expectancy, with men encountering an average decline of 10.2 years and women experiencing a fall of 7.3 years.[3] The COVID-19 epidemic has worsened this disparity.[4]

The mental health policy in India has been affected by various international frameworks highlighting the connection between mental health and broader developmental objectives.[5] In these frameworks, the connection between concerns such as poverty and gender justice with mental health is emphasised. Still, the solutions produced from these frameworks do not have practical application in planning, defining targets, and allocating budgets.

In India, a biomedical approach is dominant in mental health policy and planning, even though alternative frameworks exist.[6] These alternative, community-based approaches prioritise the impact of social and structural factors on mental health, culturally rooted practices, historically disadvantaged identities, and user-centric experiences. It is essential to thoroughly analyse the effects of mental health policies to guarantee that they effectively cater to individuals' and communities' varied and situation-specific requirements.

This paper uses tools of law and economics and explores (1) why community-based interventions are most effective. (2) uses the Coase theorem to understand the impact of criminalizing suicide and the effects community-based interventions can have on the same (2) How community-based

[2] Life expectancy at birth, total (2022), https://data.worldbank.org/indicator/SP.DYN.LE00.IN. (last visited Aug. 4, 2023).

[3] Erlangsen, Annette et al., *Cause-specific life-years lost in people with mental disorders: a nationwide, register-based cohort study*, 4,12 LANCET PSYCHIATRY, 937-945 (2017).

[4] Das-Munshi, Jayati et al., *All-cause and cause-specific mortality in people with mental disorders and intellectual disabilities, before and during the COVID-19 pandemic: cohort study*,11 THE LANCET REGIONAL HEALTH, Europe 10028 (2021).

[5] Sax W, Lang C et al., *Global mental health - views from South Asia and beyond in The Movement for Global Mental Health: Critical Views from South and Southeast Asia*, 7-37 AMSTERDAM UNIVERSITY PRESS, NL AMSTERDAM (2021).

[6] Vijayakumar, Lakshmi et al., *The national suicide prevention strategy in India: context and considerations for urgent action*, 9 THE LANCET. PSYCHIATRY, 2 (2022).

interventions have been integrated in Indian Laws and Policies (3) analyses the mental health budget for 2023-2024 from a fiscal federalism viewpoint to understand budget allocation for community-based interventions.

### 1.1 Community-based interventions

Community-based health promotion is a method that primarily emphasises preventive measures while also embracing a comprehensive population-focused viewpoint. According to Blackburn, these are holistic, going

beyond the confines of conventional medical environments and actively engaging community stakeholders, media campaigns, public education efforts and implementing environmental strategies. [7][8]

### 1.2 Economic analysis of community-based interventions.

Pure public goods are non-excludable, non-rivalrous and non-rejectable, making selling them in the market complex. These goods aren't produced for monetary profit and are often government-funded. This structure can lead to the "free rider problem," where individuals use the goods without paying, expecting others to cover the costs. These goods often generate positive externalities, benefiting even non-consumers[9].

Community-based interventions recognise that an individual's behaviour is connected to surroundings.[10] They use an individual's behaviour to impact other individuals and are successful in behavioural improvement.[11] But this also gives rise to moral hazards; people might adopt riskier behaviours, thinking community initiatives will protect them, similar to the “free rider” problem in public goods. Like public goods in economics, community-based health promotion benefits all community members. Such programs aim for broad societal shifts through strategies in varied settings, from workplaces to schools. Central to this approach is Geoffrey Rose's "population

[7]Mittelmark, M B et al., *Realistic outcomes: lessons from community-based research and demonstration programs for the prevention of cardiovascular diseases*, 14,4 JOURNAL OF PUBLIC HEALTH POLICY, 437-62 (1993).
[8] Blackburn, H, *Research and demonstration projects in community cardiovascular disease prevention*, 4 JOURNAL OF PUBLIC HEALTH POLICY (1983).
[9] R A Musgrave, The Theory of Public Finance (McGraw-Hill 1959).
[10] Elder, J P et al., *Community heart health programs: components, rationale, and strategies for effective interventions*, 14 JOURNAL OF PUBLIC HEALTH POLICY, 463-79 (1993).
[11] Schooler C et al., *Synthesis of findings and issues from community prevention trials*, 7 ANN EPIDEMIOL., S54-68 (1997).

strategy," emphasising that small changes across the community can yield significant health benefits, mirroring the widespread benefits of public goods.

The balance between the costs of these programs and their long-term benefits, especially when factoring in potentially risky behaviours by individuals, becomes crucial. Geoffrey Rose argues that subjecting a large population to minor risks could yield more substantial health outcomes than subjecting a smaller group to higher risks.[12] Rose advocates for implementing a "population strategy" instead of a "high-risk strategy," contending that little increase in prevalent risky behaviours can result in significant overall advantages. This idea emphasises the importance of targeting whole communities, including those with little risks, to optimize public health outcomes.[13]

This approach also holds promise for reducing healthcare system costs.[14] Evidence indicates that it would be impractical to assign the job of promoting and preventing mental health solely to mental health practitioners. It is imperative to provide integrated and multidisciplinary services to enhance the scope of available interventions and mitigate the possibility of unfavourable long-term outcomes.

Data from a Stepped Wedge Cluster Randomized Controlled Trial (SW-CRCT) on Atmiyata conducted in 2017-2019 affirmed the effectiveness of community-based interventions. The findings revealed that those under the program intervention are three times more likely to exhibit reduced depression and anxiety symptoms. Preliminary economic evaluations suggest that for every $1 invested, there's a return of $9.35, underscoring its cost-effectiveness.[15] The World Health Organization is among the top 25 global community-based mental health services practices.

Studies on other diseases, like moderate to severe schizophrenia, show that community-based interventions involving supervised community health workers are more effective than facility-only services. Especially in reducing disabilities linked to the condition and in promoting adherence to prescribed medications.[16] The community-based technique used is Assertive Community Treatment (ACT), which is implemented inside the community environment. Research

[12] Rose G., *Sick individuals and sick populations.*, 14 INT. J. EPIDEMIOL, 32-38 (1985).
[13] Rose G., *The Strategy of Preventive Medicine*., NEW YORK, NY. OXFORD UNIVERSITY PRESS, (1992).
[14] Chatterjee, Sudipto et al., *Effectiveness of a community-based intervention for people with schizophrenia and their caregivers in India (COPSI): a randomized controlled trial*, 383 LANCET (LONDON, ENGLAND), 1385-94 (2014).
[15] Atmiyata, *Centre for Mental Health Law & Policy*, https://cmhlp.org/projects/atmiyata/, (Aug 8 2023, 11:06 AM).
[16] Colizzi, Marco et al., *Prevention and early intervention in youth mental health: is it time for a multidisciplinary and trans-diagnostic model for care?*, 14 INTERNATIONAL JOURNAL OF MENTAL HEALTH SYSTEMS, 23 (2020).

demonstrated that ACT resulted in notable improvement in the decreasing symptoms and severity of illness. Improving overall functioning and quality of life for those with mental disorders.

These interventions have also been linked to a significant rise in individuals seeking treatment for depression, which was seen by enhancing mental health literacy and ensuring equitable contact coverage for depression,[17] something that is covered in the National Mental Health Program but awaits implementation.

### 1.3 Efficient Suicide Prevention

A Coasean approach [18]to laws examines the reciprocal effects of externalities and the circumstances in which

these externalities may or may not be bargained away with. To understand the various externalities generated by suicide, we combine this lens with the institutional possibilities frontier framework.[19] In the following analysis, we see a tradeoff between private disorder cost and public dictatorship cost.

'Disorder' is defined as the negative externality imposed on individuals due to a suicide attempt and the behavioural response of others due to a death by suicide. 'Dictatorship' refers to the costs imposed by the government to address the suicide attempt, including the violation of human rights. It includes the loss of economic opportunities but does not include the cost of re-entering the economy.

The 'disorder cost' associated with suicide includes health and behavioural externalities. The 'health externality' in this case includes the death of an individual and the increased vulnerability for the next six months if they survive an attempt[20]. This is extended to the individuals who have lost a loved one to suicide as they are susceptible to experiencing suicidal tendencies, posttraumatic stress disorder (PTSD), continued grieving, and depression.[21] These are negative externalities. The

[17] Shidhaye, Rahul et al., *The effect of VISHRAM, a grass-roots community-based mental health programme, on the treatment gap for depression in rural communities in India: a population-based study*, 4 THE LANCET PSYCHIATRY, 2 (2017).
[18] Coase, R., *The Problem of Social Cost*, 3 JOURNAL OF LAW AND ECONOMICS, 1-44; Reproduced in R. Coase. 1988. *The Firm, the Market and the Law*, UNIVERSITY OF CHICAGO PRESS: CHICAGO.
[19] Djankov S et al., *The new comparative economics*, 31 JOURNAL OF COMPARATIVE ECONOMICS, 595-619 (2003).
[20] Inagaki, Masatoshi et al., *Active contact and follow-up interventions to prevent repeat suicide attempts during high-risk periods among patients admitted to emergency departments for suicidal behaviour: a systematic review and meta-analysis*, 19 BMC. PSYCHIATRY, 44 (2019).
[21] JORDAN, GRIEF AFTER SUICIDE: UNDERSTANDING THE CONSEQUENCES AND CARING FOR THE SURVIVORS 1 (John & McIntosh 2011).

'behavioural externality' is how people respond to the situation this can be either negative or positive.

The 'dictatorship cost' imposed by the government in the Indian context is Section 309 of the Indian Penal Code[22] (IPC) and Section 115 of the Mental Health Care Act[23] (MHCA). Section 309 IPC criminalises the suicide attempt. The interim measure implemented by the MHCA, known as Section 115, reduces its impact and presupposes that an individual contemplating suicide is probably undergoing intense emotional turmoil, underscoring the government's need to furnish mental health assistance and rehabilitation.

With this background, a few policy solutions are possible when dealing with deaths by suicide. The one with the least social cost is the most efficient.

The first is one that only imposes a disorder cost; there can be two possibilities. One is the 'do nothing' response, in which the cost of health externalities keeps increasing; there are no behavioural externalities. In this case, the social cost is high due to negative health externalities. This is unlikely to happen as people are bound to respond. This leads us to the second possibility, in which the 'health externalities' give rise to 'behavioural externalities. If the people's behaviour is supportive, this will decrease the health externality and reduce social costs. But, if the behaviour increases stigma or withdraws support, the health externality will increase the social cost.

The second option is to replace the ambiguity of behavioural externality with a stable dictatorship cost. This can be an effective solution if the solution imposed can decrease the health externalities. Criminalising suicide attempts is an example of this dictatorship cost imposed by governments with the hope that it would deter

individuals from attempting suicide. In the Indian scenario, the dictatorship cost increases the disorder cost instead of reducing it.

After a patient who has made a suicide attempt arrives at a medical facility, the occurrence is documented as both a medical and legal matter under section 309 IPC. The police are notified, and they reach the hospital and contact the family, followed by an interview with the patient. They do not usually press charges against the patient but routinely subject them and their family to persistent harassment and extortion. The lack of explicit instructions under Section 115 of the

[22] Indian Penal Code,1860, § 309, No. 45, Acts of Parliament, 1860 (India).
[23] Mental Healthcare Act, 2017, § 115, No. 10, Acts of Parliament, 2017 (India).

MHCA on approaching someone in that vulnerable state gives rise to difficulties and postponed medical aid. Section 309 functions as an ineffective deterrent, dissuading individuals from obtaining necessary medical help and putting their lives at risk.[24] Resulting in increasing health externalities, rendering the policy solution inefficient. This law should be repealed completely; this will increase help-seeking behaviour, reducing health externalities and reducing social costs. We have seen a positive effect of repealing the law in other jurisdictions like Sri Lanka[25] and the United Kingdom.[26] Doing this won't be the most effective solution, but we will still be in a better place than before.

Replacing the current dictatorship costs with community-based interventions is an efficient solution. We have already witnessed the effectiveness of these interventions above. In this case, if the police officials are sensitised about post-attempt care. As members of the same community, they can act as first responders. This could benefit individuals who live alone, are estranged from their families, or do not have anyone to contact. This will convert the police into an asset in these situations, making them, in a sense, a friend of the last resort. Evidence-based treatments for post-attempt care are proven more cost-effective and result in favourable outcomes for society.[27] Training members of the community will also reduce the stigma. This will also reduce barriers to accessing health facilities. Community members speaking the same language would also reduce the information asymmetry. Engaging the community, health centres, and crisis lines as part of mental health promotion initiatives can enhance resilience and diminish suicidal behaviour.[28] Community interventions have the power to turn the negative behavioural externality into a positive behaviour externality by increasing social support and reducing stigma. This will reduce the social costs, making it the most efficient policy intervention.

## 2. MENTAL HEALTH LAWS AND COMMUNITY-BASED INTERVENTIONS IN INDIA

In response to global initiatives, India launched the National Mental Health Program (NMHP) in

[24] Inagaki, *Supra*,note no 23.
[25] Lew, Bob et al., *Decriminalizing suicide attempt in the 21st century: an examination of suicide rates in countries that penalize suicide, a critical review*, 22 BMC. PSYCHIATRY, 424 (2022).
[26] J. Neeleman *Suicide as a crime in the UK: legal history, international comparisons, and present implications* 94 ACTA PSYCHIATRICA SCANDINAVICA, (1996).
[27]Centre for Mental Health Law and Policy, *Contact Safety Plan* (Aug 10, 2023, 12:23 PM), https://cmhlp.org/projects/contact-and-safety-planning-casp/.
[28] Vijayakumar L, *Suicide prevention: Beyond mental disorder*, 38 INDIAN J. PSYCHOL. MED., 514-6 (2016).

the late 1970s, focusing on accessibility, primary healthcare integration, and community engagement. The vision expanded through the District Mental Health Program (DMHP), [29]emphasizing basic services and integration into general healthcare. The 2017 Mental Healthcare Act (MHCA) reflected a transformative shift towards prioritizing autonomy and dignity for those with mental illnesses.

### 2.1 Integration Challenges in Legal Framework

While the NMHP encouraged community participation, implementation of DMHP leaned towards a biomedical model, particularly emphasizing psychotropic medications.[30] Criticisms of the DMHP include administration, financing, and dominance by one institution, hindering creativity and integration of alternative models.[31]A notable review using oral histories from those involved in the creation of both the NMHP and DMHP reveals that the NMHP was possibly too ambitious and became overly dominated by one institution, NIMHANS.[32] This has potentially stifled creativity and the integration of other models, such as those from NGOs. The MHCA, aligned with the CRPD, faces criticism for being Western-centric and prioritizing individual rights over family-centric care. Challenges in implementation and resource allocation impede its impact.[33] 'Pills that Swallow Policy,' an ethnographic study, criticizes the DMHP's medication-centric focus, arguing it silences community voices and reinforces care barriers.[34] Despite recognizing alternative models in policy documents, their underfunding and tokenistic integration hinder effective implementation and comprehensive mental health planning.

### 2.2 Facade of Progress

[29] Shastri M, *Deconstructing the DMHP: Part 1 - Introduction to India's District Mental Health Programme*, INDIA MENTAL HEALTH OBSERVATORY, CENTRE FOR MENTAL LAW & POLICY, ILS. 2021, https://cmhlp.org/wp-content/uploads/2021/11/Issue-Brief-DMHP-I.pdf.
[30] Ecks S, *'Pharmaceutical citizenship: antidepressant marketing and the promise of demarginalization in India'*, 12 ANTHROPOL. MED., 239-254 (2005).
[31] Varma A, *Deconstructing the DMHP: Part IV - A Critique of the District Mental Health Programme*, INDIA MENTAL HEALTH OBSERVATORY, CENTRE FOR MENTAL LAW & POLICY, ILS. 2021, https://cmhlp.org/wp-content/uploads/2021/11/Issue-Brief-DMHP-IV.pdf.
[32] Van Ginneken N, Jain S, Patel V, Berridge V, *'The development of mental health services within primary care in India: learning from oral history'*, 8 INT. J. MENT. HEALTH SYST., 30 (2014).
[33] Math SB, Basavaraju V, Harihara SN, Gowda GS, Manjunatha N, Kumar CN, Gowda M, *'Mental healthcare act 2017 - aspiration to action'*, 61 INDIAN J. PSYCHIATR., S660-S666 (2019).
[34]Jain S, Jadhav S, *'Pills that swallow policy: clinical ethnography of a Community Mental Health Program in northern India'* 46 TRANSCULT. PSYCHIATR., 60-85, (2009).

The mental health policy in India has been greatly affected by international frameworks such as the Sustainable Development Goals (SDGs), the Movement for Global Mental Health (MGMH), and the World

Health Organization's (WHO) Mental Health Action Plan. These frameworks highlight the connection between mental health and broader developmental objectives.[35] Nevertheless, although the connection between concerns such as poverty and gender justice with mental health is emphasized, the solutions produced from these frameworks do not have practical application in the process of planning, defining targets, and allocating budgets. The assumptions of the Mental Global Mental Health (MGMH) framework, as seen in Indian mental health programs, prioritize pharmacological therapy for mental diseases and indicate a significant lack of access to treatment in low- and middle-income countries (LMICs).[36] Critics question the validity of the term "treatment gap" and suggest using "treatment difference" or "care gap" instead to incorporate a wider range of mental well-being resources. The implementation of the "task-shifting" technique, which involves providing specialized training to primary workers, is considered a potential answer. However, there are worries about the potential strain it may have on workers, especially marginalized women, and the reinforcement of biomedical supremacy.[37]There is also a risk of these 'trained' volunteers overshadowing local understandings and relations in mental health, as biomedical psychiatry often dismisses local mental health interpretations as mere superstitions or barriers to treatment.[38]

The National Tele-Mental Health Program has embraced technology, which has been emphasized throughout the pandemic. This has resulted in benefits such as a wider reach, but it also presents obstacles, including the existence of a digital gap.[39] The current approach, which is primarily

[35] Sax W, Lang C, *'Global mental health - views from South Asia and beyond' in The Movement for Global Mental Health: Critical Views from South and Southeast Asia*, AMSTERDAM UNIVERSITY PRESS, NL AMSTERDAM, pp. 7- 37, (2021).
[36] Gautham MS, Gururaj G, Varghese M, Benegal V, Rao GN, Kokane A, Chavan BS, Dalal PK, Ram D, Pathak K, Singh RK Lenin, Singh LK, Sharma P, Saha PK, Ramasubramanian C, Mehta RY, Shibukumar TM, NMHS Collaborators Group, 'The National Mental Health Survey of India (2016): prevalence, socio-demographic correlates and treatment gap of mental morbidity' (2020) 66 Int. J. Soc. Psychiatr. 361-372, https://doi.org/10.1177/0020764020907941.
[37] Kottai SR, Ranganathan S, *'Task-shifting in community mental health in Kerala: tensions and ruptures'* (2020) 39 MED. ANTHROPOL. 538-552, https://doi.org/10.1080/01459740.2020.1722122.
[38] Ecks S, 'Mental ills for all - genealogies of the movement for global mental health' in Sax W, Lang C (Eds), *The Movement for Global Mental Health: Critical Views from South and Southeast Asia* (AMSTERDAM UNIVERSITY PRESS, NL AMSTERDAM, 2021) pp. 41-64, https://doi.org/10.5117/9789463721622.
[39] Grover S, Sarkar S, Gupta R, 'Data handling for E-mental health professionals' (2020) 42 INDIAN J. PSYCHOL. MED.

influenced by biological psychiatry, fails to take into account other forms of knowledge and practices, hence marginalizing non-biomedical viewpoints.[40] While mental health in India is receiving considerable attention, the community-level approach that predominantly focuses on biomedical remedies fails to acknowledge the valuable insights that can be offered by varied viewpoints. The efficacy of the National Mental Health Policy in reconciling conflicting perspectives and offering guidance is still questionable, as its rights-oriented approach has not been completely put into action since its inception in 2014.

## 3. BUDGET ANALYSIS THROUGH A PUBLIC GOOD AND FISCAL FEDERALISM LENS

Fiscal federalism concerns the financial responsibilities split among various government levels. The theory aims to allocate funding efficiently, centralising goods with broad externalities and localising those with narrow impacts.[41]

As we have seen, community-based interventions are pure public goods with broad externalities. However, these programs are to be lacking support as evidenced by the 2023-2024 budget allocations.[42] The tertiary components of the National Mental Health Programme (NMHP) (India's community-based programme) are merged with the broader Tertiary Care Programme[43], funding for which has been reduced by 42%. This is concerning, especially considering the NHRC's reports on the subpar conditionsof public mental health institutions.[44] The National Suicide Prevention Strategy (NSPS)[45] introduced by the government last year has unfortunately not secured dedicated

85S-91S, https://doi.org/10.1177/0253717620956732.

[40] Kaplan B, *'Revisiting health information technology ethical, legal, and social issues and evaluation: telehealth/telemedicine and COVID-19'* (2020) 143 INT. J. MED. INF. 104239, https://doi.org/10.1016/j.ijmedinf.2020.104239.

[41] P A Samuelson, *The Pure Theory of Public Expenditure*, 36 THE REVIEW OF ECONOMICS AND STATISTICS, 387 (1954).

[42] Centre for Mental Health Law and Policy, *Union Budget for Mental Health* 2023-24., Keshav Desiraju India Mental Health Observatory, (Aug 7, 2023, 6:12 PM), https://cmhlp.org/wp-content/uploads/2023/02/Budget-Brief-2023-v3.pdf.

[43] Shastri M. *Deconstructing the DMHP: Part 1 - Introduction to India's District Mental Health Programme.* India Mental Health Observatory, Centre for Mental Law & Policy (2 Aug 2023, 10:07 AM) https://cmhlp.org/wp-content/uploads/2021/11/Issue-Brief-DMHP-I.pdf.

[44]National Human Rights Commission India, *NHRC says all the 46 Government Mental Healthcare Institutions across the country depict very pathetic and inhuman handling by different stakeholders; issues notices* (Sep 25, 2023, 3:08 PM) https://nhrc.nic.in/media/press-release/nhrc-says-all-46-government-%20mental-healthcare-institutionsacross-country-depict.

[45]Ministry of Health & Family Welfare. *National Suicide Prevention Strategy* (Aug 7, 2023, 8:09 PM)

funds for its rollout.

Other government programs that acted as mitigating factors for psycho-social determinants of mental health have also seen a reduction in the budget. The Ministry of Social Justice and Empowerment's budget have increased, but the Welfare of Persons with Disabilities has seen a 17% reduction. The Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGS), which aims to ensure a minimum of 100 days of wage employment to its beneficiaries, has had its Budget Estimate (BE) for 2023-24 reduced by 18%. A

2021 report from the National Crimes Record Bureau highlighted that 26% of those who died by suicide were daily wage earners.[46] Several studies have indicated that poverty reduction programs, such as MNREGS, can potentially lead to a decrease in suicide rates and promote better mental health outcomes.[47]

### 3.1 Investment in Exclusive, Non-Public Goods

With a significant 16% increase in allocations towards institutions like Lokpriya Gopinath Bordoloi Regional Institute of Mental Health, the T-MANAS program, and NIMHANS receiving a 29% budgetary surge,[48] it is clear that there's an emphasis on centralised, institutional, and digital approaches to mental health.

Though mental health institutions and services are essential, they do not align entirely with the principles of pure public good. The services provided by such institutions inherently possess rivalry; if one individual secures an appointment, another cannot access that same time slot. Moreover, while these institutions may provide subsidised care, they are not entirely free, creating barriers for thoseunable to afford them. This deviates from the non-excludability characteristic of pure public goods; with the inclusion of private partnerships, there is an implicit suggestion of revenue generation. While the increased allocation for mental health is a positive step, the emphasis is more on centralised, institution-based interventions rather than community-based programs.

https://main.mohfw.gov.in/sites/default/files/National%20Suicide%20Prevention%20Strategy.pdf.

[46]Ministry of Health and Family Welfare, *National Crime Records Bureau,* Government of India (Sep 3, 2023,7:09 PM) http://ncrb.gov.in/.

[47] Mahashur et al., *Impact of Poverty Reduction Programs on Suicide, Mental Health and Wellbeing*, Centre for Mental Health Law and Policy (2022).

[48]National Institute of Mental Health and Neuro Sciences (NIMHANS). NIMHANS *Annual Report 2020-21* (5 Sept 2023, 9:09 PM) https://nimhans.ac.in/wp-content/uploads/2022/09/NIMHANS_AR_2020-21_English.pdf.

## 4. CONCLUSION

Community-based mental health programs epitomise pure public goods, providing non-excludable and non-rivalrous benefits beyond direct recipients to society. Their value does not lie in immediate monetary returns; they demand government investment for long-term societal well-being. We have seen the impact of externalities on efficient suicide prevention. The laws in India are currently serving as a negative externality. Moreover, there is a decrease in funding for community-based programmes while increasing services, which

adds to the access barriers. This adds to the negative externalities, increasing the social cost. Making the intervention ineffective. Community-based models have the highest chances of reducing social costs and efficiently preventing deaths due to suicides. Thus, India needs to rethink its approach to suicide prevention, which is currently casting a massive burden on the country.

# TAXATION OF CRYPTOCURRENCY: THE INDIAN FAUX PAS

*Vedika Chawla and Vasushrava Mahipal*[1*]

## ABSTRACT

*The exponential growth that the cryptocurrency market has seen in the past decade has caused much discomfort among governments across the globe, owing to the unregulated nature of transactions and what some may argue is a disproportionate impact of the crypto market on domestic economies. The natural response of most jurisdictions has been to tax cryptocurrency transactions so as to discourage them while also gaining revenue out of them. However, taxation policies face complex questions of determining the true nature of crypto transactions, a question that is yet to be answered with clarity.*

*The knee-jerk reaction that the industry has attracted from the Indian government in particular has materialised in the form of imposition of a virtual digital assets tax on cryptocurrencies. The authors argue that this policy failed to effectively address its objective and only resulted in a sudden downfall of the crypto market in India, creating negative repercussions for the domestic economy. The authors then employ a game theoretical analysis to propose an alternative taxation framework that recognises the significance of the crypto market and better balances the need for its regulation. Further, they discuss frameworks from a range of external jurisdictions to analyse the expected implications of similar policies in the Indian economy.*

***Keywords:*** *cryptocurrency, taxation, game theory, virtual digital asset*

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## 1. INTRODUCTION

Cryptocurrencies remain an enigma in many senses, particularly in how transactions are conducted, verified, and assessed. In light of the growing popularity of cryptocurrencies, this market has expanded extensively and now stands as a prominent recipient of investment from investors across the globe. However, the market is not simply a store for investment or value. It is also increasingly being recognised as a means of transaction or a 'currency.' New businesses, both small and large are dealing extensively, if not exclusively, in cryptocurrencies, largely because of the ease of international transactions.

Owing to this growth, governments all over the world have been trying to either control or regulate this market to be able to extract revenue and also disincentivise transactions operating beyond the centralised exchange systems of the countries, or at least those that may raise suspicion. The simplest way adopted by most countries, including India, for this purpose is to tax cryptocurrency.[2] However, this raises several complex questions regarding the nature of cryptocurrency and how exactly it can be taxed. This paper attempts to first analyse how cryptocurrencies work and how they exhibit dual characteristics, and then considers how the recently imposed Indian cryptocurrency tax regime engages with the market. The paper goes on to present a game theoretical analysis of taxation of cryptocurrencies and proposes an alternative tax system, along with discussing elements from taxation regimes from foreign jurisdictions.

Owing to the limited existing research on the taxation of cryptocurrencies, especially in the Indian context, the authors have relied on research papers, books, reports by national and international organisations as well as empirical studies. For the development of the flow and arguments presented herein, the authors first studied the nature and operation of cryptocurrencies using both descriptive and analytical research papers, and then moved on to a more targeted study of analyses of the nature of cryptocurrencies and tax treatments. The authors then used authoritative analyses of game theory and its application to tax treatments and presented the same from an original standpoint.

[2] The Law Library of Congress, 'Regulation of Cryptocurrency Around the World: November 2021 Update' LL File No. 2021-020594.

## 2. CRYPTOCURRENCY AND TAXATION: A PRIMER

Ambiguous as they may be, cryptocurrencies have become an unavoidable part of the global economy, both across sectors as well as jurisdictions. However, economic research so far has not delved sufficiently into the economic relevance of cryptocurrencies.[3] This becomes a necessary endeavour largely because, by virtue of the very nature of cryptocurrencies, they have existed and operated beyond governmental control in most countries since their inception. Without understanding their mode of operation and how transactions occur, it is impossible to gauge the impact these transactions can have on the regulated facet of any economy. Cryptocurrencies also bring in several other considerations on the front of security, volatility and stability of the economy. These can be measured, either quantitatively or qualitatively only when a thorough economic analysis of the same is conducted.

Cryptocurrency is digital money that is not regulated by any central authority, and is based on a system of cryptographic security in blockchain. The FATF has defined cryptocurrency as "digital representation of value that can be traded digitally and functions as (i) a medium of exchange; (ii) a unit of account; and/or (iii) a store of value, but not having a legal tender status in any jurisdiction."[4] Blockchain serves as a transparent, digital ledger for transactions that is accessible by authorised users. Transactions can relate to a variety of transactables such as money, property, intangible assets, etc. Digital currency usually provides for transactions in the form of strings of bits, which becomes problematic when a user copies and reuses the same string for payment, resulting in an effective counterfeit currency being developed. This is often referred to as the double-spending problem. This is conventionally addressed by the appointment of a third-party to maintain a ledger of transactions to ensure that discrepancies are addressed and resolved. In these scenarios, the third parties, such as PayPal, transfer the balances in exchange for a fee.

Cryptocurrency is a form of decentralized money in the sense that they eliminate the institution of the third-party and instead employ a network of validators to contribute to this ledger. The element of trust in this system is founded on the reliability of the blockchain technology, which requires every additional block in the blockchain to be verified and approved by the validators by

[3] Chiu et al., *The Economics of Cryptocurrencies Bitcoin and Beyond* (2018), SSRN Journal, (accessed March 10, 2023) https://doi.org/10.34989/swp-2019-40.

[4] Financial Action Task Force, Virtual Currencies Key Definitions and Potential AML/CFT Risks (June 2014) (accessed March 7, 2023) available at https://www.fatf-gafi.org/media/fatf/documents/reports/Virtual-currency-key-definitions-and-potential-aml-cft-risks.pdf.

consensus. This consensus is achieved by requiring validators to engage in 'mining' to compete for the right to update the ledger and add a new block representing a transaction by computing a problem called 'proof-of-work' (PoW).

### 2.1 The Need for Regulation

With the contextual understanding of how cryptocurrency transactions take place over blockchain, it is pertinent to look at what the global response to the concept and operation of cryptocurrencies has been. The first and most prominent cryptocurrency, the Bitcoin, was developed by a person or group of persons under the pseudonym Satoshi Nakamoto in 2008-09.[5] Following this development, the cryptocurrency market saw gradual development in terms of its size and mode of operation.

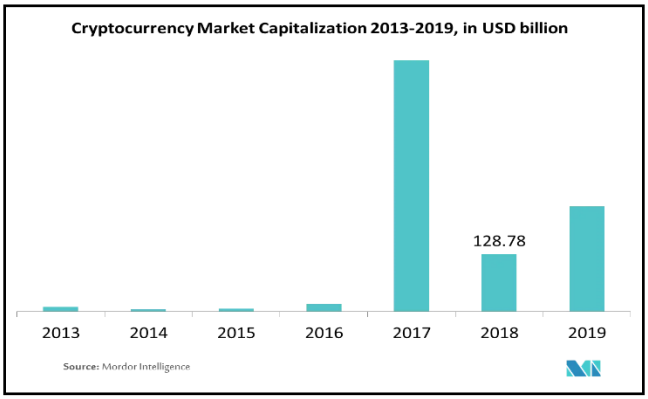



Fig. 1: Market Capitalization of the Cryptocurrency Market[6]

Data surveys and analyses clearly indicate that over the last decade, the market capitalization of the cryptocurrency market has shot up drastically (Fig. 1). This is attributable to the push received by the technology in its nascent stage and the fast-spreading attraction that followed. Further, by virtue of being an unregulated, free and open-source mode of transaction, it was seen as a lucrative opportunity for investors and dealers. Global spending on blockchain solutions, in general has also been rising uniformly and almost proportionately across geographical divisions (Fig. 2). Total cryptocurrency users have grown from 5 million in 2016 to over 100 million in 2020.[7] In addition,

[5] Satoshi Nakamoto, (2008). Bitcoin: A Peer-to-Peer Electronic Cash System; About Bitcoin.org, (accessed March 4, 2023) https://bitcoin.org/en/about-us.
[6] Mordor Intelligence, 'Cryptocurrency Market – Growth, Trends and Forecasts (2023-2028)' (accessed March 2, 2023) https://www.mordorintelligence.com/industry-reports/cryptocurrency-market.
[7] European Commission, 'Cryptocurrencies: An empirical view from a tax perspective,' JRC Technical Report, European Commission, JRC Working Papers on Taxation and Structural Reforms No 12/2021, https://joint-research-

this data also exhibits the volatility of the market, since statistics show that there was a gradual expansion at a high growth rate till 2017 followed by a sudden dip in the cryptocurrency market and noticeable wavering. The development of a competitive cryptocurrency market has attracted the attention of economists and there have been several models proposed to comprehend market behavioural patterns, some of which predict that the market may witness a compound annual growth rate of 60.2% between 2020 and 2025 (Fig. 3).

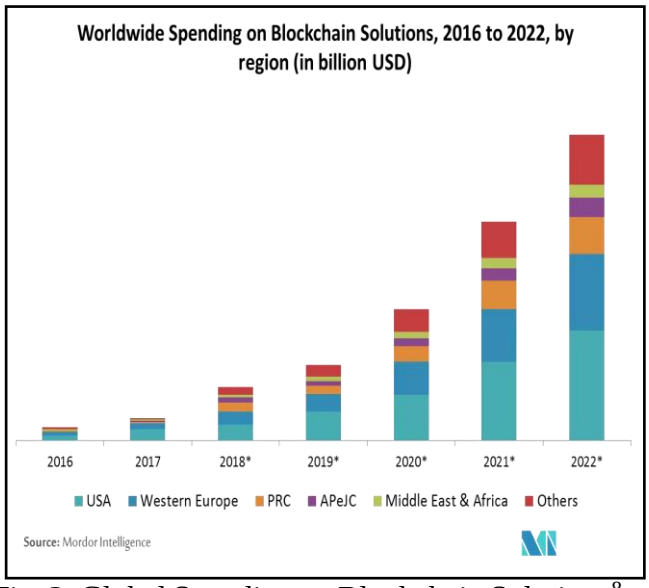



Fig. 2: Global Spending on Blockchain Solutions[8]

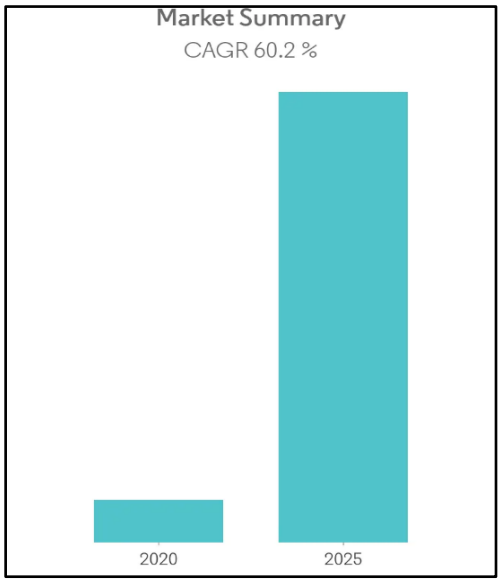



Fig. 3: Prediction for Cryptocurrency Market Size[9]

These developments have contributed to a reasonably well-founded apprehension among governments as well as financial institutions[10] regarding the unregulated flow of money into and out of the cryptocurrency market. The volatility of the market, coupled with the sudden boom it has seen puts the large sums of money invested in cryptocurrencies in direct risk. Such a risk is also a direct threat to domestic economies, especially in countries with high volumes of cryptocurrency activity. Additionally, security of transactions is a concern that emanates from the fact that the double-spending problem discussed in the previous segment is not adequately

centre.ec.europa.eu/system/files/2021-08/jrc126109.pdf (accessed March 5, 2023).

[8] Mordor Intelligence *supra* note 5.

[9] *Id.*

[10] Financial Action Task Force, 'Updated Guidance for a Risk-Based Approach to Virtual Assets and Virtual Asset Service Providers' (2021), (accessed March 2, 2023) https://www.fatf-gafi.org/en/publications/Fatfrecommendations/Guidance-rba-virtual-assets-2021.html.

addressed in the case of cryptocurrencies. Since there exists no third-party to check discrepancies in the ledger in the case of cryptocurrencies, if a user is able to convince other validators of an altered transaction history wherein the transaction in question has not occurred, the seller could perhaps be left with no exchange but having lost their goods/services. The best way to control this is the introduction of a confirmation lag, which essentially inserts a lag of one or more blocks after the payment has been made but before the seller delivers the goods/services, to make it costly and difficult for either user to edit the transaction block and all subsequent blocks. This, however, is not always efficient and also introduces a trade-off between the settlement speed and security of cryptocurrency transactions which is undesirable and even counterproductive for cryptocurrencies. This apprehension has also been echoed by some players in the cryptocurrency market which, after avoiding centralisation and regulation for long, have finally recognised that at least some degree of regulation is, in fact, necessary to sustain the market. A case in point is the world's largest cryptocurrency exchange, Binance, which pursued decentralised headquarters for long before finally transforming into a licensed financial institution to improve ties with regulators and thus, protect itself and its business.[11]

Thus, it is evident that regulation of the cryptocurrency market is a strengthening concern across jurisdictions, and understandably so. Figures 4, 5 and 6 show the distribution of density of transactions in the cryptocurrency market across political delimitations, and the data starkly highlights that India was the frontrunner in the cryptocurrency market. This makes it especially imperative for the Indian government to devise a mechanism for this purpose, firstly because the government will then be able to gain revenue from the transactions, and secondly because such a move would disincentivise unregulated transactions. Later segments of this paper discuss and analyse the steps taken in this direction by the Indian government.

[11] Markets Insider, 'Binance CEO says the crypto exchange needs centralized headquarters to work well with regulators', 16 September 2021, (accessed March 6, 2023) https://markets.businessinsider.com/news/currencies/binance-changpeng-zhao-cryptocurrency-regulators-warnings-bans-headquarters-2021-9

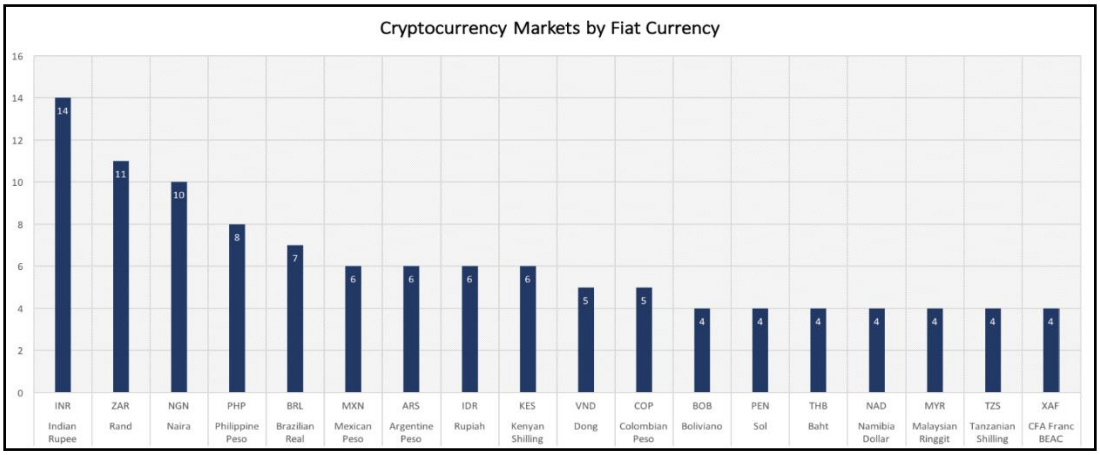



Fig. 4: Cryptocurrency Markets by Fiat Currency[12]

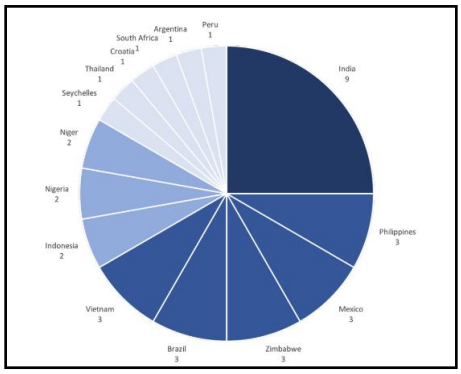



Fig. 5: Cryptocurrency Markets in Developing Countries by Number of Crypto Exchanges[13]

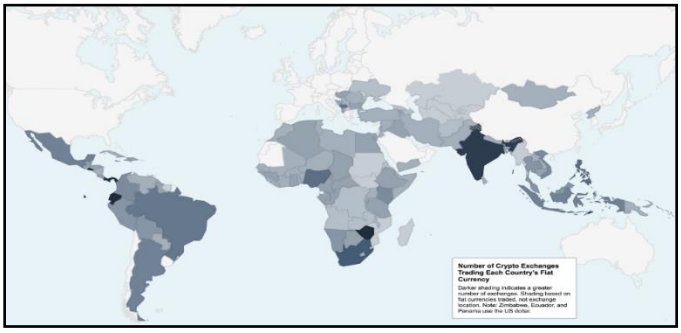



Fig. 6: Number of Cryptocurrency Exchanges Trading Each Country's Fiat Currency[14]

[12] AlliedCrowds, 'Cryptocurrency in Emerging Markets' (2018), https://www.readkong.com/page/cryptocurrency-in-emerging-markets-6568120, (accessed March 7, 2023).
[13] *Id.*
[14] *Id.*

### 2.2 Asset or 'Currency'?

Before any regulatory measures or mechanisms can be devised, it is necessary to assess how the law perceives cryptocurrencies. There has been much debate on the true nature of cryptocurrencies, and how they must be treated for economic assessment purposes. However, it is well recognized that the growth of cryptocurrencies is almost always associated with macro-financial risks for any economy, in what the IMF terms 'cryptoization.'[15]

A detailed study on the issue specifically discusses taxation of Bitcoin[16] used correspondence analysis to study traits of Bitcoin and possible taxation treatments or schemes that may be adopted, but the same may also be considered for cryptocurrencies in general. 15 traits and 15 taxation themes were identified and the study attempted to analyse the correlation between them and conclude as far as practicable what the conclusive traits and appropriate taxation themes are.

The study argued that mining of Bitcoin must be considered the taxable event instead of the Bitcoin itself, with tax manifest on the realisation of the Bitcoin after mining. As opposed to the current policy position in the UK as well as several states in the US, the method of acquisition rather than the intention or reason behind acquisition of Bitcoin must be considered while taxing. On the issue of whether cryptocurrency is a currency in the real sense, as is the case with most other analyses, the study presents no conclusive answer. While the results show that Bitcoin is distinct from currency and instead constitutes barter transactions, it is also indicated that the regulations espoused for this governmental intervention are conceptualised as if they were regulating a currency.

It has repeatedly been recognised that a significant challenge is the classification of cryptocurrencies as currency or property.[17] Thus, there still exists a lack of clarity on whether cryptocurrencies can really be termed 'currencies'[18] and several questions remain. By virtue of its

[15] International Monetary Fund, 'Global Financial Stability Report' (2021) Ch 2, The Crypto Ecosystem and Financial Stability Challenges, https://www.elibrary.imf.org/display/book/9781513595603/ch002.xml (accessed March 3, 2023).

[16] Asheer Jaywant Ram, *Taxation of the Bitcoin: Initial Insights through a Correspondence* Analysis, 26 (2) MEDITARI ACCOUNTANCY RESEARCH, 214–240 (2018).

[17] Scott A. Wiseman, *Property or Currency? The Tax Dilemma Behind Bitcoin*, UTAH LAW REVIEW, Vol 2 2016 (2016); Organisation for Economic Co-operation and Development, 'Taxing Virtual Currencies: An Overview of Tax Treatments and Emerging Tax Policy Issues', accessed March 7, 2023, https://www.oecd.org/tax/tax-policy/taxing-virtual-currencies-an-overview-of-tax-treatments-and-emerging-tax-policy-issues.htm.

[18] Aleksandra Bal, '*How to tax bitcoin?'*, in HANDBOOK OF DIGITAL CURRENCY (D. Lee Kuo Chuen ed., 2020), San Diego: Academic Press, 267–282.

nature and its digital – sometimes even anonymous – existence, is it even possible to tax cryptocurrency? In light of the tremendous growth that this market has seen, would it be prudent to imagine a policy taking into account the possibility of cryptocurrencies becoming the next big mode of payments or exchange? In such a case, would they not have to be treated as currency? In any case, would taxing the ownership of cryptocurrency provide for a more economically sound model or taxing transactions in cryptocurrencies? How does the role of an economy as a member of the global system factor into its decision-making on domestic policies for cryptocurrency regulation?

## 3 IMPOSITION OF TAX ON PROFIT AND ITS ECONOMIC IMPACT

A tax on profit on investment, often known as capital gains tax, usually leads to an increase in price of the particular assets.[19] The same can be explained through the following graph.

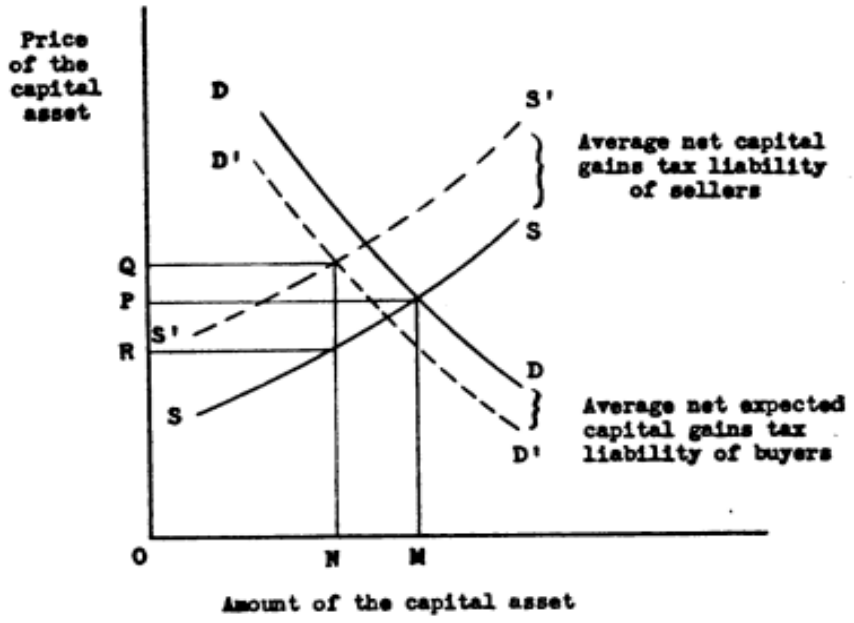



Fig. 7: Impact of Capital Gains Tax

In the absence of a capital gains tax, there will be a certain demand, DD for the asset and a certain supply, SS for the same and the price of the asset, OP. After the imposition of the tax, if all sellers

[19] Harold M. Somers, *An Economic Analysis of the Capital Gains Tax*, Vol 1, N 3, NATIONAL TAX JOURNAL 226 – 232, (1948).

were selling at a profit subject to the capital gains tax, the supply curve would shift to the position S'S'. However, since not all sellers would be selling their assets at the profit being taxed, the vertical distance between SS and S'S' actually represents the weighted average of the tax paid by all sellers.

The prospect of having to pay a tax on a gain will probably dampen the demand somewhat. The prospect of profit, however, is not the only relevant factor for a buyer of these assets as considerations such as prospect of dividend (shares), interest (government bonds and debentures) or rental income (property) are sometimes more important. Thus, there is only a slight decrease, as compared to the decrease in the supply, in the demand for this asset. The new demand curve is represented by D'D'. In such a case, the price will rise from OP to OQ. Thus, a part of the burden of this tax is shifted to the buyers, represented through PQ and the rest is borne by the sellers, represented by RP. The total tax paid, on average, is represented by RQ.

Thus, the imposition of a capital gains tax leads to a rise in the price of the asset. This rise is also controlled by the losses offset. However, the tax imposed on virtual digital assets in India does not allow for losses to be offset. Further, as we will see, this principle of rise in price of assets after the imposition of tax on profits does not apply to the virtual digital asset market.

## 4 THE VIRTUAL DIGITAL ASSET TAX: A TALE OF SELF-DESTRUCTION

The Indian Government has levied a 30% tax on the income generated from the transfer of a "virtual digital asset" which includes cryptocurrencies, NFTs etc.[20] This tax is similar to the capital gains tax that is presently levied on the income generated from the transfer of capital assets in the sense that the tax amount will be calculated according to the income generated through the transfer of such assets i.e., profit. However, benefits such as offset of loss or deductions in case of long-term holdings have not been included in the virtual digital asset tax.

*The Indian Crypto Market and its Downfall*

It is evident that India had one of the largest and fastest-growing crypto markets in the world (Figures 4, 5 and 6). During the pandemic when the concept of cryptocurrency trading came into mainstream, the Indian crypto market expanded exponentially.

The imposition of the tax on the profits generated by transferring virtual digital assets should have,

[20] Finance Act, 2022 No 6 of 2022 Acts of Parliament, 2022 (India).

according to the capital gains tax analysis, led to a rise in the price of these assets. However, the virtual digital asset market cannot be directly compared with the capital asset market. Unlike the capital asset market, the only reason why an individual may invest in a virtual digital asset is the prospect of earning profit because there is no scope of getting a rent, dividend or interest on the same. Further, any other incentives such as smoother and cheaper international exchanges that a buyer may have to buy a particular crypto asset have been completely ignored by the government in its imposition of taxes as it has not devised any mechanism to bring such transactions under its purview.

In such a scenario, the supply of the asset decreases but the decrease in demand will not be a slight decrease (as was the case with capital gains tax) but equal to or more than the decrease in supply, leading to a decrease in both price and quantity. The same can be understood through the following graph:

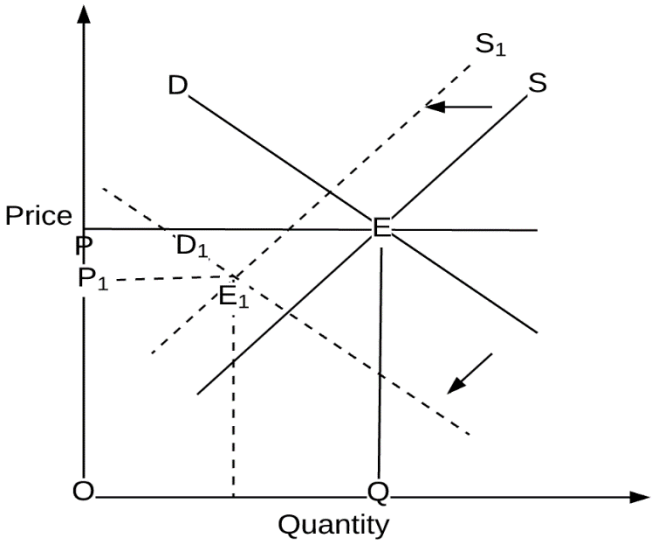



Fig. 8: Skewed impact of the Virtual Digital Assets tax

D and S represent the demand and supply of virtual assets before the introduction of the virtual digital assets tax respectively. D1 and S1 represent the demand and supply of virtual assets after the introduction of the virtual digital assets tax respectively. It can be seen that the price of the assets has reduced from OP to OP1 and the quantity has decreased from OQ to the point at which E1 coincides with OQ.

Therefore, prices of the assets go down or remain the same while the quantity demanded also

reduces, thereby decreasing the total revenue from the market. Before the implementation of this tax, the Indian crypto market was expected to grow at a very healthy rate. However, after the imposition of this tax, due to the absence of any incentive except for the prospect of profits, this market is full of uncertainties. The introduction of this tax has, in effect, slowed the growth of the crypto market in India which had the potential and was on track to becoming the crypto hub of the world (Figures 9, 10 and 11).

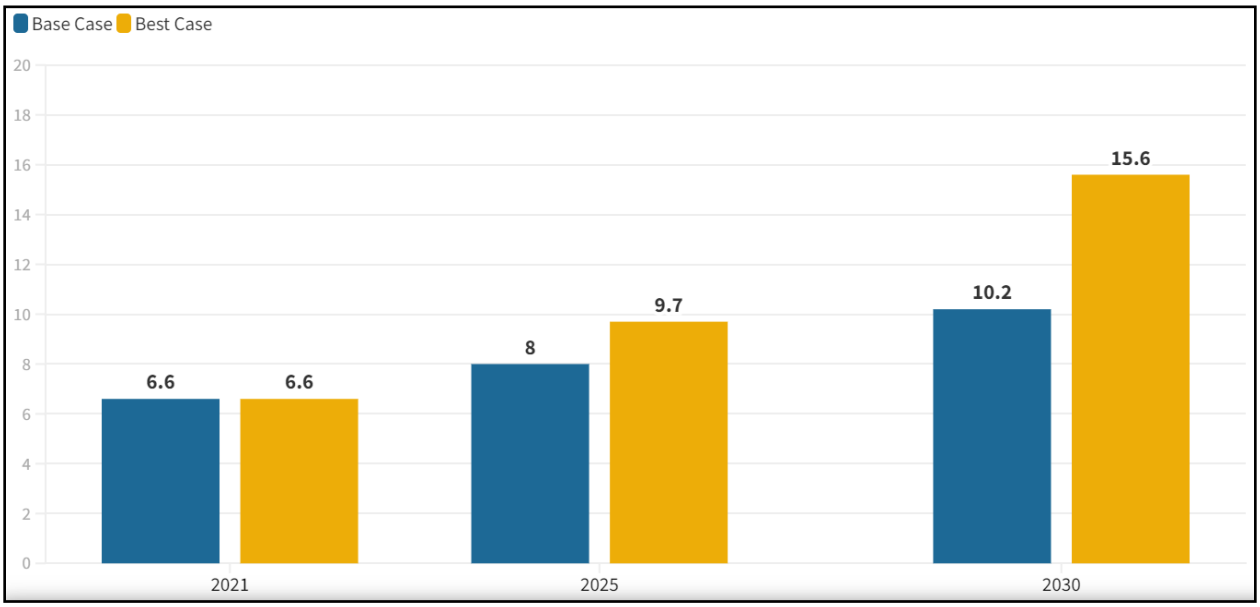



Fig. 9: Crypto Market Investments in India Predictions in US Dollars (Million) before the introduction of the Virtual Digital Asset tax (Source: NASSCOM)

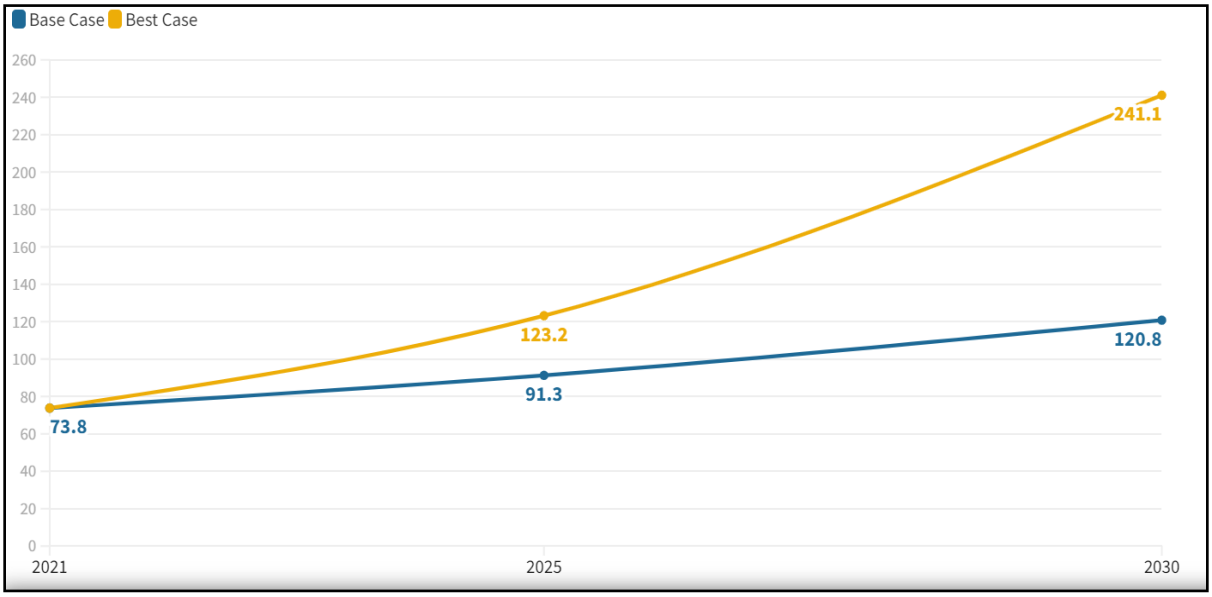



Fig. 10: Crypto Market Base in India Predictions in US Dollars (Million) before the introduction of the Virtual Digital Asset Tax (Source: NASSCOM)

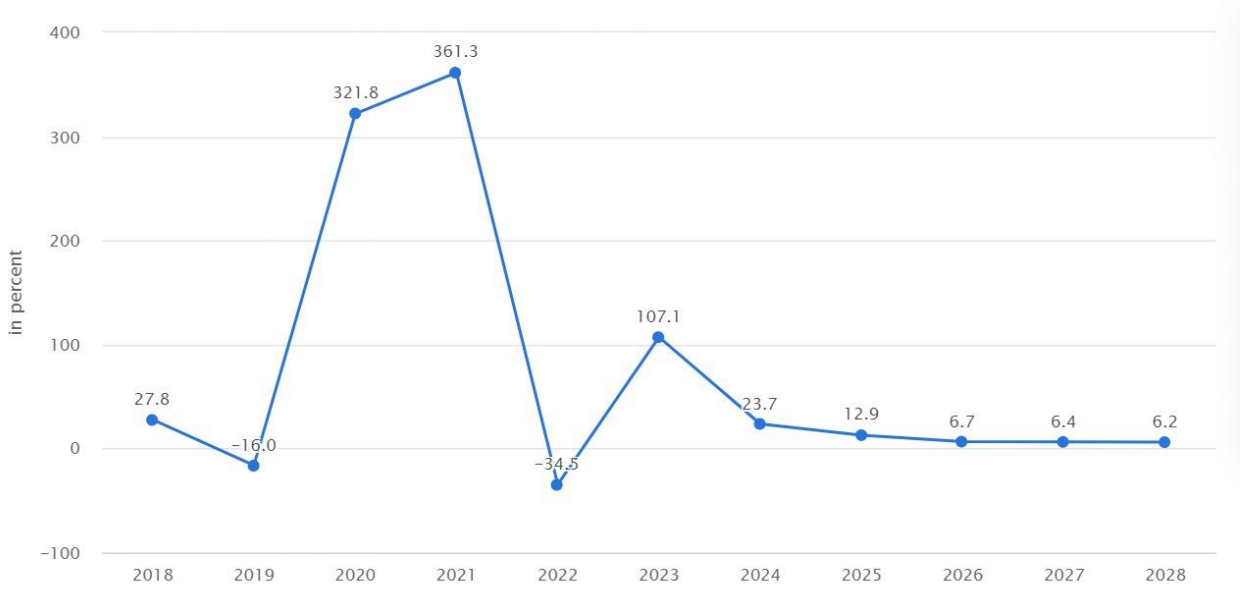



Fig 11: Year-wise percentage change in revenue in the Indian Crypto Market (Source: Statista)

## 5 IMAGINING AN IMPROVED TAX REGIME

### 5.1 Game Theoretical Analysis of the Indian Cryptocurrency Tax

If we take into account the maximisation of economic benefits for both, the government and the cryptocurrency investors, Nash Equilibrium indicates that cryptocurrencies should be taxed at a low tax rate and a high penalty in cases of non-compliance.[21] The same can be understood through the following hypothetical example:

Assume that cryptocurrency investors earn $20,000 from their investment, with the lesser and higher tax rates being respectively 15% and 40%. Let's say that the cryptocurrency investor will declare half of the revenue as $10,000 if the tax penalties are insufficiently deterrent.

| **[Determined by Government]** | **Low Tax Rate (15%)** | **High Tax Rate (30%)** |
|---|---|---|
| **High Tax Penalty** | **[Case 1]**<br>**Y*tr, Y*tr**<br>**G = +3000, I = -3000** | [Case 3]<br>Y*tr, Y*tr<br>G = +6000, I = -6000 |
| **Low Tax Penalty** | [Case 2]<br>X*tr, X*tr<br>G = +1500, I = -1500 | [Case 4]<br>X*tr, X*tr<br>G = +3000, I = -3000 |

Y= Fully declared income i.e., $20,000; X= Half the income declared i.e., $10,000; tr= Tax rate

Case 1: If the government imposes a minimum tax rate of 15%, the investor in cryptocurrencies will decide to pay the whole amount of tax by declaring their entire income in the event that there are severe tax penalties. In this case, the government will gain $3,000 and the investor will lose $3,000.

Case 2: Investors in cryptocurrencies is not expected to opt to pay the entire amount of tax if the government sets a minimum tax rate of 15% if the tax penalties are not adequate to deter them. Let's imagine that the cryptocurrency investor will declare 10,000 dollars as the equivalent of half of the revenue in this situation. In this case, the government gains $1,500 and the investor loses $1,500.

Case 3: If the government imposes a maximum tax rate of 40%, the investor in cryptocurrencies

[21] Gamze Öz Yalaman and Hakan Yıldırım, *Blockchain Economics and Financial Market Innovation: Financial Innovations in the Digital Age*, CONTRIBUTIONS TO ECONOMICS, Springer International Publishing, 407-414 (2019).

is expected to decide to pay the full amount of tax by declaring all of their income if the tax penalties are sufficiently deterrent. In this case, the government gains $8,000 and the investor loses $8,000.

Case 4: The rational cryptocurrency investor is not expected to opt to pay the full amount of tax where the tax penalties are insufficiently deterrent if the government implements a maximum tax rate of 40%. We may imagine that the cryptocurrency investor will declare $10,000 as the equivalent of half of the revenue in this situation. In this case, the government gains $4,000 and the investor loses $4,000.

A game theory analysis operates on the assumption that the government and the investors will determine their strategies to maximise their own benefits. In case of a policy decision, the first determinant is the government's selection of the policy. A bare perusal of the matrix shows that in case of either column, the first row (high tax penalty) yields more gains for the government, making it the preferred policy choice for the government. When the government selects the first line of the matrix, the taxpayer is left with a choice between the payment of $3000 and $8000 as tax and choose the first column (Case 1), namely the payment of $3000 (low tax rate, high tax penalty). When the taxpayer chooses the first column (low tax rate =15%), the government will decide between getting payment of $3000 and $1500 as tax income and prefer $3000 tax income (Case 1). As a result, the Nash Equilibrium occurs in only Case 1 with low tax rate and high penalty rate. In other cases, for both sides, the maximisation of benefits is not realised at the same point and therefore, Nash equilibrium does not occur.

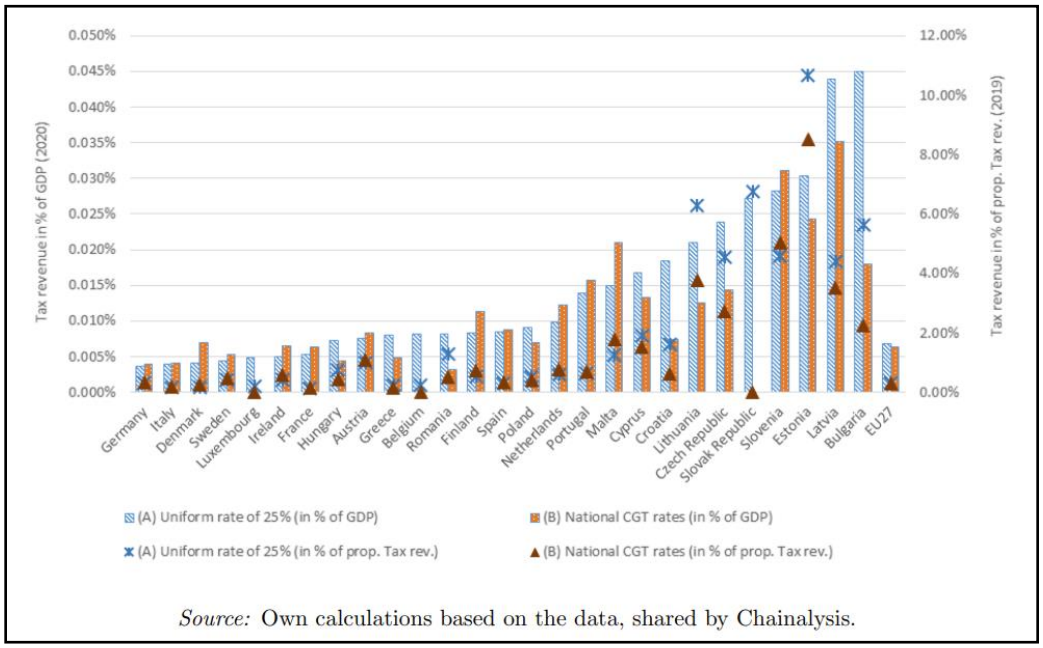
### 5.2 Inspiration from Foreign Models

In addition to considering how a balance may be struck between the tax rate and the tax penalty, there are several other considerations that have been employed, either in theory or in practice, by actors around the world. This section discusses certain taxation treatments adopted or proposed in other parts of the world and analyses whether inspiration can be taken from them for preparing an improved model in India.

#### *5.2.1 OECD Countries*

The European Commission (EC)[22] and the OECD[23] have recognized that there still exists a lack of harmonization and structure in the taxation regime followed across the OECD countries, which tends to have a negative impact on tax compliance.

The working paper by the EC, however, simulates two instances: first, the application of a uniform tax rate of 25% on realised capital gains, and second, the application of a shares-based tax rate on capital gains. It concludes that while a uniform tax rate would benefit from the first scenario, the second scenario would produce mixed results varying across jurisdictions (Fig. 10). Under the former, total Bitcoin CGT revenue in the EU amounts to 0.31% of total property tax revenue, and under the latter, to 0.29%. However, this ratio varies by large margins across countries. When applying a uniform rate of 25%, CGT revenue relative to the one from property taxes ranges between 0.12% in France and 10.7% in Estonia. Under the second scenario, it ranges between 0.14% in France and 8.5% in Estonia.




*Source:* Own calculations based on the data, shared by Chainalysis.

Fig. 10: Comparison of Uniform Tax Rate and Shares-based Tax Rate in OECD Countries[24]

For the purposes of this paper, it must also be assessed whether these results can be reasonably

[22] European Commission, *supra* note 6.
[23] OECD *supra* note 16.
[24] European Commission *supra* note 6.

placed in the Indian context. If the countries analysed in this report are categorised solely on the basis of gross income level,[25] India may be expected to present a mixture of economic behaviour observed in different countries.

Thus, while the shares-based tax may be expected to generate generally higher revenue, the degree of the same is difficult to determine. What must be considered is that this research has also assumed full tax compliance, which in the highest probability, will not be achieved in reality, meaning that a real expectation would be for lower revenue outcomes than anticipated herein.

*5.2.2 South Africa*

The legal position in South Africa is that cryptocurrency is an asset and not a currency, making all cryptocurrency transactions barter exchanges.[26] The question then arises whether this is to be taxed as a trading stock and on the revenue account, or as a capital asset and on the capital account. Given its use as both a method of payment and a speculative investment, a taxpayer may have multiple intentions while acquiring cryptocurrency. Determining whether a gain resulting from cryptocurrency price fluctuations was merely incidental or a secondary intention of the taxpayer may prove to be challenging. It is also pertinent to address the issue of allocating the cost price of cryptocurrency when acquired through direct mining as opposed to purchasing, since the mining process cannot directly be quantified in terms of cost.

Thus, it is evident that a model that adopts the asset nature of cryptocurrency may not, at least without sufficient modification, be suitable for India, since South Africa, which is a reasonably comparable market to India, has indeed been facing a multitude of issues with the same. This, of course, does not imply that the currency route will be without its own set of problems.

*5.2.3 United States of America*

In the United States of America, much like in India, income from the transfer of cryptocurrency assets is taxed.[27] However, unlike in India, the American law does not create a distinction between 'capital assets' and 'virtual digital assets.' While the non-distinction of such assets may be

[25] '*The 2020 Geography of Cryptocurrency Report - Analysis of Geographic Trends in Cryptocurrency Adoption, Usage, and Regulation*' CHAINALYSIS, (accessed March 3, 2023) https://go.chainalysis.com/2021-geography-of-crypto.html.

[26] Remerta Basson, *An analysis of issues relating to the taxation of cryptocurrencies as financial instruments*, 13.1, JOURNAL OF ECONOMIC AND FINANCIAL SCIENCES (2020).

[27] The Internal Revenue Code, 2010 (Y 1.2/5).

theoretically problematic, it ensures that the benefits provided under the taxation laws in the case of capital assets are granted even in the case of cryptocurrencies. In India, losses can be offset in case of capital gains tax but not in case of virtual digital assets whereas in the US, the same can be done in both cases. Further, in the US, there are deductions in tax rates if a person holds the particular asset for a long period of time (more than one year). The same is the case in India when it comes to capital assets but not in cases of 'virtual digital assets.'

In order to ensure the functioning of the crypto market, it is essential to increase the revenue generated from this market. The simplest way to do this is by promoting long-term holdings of virtual digital assets by allowing deductions and offsetting losses. Thus, even if the legislature is averse to treating these virtual digital assets as capital assets, it should promote long-term holding of these assets by providing the same benefits as provided in case of capital gains tax.

## 6 CONCLUSION

While the introduction of the virtual digital assets tax may seem like a step in the positive direction towards the legal recognition of cryptocurrencies in India, the specifics of this new tax have (and continue to do so) essentially crippled the growing crypto market in the country.

The introduction of this tax may also have an indirect impact on the economy as it may de-incentivize young foreign businesses, which are increasingly shifting to cryptocurrencies for various purposes, from coming to India as the imposition of such heavy taxes on income from investments made in virtual digital assets may be seen as a stepping stone towards taxing or imposing stricter regulations on crypto transactions.

This paper suggests that the virtual digital asset tax should follow the economic idea of Nash Equilibrium and accordingly, the tax rates should be reduced along with strict imposition of penalties for the defaulters. This will ensure that the government reaps the benefits of tax revenue efficiently without affecting the market substantially.

Lastly, it is also suggested that the government takes inspiration from foreign jurisdictions and its simplistic view of cryptocurrencies as 'virtual digital assets' is questionable. Even so, the government's differentiation between the tax benefits provided for under the capital gains tax and the virtual digital assets tax seems largely unreasonable and against the very objectives of the taxation policy of the government. If such benefits are provided for under the virtual digital assets

tax, it will promote long-term holdings of cryptocurrency assets and ensure stability in the market. If urgent measures are not taken to rectify the current situation, India will fail to harness the potential of the crypto industry as one of its major economic prospects. Being one of the fastest growing economies of the world with a young population, India has enormous capability to become the global crypto hub. However, the imposition of this tax, as the economic analysis in this paper has shown, has led to a substantial decline in the revenue that this market generates which is not a good sign for the growth of this market.

# JUSTICE DELAYED, PROSPERITY DENIED: AN IN-DEPTH ECONOMIC ANALYSIS OF JUDICIAL BACKLOGS IN INDIA

*Nileena Banerjee*[1]

## ABSTRACT

*India's judicial system, often a subject of scrutiny for its perceived sluggishness, has emerged as a central point of contention regarding its influence on the nation's evolving economic landscape. This paper conducts a thorough examination of India's judicial system, specifically addressing the escalating backlog of cases in the Supreme Court, High Courts, and District Courts. The study delves into the significant implications this backlog holds for the country's economic prosperity. The historical background and constitutional mandates for timely justice underscore the significance of the issue. The analysis of pendency in the Supreme Court, High Courts, and District Courts reveals a troubling pattern of judicial delay, with backlogs consistently increasing over the years. Over a ten-year period, encompassing data from 2012 to 2022, this study endeavors to establish correlations and regression models that illuminate the relationship between indicators of judicial efficiency, including average case disposal time and case backlog, and economic performance, as evidenced by GDP growth. The findings reveal a modest yet negative correlation between the duration of average case disposal and GDP growth, signifying that as judicial processes decelerate, there is a concomitant reduction in economic growth. Furthermore, a mild yet significant inverse correlation is observed between the volume of pending cases, denoted by the case backlog, and GDP growth. This trend underscores that as the backlog of cases awaiting resolution expands, economic growth tends to experience a modest decline. In conclusion, this paper underscores the substantial impact of court delays on India's economic progress, highlighting the pressing need for systemic reform aimed at ensuring the swift and efficient administration of justice. As India progresses in its economic development journey, it is crucial to tackle the efficiency challenges within the judicial system to maintain growth and uphold the principles of justice.*

***Keywords****: Judicial Efficiency, Case Backlog, Supreme Court, Economic Impact.*

[1] Student at National University of Advanced Legal Studies, Koch

## 1. INTRODUCTION

An efficient legal system plays a pivotal role in upholding social order, regulating governance, fostering economic growth, and serving as a catalyst for political reform and socio-economic transformation.[2] It encompasses a network of intertwined laws designed not only to safeguard citizens' rights but also to instill a sense of civic responsibility.[3] Moreover, various legislative measures seek to ensure the seamless implementation of government policies aimed at strengthening the nation.[4] In India, the judicial system operates through a hierarchical structure comprising the Supreme Court as the apex court of the country, followed by the High Courts, and then by the Subordinate Courts. High courts, often possessing rich historical legacies, are situated in state capitals or major metropolitan areas, while Subordinate Courts are strategically dispersed across the nation to accommodate litigants' needs.

Independence, effectiveness, accessibility, accountability, and efficiency represent the fundamental characteristics of a well-functioning judicial system.[5] Efficiency is quantified through a ratio-analysis measurement that considers the relationship between inputs and outputs,[6] where inputs are represented by the initiation and filing of cases, and outputs are evaluated based on the number of cases resolved and the caliber of the judgments rendered. Timely and effective delivery of verdicts assumes paramount importance in cementing the system's legitimacy,[7] and protracted delays in dispensing justice erode public trust in the legal framework and adversely impact economic endeavors and social cohesion.[8] Unfortunately, even with the increase in the number of courts across the nation, the accessibility of judicial services falls short of addressing the growing

[2] Kevin Davis & Michael J. Trebilcock, *What Role Do Legal Institutions Play In Development*, IMF (Oct. 20, 1999), https://www.imf.org/external/pubs/ft/seminar/1999/reforms/trebil.pdf.
[3] *Id.*
[4] *Policy Shaping And Policy Making: The Governance Of Inclusive Growth*, OECD, (2015) https://www.oecd.org/governance/ministerial/the-governance-of-inclusive-growth.pdf.
[5] *Basic Principles on the Independence of the Judiciary*, OFFICE OF THE UNITED NATIONS HIGH COMMISSIONER FOR HUMAN RIGHTS (Sept. 6, 1985), https://www.ohchr.org/en/instruments-mechanisms/instruments/basic-principles-independence-judiciary.
[6] Courtney Bir et al., *Evaluating Financial Performance and Position*, OKLAHOMA STATE UNIVERSITY (Jan. 5, 2022), https://extension.okstate.edu/fact-sheets/evaluating-financial-performance-and-position.html.
[7] Sumanti Sen, *Pending Cases & Absence Of Judges: Indian Judiciary Delays Justice Denies Equity*, THE LOGICAL INDIAN (Mar. 3, 2020, 11:40 AM), https://thelogicalindian.com/story-feed/awareness/indian-justice-system-delay-19973.
[8] *Effectiveness and fairness of judicial systems, in Government at a Glance 2015*, ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, https://www.oecd-ilibrary.org/docserver/gov_glance-2015-65-en.pdf?expires=1697718505&id=id&accname=guest&checksum=60DC0831A85176865F7E5C2995E77BA9.

need for justice.[9] This incongruity exacerbates delays and contributes to the mounting backlog of cases. India's global ranking in the Rule of Law Index, at a lowly 77th among 140 countries,[10] underscores its subpar performance, particularly in the domains of civil justice, order, and security.[11] This pattern underscores the pressing need to address the alarming impact of court delays on the economy.

### 1.1 Historical Background

At the core of India's dynamic democracy is its intricate and diverse judicial system, molded by historical legacies and constitutional mandates. This system plays a crucial role in upholding rule of law and safeguarding citizens' rights.[12] However, during recent years, courts in India have been grappling with a mounting case backlog, especially in the District Courts,[13] High Courts,[14] and Supreme Court,[15] and this issue has far-reaching implications for the nation's economic well-being. Understanding the historical development of this issue is critical to appreciating the current challenges faced by the Indian legal system.

### 1.2 Relevance of the Study

The research is highly pertinent in the contemporary Indian and international context. In India, the issue of increasing case backlogs and delays in the judicial system has become a topic of significant concern. It affects not only the quality of justice but also has wide-reaching economic implications. Delays in the disposal of cases can hinder economic activities, discourage investments, and weaken public trust in the legal system.[16] Internationally, the operation of the legal system attracts

[9] Pratik Datta & Suyash Rai, *How to Start Resolving the Indian Judiciary's Long-Running Case Backlog*, CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE (Sept. 09, 2021), https://carnegieendowment.org/2021/09/09/how-to-start-resolving-indian-judiciary-s-long-running-case-backlog-pub-85296.
[10] Mekhala Saran, *Rule of Law Index: India Ranks 77 Out of 140; Higher than China But Not Nepal*, THE QUINT (Oct. 26, 2022, 9:31 AM), https://www.thequint.com/news/law/world-justice-project-rule-of-law-index-fundamental-rights-open-government-india-ranking.
[11] *Now, govt eyes better Rule of Law Index score*, THE TIMES OF INDIA (Jan. 1, 2023, 7:30 AM), https://timesofindia.indiatimes.com/india/now-govt-eyes-better-rule-of-law-index-score/articleshow/96655787.cms.
[12] *History - Supreme Court of India*, THE SUPREME COURT OF INDIA, https://main.sci.gov.in/pdf/Museum/m2.pdf.
[13] *National Judicial Data Grid (District and Taluka Courts of India)*, E-COURTS, https://njdg.ecourts.gov.in/njdgnew/index.php.
[14] *National Judicial Data Grid (High Courts of India)*, E-COURTS, https://njdg.ecourts.gov.in/hcnjdgnew/.
[15] *National Judicial Data Grid (Supreme Court of India)*, E-COURTS, https://njdg.ecourts.gov.in/scnjdg/.
[16] Alok Prasanna Kumar, *Delayed justice: When judgement day arrives too late*, THE MINT (Jun. 07, 2016, 12:56 AM), https://www.livemint.com/Politics/AaR91YL6KuVo3ZcN3q3JfO/Delayed-justice-When-judgement-day-arrives-too-late.html.

considerable attention, particularly concerning economic development and commitment to upholding legal principles and rule of law. Consequently, findings of this study hold relevance for addressing broader concerns related to legal efficiency, economic prosperity, and the preservation of justice globally.

## 2. RESEARCH QUESTION

What is the extent of the relationship between the efficiency of the Indian judicial system, as reflected in average case disposal time and case backlog, and the country's economic performance measured by GDP growth?

## 3. METHODOLOGY

This paper employs a law and economics interface to address the research question. It leverages economic principles and legal analysis to assess the interplay between India's judicial system and its economic performance. This interdisciplinary approach allows for a comprehensive examination of how judicial efficiency, case backlog, and GDP growth are interconnected, providing valuable insights for policymakers and stakeholders.

## 4. THE CONSTITUTIONAL IMPERATIVE FOR TIMELY JUSTICE

The requirement for delivering prompt and timely justice in India is unambiguous and unquestionable according to the Constitution. It highlights the inherent and fundamental entitlement of every individual to seek and receive justice.[17] This right is designed to be safeguarded by the Indian State under a spectrum of constitutional provisions, including but not limited to Art.14, Art.19, Art.21, Art.32, Art.226, and the Preamble. Furthermore, the prompt administration of justice goes beyond being a discretionary consideration and is, in fact, a constitutional obligation, as can be seen in the Directive Principles of State Policy outlined in Articles 38(1), 39, and 39A. These obligations are further reinforced by India's international legal commitments to ensure the expeditious provision of justice.

[17] Anita Kushwaha v. Pushap Sadan, (2016) 8 SCC 509.

The interpretation of this constitutional provision was examined in the case of in *Babu v. Raghunathji*.[18] In this case, the Supreme Court emphasized that, *"social justice would include 'legal justice' which means that the system of administration of justice must provide a cheap, expeditious and effective instrument for realization of justice by all section of the people irrespective of their social or economic position or their financial resources."*

The commitment within the Indian constitutional framework to ensure the timely delivery of justice, as delineated in Articles 14, 19, and 21, holds a firmly established position in constitutional jurisprudence. The esteemed Constitution Bench of the Apex Court expressed this commitment in the case of *P. Ramachandra Rao v. State of Karnataka*.[19] The court underscored that, "*It is the constitutional obligation of the State to dispense speedy justice, more so in the field of criminal law, and paucity of funds or resources is no defence to denial of right to justice emanating from Articles 21, 19 and 14 and the preamble of the Constitution as also from the directive principles of State policy. It is high time that the Union of India and the various States realize their constitutional obligation and do something concrete in the direction of strengthening the justice delivery system. We need to remind all concerned of what was said by this Court in Hussainara Khatoon (IV) 9: 'The State cannot be permitted to deny the constitutional right of speedy trial to the accused on the ground that the State has no adequate financial resources to incur the necessary expenditure needed for improving the administrative and judicial apparatus with a view to ensuring speedy trial. The State may have its financial constraints and its priorities in expenditure, but, 'the law does not permit any Government to deprive its citizens of constitutional rights on a plea of poverty', or administrative inability. (para 10)'"*

The right to a speedy trial and the timely delivery of justice are not only safeguarded within the domestic legal framework but are also explicitly recognized in various international agreements and conventions that have relevance to India. Of significant note is the International Convention on Civil and Political Rights (ICCPR), which India signed in 1979. These international commitments have significantly influenced Indian legal principles, strengthening the protection of basic rights within the country's constitutional framework.

[18] Babu v. Raghunathji, AIR 1976 SC 1734.
[19] P. Ramachandra Rao v. State of Karnataka, (2002) 4 SCC 578.

This influence is discernible cases such as *Vishaka and Others v. State of Rajasthan and Others*,[20] *Nilabati Behera v. State of Orissa*,[21] and *People's Union for Civil Liberties v. Union of India*.[22] Furthermore, the constitutional provision found in Article 51(c) of the Indian Constitution,[23] which calls for the adherence to international law and treaty commitments, coupled with the authority vested in the Indian state by Art.73(1)(b) of the Constitution of India,[24] serves to reinforce the constitutional commitment of the Indian State to ensuring the timely provision of justice. In summary, the constitutional framework of India unambiguously underscores the imperative of delivering justice in a timely manner. This mandate is founded on fundamental rights, constitutional principles, and international obligations, all of which collectively establish the Indian State's unwavering commitment to ensuring the swift administration of justice as an essential component of a just and democratic society.

## 5. JUDICIARY'S PERSPECTIVE

The imperative of delivering justice in a timely manner has been consistently underscored by both the Supreme Court and High Courts of India. More than three decades ago, the Supreme Court affirmed that, *"speedy trial is of essence to criminal justice and there can be no doubt that the delay in trial by itself constitutes denial of justice."*[25] The landmark case of *Maneka Gandhi v. Union of India*,[26] further emphasized that, *"[t]here can, therefore, be no doubt that speedy trial, and by speedy trial we mean a reasonably expeditious trial, is an integral and essential part of fundamental right to life and liberty enshrined in Art 21."* In the case of *Anil Rai v. State of Bihar*,[27] the Supreme Court made an effort to outline guidelines for the prompt delivery of judgments. The Constitution Bench of the Supreme Court, in the case of *P. Ramachandra Rao v. State of Karnataka*,[28] reasserted the adage that 'justice delayed is justice denied.'

[20] Vishaka and Others v. State of Rajasthan and Others, 1997 (6) SCC 241.
[21] Nilabati Behera v. State of Orissa, 1993 (2) SCC 746.
[22] People's Union for Civil Liberties v. Union of India, 1997 (3) SCC 433.
[23] INDIA CONST. art. 51, cl. c.
[24] INDIA CONST. art. 73, cl. 1(b).
[25] Hussainara Khatoon v. State of Bihar, AIR 1979 SC 1364.
[26] Maneka Gandhi v. Union of India, AIR 1978 SC 597.
[27] Anil Rai v. State of Bihar, (2001) 7 SCC 318.
[28] P. Ramachandra Rao v. State of Karnataka, (2002) 4 SCC 578.

In the case of *All India Judge's Association v. Union of India*,[29] the Supreme Court took decisive action by issuing specific directives aimed at *"increasing the judicial strength from 10.5 judges per 10 lakh population to 50 judges per 10 lakh population"* within a five-year timeframe. Additionally, the court mandated the prompt filling of judicial vacancies within a year and the appointment of necessary ad hoc judges to alleviate the backlog of pending cases. This directive was issued in tandem with the requisite infrastructure enhancements, taking into consideration the recommendations outlined in the 85th Parliamentary Standing Committee Report from 2001 and the 120th Law Commission Report from 1987.

The cases highlighted above underscore the judiciary's commitment to ensuring timely justice delivery in India and the recognition that delays in legal proceedings can result in a denial of justice. Furthermore, these cases have prompted critical measures to increase the judicial workforce and improve the efficiency of the legal system to address case backlogs and expedite the resolution of legal matters. These initiatives are geared towards upholding the constitutional right to a fair and timely trial, a crucial aspect for upholding justice and ensuring the protection of individuals' freedoms.

## 6. PENDENCY IN SUPREME COURT

The Supreme Court, currently comprising 34 judges,[30] grapples with a mounting caseload that significantly impairs its efficiency, impacting both the quantity and quality of cases it can adjudicate.[31] This surge in pending cases and associated delays poses significant barriers to equitable access to justice, eroding public trust in the institution.[32] The increasing volume of appeals against decisions made by lower courts underscores concerns about the quality of

[29] All India Judge's Association v. Union of India, (2002) 4 SCC 247.

[30] *Constitution: Supreme Court Of India*, THE SUPREME COURT OF INDIA, https://main.sci.gov.in/constitution#:~:text=The%20Supreme%20Court%20of%20India%20comprises%20the%20Chief%20Justice%20and,the%20age%20of%2065%20years..

[31] *State Of The Judiciary And Access To Justice*, OFFICE OF JUSTICE PROGRAMS, https://www.ojp.gov/pdffiles1/Digitization/48528NCJRS.pdf.

[32] Rajnish Jindal & Amit Raj Agrawal, *Delays And Pendency Of Court's Cases In India*, 18 PALARCH'S JOURNAL OF ARCHAEOLOGY OF EGYPT 1763- 1774, 1766 (2021), https://archives.palarch.nl/index.php/jae/article/download/9013/8371/17681.

judgments and the shortcomings in the judicial system,[33] with adverse repercussions for the country's social and economic well-being. The foremost challenge faced by the Supreme Court is the persistent issue of case backlog, which has steadily escalated over the years. In 1951, the Supreme Court had 827 pending cases, a number that had ballooned to 69,781 cases by 2022, representing an 84.37-fold increase.[34]

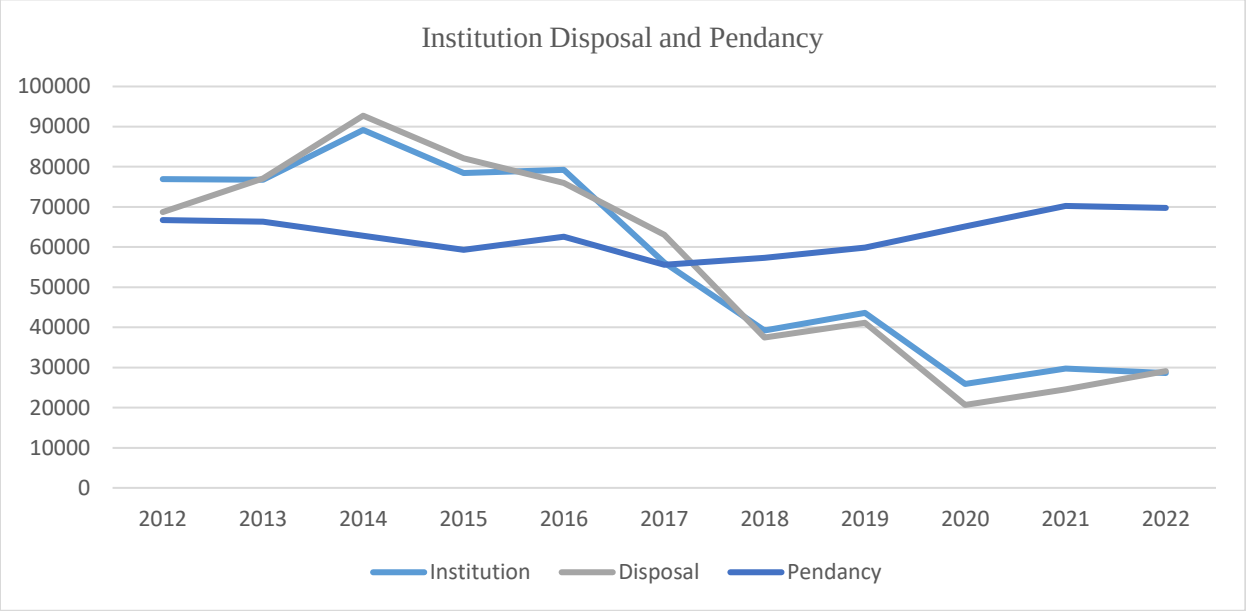



Fig. 1: Institution disposal and pendency (Supreme Court)[35]

With regard to the Supreme Court, the graph shows the pattern of pending cases over the years. As can be seen, it is clear that there is a persistent issue of judicial delay in this system. the overall trend over time has seen a growing number of pending cases. The year 2020 saw a significant increase in pending cases, and while there was a slight reduction in 2021, the overall situation remains concerning, with a high number of cases pending in 2022. This suggests that the judicial system is not disposing of cases at a rate that keeps up with the rate at which new cases are being instituted, indicating a delay in the resolution of cases.

[33] Richard Nobles & David Schiff, *The Right to Appeal and Workable Systems of Justice*, 65 THE MODERN LAW REVIEW 676-701, 699 (2002), https://www.jstor.org/stable/1097612.
[34] *The Indian Judiciary Annual Report 2021-22*, THE SUPREME COURT OF INDIA, https://main.sci.gov.in/pdf/AnnualReports/INDIAN%20JUDICIARY%20Annual%20Report%202021-22.pdf.
[35] *Id.*

## 7. ECONOMIC ANALYSIS (SUPREME COURT)

To determine the relationship between judicial efficiency (average disposal time and case backlog) and economic performance (GDP growth), the correlation coefficients have been calculated. Additionally, regression analysis has also been used to estimate the economic cost of judicial delay. All calculations have been done using data in Table 1.

| **Year** | **Cases Instituted** | **Cases Disposed** | **Cases Pending** | **Average Disposal Time (Months)** | **Case Backlog (%)** | **GDP Growth (%)** |
|---|---|---|---|---|---|---|
| 2012 | 76917 | 68744 | 66692 | 10.71 | 86.69 | 5.46 |
| 2013 | 76742 | 77085 | 66349 | 10.69 | 86.32 | 6.39 |
| 2014 | 89164 | 92722 | 62791 | 10.71 | 70.58 | 7.41 |
| 2015 | 78444 | 82092 | 59272 | 10.69 | 75.59 | 8.00 |
| 2016 | 79244 | 75979 | 62537 | 10.72 | 79.07 | 8.26 |
| 2017 | 56104 | 63053 | 55588 | 10.73 | 99.17 | 6.80 |
| 2018 | 39228 | 37470 | 57346 | 11.36 | 145.84 | 6.45 |
| 2019 | 43613 | 41100 | 59859 | 10.60 | 137.45 | 3.87 |
| 2020 | 25897 | 20670 | 65086 | 13.46 | 250.86 | -5.83 |
| 2021 | 29739 | 24586 | 70239 | 13.32 | 236.10 | 9.05 |
| 2022 | 28651 | 29109 | 69781 | 13.21 | 243.63 | 7.00 |

Table 1: Calculation of correlation coefficients (Supreme Court)[36]

### 7.1 Correlation Analysis

*1. Correlation between Average Disposal Time and GDP Growth (r = -0.388):* The negative correlation coefficient (-0.388) suggests a weak negative relationship between average disposal time and GDP growth. In other words, as average disposal time increases (indicating slower judicial processes), GDP growth tends to decrease, though the relationship is not very strong.

*2. Correlation between Case Backlog and GDP Growth (r = -0.4422):* Similarly, the negative correlation coefficient (-0.4422) indicates a weak negative relationship between case backlog and GDP growth. As the case backlog increases (more pending cases), GDP growth tends to decrease, though, again, the relationship is not very strong.

### 7.2 Regression Analysis

*1. Average Disposal Time vs. GDP Growth ($\hat{y}$ = -1.30681X + 20.70723):* In this linear regression model, the coefficient 'b' (-1.30681) suggests that for every unit increase in average disposal time, GDP growth is estimated to decrease by approximately 1.31 units. The positive intercept (20.70723) represents the estimated GDP growth when average disposal time is zero (which may not have practical significance in this context).

*2. Case Backlog vs. GDP Growth ($\hat{y}$ = -0.02493X + 9.1403):* In this linear regression model, the coefficient 'b' (-0.02493) indicates that for every unit increase in case backlog, GDP growth is estimated to decrease by approximately 0.025 units. The positive intercept (9.1403) represents the estimated GDP growth when case backlog is zero (which may not be practically achievable).

## 8. PENDENCY IN HIGH COURTS

[36] *Supra* note 34.

India is home to 25 High Courts, and the approved capacity for Judges across these courts stands at 1114.[37] However, out of this only 785 Judges are working and 329 posts of Judges are vacant.[38] In 1980, pendency in the High Courts were 1515, which rose to 727031 cases in 2022 (479.88 times).[39]

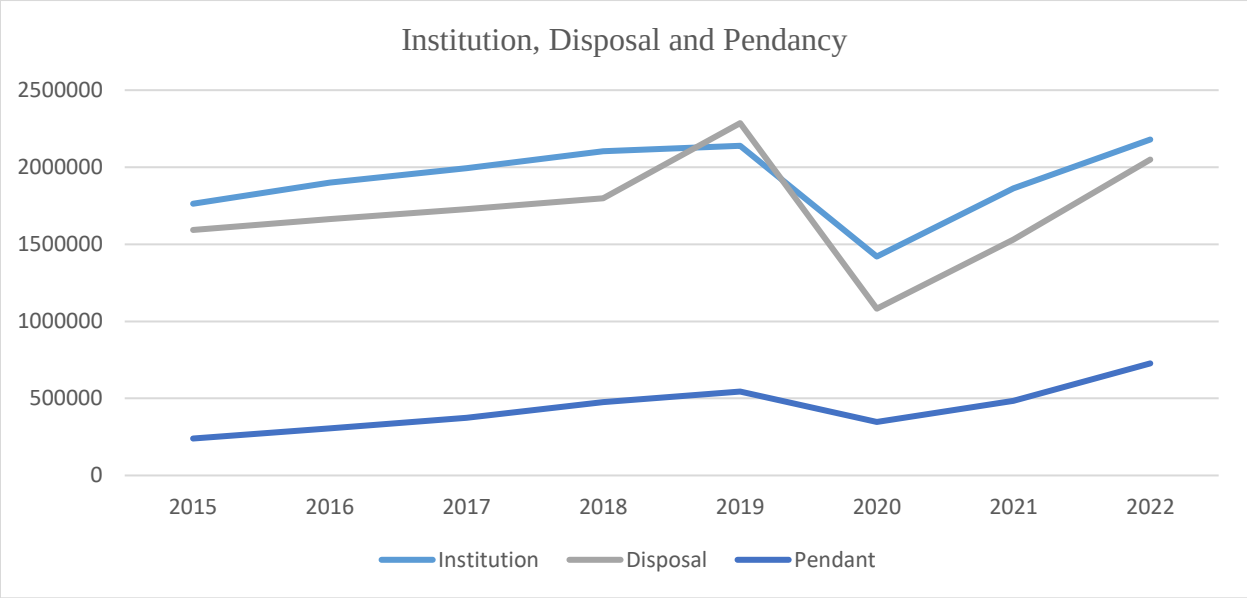



Fig. 2: Institution, Disposal and Pendency (High Courts)[40]

With regard to High Courts, the graph suggests a persistent issue of judicial delay. While there was a significant reduction in pending cases in 2020, the years 2016, 2017, 2018, and 2019 all saw increases in the number of unresolved cases, indicating a delay in case resolution. The situation improved in 2020 but worsened again in 2022, with a substantial increase in pending cases. Overall, this data indicates that the judicial system is struggling to keep up with the rate at which new cases are being instituted, leading to delays in case resolution.

[37] *The Indian Judiciary Annual Report 2021-22*, THE SUPREME COURT OF INDIA, https://main.sci.gov.in/pdf/AnnualReports/INDIAN%20JUDICIARY%20Annual%20Report%202021-22.pdf.
[38] *Strength of Judges*, MINISTRY OF LAW AND JUSTICE PIB DELHI (Mar. 24, 2023, 6:16 PM), https://pib.gov.in/PressReleasePage.aspx?PRID=1910433.
[39] *National Judicial Data Grid (High Courts of India)*, E-COURTS, https://njdg.ecourts.gov.in/hcnjdgnew/.
[40] *Id.*

## 9. ECONOMIC ANALYSIS (HIGH COURTS)

To determine the relationship between judicial efficiency (average disposal time and case backlog) and economic performance (GDP growth), the correlation coefficients have been calculated. Additionally, regression analysis has also been used to estimate the economic cost of judicial delay. All calculations have been done using data in Table 2.

| **Year** | **Cases Instituted** | **Cases Disposed** | **Cases Pending** | **Average Disposal Time (Months)** | **Case Backlog (%)** | **GDP Growth (%)** |
|---|---|---|---|---|---|---|
| 2015 | 1762210 | 1593453 | 239641 | 6.35 | 13.59 | 5.46 |
| 2016 | 1899887 | 1664510 | 306501 | 7.35 | 16.08 | 6.39 |
| 2017 | 1993516 | 1727594 | 374360 | 7.69 | 18.76 | 7.41 |
| 2018 | 2102812 | 1798694 | 476142 | 8.04 | 22.67 | 8.00 |
| 2019 | 2138226 | 2286084 | 545148 | 8.76 | 25.50 | 8.26 |
| 2020 | 1420443 | 1082211 | 346559 | 7.71 | 24.40 | 6.80 |
| 2021 | 1863016 | 1531154 | 484015 | 8.31 | 26.03 | 6.45 |
| 2022 | 2179770 | 2048902 | 727031 | 8.43 | 33.35 | 3.87 |

Table 2: Calculation of correlation coefficients (High Courts)[41]

### 9.1 Correlation Analysis

*1. Correlation between Average Disposal Time and GDP Growth (r = 0.2371):* The positive correlation coefficient (r = 0.2371) indicates a weak positive relationship between average disposal

[41] *Supra* note 39.

time and GDP growth. This implies that with the rise in average disposal time, there is a slight inclination for GDP growth to also increase. However, the correlation is relatively weak, suggesting that other factors have a more prominent influence on GDP growth.

*2. Correlation between Case Backlog and GDP Growth (r = -0.2558):* The negative correlation coefficient (r = -0.2558) implies a weak adverse association between the growth of case backlog and GDP growth. This means that with an escalation in the case backlog, there is a slight inclination for a reduction in GDP growth. However, the correlation remains relatively feeble, indicating that other factors might wield a more substantial influence on GDP growth.

### 9.2 Regression Analysis

*1. Average Disposal Time vs. GDP Growth ($\hat{y} = 0.44975X + 3.05846$):* The regression equation for Average Disposal Time vs. GDP Growth indicates that, on average, for each unit increase in Average Disposal Time, there is a predicted increase of 0.44975 units in GDP Growth. The intercept (3.05846) represents the estimated GDP Growth when Average Disposal Time is zero. This suggests that an increase in Average Disposal Time is associated with a positive but modest increase in GDP Growth.

*2. Case Backlog vs. GDP Growth ($\hat{y} = -0.05793X + 7.88607$):* The regression equation for Case Backlog vs. GDP Growth indicates that, on average, for each unit increase in Case Backlog, there is a predicted decrease of 0.05793 units in GDP Growth. The intercept (7.88607) represents the estimated GDP Growth when Case Backlog is zero. This suggests that an increase in Case Backlog is associated with a negative impact on GDP Growth, albeit a relatively small one.

## 10. PENDENCY IN DISTRICT AND TALUK COURTS

India's judicial landscape is extensive, encompassing a total of 672 District Courts,[42] designed to serve as the foundation of the legal system across the country. These courts are crucial in guaranteeing citizens at the grassroots level access to justice.[43] However, the efficiency of this vital

[42] *District Courts In India*, LEGOPEDIA, https://legodesk.com/legopedia/district-courts-in-india/.
[43] Jayanth K. Krishnan et al., *Grappling at the Grappling at the Grassroots: Access to Justice in Lower s Lower Tier*, MAURER LAW (2014), https://www.repository.law.indiana.edu/cgi/viewcontent.cgi?article=2302&context=facpub.

tier in the judicial hierarchy is compromised due to a substantial shortage of judges.[44] Out of the total sanctioned strength, which is 25,042 judges, [45] a worrying 5,850 positions remain vacant, [46] hampering the courts' ability to handle cases effectively. In 1980, pendency in the District Courts were 19792, which rose to 8476091 cases in 2022 (428.25 times).[47]

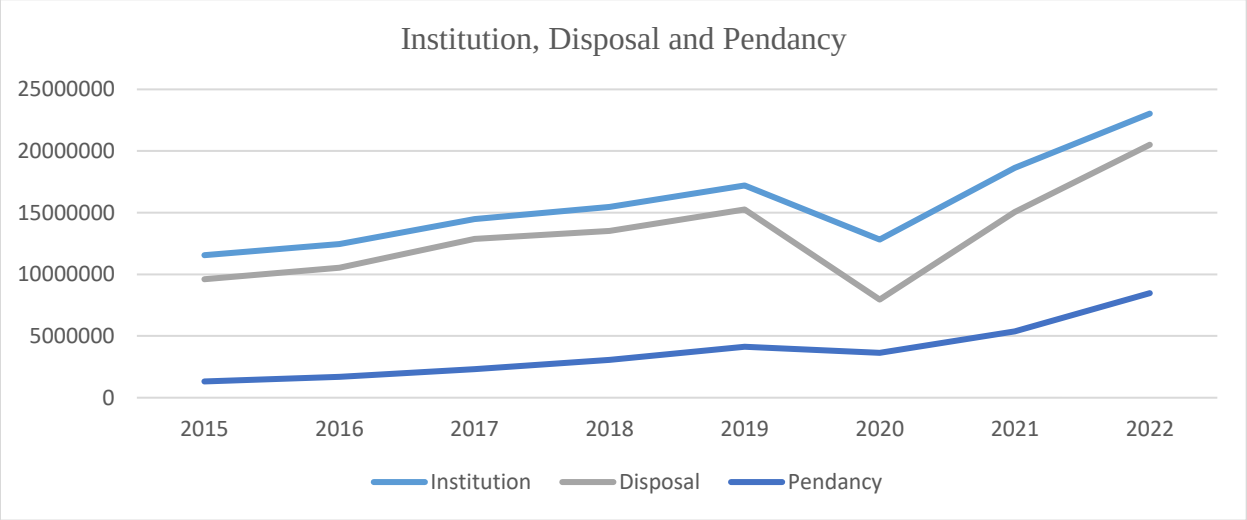



Fig. 3: Institution, Disposal and Pendency (District and Taluk Courts)[48]

With regard to District Courts, the data presented in the graph clearly illustrates and demonstrates that there is a pronounced issue of judicial delay. The graph clearly shows an upward trend in pending cases, indicating the number of unresolved cases at the conclusion of each year. It consistently demonstrates significant growth over the years, underscoring a troubling backlog in case resolution. From 2016 to 2022, the number of pending cases steadily grew, with a particularly pronounced surge in 2022. This trend underscores a systemic challenge in district courts, where the capacity to manage new cases is outpaced by the accumulation of pending ones, resulting in

[44] *Pendency and Vacancies in the Judiciary*, PRS INDIA, https://prsindia.org/policy/vital-stats/pendency-and-vacancies-in-the-judiciary.
[45] Sumeda, *The clogged state of the Indian judiciary*, THE HINDU (May 10, 2022, 11:30 AM), https://www.thehindu.com/news/national/indian-judiciary-pendency-data-courts-statistics-explain-judges-ramana-chief-justiceundertrials/article65378182.ece.
[46] Kanu Sarda, *District courts in India have a vacancy of 5850 judges*, INDIA TODAY (Dec. 23, 2022, 20:35 PM), https://www.indiatoday.in/law/story/district-courts-in-india-have-a-vacancy-of-5850-judges-law-minister-tell-rajya-sabha-2312841-2022-12-23.
[47] *National Judicial Data Grid (District and Taluka Courts of India)*, E-COURTS, https://njdg.ecourts.gov.in/njdgnew/index.php.
[48] *Id.*

considerable delays in the justice system, necessitating urgent and comprehensive reforms to address this pressing issue.

## 11. ECONOMIC ANALYSIS (DISTRICT AND TALUK COURTS)

To determine the relationship between judicial efficiency (average disposal time and case backlog) and economic performance (GDP growth), the correlation coefficients have been calculated. Additionally, regression analysis has also been used to estimate the economic cost of judicial delay. All calculations have been done using data in Table 3.

| **Year** | **Cases Instituted** | **Cases Disposed** | **Cases Pending** | **Average Disposal Time (Months)** | **Case Backlog (%)** | **GDP Growth (%)** |
|---|---|---|---|---|---|---|
| 2015 | 11555626 | 9599328 | 1317414 | 2.96 | 11.42 | 5.46 |
| 2016 | 12467167 | 10528544 | 1688625 | 2.94 | 13.55 | 6.39 |
| 2017 | 14492734 | 12867997 | 2313900 | 3.01 | 15.94 | 7.41 |
| 2018 | 15460697 | 13522454 | 3072808 | 3.00 | 19.87 | 8.00 |
| 2019 | 17198455 | 15273662 | 4118239 | 3.05 | 23.95 | 8.26 |
| 2020 | 12819952 | 7954575 | 3636614 | 4.08 | 28.42 | 6.80 |
| 2021 | 18630735 | 15043120 | 5382511 | 4.17 | 28.86 | 6.45 |
| 2022 | 23031174 | 20512087 | 8476091 | 4.32 | 36.81 | 3.87 |

Table 3: Calculation of coefficients (District and Taluk Courts)[49]

[49] *Supra* note 47.

### 11.1 Correlation Analysis

*1. Correlation between Average Disposal Time and GDP Growth (r = -0.5366):* The negative correlation coefficient of -0.5366 indicates a moderately strong negative relationship between the time it takes to resolve legal cases (Average Disposal Time) and the rate of economic growth (GDP Growth). In simpler terms, as the judicial process becomes lengthier, there is a significant tendency for economic growth to decline. The larger the delays in case disposal, the more pronounced the negative impact on the economy. This means that as legal processes take more time, the economy tends to grow at a slower pace.

*2. Correlation between Case Backlog and GDP Growth (r = -0.3546):* This negative correlation coefficient of -0.3546 suggests a moderate negative relationship between the backlog of unresolved legal cases (Case Backlog) and GDP Growth. As the backlog of cases waiting to be resolved increases, there is a tendency for GDP Growth to decrease. While the correlation isn't as strong as with Average Disposal Time, it still indicates that a growing backlog negatively affects the economy. In essence, a larger backlog implies slower economic growth.

### 11.2 Regression Analysis

*1. Average Disposal Time vs. GDP Growth ($\hat{y}$ = -1.22556X + 10.79747):* The regression equation demonstrates a negative relationship between Average Disposal Time and GDP Growth. For each additional month of average disposal time, the model estimates that GDP Growth decreases by approximately 1.22556 percentage points. The intercept (10.79747) represents the estimated GDP Growth when Average Disposal Time is zero, which is a theoretical scenario where cases are resolved instantly. This means that extended case disposal times are associated with a significant reduction in economic growth.

*2. Case Backlog vs. GDP Growth ($\hat{y}$ = -0.05783X + 7.87254):* In this regression equation, the relationship between Case Backlog and GDP Growth is also negative. For each additional percentage point increase in the backlog of unresolved cases, the model estimates that GDP Growth decreases by approximately 0.05783 percentage points. The intercept (7.87254) represents the estimated GDP Growth when Case Backlog is zero. This indicates that a growing backlog of cases is linked to a decline in economic growth.

## 12. ROLE OF LEGAL SYSTEMS IN ECONOMIC DEVELOPMENT OF INDIA

In the field of economics, the central role of the government is to create and enforce laws and regulations that foster a country's economic progress and advancement.[50] The activities of the government sector are largely shaped by the requirements and principles of the private sector.[51] In this context, the law plays a dual role in facilitating economic development within a nation.[52]

Firstly, it plays an allocative role by determining the allocation of resources, their sources, and their intended utilization. It addresses whether resource allocation is driven by the state or left to market forces.[53] Secondly, it assumes a procedural role, ensuring the efficiency of legal enforcement and the alignment of legal institutions with the overarching objective of attaining economic growth and development.[54] This procedural dimension may adopt either a discretionary approach, wherein the State can modify laws at its discretion, or a rule-based approach, necessitating adherence to specific legal rules and principles.[55] These two aspects of laws and legal systems significantly influence a country's economic development, with a preference for market-driven resource allocation and rule-based procedural mechanisms to optimize economic progress.[56]

In the Indian context, the connection between law, legal systems, and economic development can be encapsulated in two primary assertions. The first assertion posits that "law" determines a firm's

[50] Kevin Davis & Michael J. Trebilcock, *What Role Do Legal Institutions Play In Development*, INTERNATIONAL MONETARY FUND (Oct. 20, 1999), https://www.imf.org/external/pubs/ft/seminar/1999/reforms/trebil.pdf.
[51] A.J. Perry, *The Relationship between Legal Systems and Economic Development: Integrating Economic and Cultural Approaches*, 2 JOURNAL OF LAW AND SOCIETY 282-307, 292 (2002), https://www.researchgate.net/publication/227617607_The_Relationship_between_Legal_Systems_and_Economic_Development_Integrating_Economic_and_Cultural_Approaches.
[52] K. Pistor, K. & P.A. Wellons, *The Role of Law and Legal Institutions in Asian Economic Development*, OXFORD UNIVERSITY PRESS (1998), http://www.asianlii.org/asia/other/ADBLPRes/1998/3.pdf.
[53] *Id.*
[54] *Id.*
[55] T. R. S. Allan, *Human Rights and Judicial Review: A Critique of 'Due Deference'*, 65 THE CAMBRIDGE LAW JOURNAL 671-695, 673 (2006), http://www.jstor.org/stable/4509244.
[56] Perry, A.J., *The Relationship between Legal Systems and Economic Development: Integrating Economic and Cultural Approaches*, 2 JOURNAL OF LAW AND SOCIETY 282-307, 292 (2002), https://www.researchgate.net/publication/227617607_The_Relationship_between_Legal_Systems_and_Economic_Development_Integrating_Economic_and_Cultural_Approaches.

access to financial resources and its capacity to raise capital for operational needs.[57] The second assertion underscores the pivotal role that a country's legal system and legal origins play in determining its adaptability to modify and evolve its regulatory framework.[58] A direct correlation exists between the effectiveness of the legal system in protecting investor interests and the advancement of the external finance market.[59] As a result, India has seen a substantial increase in laws aimed at protecting equity investors.[60] Industries heavily reliant on equity financing, such as pharmaceuticals and software, have witnessed more substantial growth compared to those predominantly dependent on debt financing, like heavy manufacturing.[61] The role of the legal system in facilitating industry growth is evident, as robust legal provisions have been formulated to enhance equity financing processes in contrast to debt financing.[62]

India has experienced continuous economic development, as evidenced by its Gross Domestic Product growth rates over the past decade (Figure 4). Research suggests that sustained high growth rates, such as the 8% growth rate, must be coupled with an investment effort exceeding 35% of GDP.[63] Investment and equity finance play pivotal roles in influencing a country's economic advancement, stimulating demand, introducing new technology, enhancing productivity, generating employment opportunities, and expanding overall capacity.[64]

In consequence, when evaluating the influence of laws and the legal system on India's economic growth, it is essential to focus on their influence on investment policies serves as a vital connection between the two domains. This perspective aligns with the findings of the Economic Survey of

[57] John Armour & Priya Lele, Law *Finance and Politics: The Case of India*, LAW AND SOCIETY REVIEW (Apr. 1, 2009), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1116608.
[58] *Id.*
[59] Amanda Perry, *Effective Legal Systems and Foreign Direct Investment: In Search of the Evidence*, 49 THE INTERNATIONAL AND COMPARATIVE LAW QUARTERLY 779-799, 783 (2000), http://www.jstor.org/stable/761760.
[60] *Supra* note 51.
[61] Michael Mussa, *Factors Driving Global Economic Integration*, INTERNATIONAL MONETARY FUND (Aug. 25, 2000), https://www.imf.org/en/News/Articles/2015/09/28/04/53/sp082500.
[62] *Capital market instruments to mobilize institutional investors to infrastructure and SME financing in Emerging Market Economies*, THE ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, https://www.oecd.org/g20/topics/development/WB-IMF-OECD-report-Capital-Markets-Instruments-for-Infrastructure-and-SME-Financing.pdf.
[63] S Sanyal, *Improving legal system is the best investment India can make*, THE ECONOMIC TIMES (Jul. 5, 1998), https://economictimes.indiatimes.com/news/economy/policy/view-improving-legal-system-is-the-best-investment-india-can-make/articleshow/7007%E2%80%A6.
[64] Amanda Perry, *Effective Legal Systems and Foreign Direct Investment: In Search of the Evidence*, 49 THE INTERNATIONAL AND COMPARATIVE LAW QUARTERLY 779-799, 783 (2000), http://www.jstor.org/stable/761760.

2019,[65] which emphasizes the importance of strengthening the legal system to encourage investments and promote growth in India.

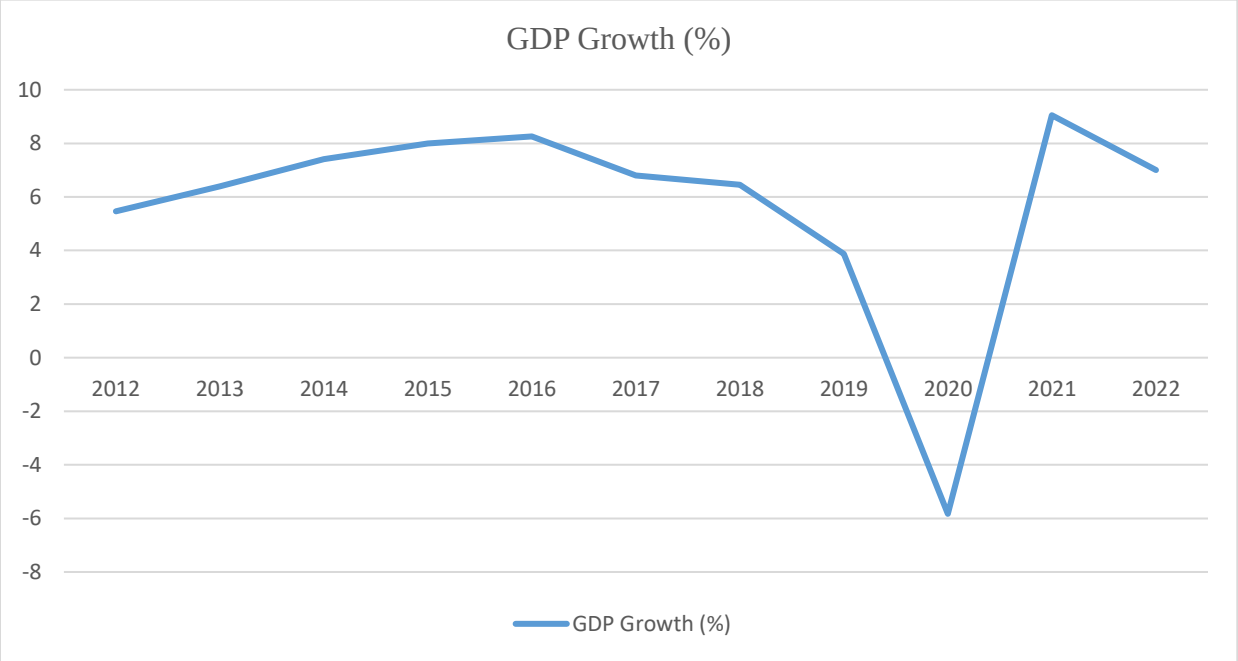



Fig. 4: GDP Growth (%)[66]

India's legal landscape post-independence was characterized by a lack of robust and effective legislation, impeding the progress and development of industries.[67] A notable example is the Companies Act of 1956,[68] which did not contain provisions enabling businesses to continue their operations during corporate restructurings and negotiations.[69] Nevertheless, the transformative New Economic Policy of 1991,[70] brought about significant changes to the investment environment

[65] *The Economic Survey 2019-20*, INDIA BUDGET, https://www.indiabudget.gov.in/budget2020-21/economicsurvey/doc/echapter.pdf.
[66] *Year-wise Real Gross Domestic Product (GDP) Growth Rate from 2014-15 to 2021-22*, OPEN GOVERNMENT DATA PLATFORM INDIA (Feb. 21, 2023), https://data.gov.in/resource/year-wise-real-gross-domestic-product-gdp-growth-rate-2014-15-2021-22.
[67] Nimish Adhia, *The History of Economic Development in India since Independence*, 20 INDIA PAST PRESENT AND FUTURE 18-22, 19 (2015), https://www.asianstudies.org/publications/eaa/archives/the-history-of-economic-development-in-india-since-independence/.
[68] The Companies Act 2013, No. 18, Acts of Parliament, 2013 (India).
[69] S. Batra, *The Asian recovery: Progress and pitfalls, The position of India, Global Forum on Insolvency Risk Management*, WORLD BANK GLOBAL FORUM ON INSOLVENCY RISK MANAGEMENT (2003), http://siteresources.worldbank.org/GILD/ConferenceMaterial/ 20157508/Batra%20-%20India%20-%20FINAL.pdf.
[70] Ushma Upadhyay, *India's New Economic Policy of 1991*, 6 TAYLOR & FRANCIS JOURNALS 105-122, 111 (2000), https://ideas.repec.org/a/taf/femeco/v6y2000i3p105-122.html.

in India.[71] This shift was accomplished by expanding the extent of safeguarding investors, which included the introduction of pivotal laws such as the Foreign Exchange Management Act of 1999.[72] Additionally, the formation of significant institutions like NSE and SEBI in 1992 played a vital role in this transformation.[73] The financial system benefited significantly from these legal modifications, ultimately fostering economic development.[74]

When a country or region provides legal safeguards for its investors and shareholders, it attracts increased external finance.[75] As a result, India boasts a highly developed equity market. Notably, the service sector constitutes a substantial 48.58% of India's GDP (as depicted in Figure 5). Service-oriented industries typically lack tangible assets that can be used as collateral to secure debt financing, making equity financing a primary source of capital.[76] India's proactive implementation of equity finance laws has fueled investment in lucrative sectors within the country, thereby fostering economic growth.[77]

The development of the legal framework of India, especially concerning investor protection and equity finance, has been instrumental in shaping its economic landscape. The legal reforms introduced in the wake of the 1991 New Economic Policy have not only attracted external investment but have also bolstered the growth of key industries, which, in turn, have contributed significantly to India's economic progress.

[71] Davinder Kumar Madan, *India's New Economic Policy - A Macro Study*, 2 INDIAN JOURNAL OF ASIAN AFFAIRS 104-113, 111 (1995), http://www.jstor.org/stable/41950393.
[72] Foreign Exchange Management Act, 1999, No. 42, Acts of Parliament, 1999 (India).
[73] Raj Krishna, *The Economic Development of India*, 23 SCIENTIFIC AMERICAN 166-181, 173 (1980), https://www.jstor.org/stable/24966416.
[74] *Id*.
[75] R. La Porta et al., *Legal Determinants of External Finance*, 3 THE JOURNAL OF FINANCE 1131-1150, 1139 (1997), https://www.jstor.org/stable/2329518.
[76] John Armour & Priya Lele, *Law Finance and Politics: The Case of India*, LAW AND SOCIETY REVIEW (Apr. 1, 2009), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1116608.
[77] *Capital market instruments to mobilize institutional investors to infrastructure and SME financing in Emerging Market Economies*, THE ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, https://www.oecd.org/g20/topics/development/WB-IMF-OECD-report-Capital-Markets-Instruments-for-Infrastructure-and-SME-Financing.pdf.

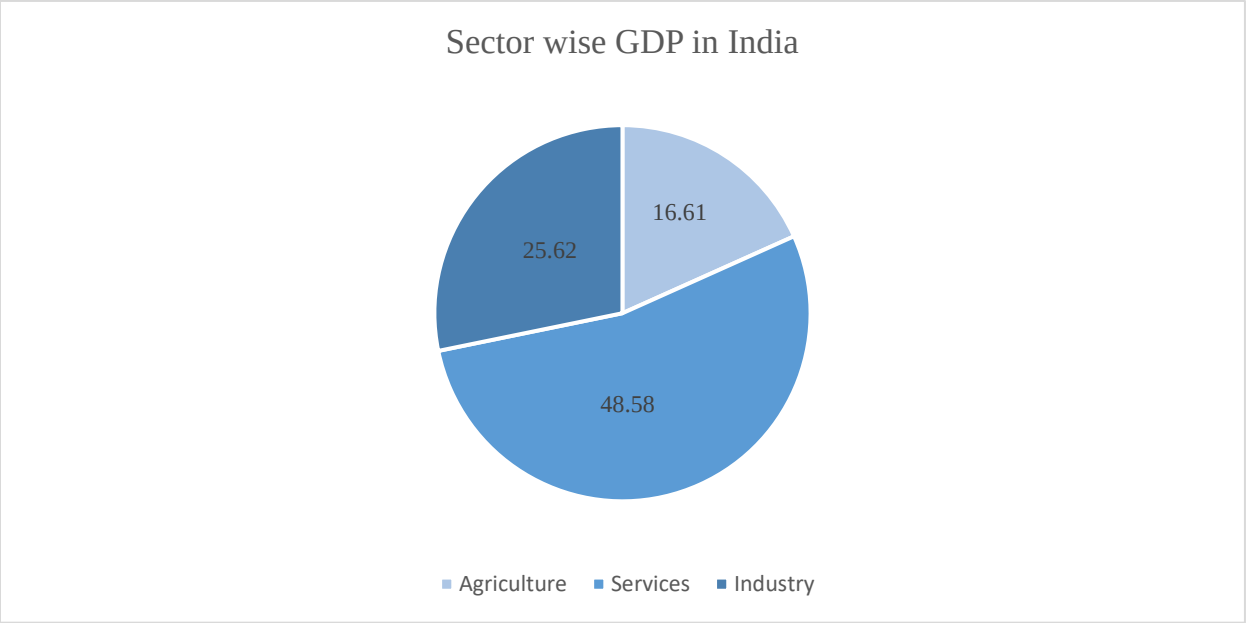



Fig. 5: Sector wise GDP in India[78]

The concept of 'legal origin' primarily hinges on the origins of a country's legal system and the dichotomy between civil law and common law jurisdictions.[79] However, this categorization has faced criticism from scholars,[80] due to its oversimplification, given that many countries have legal systems that incorporate elements of both civil law and common law.[81] Nevertheless, for analytical purposes, we can adhere to the division between common law and civil law to examine how legal systems influence a country's economic development.

[78] *India: Distribution of gross domestic product (GDP) across economic sectors from 2012 to 2022*, STATISTA (Oct. 13, 2023), https://www.statista.com/statistics/271329/distribution-of-gross-domestic-product-gdp-across-economic-sectors-in-india/#:~:text=International-,Distribution%20of%20gross%20domestic%20product%20(GDP)%20across,economic%20sectors%20in%20India%202022&text=In%202022%2C%20almost%20half%20of,telecommunications%2C%20IT%2C%20and%20software.

[79] R. LaPorta et al., *What Works in Securities Laws*, 1 JOURNAL OF FINANCE 1-32, 26 (2006), https://scholar.harvard.edu/shleifer/publications/what-works-securities-laws.

[80] M. Siems, *Legal origins: reconciling law and finance and comparative law*, CENTRE FOR BUSINESS RESEARCH, UNIVERSITY OF CAMBRIDGE (2006), https://EconPapers.repec.org/RePEc:cbr:cbrwps:wp321.

[81] William Tetley, *Mixed Jurisdictions: Common Law v. Civil Law (Codified and Uncodified)*, 60 UNIDROIT UNIFORM LAW REVIEW 676- 738, 721 https://digitalcommons.law.lsu.edu/cgi/viewcontent.cgi?article=5822&context=lalrev.

Common law systems are characterized by their adaptability to changing economic conditions, as they rely on a case-by-case application of laws.[82] Conversely, civil law systems are characterized by rigidity and can only be modified through lengthy legislative processes.[83] In common law systems, judges play a vigilant role and wield a substantial degree of influence in shaping legal interpretations and decisions.[84] Consequently, they are well-positioned to effectively protect privately-owned property from potential encroachments by government entities. In contrast, civil law systems often grant an imbalanced level of control to the legislature, not only in the realm of law-making but also in the appointment of judges.[85] This dynamic can render judges less inclined to protect the interests of investors and private property over those of the state.[86]

India, as a common law country, benefits from affording the judiciary a significant degree of influence and control over the legal system.[87] This characteristic contributes to the growth of equity finance in India, ultimately fostering economic prosperity.[88] However, the practical implementation of these advantages is hampered by the substantial backlog of cases that burden the Indian judiciary. Despite operating within a common law framework, Indian judges face challenges in being as proactive as desired due to the overwhelming number of pending cases.[89] This constraint limits their capacity to serve as positive enforcers of economic development.

Resolving disputes is of paramount importance to any economy, and the efficiency of contract enforcement mechanisms plays a pivotal role in attracting financial investments.[90] Contract enforcement is a crucial factor in determining a country's ranking in the "Ease Of Doing Business"

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[82] *The Common Law And Civil Law Traditions*, BERKELY LAW, https://www.law.berkeley.edu/wp-content/uploads/2017/11/CommonLawCivilLawTraditions.pdf.
[83] *Id.*
[84] *The scope of judicial law-making in the common law tradition*, THE UK SUPREME COURT, https://www.supremecourt.uk/docs/speech-191028.pdf.
[85] Carlo Guarnieri et al., *The Power of Judges: A Comparative Study of Courts and Democracy*, OXFORD UNIVERSITY PRESS, https://academic.oup.com/book/7687/chapter/152746875.
[86] *Supra* note 74.
[87] Ashish Bhan & Mohit Rohatgi, *Legal Systems in India: Overview*, PRACTICAL LAW (Oct. 1, 2022), https://uk.practicallaw.thomsonreuters.com/w-017-5278?transitionType=Default&contextData=(sc.Default)&firstPage=true.
[88] *Id.*
[89] *Judicial delay in India*, THE TIMES OF INDIA (Feb. 20, 2023, 23:13 PM), https://timesofindia.indiatimes.com/readersblog/lawpedia/judicial-delay-in-india-50731/.
[90] *Why it matters in Enforcing Contracts*, THE WORLD BANK, https://subnational.doingbusiness.org/en/data/exploretopics/enforcing-contracts/why-matters.

index, a metric prepared by the World Bank, where India currently ranks 66th.[91] India's subpar performance in this index deters financial firms from investing in the country, thereby hindering the prospects of economic development.[92]

The protracted resolution of contractual disputes in India is a significant contributing factor to this issue. It takes over 1,445 days to resolve contractual disputes in the country, and nearly 1,000 cases have been pending for over half a century.[93] The backlog in Indian courts is exacerbated by the shortage of judges per capita and the persistent vacancies in judicial posts.[94] Complex procedural laws often frustrate litigants, and lawyers are incentivized to prolong proceedings, as their fees are typically billed by the hour.[95]

Despite these constraints, Indian courts have exhibited a level of adaptability in how they construe and implement laws, guided by the overarching aim of fostering the economic progress of the nation.[96] The Indian Supreme Court, in particular, has employed the Constitution to extend the realm of legal protection, enabling challenges to legislation even when the applicants do not have a vested interest in the outcome.[97]

In summary, the influence of legal regulations and systems on the economic progress of India is multifaceted. While India's common law tradition provides a favorable environment for the judiciary to play a role in shaping legal interpretations, the practical challenges of case backlogs and inefficient contract enforcement mechanisms continue to impede the full realization of these

[91] Hemant Kashyap, *Economic Survey 2022-23: India Reduced 39,000+ Compliances For Ease Of Doing Business*, INC 42 (Jan. 31 2023), https://inc42.com/buzz/economic-survey-2022-23-india-reduced-39000-compliances-ease-of-doing-business/.
[92] *Id.*
[93] S. Shukla, *The biggest reform needed to fix Indian economy is not economic but Judicial*, THE TIMES OF INDIA (FEB.28, 2020, 03:11 PM), https://timesofindia.indiatimes.com/blogs/science-nomad/the-biggest-reform-needed-to-fix-indian-economy-is-not-economic-but-legal/.
[94] B. DEBROY, SOME ISSUES IN LAW REFORM IN INDIA, GOVERNANCE, DECENTRALIZATION AND REFORM IN CHINA, INDIA AND RUSSIA, BOSTON, 339-368 (Kluwer Academic Publishers 2000).
[95] Umakanth Varottil & Sriram Chakravarthi, *Judicial Delays in India and Turning Tides*, OXFORD BUSINESS LAW BLOG (Apr. 14, 2016), https://blogs.law.ox.ac.uk/business-law-blog/blog/2016/04/judicial-delays-india-and-turning-tides-%E2%80%93-significance-commercial.
[96] Pradeep S. Mehta, *How Can India's Judiciary be More Economically Responsible*, THE WIRE (Feb. 26, 2021), https://thewire.in/economy/india-judiciary-economically-responsible-environment.
[97] S.K. VERMA & K. KUSUM, FIFTY YEARS OF THE SUPREME COURT OF INDIA: IT'S GRASP AND REACH, 67 (Oxford University Press 2002).

advantages.[98] Legal reforms and improvements in judicial efficiency are imperative to unlock the full potential of the Indian legal system in facilitating economic growth.

## 13. CONTEMPORARY DEVELOPMENTS

In addressing the persistent challenges of backlog and delayed justice, the Indian judiciary has embarked on a technological journey, notably through initiatives like Digital India and e-Courts.[99] These endeavors aim to harness the power of technology to bring about transformative changes within the legal system. The infusion of technology into traditional court systems is a focal point of these initiatives.[100] By integrating modern solutions, the judiciary seeks to expedite case resolution and alleviate the burden of pending litigation. This strategic approach reflects a commitment to leveraging technology as a catalyst for increased efficiency and improved access to justice.[101] One key aspect of this technological integration is the adoption of innovative solutions to enhance the practice of law. Legal practitioners and judiciary stakeholders now benefit from automated processes, including document management, legal research, and scheduling.[102] This not only reduces administrative burdens but also amplifies productivity, allowing for more effective management of caseloads.

As part of this broader technological transformation, e-Courts have emerged as a promising avenue. The digital era has ushered in new possibilities for court proceedings, particularly highlighted during the COVID-19 pandemic.[103] Virtual court hearings and electronic filing systems have become integral components, addressing challenges posed by physical distances and

[98] Umakanth Varottil & Sriram Chakravarthi, *Judicial Delays in India and Turning Tides*, OXFORD BUSINESS LAW BLOG (Apr. 14, 2016), https://blogs.law.ox.ac.uk/business-law-blog/blog/2016/04/judicial-delays-india-and-turning-tides-%E2%80%93-significance-commercial.
[99] Deepika Kinhal et al., *Virtual Courts in India*, VIDHI LEGAL POLICY (Apr. 23, 2020), https://vidhilegalpolicy.in/wp-content/uploads/2020/07/20200501__Strategy-Paper-for-Virtual-Courts-in-India_Vidhi-1.pdf.
[100] Jane Donoghue, *The Rise of Digital Justice: Courtroom Technology, Public Participation and Access to Justice*, 6 THE MODERN LAW REVIEW 995-1025, 1010 (2017), https://csja.gov.in/images/p1195/s_3_lct_court_and_case_management/jane_donoghue_rise_of_digital_justice.pdf.
[101] *Id.*
[102] *The benefits of automating legal processes: An overview*, INFOSYS BPM (Oct. 11, 2021), https://www.infosysbpm.com/blogs/legal-process-outsourcing/benefits-of-automating-legal-processes.html.
[103] Mayura Sabne & Ms. Gouri Konpure, *Evolving Technology & Access to Justice in India*, LEGASIS PRIVATE LIMITED (Nov. 6, 2023), https://www.linkedin.com/pulse/evolving-technology-access-justice-india-legasispvtltd-nipzc/.

contributing to the reduction of delays in legal proceedings.[104] Infrastructure plays a pivotal role in the success of e-Courts. Video conferencing systems, court management tools, document management systems, electronic display systems, and court recording and transcription systems collectively contribute to a seamless and efficient judicial process.[105] These technological elements are crucial for ensuring that the benefits of e-Courts are fully realized.

India's E-Court initiative is at the forefront of these technological advancements. The initiative aims to offer transparent and efficient services to litigants by facilitating electronic submission, case administration, and online availability of case details.[106] Virtual court hearings and video conferencing capabilities have further facilitated remote participation, addressing geographical constraints and reducing delays caused by physical distances.[107] The integration of technology, particularly through the implementation of e-Courts, represents a significant stride towards a more accessible and efficient judicial system in India. These innovations not only contribute to the reduction of backlog and improved case resolution but also signify a commitment to embracing the possibilities offered by the digital era in the pursuit of justice for all.[108]

## 14. RECCOMENDATIONS AND WAY FORWARD

The recommendations and the way forward outlined are aimed at addressing the challenges associated with India's judiciary, particularly concerning the backlog of cases and the timely dispensation of justice. One of the most pressing issues is the shortage of judges per capita compared to other major economies.[109] To alleviate this problem, it is recommended to prioritize the appointment of judges to bridge this gap. The 120th report from the Law Commission,[110] and

[104] *Id.*
[105] *Supra* note 101.
[106] Anmol Yadav, *Initiatives Taken by E-Courts Committee of Supreme Court for Facilitating Access to Justice*, 5 LAW AUDIENCE JOURNAL 39-61, 54 (2023), https://www.lawaudience.com/initiatives-taken-by-e-committee-of-supreme-court-for-facilitating-access-to-justice/.
[107] *Supra* note100.
[108] Toshan Watts, *The Role of Technology In The Future and Its Impact on Society*, THE TIMES OF INDIA (Apr. 14, 2023), https://timesofindia.indiatimes.com/readersblog/amitosh/the-role-of-technology-in-the-future-and-its-impact-on-society-52565/.
[109] Pratik Datta & Suyash Rai, *How to Start Resolving the Indian Judiciary's Long-Running Case Backlog*, CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE (Sept. 09, 2021), https://carnegieendowment.org/2021/09/09/how-to-start-resolving-indian-judiciary-s-long-running-case-backlog-pub-85296.
[110] *Law Commission 120th report*, THE LAW COMMISSION OF INDIA,

the Supreme Court have both examined this issue and recommended an augmentation of the judge-to-population ratio to 50 judges for every one million people.[111] This step is essential to ensure that the judiciary has adequate manpower to handle the caseload effectively. In addition to increasing the number of judges, there is a call to set specific time limits for hearing cases and delivering judgments.[112] This would ensure that cases are not indefinitely delayed, providing litigants with a sense of certainty and a prompt resolution to their legal matters.[113]

The practice of granting adjournments,[114] especially in cases where they are not essential, contributes to case delays.[115] The recommendation is to restrict adjournments to emergencies and exceptional cases. This would deter lawyers from handling numerous cases simultaneously, leading to a focus on a few and frequent requests for adjournments in others.[116] By reducing unnecessary adjournments, the legal process becomes more efficient and cases can proceed in a timelier manner.[117]

Another critical aspect to be taken note of are Alternative Dispute Resolution mechanisms, such as conciliation, mediation and arbitration. These ADR methods offer a quicker and often less costly alternative to traditional court litigation.[118] Encouraging their use can alleviate the burden on the court system, provide litigants with more expedient dispute resolution, and diminish the accumulation of pending cases within the judicial system.[119] Furthermore, pre-trial counseling and dispute resolution measures are recommended to minimize the load on the courts and expedite the

https://cdnbbsr.s3waas.gov.in/s3ca0daec69b5adc880fb464895726dbdf/uploads/2022/08/2022080852.pdf.

[111] *Subordinate Courts of India: A Report on Access to Justice*, THE SUPREME COURT OF INDIA, https://main.sci.gov.in/pdf/AccesstoJustice/Subordinate%20Court%20of%20India.pdf.

[112] Vandana Ajay Kumar, *Judicial Delays in India: Causes & Remedies*, 4 JOURNAL OF LAW POLICY AND GLOBALIZATION 16, 19-20 (2012), https://core.ac.uk/download/pdf/234649558.pdf.

[113] *Id.*

[114] Varun Agarwal, *Adjournments: The Bane of Civil Litigation*, SSRN PAPERS (Apr. 7, 2023), https://ssrn.com/abstract=4549011.

[115] Gaurav Pandey, The Unsettling Consequences of Justice Delay in India: A Grave Situation with Alarming Data, The Times of India (Jun. 11, 2023, 20:53 AM), https://timesofindia.indiatimes.com/readersblog/the-legal-perspective/the-unsettling-consequences-of-justice-delay-in-india-a-grave-situation-with-alarming-data-55042/.

[116] Edward Laws, *Addressing case delays caused by multiple adjournments*, GSDRC HELPDESK RESEARCH REPORT (Jun. 14, 2016), https://assets.publishing.service.gov.uk/media/57a9c983e5274a0f6c000006/HDQ1374.pdf.

[117] *Supra* note 94.

[118] Sterling Miller, *The problems and benefits of using alternative dispute resolution*, THOMSON REUTERS (Apr. 29, 2022), https://legal.thomsonreuters.com/en/insights/articles/problems-and-benefits-using-alternative-dispute-resolution.

[119] Jethro K. Lieberman & James F. Henry, *Lessons from the Alternative Dispute Resolution Movement*, 53 THE UNIVERSITY OF CHICAGO LAW REVIEW 424, 429 (1986), https://www.jstor.org/stable/1599646.

resolution of cases.[120] This approach allows for the early identification of disputes and encourages parties to seek out-of-court solutions.[121]

The provision outlined in Section 89A of the Civil Procedure Code of 1908,[122] plays a vital role in this context. It provides the court with the authority to ensure that litigants first explore alternative dispute resolution methods before pursuing a court trial.[123] By leveraging this legal provision, the court can significantly reduce the backlog of cases, cut down litigation costs, and promote timely and amicable dispute resolution.[124]

In conclusion, these recommendations and the way forward emphasize the need to address systemic challenges within the Indian judiciary that contribute to case delays and backlog. These measures have the potential to notably improve the overall efficiency of the Indian legal system and uphold the constitutional right to prompt and timely justice.

## 15. CONCLUSION

The state of India's legal system presents a complex and multifaceted challenge. While the system is often lauded for its commitment to fair and impartial judgments, it grapples with contentious issues related to efficiency and timeliness. The exponential growth in litigation can be viewed as a testament to the increasing awareness of citizens regarding their rights, reflecting the system's pivotal role in upholding social order and civic responsibility. However, the shadow of unreasonable delays in the administration of justice looms large, casting doubt on the system's reputation and resulting in an unconscionable denial of justice. The statistics presented in this research emphasize the intricate relationship between judicial efficiency and economic growth.

[120] *Experts discuss how we can reduce load on courts*, THE TIMES OF INDIA (Apr. 24, 2022, 04:14 AM), http://timesofindia.indiatimes.com/articleshow/91038850.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst.
[121] *Id*.
[122] The Code of Civil Procedure, 1908, § 89A, No. 5, Acts of Parliament, 1908 (India).
[123] Katie Shonk, *What is Alternative Dispute Resolution*, HARVARD BLOG (Aug. 22, 2023), https://www.pon.harvard.edu/daily/dispute-resolution/what-is-alternative-dispute-resolution/.
[124] R.V. Raveendran, *Justice Delivery – Some Challenges and Solutions*, SCC ONLINE (Oct. 15, 2022), https://www.scconline.com/blog/post/2022/10/15/justice-delivery-some-challenges-and-solutions/.

These findings highlight that the efficiency and timeliness of the legal system are inextricably linked to the nation's economic performance.

The analysis of pending cases in District Courts, High Courts and the reveals a troubling pattern of judicial delay, with backlogs increasing over the years. The correlation and regression analyses provide quantitative evidence of the adverse impact of judicial inefficiency on economic growth. As average disposal times lengthen and case backlogs increase, there is a notable negative effect on GDP growth. While the relationship may not be extraordinarily strong, the findings underscore the significant economic cost of judicial delay. These models provide empirical evidence on how inefficiencies in the judicial system affect the economic vitality of the nation. In light of these findings, urgent and comprehensive reforms are imperative to enhance the efficiency of the Indian legal system, reduce case backlogs, and ensure timely justice delivery.

The paper also explored the influence of law and legal systems on fostering economic growth in India, emphasizing aspects such as safeguarding investor interests, equity finance, and the legal foundations of the nation. Legal reforms and improvements in judicial efficiency are crucial for unlocking the full potential of the Indian legal system in facilitating economic progress. To address these challenges, the paper has offered a set of recommendations and a way forward. These include increasing the number of judges, setting time limits for case resolution, limiting adjournments, promoting alternative dispute resolution mechanisms, and leveraging legal provisions for pre-trial counseling and dispute resolution. The objective of these actions is to simplify the legal procedures, diminish the backlog of cases, and guarantee a more prompt and effective delivery of justice.

Ultimately, guaranteeing the prompt delivery of justice is not only a legal and constitutional duty but also a fundamental necessity for fostering a just and prosperous society. By implementing these recommendations and taking proactive steps, India can work towards a more efficient and responsive legal system that upholds the principles of justice and supports economic development. It is a path toward a brighter future where the rule of law is not just a promise, but a reality for all citizens.

# DATA PROTECTION IN INDIA: PRIVACY, PERSONAL DATA, AND THE SAGA OF A LEGISLATIVE AND ECONOMICAL APPROACH

*Acharaj Kaur Tuteja*[1] *and Digvijay Singh*[2]

## ABSTRACT

*Set to become the most populated country, India has always lacked an adequate legal framework for protecting the data privacy of its citizens. While random attempts have been sprung at the Parliament from time to time, there still remains an astonishing lacuna in that aspect. The same has been tried to bridge through the recent Data Protection Bill, 2022 with its 30 clauses articulated for the supposed benefit of data principals. The following research paper, takes the assistance of secondary research to delve into the economic analysis of the Bill and how it strategically contradicts the purpose and objective of its creation that is – data privacy protection. Through adoption of Coase theorem and game theory, this paper seeks to elaborate on the provisions of the Bill and how they lack an appropriate economic trade-off for most individuals involved. Right to privacy was deemed a fundamental right in 2017 itself, and the project outlines the disruption of this Apex Court judgement from an economic point of view.*

***Keywords***: *Right to Privacy, Data Protection, Sri Krishna Committee, Coase theorem, game theory, costs and incentives*

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## 1. HYPOTHESIS

Following the theme of the research, we can derive a variety of factors keeping in mind the interplay of law with economics; it was observed that privacy is nuanced and citizens desire more privacy; hence when there is backing and legislation for more privacy, the consumer respond leading to increased confidence and increased economic efficiency hence it can be said that increased privacy leads to increased confidence leading to increased efficiency.

We can also see that this has negative connotations, as we noticed from the analysis of the Coase theorem that the transaction costs here are not zero; this impacts the total costs as the power to negotiate between the parties is not equal.

The analysis of the data protection bill, it can be derived that the powers equation and balance is not really at an equal position. Hence, this gives the state a higher bargaining power and decisionmaking power, giving it more leverage and authority. Hence, the state has the propensity to expand on it economically.

We have also analyzed the breach of data, privacy, and data protection tool from various economic tools, we also look at the constitutional aspects of economics of privacy in detail.

### 1.1 Research Methodology and Objectives

This paper adopts an exploratory research approach to investigate the necessary information from various secondary sources, such as published research works, RBI reports, and government reports, along with constitutional precedents and approaches.

We looked at the legislative framework provided in our constitution on privacy and the precedents looked at the Supreme Court to understand the jurisprudence that exists in India; we also looked at the various approaches that other nations have taken and the perception people have about privacy. We then contrasted the same with the various theories of economics like the game theory and its interplay with privacy, cost-benefit analysis of data, Coase theorem and analysis of economic surveys done. We also approached data from the perspective of positive externalities.

Eventually, we looked at the draft of the data protection bill and how it would have its own economic nuances and effects and how it would have a role to play when analysed from an

economic perspective.

Looking at the objectives of the study, the implementation of the Personal Data Protection Act of 2023 marks a significant milestone in data governance, introducing stringent regulations governing the collection, processing, and storage of personal data. With a focus on enhancing privacy rights and empowering consumer choices, the legislation compels businesses to adopt more transparent and ethical approaches to data management. This shift not only fosters greater trust and accountability in the digital landscape but also stimulates innovation and competition within the marketplace.

As companies adapt to comply with the provisions of the new law, they are compelled to recalibrate their business models to accommodate evolving consumer preferences and privacy concerns. By prioritizing data security, transparency, and user consent, businesses can cultivate stronger relationships with their customer base, fostering loyalty and bolstering brand reputation. The enactment of stringent data protection regulations not only stimulates economic growth but also drives sustainable development, paving the way for a more privacy-centric and consumer-friendly digital ecosystem in the long term.

## 2. INTRODUCTION

When referring to data privacy, the landmark judgement of *Justice KS Puttaswamy v. Union of India*[3] leaves little to interpretation. It continues to be the pedestal for "Right to Privacy" being recognized as a fundamental right in the country of India. A nine-judge bench, the decision allowed for inclusion of right to privacy as an overarch of right to life at large and guaranteed under Part III of the Constitution.

The facts of the case involved a petition being filed by the aforementioned retired judge of Karnataka High Court, in regards to the Aadhar Project initiated by the Unique Identification Authority of India (UIDAI). UIDAI claims that, "Not only it is a fool-proof method of identifying a person, it is also an instrument whereby a person can enter into any transaction without needing any other document in support. It has become a symbol of digital economy and has enabled

[3] Justice KS Puttaswamy v. Union of India, (2017) 10 SCC 1.

multiple avenues for a common man." A 12-digit Aadhar number was to be given to every Indian citizen. The government wished to make a uniform biometrics-based identity card mandatory for accessing public schemes and benefits. Judge KS Puttaswamy challenged the validity of the same saying that it violated the right of privacy. The standards for the collection of demographic biometric data by the government were contested in 2015 before a three-judge bench of the court on the grounds that they violated the right to privacy. Based on the rulings in *M.P. Sharma v. Satish Chandra*[4] and *Kharak Singh v. State of Uttar Pradesh*[5], the Attorney General of India argued against the existence of a fundamental right to privacy. The three-judge bench took note of recent Supreme Court cases where the right to privacy had been declared to be a fundamental right that was protected by the constitution while examining these issues. However, the benches in all those cases that reaffirmed right to privacy as a fundamental right, constituted a lesser strength than the two cases cited by the Attorney General.

The Supreme Court, pronounced privacy to be a distinct and independent fundamental right under Article 21 of the Constitution. The decision's core outlined a broad understanding of the right to privacy, one that included decisions, choices, information, and freedom rather than being restricted to physical invasion or a derivative right under Article 21. It was determined that Part III of the Constitution's fundamental right to privacy was both enforceable and comprehensive. The several opinions included specifics pertaining to the right's scope.

"The right to privacy is inextricably bound up with all exercises of human liberty – both as it is specifically enumerated across Part III, and as it is guaranteed in the residue under Article 21. It is distributed across the various articles in Part III and, mutatis mutandis, takes the form of whichever of their enjoyment its violation curtails."

Subsequently, the government set up a Parliamentary Committee under the chairmanship of Justice BN Srikrishna that advanced a report alongside a draft data protection bill in 2018. The Committee noted that the legal framework must strike a balance between the interests of the individual with regard to his personal information and those of the organization, such as a service provider, that has access to this information. It was said that the connection between the client and the service provider ought to be seen as a fiduciary one. This is brought on by the person's

[4] M.P. Sharma v. Satish Chandra, AIR 1954 SC 300.

[5] Kharak Singh v. State of Uttar Pradesh, AIR 1963 SC 1295.

reliance on the service provider in order to acquire a service. As a result, the service provider handling the data has a responsibility to treat the individual's personal information fairly and to use it only for those reasons that have been approved. The same was struck down and a much more controversial version of it emerged in the following year. The Personal Data Protection Bill, 2019 was presented to the Committee that gave its report and a new draft in 2021. The same was rejected by the Centre on grounds of it having extensive and unacceptable changes, making this the fourth attempt at introducing a legal framework and protecting personal data.

The Ministry of Electronics and Information Technology, on November 18, 2022, introduced the Digital Personal Data Bill, 2022. If passed, it is set to fill the lacunae present in the current IT SPDI (Information Technology (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information) Rules notified in 2011. The bill seeks to regulate and place obligations on Data Fiduciaries (any person who alone or along with other persons determine purposes and means of processing) and Data Processors (personal who processes personal data on behalf of a data fiduciary). The data fiduciary, under this proposed law, is required to provide an itemised notice in clear and plain language containing a description of the personal data needed and the purpose for which such data has been processed, as soon as it is reasonably practicable to the data principal. The factor of consent has been given considerable importance. According to the provisions, notice can be "a separate document, or an electronic form, or a part of the same document in or through which personal data is sought to be collected, or in such other form as may be prescribed."

Dissection of the Bill provides us with the rights and duties of the Data Principals (individuals to whom the personal data belongs) enclosed in Chapter 3. It ranges from the right to information regarding their personal data being processed by companies, right to withdraw consent for their data to be processed once they know relevant details of the same or even the direct right to request erasure of incorrect and incomplete information. For example, data taken for an e-commerce delivery can be eradicated from the system once delivery is made. Next, the right to approach the appropriate authority appointed by the company in case of a grievance the contact details of a Data Protection Officer must be published and easily accessible. A Data Protection Board would exist for appealing the decision within seven days. Additionally, there exists a right to nominate another individual for carrying out their rights in case of death or incapacity.

## 3. CONSTITUTIONAL DILEMMA OF THE STATE BREACHING PRIVACY

According to Article 21 of the Indian Constitution, the right to privacy, which is itself protected by the right to life and personal liberty, includes the right to be forgotten. As stated before, the judgement of Justice K.S. Puttaswamy v. Union of India, ruled privacy to be a natural right that is necessary to lead a decent existence, the right to privacy has been incorporated into Article 21. Everyone has the right to protection from anyone attempting to violate their privacy without a good reason or legal justification. Naturally, the person should also have a right to this information if it has been made available to the public or to any third party.

The Data Protection Bill, 2022 however brings in the factor of information that is pertinent to the public or national security. It allows the Central Government, under Section 18, to exempt certain data from privacy protection – "by any instrumentality of the State in the interests of sovereignty and integrity of India, security of the State, friendly relations with foreign States, maintenance of public order or preventing incitement to any cognizable offence relating to any of these." The Bill even seeks to amend the Right to Information Act, 2005 under Clause 30(2). Section 8(1)(j) of the

RTI Act is an exception. It states that –

"(j) information which relates to personal information the disclosure of which has not relationship to any public activity or interest, or which would cause unwarranted invasion of the privacy of the individual unless the Central Public Information Officer or the State Public Information Officer or the appellate authority, as the case may be, is satisfied that the larger public interest justifies the disclosure of such information: Provided that the information, which cannot be denied to the Parliament or a State Legislature shall not be denied to any person."

Given the lack of adequate surveillance laws in the country, this places an abnormal amount of power in the State's hand which in turn is a threat to right to privacy. The Indian government will have access to information on a scale never before possible in conjunction with the localization requirement for data. The Bill will become an excuse for them to exercise authority blindly since there is no third-party check, no need for informing the surveillance subject or even introduction of court orders. To top this on the proposal of an outside committee, the draft bill grants the central

government the right to nominate members of the data protection authority. Five years seems like a very little time to allow a new institution the chance to get its feet under it and achieve the independence it needs to function as a regulator. For reasons outlined in the legislation, the central government may also dismiss members of the authority.

The immense regulation power that has very strategically been given up to the Government, will economically affect the market. For market exchanges, regulation results in a social transaction cost that is shared by the general public and the parties involved. In some cases, the expense of the rule might outweigh the net efficiency improvements it brings about. More regulation has diminishing returns in the same way that it does for producers and consumers, and eventually it becomes too expensive. Application of the Coase theorem would suggest, that such a situation involves higher transactional costs which leads to less scope for bargaining for consumers and in turn an inefficient outcome.

## 4. ECONOMICS OF NON-COMPLIANCE AND BREACH OF PRIVACY

Privacy as a concept has been somewhat difficult to fit into watertight compartments. While most people hold it synonymous to mere concealment of information, it sometimes goes beyond that to autonomy and personal freedom.[6] And of course, economists have taken a particular interest in that aspect. They focus on the line that separates information kept to self and that released and put forth to the public. This in turn revolves around the trade-off between protecting or sharing personal data. The Data Protection Bill, 2022 defined personal data as "any data about an individual who is identifiable by or in relation to such data." The massive strides that information technology has made in recent years, has increased the amount of individual information that can be collected and stored for various purposes. This has inherently led to open access to a person's details such as their income, address, gender, and age by third parties usually without actual consent. These are then religiously studied as business tactics for advertising and target services.[7]

[6] Richard A. Posner, *The Economics of Privacy,* 2 THE AMERICAN ECONOMIC REVIEW 71, (1981), http://www.jstor.org/stable/1815754.

[7] David S. Evans, *The Online Advertising Industry: Economics, Evolution, and Privacy,* 3 THE JOURNAL OF ECONOMIC PERSPECTIVES 23, (2009), http://www.jstor.org/stable/27740539.

Data holders are have clearly benefitted from the same, but the rising concern amongst internet users about their personal data privacy cannot be ignored.

The issue that remains is the divide that comes from information asymmetry. Take an example of a seller who has access to how little you know about a certain product he is selling, the same can be used to exploit you. Alternatively, a real-estate company might hire the wrong employee due to a lack of personal data available. The society or an individual may equally benefit from certain information either being suppressed or revealed. Further, the cost of protecting their data might be dependent on how much others are revealing about themselves (for example, various online blogs require you to compulsorily have a social media id in order to gain access to their articles) or just impossible completely since the websites can analyse their data on the basis of what similar people had to say about their interests.[8] While firms are actively engaged in this personal data exchange market, the individual has little to no awareness of this chain and in turn, less opportunities to curb the flow.

The Bill through its concept of notice and consent tries to place greater autonomy in the hands of the individuals. Section 25, in regards to non-compliance and breach of privacy, states that –

"If the Board determines on conclusion of an inquiry that non-compliance by a person is significant, it may, after giving the person a reasonable opportunity of being heard, impose such financial penalty as specified in Schedule 1, not exceeding rupees five hundred crore in each instance."

Now, the Bill proposes a penalty of up to Rs. 250 crores if the data fiduciaries fail to provide reasonable safeguards or inform the Board in cases of the personal data breach. The question here is whether the determination of the penalty has been done proportional to the consumer harm, which is difficult to measure alongside the amount of liability that these firms may have. Setting the punishment at a higher level, obstructs innovation and doing it at a lower level will legitimize the intrusive behaviour, making the fiduciaries believe that it is just a production cost that they need to incur. The Bill places absolute liability on the data processors and the data fiduciaries without considering their intent in having done so, causing a disproportionate burden. This creates a certain level of inefficiency since firms more vulnerable to data breaches are placed on an

[8] Alessandro Acquisti, Curtis Taylor, and Liad Wagman, *The Economics of Privacy*, 2 JOURNAL OF ECONOMIC LITERATURE 54, (2016), http://www.jstor.org/stable/43966740.

uneven footing with other organizations.

Delving into the costs of protecting data reveals that in two ways, protecting customer data may be expensive for firms. First, in order to save future privacy costs, businesses can postpone potentially profitable data collection, mining, and processing. In terms of economics, this represents an opportunity cost. Second, companies may spend lesser but specific ex-ante expenditures in an effort to avert ex-post projected losses brought on by privacy scandals by aggravated consumers. Businesses may elect to invest in data security and protection, sometimes overinvesting. Additional costs comprise the social losses due to incoherent privacy policies amidst a complex array of legislative and self-regulatory initiatives, both consumers and firms are uncertain about the level of protection afforded to, or required for, various types of personal data. This uncertainty is costly in itself, in that it forces data subjects and data holders to invest resources into learning about the admissibility of a given data practice.

However, these costs might attract consumers who are intent on protecting personal information and end up developing a sense of loyalty towards these firms that are dedicated towards data privacy. By limiting liabilities of misused data, the firms can ensure a set of customers who regard privacy at a higher pedestal than most. Thereby, equating the cost of data security and protection to the benefit of an increased revenue being earned.

## 5. ECONOMICS BEHIND COSTS INCURRED

Privacy has always been considered as an aspect that deals with individual liberty, freedom, and morality. It has been an accepted norm throughout the globe that an individual must be given right to keep their private information to themselves and should be provided the ability to choose whether they wish to impart such information or not. Across the globe, there are legal texts and laws with legislative mandates which imply this, and in the absence of such legislation, there are always laws which imply a right to privacy. Like in India, the constitution came in effect in 1950 and had no mention of right to privacy but it was through the gradual process of time, the right to privacy was interpreted to be applied and the genesis was found in article 21 of our constitution. There has been a paradigm shift in the thinking as privacy today is not just a concept to be

deliberated under public policy but a concept which is also being deliberated under economics[9] Similarly, there has been minimal mention and analysis of privacy as an economic concept but with the process of time and the rise of data analysis to interpret market patters, we see this emerging aspect where privacy has been looked through an economic perspective where there is an overview of an individual's privacy through the cost and value of his data and credentials. This usage of personal data comes at a cost.[10]

In this changing environment of data and digital technology, today, we see that a lot of companies, firms and service providers request data from individuals while signing up and at the time of providing such service, one of the primary objectives of such data collection is an accumulation of information attached and associated with such a person and then using such attributes for the purpose of sales of various good and services. This leads to costs being attached to such product and service and this also leads to such service or product being competitive, the firm with more information would make more sale and this at time would come at the cost of privacy of the person imparting that information, as there is not only a lack of jurisprudence currently but there is no guiding law which decides or provides a background to deal with such economic costs of privacy. One of the concerns also remains is the factor of consent as there is enough evidence to prove that the consent of such a person is taken before using their information for commercial purposes. While this may be one of the aspects behind the economics of privacy, there are other aspects to privacy as well.

We must look at the market costs of privacy before we can examine the effects of privacy economically. The connotations can either be positive or negative. Take the labour market as an example. A job seeker who bluffs (or withholds information from the company) could hurt his chances of landing the position. This results in a negative cost because by hiding the knowledge, the seller (labour) lowers the market's efficiency because the buyer (employers) would be unable to meet expectations. Contrarily, if an employee withholds knowledge that could propel him to a higher position, it will cost the company money because he won't be able to operate as efficiently

[9] KS Puttaswamy & Anr. v. Union of India and Others, (2017) 10 SCC 1.

[10] Smith, R., Morrow, R., & Ross, *Intervention Costing and Economic Analysis*, 3 IN FIELD TRIALS OF HEALTH INTERVENTIONS 18, (2015), https://med.libretexts.org/Bookshelves/Nursing/Field_Trials_of_Health_Interventions__A_Toolbox_(Smith_Morrow_and_Ross)/19%3A_Intervention_costing_and_economic_analysis/19.02%3A_Types_of_economic_analyses.

as the market, hence here the key factor is the transmission of Information in a perfect market, where there would be same access of knowledge to all the players, privacy would be low as there would be less concealment of any information. Such view was also endorsed by Richard Posner when he said that the protection of privacy creates inefficiencies in the marketplace, since it conceals potentially relevant information from other economic agents

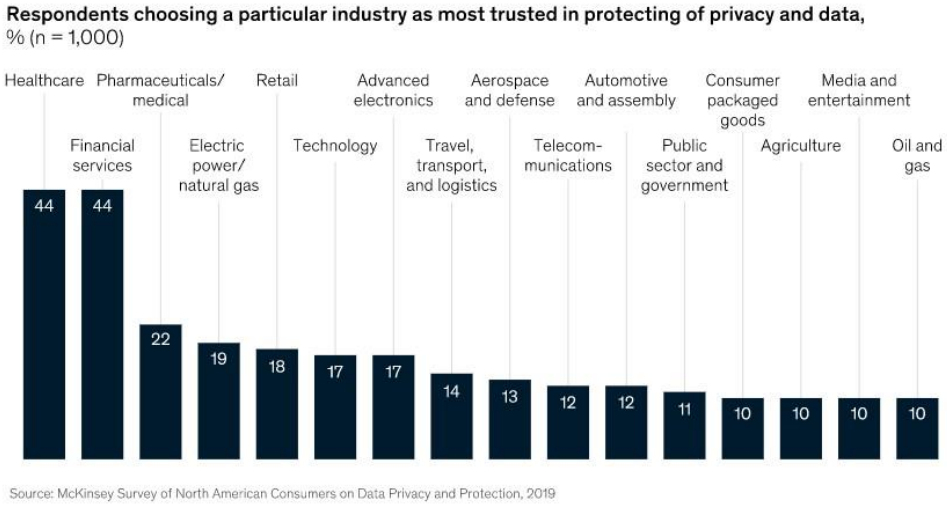
This occurs because a worker who withholds information raises the price of the good or service. As soon as the person starts working, the efficiency will drop when they are combined with the pool of qualified workers, raising the price of goods or services. Also, this will impact the market since rising prices for products and services will cause market inflation, which will eventually result in a decline in the average income level for the workforce. Moreover, if in the market a situation arises where most information or knowledge is withheld, the prices would remain uncertain as there would not be enough understanding to ensure that a price for such good can bet determined.

Privacy also needs to be seen as a tool for empowerment, as we understand that if there are adequate mechanisms to ensure that the state can protect the privacy of Individuals, the efficiency of those working in the markets would certainly increase as there would be more confidence in the market, and with consent, people would also not hesitate to share information with other people and firms if they are sure that their information is secured and the mechanism. This might be a new arena, but the economic cost of privacy is extremely relevant and crucial. This reasoning is the stepping stone behind the nuances of privacy in India.

## 6. DATA FROM A COST-BENEFIT ANALYSIS

It is important to look at data from a cost-benefit analysis, as there are certain tradeoffs which are involved here, first of them being would a rational consumer be willing to part ways from their data while consuming a product, what would be the cost of such action and will the incentive which is derived from parting away from such data be enough to motivate the rational consumer from parting away from his data, in various studies and events it is understood that there would in very few cases a consumer be willing to part ways with their data as personal information and privacy in an nuanced positions are considered to be sacrosanct, despite the benefits , this was

also concluded in a study done by McKinsey and Co. [11] this happens because a consumer understands that in any scenario the benefit should always be higher than the value of privacy in such matter, that is why in the McKinsey report it is noticed that a consumer would be willing to share its data with the government to derive incentive from the government and they see the benefit and since it is the government the level of trust is also high and the consumer would not feel that their data is misused




Moreover, it becomes more difficult to look at a cost-benefit analysis primarily because, the trust a rational consumer has also depended from firm to firm and sector to sector, so per data from My analyst firm McKinsey, a consumer would be more willing to share their data with a hospital than with a fashion company because of the type of industry and the cost-benefit analysis that they see in them.

We can also understand this with the example of the simple app called LinkedIn, where people voluntarily upload their personal information primarily because it connects them with other people who desire such attributes from the person and this certainly creates an atmosphere where the person is incentivized to upload their data as the benefit is higher than the cost even if the data which is personal comes in the public arena

[11] Jacques Bughin, and Jonathan Godsall, *The Consumer Data Opportunity and The Privacy Imperative*, McKinsey & Company, https://www.mckinsey.com/capabilities/risk-and-resilience/our-insights/the-consumerdata-opportunity-and-the-privacy-imperative.

## 7. AN ECONOMIC ANALYSIS OF DATA LEGISLATION

To "process the digital personal data of the individuals respecting their rights and balancing the requirement to process the personal data legitimately," the Digital Personal Data Protection Bill, 2022 was drafted. The Personal Data Protection Bill 2019, which was then being developed, was not codified, so this is the second attempt by the Indian parliament to enact a data protection law in the nation.

It must be kept in mind that any such legislation that comes to the fray in India would be a regulatory one which would require much more compliance so that might have a sweeping impact on businesses in India, and this would also be the reason variable costs of the companies would shoot up because of increased regulations and regulatory framework but as a value which is intrinsic to human life, ta middle ground needs to be found where the line can be drawn.

### 7.1 The Prism Of Coase Theorem

Let's us say that there exist two parties. The two parties in question can negotiate and find an effective solution if the transaction costs are low and property rights are properly established. For instance, the data subject might sell the data controller their personal information, or the controller could compensate the data subject for the use of their information as this would be a situation which would provide negotiating power to both parties to come at a situation where the most optimal option and can be decided.

But, in practice, the costs of drafting such an agreement could be substantial, particularly for individual data subjects who might not have the means or negotiation leverage. Furthermore, as the use of personal data frequently involves legal and moral considerations, the property rights over that data may not be clearly defined.[12]

The rational consumer receives the power to negotiate his position with the help of data and this in fact is a way they empower them with the power to negotiate, Coase in fact has a view on this himself where he argued that In the case of privacy, Coase's Theorem suggests that control over data will go to the party that values it the most, regardless of who initially has the "right" to the

[12] RH Coase, *The problem of social cost. Journal of Law and Economics*, (1960).

data (i.e., whether the individual must opt in or opt out).[13]

But when it comes to transaction costs, Coase's theorem requires transaction costs to be near zero for parties or at a stage where in the longer run they are irrelevant so that they are not a factor which either allow negotiating power to either of the parties and also to and the end result to negotiate an efficient outcome. However, the transaction costs of privacy decisions can be significant, especially when consumers must opt in for companies to be able to use the data. Obtaining affirmative consent imposes significant costs on businesses as there is increased vigilance and a sense of security when it comes to data.

### 7.2 A Prism of Game Theory

Game theory is one of the tools we can employ to understand the nuances of privacy from an economic perspective, let us take a data subject and a data collector, such as a social networking site or an advertising network (such as an individual consumer). The decision to acquire or not to collect personal information from the data subject is up to the data collector, and the decision to provide personal information is up to the data subject and this can also be a variable as there ia high chance that when such a collector is the government in. the game theory, the perceived level of trust would be high so in a model of game theory, a rational consumer is likely to take a chance an act on it. What game theory here would essentially do is provide stricter privacy regulations or increased transparency requirements may change the beliefs and preferences of the players, leading to different equilibria. In addition, the game can be extended to include multiple data collectors and multiple data subjects, as well as other parties such as regulators or advocacy groups. Overall, game theory provides a powerful framework for analyzing the strategic interactions between individuals and firms in the context of data protection and privacy.

This model's main presumption is that the data collector only has partial knowledge of the preferences and traits of the data subject. It is possible that the data subject has privacy preferences that the data collector is unaware of or that the subject has security concerns about their personal information that the data collector is unable to see.

The game can be seen as a matrix, with the rewards for the data subject and the data collector

[13] Information Technology and Innovation Foundation, *The Economics of Opt-Out Versus Opt-In Privacy Rules* (6 October 2017), https://itif.org/publications/2017/10/06/economics-opt-out-versus-opt-in-privacy-rules/.

based on their individual decisions. As an illustration, if the data collector gathers personal information from the data subject and uses it for targeted advertising or other reasons, the data collector may profit from doing so, and the data subject may profit from using the platform or service that the data collector offers. Yet, if the data collector gathers personal information and the data subject chooses not to disclose it, the data collector may still be responsible for the costs of data management and storage while the data subject is left out of the picture. The game can have multiple equilibria, depending on the preferences and beliefs of the players. For example, if the data collector believes that the data subject is privacy-sensitive and the data subject believes that the data collector will not use their personal data ethically, the game may result in a lowinformation equilibrium, where the data collector does not collect personal data and the data subject does not provide it. On the other hand, if the data collector believes that the data subject is not privacy-sensitive and the data subject believes that the data collector will use their personal data ethically, the game may result in a high-information equilibrium, where the data collector collects personal data and the data subject provides it.

Game theory essentially pans out the usage of data and privacy in a model which depends on situations and players to achieve an outcome that is the most probable [14]

## 8. POSITIVE EXTERNALITY OF PERSONAL DATA

There are several instances like this one where there are social benefits when data is shared, and citizens go beyond the nuances of privacy; this perhaps happens because there are several citizens out there who, let us say, share their health and medical data allowing to map more data and create patterns to study diseases. Still, on the same hand such profiling only leads to situations where an economic public good is created which is in the larger benefit of society.

Similarly, where data about the position of cars and traffic is shared, the outcome is more efficient as more citizens can manage traffic better, allowing a positive externality and creating public incentives to share data, but there needs to be proper analysis as to where the line can be drawn between a public good which creates economic incentive for all and the problem of free rider.[15]

[14] George Stigler, *An Introduction to Privacy in Economics and Politics*, 9 J. LEG. STUD. 623 (1980).

[15] Lacker, J. M., & Weinberg, J. A., *The economics of financial privacy: To opt out or to opt in?,* JOURNAL OF MONETARY ECONOMICS (2007).

## 9. THE DIGITAL PERSONAL DATA PROTECTION BILL, 2022: AN ECONOMIC PERSPECTIVE

This discussion stems from the usage of personal data, it is defined as Personal Data according to The Digital Personal Data Protection Bill, 2022 is defined as "data about an individual which is identifiable". We find similar definition of personal data under General Data Protection Regulation (GDPR) which states that "personal data are any information which are related to an identifiable or identifiable natural person." Further, under the European Union Data Protection Regulation Directives adopted in 1995 provides for the definition of personal data as "any information relating to an identified or identifiable natural person; an identifiable person can be identified, directly or indirectly, in particular by reference to an identification number or to one or more factors specific to his physical, physiological or mental and other attributes in the genre, economic and financial, cultural or social identity of a person. Personal data can provide a basis which could lead to profiling of such a person and drawing and economic incentives out of the same.

There has been a lot of deliberation on the need for a new bill which is promptly required to take care of privacy needs but under the absence of such legislation, the current legislation is the Information Technology act of 2000. The legislation covered data breaches, and data privacy, and it set out the penalties for those who violate data privacy and commit other offences relating to cyberspace. The act contains a few significant parts that deal with personal data. Section 43 of the Information Technology Act of 2000 is the most significant; it states that if any person uses a computer, computer system, or computer network without the owner's or another person in charge of those devices' permission, that person shall be liable to pay damages by way of compensation not exceeding one crore rupees to the person so affected. While the act has several provisions to deal with such notions of privacy, the act has several lacunas which need to be fulfilled, especially considering the time gap that has been existing.

The contention over who owns the personal data is what gives it its commercial value. Who owns the data of an individual? is the key issue that captures the entire discussion. Because of this ownership, personal data is now commercially viable. Corporations are the only entity holding the financial worth of personal data. The fact that these businesses approach personal information as a commodity transforms it into a resource. Given the scarcity of this resource, figuring out who

owns it is crucial to estimating its economic worth. When addressing this question in a particular jurisdiction, it facilitates a more complex use of personal data.

There are experts and analysts who today argue that while this might be the situation now, in the absence of a proper data regime, things will only get worse in the future as with the advent of Artificial intelligence, the data that we consume could be segregated more properly, reducing the economic costs for the same, with the such advent of data there would also be serious concerns, like highlighted by Thomas Piketty as he argues that this might lead to economic inequalities as there would be differentiation in how such data is being collected and perceived. There would be institutions and organisations who are better equipped to deal with the collection of such data who would certainly incentivize of such data, while others would not. There are probable scenarios where some corporates and institutions would gather such information and capitalize on it this would also lead to ensuring that the capabilities and resources of firms which are smaller are not able to match the talent and technology of firms which have more manpower, resources [16]

Thomas Piketty also highlighted that various nations around the world have brought in legislations to ensure that data protection is given a priority, this is certainly a measure of economics ac=long with being a step for public policy as this ensures that there is a sense of semblance and parity while allocation of resources which in this case is data. This emphasis on data is certainly useful to ensure that we today understand the nuances of data protection.

Now, the data protection bill would have its own nuances and would certainly be step in the right direction as it has economic consequences as it would make the data more valuable calling for increase of demand for such data and more stringent action by la from the government

The contention over data ownership is what gives personal data its economic value. The question "who owns the data of an individual?" can be used to summarize the entire discussion. This ownership is what makes personal data economically valuable in the market. Corporations are the only entity holding the personal data's economic value. Personal data is a resource because these businesses regard it like a commodity and handle it as such. Due to this resource's scarcity, determining who owns it and how much it is worth to the economy is crucial. When the answer to this question is provided in any jurisdiction, it facilitates a more complex use of personal data.

[16] Tomas Piketty, *Tomas Piketty: Big Data Limitations,* (2014), https://www.weforum.org/agenda/2014/05/tomas-piketty-big-data-limitations/.

While corporates and firms are one of the major players who desire to possess data of consumers, the government is also another data which possesses data and it as a body cannot be entrusted with data as well; there need to be protection as well as to how the government of a nation can harvest and use such data, as pointed out by economist and thinker Ruchir Sharma, data is dynamic in nature and governments through their record have the economic propensity to collect data of funds and assets of companies as well as individuals . This can often lead to policy making which deals with macroeconomic policy being made keeping consumers' data.

This demonstrates the legal status of personal data and its expanding economic significance, which draw our attention to a crucial idea without which any discussion of personal data would fall short—namely, privacy. Without an economic analysis of privacy, any discussion of the economic value of personal data would fall short.

## 10. CONCLUSION

In the modern era of data proliferation, safeguarding personal information and privacy has become paramount. Data protection is not merely a theoretical concept but a fundamental necessity in contemporary society, where the exploitation of data for selfish and financial gains poses significant threats to individuals and societies at large. The responsibility of ensuring data protection primarily lies with the state, which must enact robust legislation and regulatory frameworks to mitigate the risks associated with data misuse and abuse

At the heart of the discourse on data protection lies the understanding and definition of personal data and privacy. Without a clear understanding of these concepts, it is challenging to grasp the full implications of data protection measures. Privacy, in particular, is of utmost importance in the digital age, where individuals share vast amounts of personal information online, often without fully comprehending the potential consequences.

In the context of India, the judiciary's role in delineating and safeguarding privacy rights has been pivotal. The landmark KS Puttaswamy decision, which recognized the right to privacy as a fundamental right under the Indian Constitution, marked a significant milestone in the country's legal landscape. Through its deliberations, the judiciary elucidated various facets of privacy and its significance in the digital realm, laying the groundwork for a more nuanced understanding of privacy rights in India.

One critical aspect highlighted by the Puttaswamy decision is the consideration of privacy costs in legislative processes. Despite the judiciary's emphasis on the importance of privacy, there remains a glaring gap between legal discourse and legislative action. The failure of parliament to adequately account for privacy costs when crafting laws undermines the protection of individuals' privacy rights and exposes them to potential abuses of their personal data.

The disconnect between legal principles and legislative enactments underscores the urgent need for a more comprehensive approach to data protection in India. Parliament must actively engage with the principles elucidated by the judiciary and integrate them into legislative frameworks governing data privacy and protection. Moreover, stakeholders across sectors must collaborate to develop robust mechanisms for enforcing data protection laws and holding violators accountable.

In conclusion, the debate over data protection and privacy rights is not merely academic but holds profound implications for individuals, society, and the integrity of democratic institutions. Strengthening the legal and regulatory framework surrounding data protection is imperative to safeguarding individual liberties and fostering trust in the digital ecosystem. Only through concerted efforts and a steadfast commitment to upholding privacy rights can India navigate the complexities of the digital age while ensuring the dignity and autonomy of its citizens.

# AN EMPIRICAL ANALYSIS OF THE APPLICABILITY OF BECKER'S MODEL OF CRIME: A CASE STUDY OF RAPE, TRAFFIC VIOLATIONS AND CORRUPTION IN INDIA

*Chinmayee Hegde[1] and Anuradha S Pai[2]*

**ABSTRACT**

*The basis of the entire legal system, since time immemorial, is shrouded in the ideals of justice. Crime attracts Punishment. When a wrongdoer or a criminal is punished, the balance of society is restored. Justice prevails and society reverts to the civil course of functioning. This is the major principle that criminal law is based on.*

*Different jurists have proposed multiple theories of punishment in Jurisprudence. Most societies across the world today follow a punishment model that is a mixture of reformative theory and deterrent theory. The reformative model includes rehabilitation and community service. These activities help the wrongdoer in analysing their mistakes and becoming a better person. While, imprisonment, the death penalty and penalties or fines imposed on the wrongdoer deter them from committing the crime again and also deter other members of society from committing such an act. In some cases, the guilty are sentenced to a particular prison time and also asked to pay penalties or fines to the court or compensation to the victim. This is where the economic approach to particular crime factors in.*

*This paper is divided into three parts. The first part deals with theories of punishments and how specific punishments are decided for specific crimes. The second part discusses the economic perspectives of penalties, fines, and compensations by applying Becker's economic model to certain crimes like rape and traffic violations in India. In furtherance, the third part of this paper analyses the data available on white-collar crimes in India, applying Becker's economic model to corruption data in India in particular, and how monetary deterrents can be used to contain the crimes. As per the analysis, Becker's economic model of crime applies to traffic violations but not rape and white-collar crimes.*

***Keywords:*** *Economics of crime, Punishment, Deterrence, White-Collar Crime*

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## 1. INTRODUCTION

The Indian Penal Code, of 1860 is the substantive legislation that covers the types of punishments offenders are given in India. Section 53 of the Indian Penal Code[3] states that the death penalty, life imprisonment, forfeiture of property, rigorous or straightforward imprisonment and fine are types of punishments that can be given for offenders liable under the provisions of the Code. Broadly, the punishments can be grouped as imprisonment, the death penalty and monetary punishment. Based on the intensity of the crime, corresponding punishments can be levied. Monetary fines can be levied along with imprisonment.

The rationale behind levying monetary punishments is twofold. It serves the purpose of preventing the wrongdoer from committing that crime again. Also, it sets an example of the monetary cost a person who is a part of society would incur if the act is committed. It also serves the purpose of compensating and making the punitive damage caused to the victim right.

Much on this subject can be understood by looking at Nobel laureate Gary Becker's Economic Theory of Criminal Behaviour[4]. In this model, Becker states that potential criminals respond to deterrents set by the criminal justice system. One such deterrent is penalties or fines.

This paper shall deal with crimes such as rape and traffic violations in Indian society and the types of punishments imposed. Various theories of punishments and crime will be discussed.

This paper will further deal with the economic prospect of white-collar crimes in India, paying special attention to corruption data in India. The rationale behind imposing monetary punishments and case studies related to the same will be dealt with.

The final part of the paper will focus specifically on data regarding corruption in India and try to answer questions of the nature:

a. Whether economic and pecuniary punishments reduce white-collar crime effectively or not.

b. Is it feasible to increase punitive damages given by the perpetrator to ensure a reduction in related crime?

[3] Ratanlal Ranchhoddas. (2007). *Ratanlal & Dhirajlal's The Indian Penal Code (Act XLV of 1860)*. New Delhi: Wadhwa & Co.

[4] Becker, G. S. (1968). Crime and Punishment: An Economic Approach. *Journal of Political Economy*, 76(2), 169–217. [http://www.jstor.org/stable/1830482](http://www.jstor.org/stable/1830482)

### 1.1 Objectives

1. *To analyse the applicability of Becker's economic model to the case of traffic violation in India specific to Bengaluru*
2. *To examine the application of Becker's economic model to the cases of rape in India*
3. *To assess the relevance of Becker's economic model to white-collar crimes in India specific to corruption cases.*

### 1.2 Theoretical Framework:

What should be the primary objective of levying punishments? Should it restore the losses of the victim? Or should the perpetrator be given rehabilitative care to become a better person? Criminal jurisprudence frames four cardinal theories of punishment, namely Retributive Theory, Deterrent Theory, Reformative and Preventive Theory.

McPherson T., in the paper titled *Punishment: Definition and Justification*[5] quotes the definition of punishment in the form given by H.L.A Hart. According to Hart, 'punishment' must fit 5 criteria, namely:

i. *It must involve pain or other consequences normally considered unpleasant.*
ii. *It must be for an offence against legal rules.*
iii. *It must be of an actual or supposed offender for his offence.*
iv. *It must be intentionally administered by human beings other than the offender.*
v. *It must be imposed and administered by an authority constituted*
vi. *by a legal system against which the offence is committed.*

In the article *Theories of Punishment with Special Reference to Capital Punishment*[6], a summary of each of the theories is elucidated. Retributive theory is considered to be the oldest form of punishment. It is based on the principle, "an eye for an eye and a tooth for a tooth" where the punishment given to the perpetrator would be equivalent to the grievance or crime caused to the victim. The best example of this theory would be Ameneh Bahrami's case[7]. The incident took

[5]McPherson, T. (1967). Punishment: Definition and Justification. *Analysis*, 28(1), 21–27. [https://doi.org/10.2307/3327609]

[6] "THEORIES OF PUNISHMENT WITH SPECIAL REFERENCE TO CAPITAL PUNISHMENT." (2020). *Journal of Emerging Technologies and Innovative Research*, 7(10), 2335. [https://www.jetir.org/papers/JETIR2010302.pdf]

[7] Dehghan, S. K. (2017, November 29). Eye for an eye: Iran blinds acid attacker. *The Guardian*. [https://www.theguardian.com/world/2015/mar/05/eye-for-an-eye-iran-blinds-man-who-carried-out-acid-attack]

place in Iran, in 2011, where a man attacked Ameneh Bahrami, by throwing acid on her face and blinding her in the process. He was convicted under Sharia Law that Iran follows and was sentenced to 10 years of prison, and a fine and was also supposed to have his eyes removed as punishment. This highlights the retributive nature of the judgment. The woman was blinded and hence the perpetrator too shall be blinded.

Deterrent Theory, on the other hand, focuses on creating a sense of fear or reluctance amongst members of society from committing a particular crime. A punished criminal is made an example to instil fear in the citizens. Everyone is shown what could happen to them if they ever committed a particular crime. An example of this theory could be the death penalty which creates fear in society. However, many scholars believe that the death penalty does not work as an effective deterrent. For instance, in the Nirbhaya case[8], the perpetrators were sentenced to death. But yet, rape cases in India have not decreased, despite the death penalty set as a deterrent.

Reformative Theory is the model that is widely followed across the globe today. It focuses on punishment from a positive perspective. It aims at reforming or building the character of the perpetrator. The best example of this theory would be sending culprits to rehabilitation, giving counselling and imprisoning them with vocational training and skill development.

Preventive Theory punishments disable the perpetrator or the accused from committing the same crime, or any other crime again. Life imprisonment is a great example, that prevents the accused from committing the corresponding crime as he or she is restrained or prevented by being imprisoned.

Most of these theories have been put to the test by evolving societies. Each crime is awarded a punishment based on one of the above-elucidated theories based on the nature, intensity and type of crime. It becomes crucial that the design of the punishment is in tandem with the progress and structure of the society to which such penalties are applied. Because, in the end, the main goal of punishments is to revert society to its civil, functional form that existed before the crime was committed.

[8] *Mukesh v. State (NCT of Delhi)* (2017) *6 SCC 1, 2017 SCC Online SC 533.*

## 2. LITERATURE REVIEW

Not long before, the intersection of economics and crime as interdisciplinary research would have been unimaginable. But today, economic aspects of crime and penalty help in understanding the intent behind offences more easily. Further, it helps in formulating better policies and penalties to reduce crime in society.

**Sutherland (1940)** in the paper titled *White-Collar Criminality*[9] attempts to integrate the sociologist and economics point of view of crime. He seeks to compare the white-collar crimes that are socially understood to be committed by higher-class, respectable people to those committed by people of "low socio-economic status". Sutherland believes that this explanation for crime is correct. Rather than poverty, other social factors contribute towards a person committing a crime. Sutherland has used secondary data from the Federal Trade Commission in 1920 to analyse commercial bribery present in food chain stores among many other examples. He further goes ahead to state that the losses caused by white-collar crimes are as impactful and huge as common burglaries and thefts, even more so. An officer embezzling $600,000 from a chain grocery store is said to have six times the loss from five hundred burglaries. Sutherland aims to create an argument regarding the seriousness of white-collar crimes and the social implications of the same.

**Coase (1960)** in the paper titled *The Problem of Social Cost*[10] deals with the social perspective of penalties or fines that are levied on businesses that affect the society's functioning. Coase uses the example of a factory that emits smoke and causes damage to the neighbours. Most economists in such cases place their probable solutions on the principles of Pigouvian economics and recommend the owner of the factory pay for the losses of the neighbouring properties due to the pollution, or place a tax on the owner to deter him or her from excessively polluting. According to the author, both these courses of action are inappropriate leading to undesirable results. As per the Coase Theorem that was developed in this paper, the parties involved in an economic conflict can always negotiate terms that will do justice to the actual value of the property rights involved, provided the cost of negotiation is less.

**McPherson (1967)**, in the paper titled *Punishment: Definition and Justification*[11] further goes on

[9] Sutherland, E. H. (1940). White-Collar Criminality. American Sociological Review, 5(1), 1–12. https://doi.org/10.2307/2083937

[10] Coase, R. H. (1960). The Problem of Social Cost. The Journal of Law & Economics, 3, 1–44. http://www.jstor.org/stable/724810

[11] McPherson, T. (1967). Punishment: Definition and Justification. Analysis, 28(1), 21–27.

to add that the aforementioned 5 elements charted by Hart fit the retributive theory of punishment rather than the deterrent or reformative theories. According to him, the retributive theory describes punishment while the other theories justify the reasoning and rationale behind the punishment as well[12]. This excerpt encapsulates the concept of punishments, penalties and compensations in a very concise manner. In this article, the author has used secondary data from various philosophers and scholars to arrive at definitions and opinions on theories of punishment.

The most groundbreaking work in this field of crime and economics belongs to **Gary S.Becker** who was even awarded the Nobel Prize in 1992 for the same. **Becker (1968)** in his paper titled *Crime and Punishment: An Economic Approach*[13]. In this paper, Becker has broken down the amount incurred by a person to commit a crime. He presents the theory that a person shall commit a crime if the utility or profit incurred by such offence exceeds the utility or profit incurred in doing legally valid work. It is based on the premise that criminals are rational individuals who seek to maximise utility. This is termed as "the Rational Choice Model." If the "cost of committing a crime" entailing an increase in penalty or an increase in prison time, exceeds the utility obtained by committing the crime, then the rational criminal would choose not to commit the crime. Thus, giving way to penalties as crime deterrents. Data used by Becker in proposing an economic model for crime is primary data on the crimes committed in the U.S. in 1967 (Source: President's Commission), the money lost by victims in such crimes and the amount of money spent by the government to prevent such crimes.

In the paper written by **Danziger and Wheeler (1975)** titled *The Economics of Crime: Punishment or Income Redistribution*[14], the authors proposed the theory of how income inequality leads to a rise in crime. It is based on the premise that whilst evaluating one's welfare, individuals refer to their relative income with other classes rather than absolute income. When a person finds inconsistency between the income of other groups to his, a conflict arises. This conflict can be a crime. This paper emphasises that not just punishments, but income distribution is a major crime deterrent as well. An economic model is designed by considering 3 FBI indexed crimes, namely,

https://doi.org/10.2307/3327609

[12] Ibid.

[13] Becker, G. S. (1968). Crime and Punishment: An Economic Approach. Journal of Political Economy, 76(2), 169–217. http://www.jstor.org/stable/1830482

[14] Danziger, S., & Wheeler, D. (1975). THE ECONOMICS OF CRIME: PUNISHMENT OR INCOME REDISTRIBUTION. Review of Social Economy, 33(2), 113–131. http://www.jstor.org/stable/29768770

burglary, aggravated assault, and robbery. The above crime rates are correlated to different categories like youth, unemployed etc. The primary data encompasses U.S. crime rates and ranges between the years 1949 to 1970.

**Donohue (2007)**, in his paper titled *Economic Models of Crime and Punishment*,[15] gives a critical analysis of Becker's economic model of crime. His secondary data on the number of prisoners in the United States between the years 1933 and 1973 and later 2003 show the increase in incarceration as a mode of penalty. Between 1933 and 1973 there were only 100-120 prisoners per 100,000 members of the population as opposed to the 2 million people imprisoned in the United States in 2003. He also questions whether increasing the "cost" of an illegal offence helps reduce crime rates. To support his statement that "crime is too complex a phenomenon to think that a simple model of "raise the price and you will get less of it" ", he provides the results of Chen and Shapiro's regression analysis model wherein it was discovered that worsening prison conditions made perpetrators more recalcitrant and uncooperative.

**Winden and Ash (2012)** in their article titled *On the Behavioral Economics of Crime*[16] highlight the 'ecologically rational' criminal whose decisions are influenced by brain sciences. The traditional theory deals with abstract theories based on the rational choice made by humans while the psychological approach provides reasoning for the deviations from the rational choice theory. The article delves into the concept of heuristics by stating examples. For instance, the Availability Heuristic (where people rely on easily accessible information to make decisions) can be used to place conspicuous or gaudy parking tickets that will remind people of the consequences of violating the parking rules. Anchoring Effects (a cognitive bias where people rely too heavily on the first piece of information encountered when making decisions) come into the picture when one party makes a first strong case for a particular sentence that can influence the jury to be biased towards it. Overall, the paper advocates for a re-evaluation of criminal law concepts of responsibility and punishment based on a more nuanced understanding of human decision-making processes influenced by cognitive and emotional factors.

**Black (2014)**, in the article titled *Gary Becker's Imperialistic Blunders about Crime,*[17] highlights

[15] Donohue, J. J. (2007). Economic Models of Crime and Punishment. Social Research, 74(2), 379–412. http://www.jstor.org/stable/40971937

[16] van Winden, F., & Ash, E. (2012). On the Behavorial Economics of Crime. Review of Law and Economics, 8(1), 181-213. https://doi.org/10.1515/1555-5879.1591

[17] Black, W. (2014, June 18). Gary Becker's Imperialistic Blunders about Crime. New Economic Perspectives. https://neweconomicperspectives.org/2014/06/gary-beckers-imperialistic-blunders-crime.html

the setbacks in Becker's economic model of crime. The author criticises Becker's views on crime by drawing attention to how Becker fails to take into account the negative externalities of theft (feeling of violation, violence and destruction, the ethics). Furthermore, the author states how Becker did not collect data regarding the costs of white-collar crimes in his groundbreaking paper, despite developing a model that requires the incidence of the type of crime and the cost of each type of crime. The cost estimates for white-collar crimes fail as Becker focuses on costs driven by police forces while in reality bodies like the FBI (Federal Bureau of Investigation) or CBI (Central Bureau of Investigation) investigate elite white-collar crimes and not the police. According to the author, the model almost favours the option of the wealthy buying their way out of prison as Becker favours fines over imprisonment for punishment.

The chapter titled *Sentencing Respectable Offenders* published in the *Oxford Handbook of White-Collar Crime* by **Levi (2016)**[18] examines the sentencing procedure for white-collar crimes, emphasising both private citizens and large organisations. Levi talks about several sentencing topics, including trends in fraud sentences, fines, and data on white-collar criminal sentencing in the US federal system. The sentencing of rogue traders, the US Sentencing Guidelines, and penalties by regulatory organisations and professional associations are all covered in this chapter.

**McAdams and Ulen (2017)** in the paper titled *Behavioral Criminal Law and Economics*[19] have presented a Behavioural Economics view of Becker's rational choice theory. Becker's model of crime propounds the classical economics view that criminals are rational human beings who make a cost-benefit analysis of the committing or non-committal of a crime. Other proponents in society like victims, judges, prosecutors, police, etc. are also considered rational beings who make informed decisions. This paper substantiates that the aforementioned actors are subject to behavioural biases that may not fit the rational choice theory and hence, the aspect of behavioural economics needs to be included while applying Becker's theory to crimes. The article concludes that behavioural assumptions have a significant impact on the economic analysis of criminal law. Although behavioural assertions are still being empirically tested, the best-known data at this time calls for certain revisions to the positive description and normative suggestions that economics

[18] Levi M (2016) Sentencing Respectable Offenders. In: Cullen F, Benson M, van Slyke S (eds) Oxford Handbook of White-Collar Crime. Oxford: Oxford University Press, pp. 582–602.

[19] McAdams, R. H., & Ulen, T. S. (2017). Behavioral criminal law and economics. In Edward Elgar Publishing Limited eBooks. https://doi.org/10.4337/9781781950210.00021.

makes for criminal law.

**Jain et al. (2017)**, in the paper titled *Case Study on White Collar Crimes,*[20] have discussed the various types of white-collar crimes. The causes and data concerning such crimes in India have also been discussed in the paper. Examples that include stock manipulation, adulteration of food and unfair labour practices have been cited by the authors. The methodology involves secondary data's qualitative analysis derived from sources like KPMG India's Fraud Survey of 2012.

The paper *When stealing, go for millions? Quantitative analysis of white-collar crime sentencing in Poland*[21] by **Czarnocki, Janulek, and Olejnik (2019)** offers a distinctive viewpoint on Poland's sentencing practices for white-collar crimes. Investigating the connection between the duration of custodial terms and the degree of fraud, the study finds a non-linear dependency that might encourage people to perpetrate larger-scale scams. Additionally, the study reveals a bias against women in sentencing, as women are given shorter prison terms, especially when their judges are female.

**Andenaes's (2019)** paper titled *The General Preventive Effects of Punishment*[22] offers a comprehensive analysis of the interplay between legal sanctions and societal behaviour. The paper explores the differences between general and particular prevention, highlighting the complex ways that punishment affects both individuals and communities.

Utilising perspectives from eminent experts in the field of criminal law philosophy, the article emphasises the progressive development of punitive measures and their function in moulding legal standards and disincentives. It draws attention to the contributions made by authors such as Feuerbach, Beccaria, and Bentham in clarifying the psychological pressure that punishment entails and how it affects citizens' adherence to the law.

**Tiwari and Kumar (2020)** in the journal article titled '*Theories Of Punishment With Special Reference To Capital Punishment'*[23] have given a panoramic view of the concept of punishments along with the various theories and an opinionated stance on capital punishment. The article

[20] Jain, H., Agarwal, C., Sharma, H., Joshi, A., & Surana, J. (2017). Case Study On White Collar Crime. International Journal of Engineering Development and Research, 5(2).

[21] Czarnocki, K., Janulek, D., & Olejnik, Ł. (2019). When stealing, go for millions? Quantitative analysis of white-collar crime sentencing in Poland. MPRA Paper. https://ideas.repec.org/p/pra/mprapa/92340.html

[22] Andenaes J (1966) The general preventative effects of punishment. *University of Pennsylvania Law Review* 114(7): 949–983.

[23] Tiwari, R. Dr Kumar, R. (2020). THEORIES OF PUNISHMENT WITH SPECIAL REFERENCE TO CAPITAL PUNISHMENT. Journal of Emerging Technologies and Innovative Research, 7(10), 2334–2338. https://www.jetir.org/papers/JETIR2010302.pdf

reinstates the idea behind the punishment, being, restoring the normal functioning of society the way it used to be before the crime was committed. Retributive, Deterrent, Preventive, and Reformative theories are discussed in depth in the article.

In the paper titled *Punishing White-Collar Crime in Canada: Issues with the Economic Model of Crime and Punishment*[24], **Haas (2021)** has given a detailed perspective on how Becker's model is very aptly suitable for white-collar crimes. She further provides an in-depth economic analysis of white-collar crimes in Canada. Secondary data on the amount of money spent on correctional services in Canada in the years 2017 to 2018 was compared with the money spent on prisoners on probation. the annual cost of keeping an inmate incarcerated was $121,339 for males and $212,005 for females. While, the cost of keeping an offender in the community, such as on probation, is only $32,327 per year. She states that while the economic model favours fines as suitable deterrents when compared to incarceration because fines act as social revenue while money must be spent on correctional services from the state's coffers, it is crucial to understand that "the offender must be able to pay the fine". Thus, since white-collar crimes are committed by the affluent, penalties for such crimes seem to be feasible. But, since affluent people do not lack money, it becomes easy for them to pay the fine and wash their hands. As a result, she states that incarceration coupled with a monetary penalty would work as a perfect deterrent for white-collar criminals.

White-collar crimes in the Indian landscape have been analysed theoretically in the article titled *White Collar Crimes in India: An Analytical Study*[25] by **Sharma and Singh (2022)**. The article aims to deduce the gravity of white-collar crimes in India about specific Indian Penal Code provisions that criminalise bribery, forgery, counterfeiting, adulteration and corruption. They also discuss why white-collar criminals are not considered, feared or have a stigma attached to them like traditional criminals of theft, burglary etc. With not much awareness about the subject, fewer and infrequent arrests and limited media coverage, white-collar crimes are not subject to significant stigma.

**Sahoo (2022)** in the paper titled '*Study Relating to White Collar Crimes in Indian Corporate Sector: Critical Analysis*'[26] has shed light on corporate white-collar crimes in India. This paper

[24] Haas, M. (2021, October 2). Punishing White-Collar Crime in Canada: Issues With the Economic Model of Crime and Punishment. Alberta Law Review. https://albertalawreview.com/index.php/ALR/article/view/2669

[25] Sharma, J., & Singh, M. (2022). White Collar Crime In India: An Analytical Study.

[26] Sahoo, D. (2022). Study relating to White Collar Crimes in Indian Corporate Sector: Critical Analysis. Central

aims to raise awareness regarding crimes of a certain theme. The paper is based on the premise that the current legislation adds to the creation of a free economy in India but is not sufficient to handle or curb white-collar crimes in India. Doctrinal research methodology referring to various case studies has been used in this paper by the author.

**Makkar and Kuar (2022)** in the paper titled '*White Collar Crimes In India: A Set Back For Progressive Nation Building'* [27] have discussed the impact of white-collar crimes on the Indian Economy. The paper aims to analyse the root causes of the growth of white-collar crimes in India and the role of the government in it. Further on, this paper produces an in-depth view of the evolution of including "white-collar crimes" in various legislations. The discussions and reports of various law commissions in India have been analysed and the history of such crimes has been discussed. The Secondary qualitative data research methodology has been used by the authors.

**Chevalier (2022)** in the article titled '*Gold: when the Price Goes Up, More Gets Stolen in break-ins-new research'*[28] deals with how the value of a stolen good influences the behaviour of criminals. The author gives the example of how stealing more phones increases the availability of phones in the market causing a dip in the prices of phones thus making it a less valuable commodity to steal. The article focuses on the commodity of gold and how its prices affect burglary in England and Wales. As per the Crime Survey for England and Wales (CSEW), jewellery burglaries increase with the increase in gold price. A study conducted by the author proves that criminals are rational as per Becker's model as burglaries increased remarkedly in South-Asian neighbourhoods when gold prices increased, as South-Asian houses are culturally known for storing more gold jewellery.

**Sharma (2024)** in his article titled '*Laws Have Changed After Nirbhaya Rape Case, Have These Amendments Deterred Crimes Against Women'*[29] provides a view into the legal framework of India related to criminal law amendments, 10 years after the Nirbhaya rape case that caused huge outrage across the world. The article explores the Criminal Law Amendment (2013) that was enforced after the incident and included stringent provisions concerning rape. The definition of rape was

European Management Journal, 30(4).

[27] Makkar, H., & Kuar, A. (2022). WHITE COLLAR CRIMES IN INDIA: A SET BACK FOR PROGRESSIVE NATION BUILDING. Journal of Positive School Psychology, 6(4), 3549 – 3553.

[28] Chevalier, A. (n.d.-b). Gold: when the price goes up, more gets stolen in break-ins – new research. The Conversation. https://theconversation.com/gold-when-the-price-goes-up-more-gets-stolen-in-break-ins-new-research-137935

[29] Madhur Sharma, & Madhur Sharma. (2024, February 7). Laws have changed after the Nirbhaya rape case, Have these amendments deterred crimes against women? Outlook India. https://www.outlookindia.com/national/how-laws-changed-after-nirbhaya-rape-case-have-amendments-deterred-crimes-against-women-news-245368

widened and the punishment of rape was increased. The amendment was seen to be more populist than reformist. The article delves into the opinions of various academicians, woman rights activists and criminologists. As per most of their opinions, improper enforcement of punishments and patriarchal notions about such crimes are key issues as to why crimes against women are still widespread.

Thus, there has been an increase in the study of the nature, dynamics and types of white-collar crimes across the globe ever since Sutherland's ground-breaking analysis of the same. The perceived bridge between regular crimes and white-collar crimes seems to have reduced with the advent of technology and globalisation. However, not much data regarding this crime theme is available as it is a relatively new field of study that has gained momentum in the past decade.

### 2.1 Research Gap

Although many studies have examined the applicability of Becker's economic model on specific crimes, there is a lack of literature in the area concerning the applicability of Becker's model to crimes like rape in India, traffic violations specific to Bengaluru and white-collar crimes, corruption in India, precisely. The paper applies Becker's economic model of crime to the aforementioned crimes for the years 2011-2023 (for traffic violations in Bengaluru); 2003 to 2021 (for rape cases in India) and 2011 to 2022 (for corruption in India).

This paper will attempt to apply Becker's economic model to rape, traffic violations and corruption crimes in India. The major question, of whether the incentives to crime and deterrents to crime as enumerated in the economic model will work effectively and be rightfully applicable to various crimes like rape, traffic violations and corruption, will be answered.

### 2.2 Research Hypothesis

Theoretically, Becker's model should be perfectly applicable to low-intensity crimes that usually have economic damages rather than societal damages; and that are civil but not of a criminal nature. This paper will use crime numbers as the data set to analyse if the numbers follow the pattern as suggested by Becker, in relation to deterrents put forth by the state.

#### *2.2.1 First Hypothesis*

$H_0$-Becker's model applies to traffic violations in Bengaluru as the number of cases registered or the commission of the offence decreases with the increase in punishment for the offence.
$H_1$-Becker's model does not apply to traffic violations in Bengaluru as the number of cases registered or the commission of the offence increases with the increase in punishment for the offence.

*2.2.2 Second Hypothesis*

$H_0$-Becker's model applies to the crime of rape in India as the number of cases registered or the commission of the offence decreases with the increase in punishment for the offence.
$H_1$-Becker's model does not apply to the crime of rape in India as the number of cases registered or the commission of the offence increases with the increase in punishment for the offence.

*2.2.3 Third Hypothesis*

$H_0$-Becker's model applies to the crime of corruption in India as the number of cases registered or the commission of the offence decreases with the increase in punishment for the offence.
$H_1$-Becker's model does not apply to the crime of corruption in India as the number of cases registered or the commission of the offence increases with the increase in punishment for the offence.

## 3. METHODOLOGY

This paper uses the secondary data qualitative analysis methodology to assess the data on crimes such as rape, traffic violations and corruption, penalties and punishments used as deterrents from various journals, articles, websites and reports of surveys conducted by associations.
The data collected for traffic violations in Bengaluru spans the years 2011 to 2023 while the data for rape in India is collected for the years 2003 to 2021 and the data for corruption in India spans the years 2011 to 2022.
The source of data collected originates from websites such as NCRB (National Crime Records Bureau) and OpenCity which consists of an Urban Portal database for crimes in cities. The data for traffic violations has been restricted to the city of Bengaluru for ease of research, collection of data and analysis.
The paper contains various bar graphs to analyse the figures or data regarding specific crimes

through a visual tool of analysis.

## 4. DATA ANALYSIS AND DISCUSSION

### 4.1 Becker's economic model

The breakthrough in the interdisciplinary field of law and economics has been Gary Becker's economic model of crime. In his paper, Becker views crime as an "industry". People involved in this industry want to maximise their profits. He also views the performance of illegal activities, like selling narcotics, as a source of income. Becker has presented these data to establish that crime has emerged as an important trend. It is crucial to note that there will be a sizable amount of expenditure on the part of the society and state to contain these crimes by investing in prisons, correctional facilities, police etc.

Becker further states that criminals commit crimes when the benefit of committing that crime exceeds the benefits of committing legal activities[30]. Thus, this model operates on the premise that criminals are rational individuals who analyse the marginal utility and cost before committing a crime and proceed to do so only if there exists profit.

Hence, by applying this model, policymakers need to increase the cost of committing a crime by including harder punishments or penalties that instil apprehension in a wrongdoer's mind before committing a crime.

### 4.2 Application of Becker's Model to Traffic Violations in Bangalore

As the long title of the legislation suggests, the Motor Vehicles Act of 1988[31] aims "to consolidate and amend the law relating to motor vehicles". The legislation has gone through many amendments. For our study, consider the 2019 amendment, the Motor Vehicles (Amendment) Act of 2019[32]. The 2019 amendment is known to have increased the penalties and prescribed more stringent punishments for traffic violations as compared to the previous amendments. The following data substantiates Becker's model based on the number of cases booked under the Motor

[30] Haas, M. (2021, October 2). Punishing White-Collar Crime in Canada: Issues With the Economic Model of Crime and Punishment. Alberta Law Review. https://albertalawreview.com/index.php/ALR/article/view/2669 Pg. 204.
[31] Motor Vehicles Act, 1988, No. 59 of 1988, Acts of Parliament, 1988 (India).
[32] Motor Vehicles (Amendment) Act, 2019, No. 32 of 2019, Acts of Parliament, 2019 (India).

Vehicles Act before and after the 2019 amendment in Bengaluru, a city in India.

Considering the data provided on the Open City Urban Data Portal[33] website the number of Motor Vehicles Act cases in 2017 was 68,94,931; in 2018 was 51,00,540 while after the Amendment in 2019, the number of cases booked under the Motor Vehicles Act was 39,79,303. Further, the number of cases keeps decreasing in the subsequent years, with the figure being 20,98,952 cases in 2020 (COVID-19 could have been a contributing factor) and 14,95,031 cases in 2021.

The fines collected however increased with the decrease in the number of violations. This was due to a hike in the penalty amounts. The fines collected in 2017 were Rs.89,40,16,575; in 2018 for offences under the Motor Vehicles Act were Rs. 69,69,76,700. Post amendment, the fines collected in 2019 were Rs. 82,19,39,150; in 2020 were Rs. 94,46,13,890 and in 2021 were Rs. 1,30,23,28,500.

This example strengthens Becker's model. With increased penalties and fines for a slew of offences, apprehension was created in the public. This marked a downward trend in traffic rule violations post the enforcement of the stringent amendment.

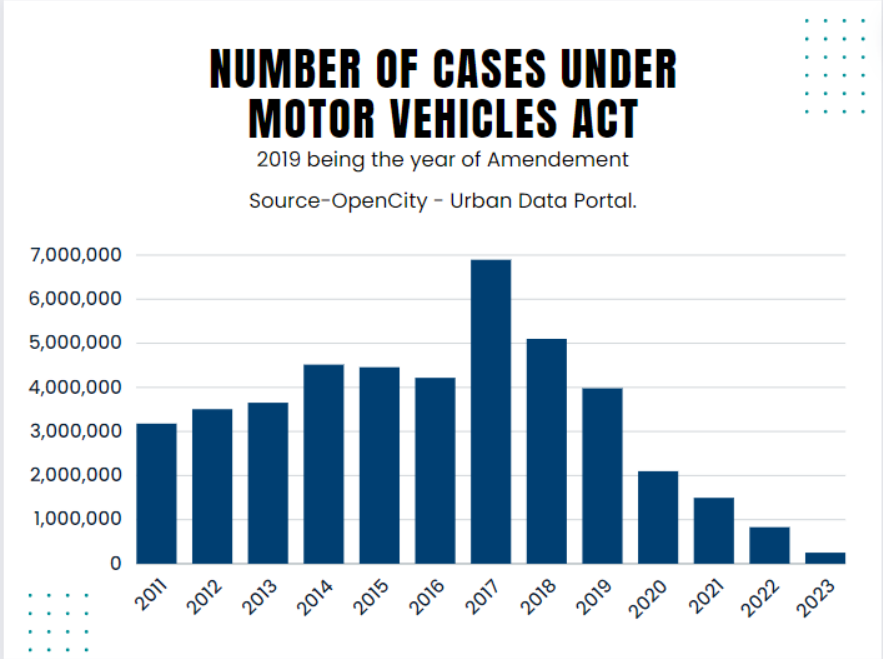



Fig 4.2.1 The comparison of traffic violation cases in Bengaluru from 2011 to 2023

Source: OpenCity - Urban Data Portal. (n.d.).

[33] *Urban Data Portal* (no date) *OpenCity*. Available at: https://data.opencity.in/dataset/bengaluru-traffic-violations-data/resource/btp---cases-and-fines-collected-under-various-acts-(2011-2023)

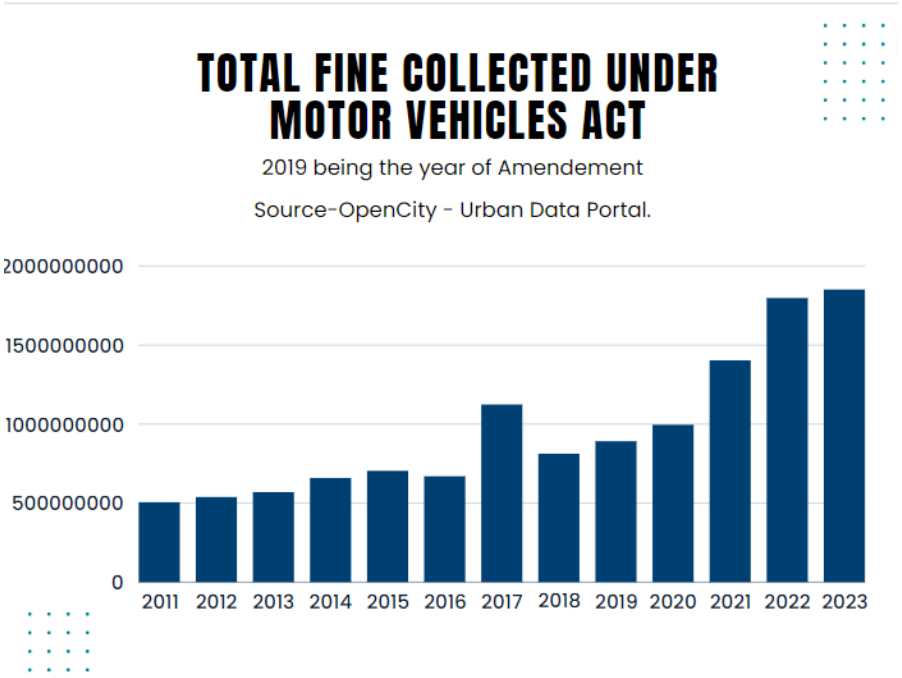



Fig 4.2.2 The comparison of fines collected as a result of traffic violations under the Motor Vehicles Act from 2011 to 2023

Source: OpenCity - Urban Data Portal. (n.d.).

By the above data analysis, $H_0$ of the First Hypothesis stands true while $H_1$ is rejected as the number of traffic violations decreased with the increase in punishment, thus satisfying Becker's economic model of crimes.

### 4.3 Application of Becker's Model to Rape Cases in India

As per the example taken above, Becker's model seems perfectly applicable to crimes that can have penalties as a deterrent. But is the model applicable to severe offences like rape?

December 2012 was a dark month for India. The whole nation was enraged at the rape of Nirbhaya[34]. Protests and riots asking for quick justice broke out across the country. It was not the first rape case that India had seen. But people from all backgrounds united to express their grief, anger, and dissatisfaction about the safety of women in India.

[34] Mukesh & Anr v. State (NCT of Delhi) & Ors (2017) 6 SCC 1.

After numerous protests, a committee headed by Late Justice J.S Verma, Gopal Subramaniam, and Ex-Justice Leila Seth was set up to reframe rape laws and give suggestions to the legislature regarding the same. As a result of the report submitted by the Committee, the Criminal Law (Amendment) Act, 2013 came into force.

The 2013 Amendment widened the definition of rape to not just include penetrative rape. Even acts of inserting foreign objects other than the penis and acts of oral sexual intercourse were added to the traditional definition of rape.

The 2013 amendment also included provisions to hold trials concerning rape on a day-to-day basis for the quick disposal of cases. Provisions regarding Voyeurism, stalking, and acid attacks which were not in the 1983 amendment were added. Punishment for gang rape was increased to 20 years from 10 years and a provision was included that made it mandatory for government and private hospitals to provide free medical treatment in case of rape and acid attacks. Thus, the 2013 amendment increased the penalty for rape.

Despite such a deterrent, rape cases have only increased with the year. Considering the data from NCRB (National Crime Records Bureau)[35], the number of rape cases that took place in 2011 was 24,206 while in 2012 it was 24,923. Post the 2013 Amendment and increase in the punishment, the number of registered rape cases was 33,707 in 2013; 36,735 in 2014; 34,651 in 2015 and 38,947 in 2016. As highlighted by the trend, crime was not deterred by increasing the punishment. Thus, Becker's model fails to hold for serious offences or crimes. In the case of traffic violations, the rational utilitarian theory of a criminal holds good. But in the case of serious offences like rape and murder, the criminal is not always seeking economic benefit or utility, rather there are many other social, mental and physical motives or factors that contribute towards the commission of that crime.

[35] *Nationalcrimerecordsbureau* (no date) *Home*. Available at: https://ncrb.gov.in/.

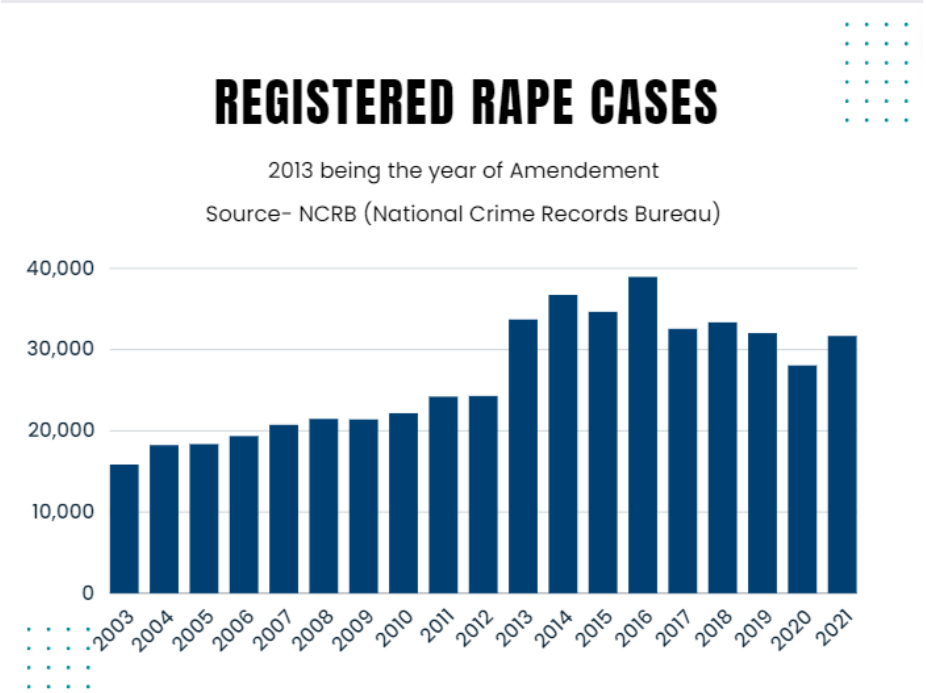



Fig 4.3.1 The number of registered rape cases in India from 2003 to 2021

Source: NCRB (National Crime Records Bureau)

By the above data analysis, $H_0$ of the Second Hypothesis stands rejected while $H_1$ stands true as the number of rape cases increased with the increase in punishment, thus not following Becker's economic model of crimes.

### 4.4 White Collar Crimes in India

Sutherland defines white-collar crime as offences committed by respectable businessmen or professional men[36]. The definition of white-collar crimes operates on the premise that it is committed by people who belong to the affluent part of society in positions of power. Bank frauds, bribery, forgery, stock market manipulations, tax evasion, counterfeiting etc. all fall under the category of white-collar crimes in India.

White-collar crimes as a field or subset of crimes have emerged recently in the past few decades. The reasons why such crimes have now gained momentum are plenty.

a. Most of the offenders do not consider this to be a typical crime as it does not involve the typical

[36] Supra note 9.

definitions of violence or damage to society.

b. There is a lack of awareness amongst members of the society as well as policymakers regarding such crimes thus leading to faulty legislation with loopholes.

c. The growth in technology supplies white-collar criminals with umpteen resources. The digitisation of every aspect of life has made the globe a smaller place. Thus, such crimes can be targeted at any person residing in any part of the world.

As far as India is concerned, many legislations deal with white-collar crimes.

a**. The Indian Penal Code**: Various provisions of the Indian Penal Code have addressed issues like bribery, forgery, embezzlement etc. For example; Section 28 of the Indian Penal Code defines counterfeiting as "A person is said to "counterfeit" who causes one thing to resemble another thing, intending using that resemblance to practise deception, or knowing it to be likely that deception will thereby be practised." The penalty for the same has been prescribed in Section 489A. The punishment is imprisonment for life or imprisonment extending for 10 years or a fine.

**b. Prevention of Money Laundering Act of 2002**: Section 3 of the Act defines money laundering as "Whosoever directly or indirectly attempts to indulge or knowingly assists or knowingly is a party or is involved in any process or activity connected with the proceeds of crime including its concealment, possession, acquisition or use and projecting or claiming it as untainted property shall be guilty of the offence of money-laundering." and the prescribed punishment for it "shall not be less than three years but may extend to seven years and shall also be liable to a fine"

c. **Income Tax Act of 1961**: Section 276C of the Income Tax Act prescribes punishment for any person who tries to evade tax as:

(i) in a case where the amount sought to be evaded exceeds one hundred thousand rupees, with rigorous imprisonment for a term which shall not be less than six months but which may extend to seven years and with fine;

(ii) in any other case, with rigorous imprisonment for a term which shall not be less than three months but which may extend to three years and with a fine.

There are many more legislations regarding white-collar crimes in India. But for now, the focus is on the above laws and trying to analyse whether Becker's economic model works for the data

regarding money laundering, counterfeiting and tax evasion in India.

### 4.5 Applicability of Becker's Model to White Collar Crimes:

By the aforementioned data analysis, it is safe to say that Becker's model applies to crimes or violations that have an economics or cost-benefit analysis as undertones. However, the model does not justify crimes that have high emotional, social and mental implications.

Contrastingly, white-collar crimes are perpetuated by offenders who are well-educated and who plan their crimes in much more sophistication and detail. Thus, the "rational criminals who compare the utility of a crime to the utility of not committing a crime" can be well-qualified white-collar criminals, as they have all the resources, knowledge and skills to analyse the profits or economics behind a crime. Thus, white-collar crimes fit more appropriately into Becker's economic model. [37]

The economic model of crime calculates the cost of commission of a crime (C) as the product of the probability of apprehension (p) and the actual punishment, which can be either a fine (f) or imprisonment that can be calculated by multiplying the amount earned by the convict if he or she were free (c) and the period of imprisonment (t). Thus, the following equations can be obtained:

$$C=p*f \quad \text{or} \quad C=p*c*t$$

Thus, if white-collar crimes need to be contained, one of the ways that could be employed is to increase the fine or penalty to be paid (f). Since white-collar crimes are perpetuated by people who belong to the affluent part of society, it is easy for them to pay fines and penalties as a form of punishment. This reduces the apprehension towards punishment, thus reducing the cost of the commission of the crime, making it easier to commit the crime.

But, most of these perpetrators value freedom and their status in society which will be affected if they are imprisoned. Hence, the best way to increase the cost of committing a white-collar crime is to increase the probability of apprehension (p) by increasing provisions related to incarceration or imprisonment.

### 4.6 Applying Becker's Model to Corruption Data in India

[37] Haas, M. (2021, October 2). Punishing White-Collar Crime in Canada: Issues With the Economic Model of Crime and Punishment. Alberta Law Review. https://albertalawreview.com/index.php/ALR/article/view/2669 204

Considering the data on corruption in India, which is an offence under the Prevention of Corruption Act of 1988[38], the amendment of 2018[39] was crucial in strengthening the punishment for offences involving corruption. The Act majorly covers offences and misconduct of the nature of bribery, corruption etc. perpetuated by public servants. The Amendment of 2018 increased the punishment for such offences from a minimum imprisonment term of six months to three years and a maximum of five years to seven years with or without a fine under Section 7.

If we apply the above amendment in the laws to the model substantiated by Becker, the cost of commission of corruption has increased (C) as the probability of apprehension (p) was increased by tightening the penalty provisions of the Act. Thus, as per Becker's model, white-collar criminals who are considered to be "rational" would prepare a cost-benefit analysis to realise that the cost of commission of corruption is more than not resorting to corrupt means. However, in the data analysis of corruption cases, as recorded by the NCRB (National Crime Records Bureau), we see that the crime of corruption increasing despite tightening penalty provisions.

Taking into consideration the data on the number of corruption cases registered by NCRB**[40]**, the number of cases registered by NCRB under the Prevention of Corruption Act in 2016 was 38,947 and in 2017 was 32,559. Post the 2018 Amendment, there was no significant drop in the number of cases. There were 33,356 cases recorded in 2018. 32,032 in 2019; 28,046 in 2020 and 31,677 in 2021 were the case statistics of the subsequent years. Although an infinitesimally small drop was observed, this drop cannot be equated to the reduction in crime numbers that was so significant and apparent as in the traffic-violation case study[41].

[38] Prevention of Corruption Act, 1988, No. 49 of 1988, Acts of Parliament, 1988 (India).
[39] Prevention of Corruption (Amendment) Act, No. 16 of 2018, Acts of Parliament 2018 (India).
[40] *Nationalcrimerecordsbureau* (no date) *Home*. Available at: https://ncrb.gov.in/.
[41] Section 4.2 of this paper.

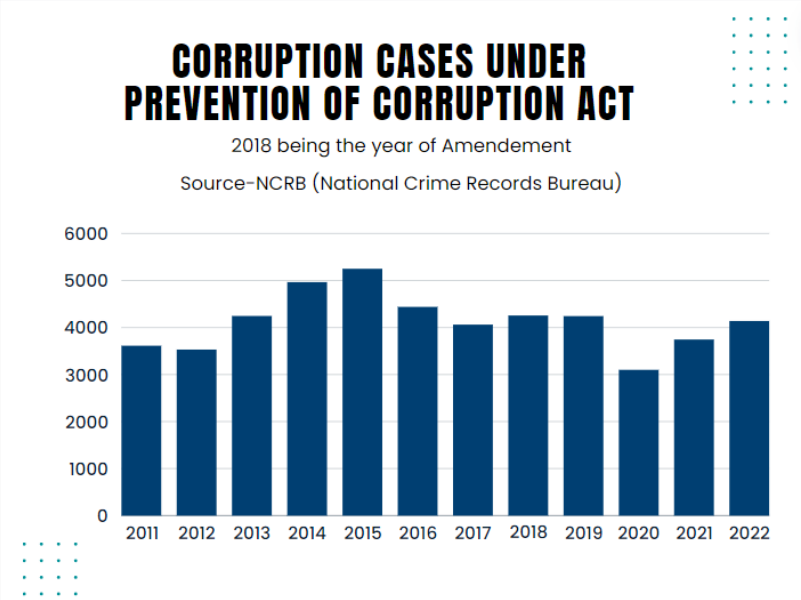



Fig 4.6.1 The Number of registered corruption cases under the Prevention of Corruption Act, 1988

Source: NCRB (National Crime Records Bureau)

Why did Becker's model not apply to corruption despite it being a type of crime where criminals are considered affluent and perfectly fit the rational criminal theory?

The possible reasons as to why Becker's model does not apply is that:

1. While curating the Economic Model of Crime, Becker considered the data of various crimes in the United States of America but omitted the data of many white-collar crimes thus reducing the figure of net damages to society.

2. In his paper, Becker himself states that the effectiveness of punishment differs from crime to crime as the time between commission and detection of an offence varies. It can be inferred that the detection of crimes like traffic violations or rape is evident due to its perceptive impact on the society. At the same time, white-collar crimes take more time and more specialised resources to detect.

3. Sutherland[42] in his paper defined white-collar criminals as individuals committing crimes often belonging to a higher class in society and deemed to be respectable people. This traditional

[42] Supra note 9.

definition of white-collar criminals has been widely criticized as speaking from a contemporary perspective, a commission of a crime is not strictly restricted to a particular class anymore. Herbert Edelhertz defined white-collar crimes as "(an) illegal act or series of acts committed by nonphysical means and by traditional notions of deceit, deception, manipulation, concealment or guile to obtain money or properties, to avoid the payment or loss of money or property, or to obtain a business or personal advantage."[43] This definition seems to be more practical and applicable to the present scenario as the crime is not restricted to a particular economic class but rather to the offence. Thus, the inference that educated white-collar criminals are rational individuals whose crimes Becker's model can be perfectly applied as they perform a cost-benefit analysis before committing a crime and thus, by increasing apprehension of getting caught, they can be deterred is dismantled.

4. As mentioned in Michelle De Haas's paper[44], the view that white-collar criminals amass a huge wealth and hence it becomes easy for them to pay off the penalty and wash their hands. Furthermore, it becomes easy for such criminals to spot loopholes in the justice system, use bribery and find a way out of the punishment that is designed.

By the above data analysis, $H_0$ of the Third Hypothesis is rejected while $H_1$ stands true as the number of corruption cases increased with the increase in punishment, thus not complying with Becker's economic model of crimes.

## 5. CONCLUSION

It is impossible to completely remove the element of crime from society. Immaterial to the level of evolution that mankind will go through, crime is constant. Every person in the society is affected either directly or indirectly by a crime. Thus, it becomes important to understand the implications of crime. This paper has attempted to analyze the economic implications behind crimes backed by data.

By the analysis of the application of Becker's model to various crimes in the above chapters, it is evident that the economic model of crime can be applied to reduce petty crimes like traffic violations, but serious crimes like rape do not follow the model consistently. Surprisingly, the

[43] Fischer, R. J., Halibozek, E. P., & Walters, D. C. (2019). Selected security threats of the 21st century. In Elsevier eBooks (pp. 487–505). https://doi.org/10.1016/b978-0-12-805310-2.00019-6
[44] Supra note 24.

model also does not apply to white-collar crimes like corruption.

The reason for the inapplicability of the model to heinous crimes could be the involvement of emotional or societal motivations rather than economic motivations behind committing serious offenses. For example, increasing traffic fines is enough motivation to restrict people from breaking traffic rules as no one would want to pay exorbitant fines over following the rules. But revenge, vengeance, acts of passion, or any other intent could be enough motivation to commit murder.

The economic model does not work for white-collar criminals who are well-educated and well-qualified and are better equipped to perform a cost-benefit analysis. The fact remains true that if penalties were increased for white-collar criminals who are affluent it would be easy for them to pay off the penalty and get away with the crime. The initial hypothesis set by the paper did not stand true for corruption data, the reasons for such anomaly have been substantiated in Section 4.6 of the paper.

With the advent of Behavioural Economics as a field, a few theories propagated by Becker's economic model can be questioned. The model reduces crime as a "business transaction" with profits and losses. Criminals are considered to be "rational" as they weigh the utility of the crime. This model thus is based entirely on the principle of classical economics that considers consumers to be rational people who make rational choices. But in reality, human emotions come into play and affect the course of choice-making, as per Behavioural Economics. If this principle of Behavioural Economics were to be applied to Becker's Economic Model, then the model would probably not be consistently applicable to all crimes. It makes one wonder if crime should be viewed as a business transaction or as an emotional response.

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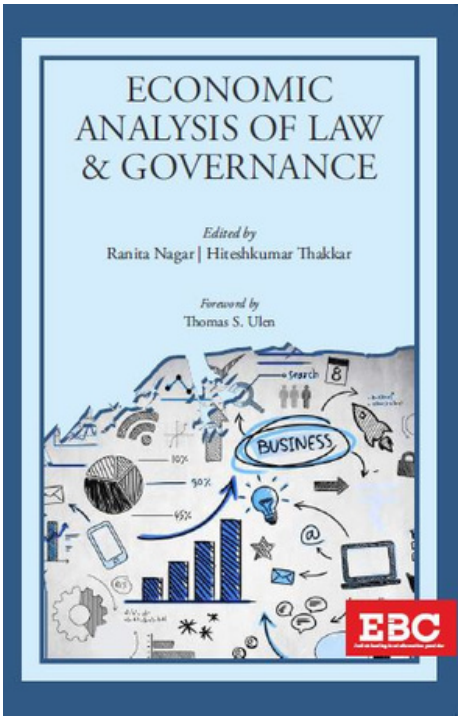
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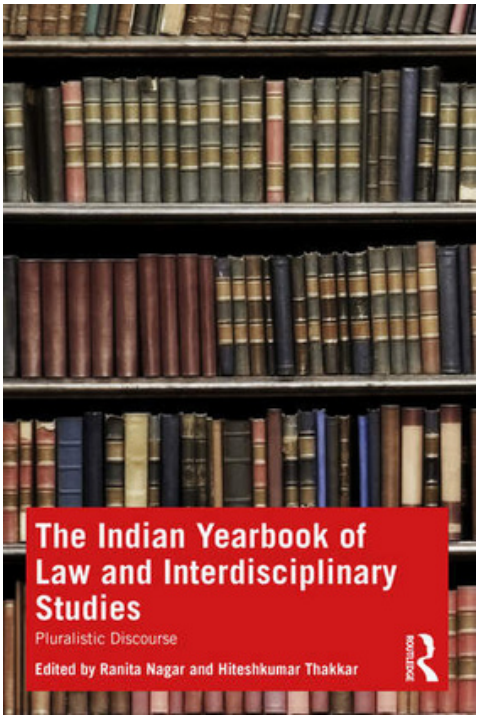
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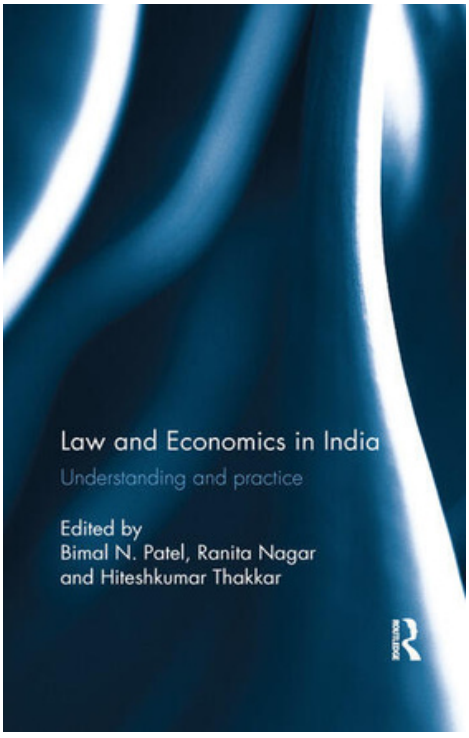
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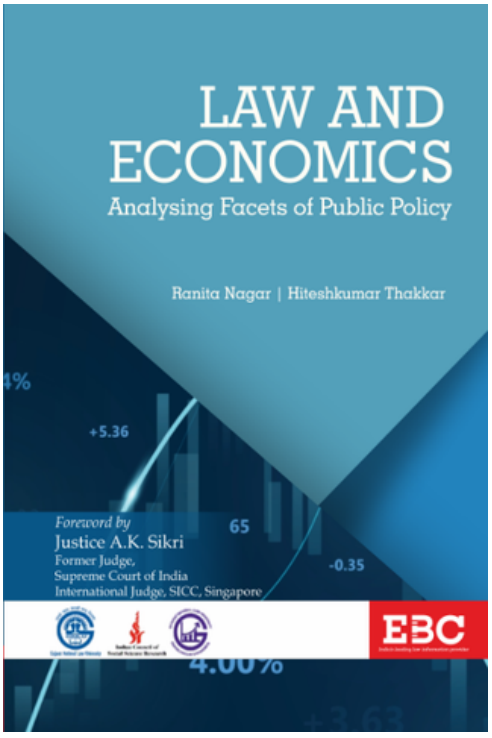

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