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EDITORIAL NOTE

-Editors

The first issue of Volume VIII of the GNLU Journal of Law & Economics comprises six carefully curated articles that delve into critical intersections of law and economics. This issue brings forth fresh perspectives and empirical insights on contemporary challenges, demonstrating the Journal's continued commitment to fostering informed discourse that bridges doctrinal frameworks with real-world socio-economic concerns.

The paper titled **"Risk, Deprivation, and Revolt: An Economic Examination of Bangladesh's Political Unrest"** authored by Nabeeha Sama and Vansh Gaint, examines the large-scale student-led protests and subsequent political upheaval in Bangladesh through the lenses of relative deprivation and prospect theory. By analysing socio-economic triggers such as youth unemployment, income disparity, and inflation, the authors uncover the deeper economic grievances that fuel civil unrest. The paper complements its theoretical framework with a practical game-theoretic model that explains the strategic choices made by both the government and protestors. In addition to offering an academic perspective on Bangladesh's contemporary political landscape, the study provides policy directions for improving institutional responsiveness, strengthening communication channels, and addressing long-standing developmental deficits

The paper titled **"The Hidden Cost of Cheap Labour: An Antitrust Reassessment Beyond Consumer and Labour Law"** by Tejaswini Kaushal and Madhav Tripathi presents a compelling critique of how traditional antitrust frameworks have overlooked exploitative labour arrangements that distort markets and suppress fair competition. By demonstrating how the systematic underpricing of labour costs skews competitive conditions and entrenches market power for dominant firms, the authors bridge gaps between competition policy and labour law. The paper argues that modern competition law must expand its focus to recognise monopsony-like conditions and wage suppression as anti-competitive harm. The authors call for regulators to adopt innovative enforcement strategies, such as integrating fair wage standards within merger reviews and antitrust remedies, to curb hidden market inefficiencies and promote equitable growth.

The paper titled **"Examining the Role of Non-Tariff Barriers in Trade Regulation and Trade Flows: Insights from the India-ASEAN Free Trade Agreement"** by Prajakta Arote, Dr. Hastimal Sagara, and Dr. Pravin Jadhav investigates the persistence and sector-specific impacts of non-tariff barriers (NTBs) within the India-ASEAN Free Trade Agreement framework. Using comprehensive indices such as the Frequency Index and Coverage Ratio, the authors reveal how NTBs continue to inhibit trade flows despite tariff liberalisation. Their findings provide a valuable evidence base for policymakers seeking to reduce hidden trade frictions and strengthen regional economic ties under India's Act East Policy.

The paper titled **"Assessing the Macroeconomics Implications of the Unified Pension Scheme in India: An Analysis of the Effects on Fiscal Sustainability"** by Pranay Agarwal undertakes a timely and detailed examination of India's Unified Pension Scheme (UPS). Using debt sustainability models and cross-sectional regression, the paper maps the fiscal burden created by overlapping old-age pension schemes and analyses how behavioural economic factors influence individual participation and savings behaviour. Drawing on international comparisons with pension reforms in the US, Sweden, and Argentina, the paper distils lessons for India to balance pension adequacy with long-term fiscal health. The study concludes with pragmatic suggestions on implementing auto-enrolment, incentivising private savings, and aligning the UPS with India's existing National Pension System to avoid redundancy and ensure intergenerational equity.

The paper titled **"Beyond Landes Posner Model: Modelling Independent Judiciary Based on Social Choice Theory"**, authored by Rishi A. Kumar, revisits the classic Landes-Posner model that treats the judiciary as a contractual enforcer between the legislature and interest groups. Through a robust interdisciplinary approach, the paper critiques the model's rigid assumptions and introduces an alternative framework grounded in social choice theory and public choice theory. By doing so, the study explains why independent courts persist even when other political actors have incentives to curb judicial autonomy. The paper's novel contribution lies in its use of spatial voting theory and veto-player logic to demonstrate how an independent judiciary resolves cyclical preference conflicts in democratic institutions. The insights offered broaden our understanding of judicial independence as a stabilising feature in pluralist political systems and open new avenues for research on constitutional design and governance.

The final contribution, **"Assessing the Impact of Legislative Intervention on Child Marriage in Bihar, India: Untying the Knots Between Law, Economics and Society"** by Shivani Mohan, provides a comprehensive economic analysis of the persistent prevalence of child marriage in Bihar despite legislative prohibitions. Using data from national surveys, the study demonstrates how entrenched socio-economic incentives continue to drive child marriage as a perceived economic coping mechanism among marginalised communities. The paper argues for aligning legal frameworks with targeted socio-economic interventions to address the root causes and deliver meaningful social change.

This issue reflects the Journal's vision of encouraging interdisciplinary scholarship that meaningfully informs contemporary policy debates. Each paper offers grounded insights and robust analyses that underscore the vital connection between sound economic reasoning and legal frameworks.

The Editorial Board extends its heartfelt gratitude to the Review Process Committee consisting Anuradha S Pai, Dr Aman Deep Singh, Dr. Manoranjan Kumar, Dr. Faisal, Dr. Rohit B. Jadhav, Dr. Shivani Mohan, Dr. Himanshu Thakkar, Dr. Seema Shrivastava, Dr. A. Marisport, and Shriram C R, for their diligent and constructive reviews.

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RISK, DEPRIVATION, AND REVOLT: AN ECONOMIC EXAMINATION OF BANGLADESH'S POLITICAL UNREST

- *Nabeeha Sama and Vansh Gaint*[1]

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ABSTRACT

The essay examines the violence that unfurled in Bangladesh in 2024 from the lens of the relative deprivation theory to explain the role of perceived inequality in political violence, and the prospect theory to explain the role of prospect losses as a motivation for individuals to participate in political violence. The essay analyses the events that acted as a trigger for the social unrest and focuses on the contentious quota to explain the decision-making process of the players involved, from the viewpoint of the prospect theory. The essay also looks at macroeconomic variables such as youth unemployment, inflation etc. during both the years that marked a social unrest among the general population and found that in both years, the economy had shown worrying trends. The essay also looks at the role of costs and benefits as perceived by an individual while making a choice in a risky situation. The conceptual framework is further demonstrated by a game where the decision-making process of the government, as a player, is discussed. It is found that the equilibrium for both the players is at the first outcome, where the participation is met with suppression by the government. The most ideal outcome for both the parties is a peaceful approach to the issue at hand. Based on the existing research, and the game theory, policy recommendations have been formulated emphasizing the need for a stronger penal system, to augment the costs that are associated with participation in violence, and to make infrastructural developments to address the socio-economic issues at hand. The establishment of transparent communication channels would also go a long way in mitigating the risks of future unrest.

Keywords: *Relative deprivation theory, prospect theory, Bangladesh student protests, prospective losses.*

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1. INTRODUCTION

Political violence is best understood in the terms of its underlying causes, its central objective being to (directly or indirectly) impact political decisions, and decision-making (Bosi et al, 2015). Identifying the underlying causes of political violence has been a matter of extensive academic discourse with earlier theories postulating that prolonged economic inequality along group lines generates grievances leading to political violence (Cederman et al, 2014).or viewing political violence as serving as an outlet for the human need to form community (Cederman et al, 2014). or that people weigh the benefits and costs of participation/non-participation in political violence (Whiteley, 1995). Castles (1991) states Olson's Rational Choice Theory, applied in the context of political violence, provides that the considerations of an individual who has to make a choice to take part in political violence, depend on the incentives of participation and the costs involved in the alternatives available. Gurr (2012) states that the pioneering theory on political violence by Ted Robert Gurr draws from socio-psychological principles to posit the Relative Deprivation theory which theorizes that widespread perceived discrepancy between the expectations of the people and the capabilities of their current material reality (coined the revolutionary gap) combined with the feeling that this deprivation cannot be addressed through institutional means causes tension leading to political violence. Contemporary research has led to the theory of "Poor Prospects" postulated by Bartusevičius and Leeuwen (2022) which expounds that a higher probability of benefits would entail higher probability for participation and vice versa, that an individual facing the dilemma of participation would be primarily influenced by the prospective losses he expects to incur if the objectives of the violence are not realized. Ritchie (2024) says that the popular student-led movement in 2024 in Bangladesh for reforms in the Quota system snowballed into a mass uprising against the incumbent government's repressive measures to quell said protests. The movement also transformed into a larger avenue to express dissatisfaction with the government's management of the national economy (Ethirajan and Ritchie, 2024), rampant corruption by government officials (Alam, 2024), human rights violations (*Amnesty International,* 2024), allegations of undermining the country's sovereignty by Sheikh Hasina (*Amnesty International,* 2024), increasing authoritarianism and democratic backsliding (Ethirajan and Ritchie, 2024). This has presently resulted into the successful ouster of the Prime Minister and her cabinet (Ethirajan and Ritchie, 2024). The Quota System in Bangladesh was sought to be reinstated in 2024 by a High Court decision in Ohidul Islam and Ors. v. The Government of Bangladesh and

Ors WP No. 6063 of 2021 in June 2024 thereby becoming the subject of mass revolt and this would also amount to reintroduction of the 30% quota for government job, the beneficiaries of which would include the families of freedom fighters bringing the reservation to a total of 56% including that for women, disabled people among other disadvantaged classes. Ethirajan and Ritchie (2024) says that the protests were marked by large-scale political mobilization. In this essay, the authors seek to view political violence within the backdrop of Bangladesh in light of its underlying factors. This is done through comparisons between the prominent theories of political violence- Relative Deprivation and Prospects Theory, for its suitability in the context of the backdrop and providing a game theory to understand the decision-making approach of the players.

2. COMPARATIVE ANALYSIS OF THE RELATIVE DEPRIVATION THEORY AND THE POOR PROSPECTS THEORY

a. Core Concepts

The Relative Deprivation theory provides that an individual is willing to participate in political violence when a grave and intolerable discrepancy between his value expectations and capabilities arise (Ethirajan and Ritchie, 2024). Value expectations refer to the materialistic goods, conditions, etc., that the individual feels entitled to, and the value capabilities refer to the individual's material reality (Ethirajan and Ritchie, 2024). The main objective of the individual in this paradigm is a change in the status quo (Ethirajan and Ritchie, 2024).

The prospect theory as given by Bartusevičius and Leeuwen (2022), on the other hand, uses the psychological mechanism of loss-aversion to explain individual behavior in situations related to political violence. The theory contends that an individual is more likely to avert future losses than consider future gains when policy speculation projects future losses (Bartusevičius and Leeuwen, 2022). This is because of the perceived utility of gains and losses. The objective of the individual behind the action is to retain the status quo. The theory depends on dynamic variables to explain human behaviour such as temporal changes in economic conditions (Bartusevičius and Leeuwen, 2022). The theory proposes that temporal dynamic deprivations which are tantamount to an individual comparing their present to past circumstances are highly relevant in political violence. It also suggests that prospective detrimental deprivation, i.e. when the value capabilities fall while the value expectations remain constant, is more likely to lead to violence (Bartusevičius and Leeuwen, 2022).

The Relative Deprivation theory situates its analysis of political violence primarily in the motivations of individuals tracing a link between relative deprivation and political violence through psychological mechanisms referred to as frustration-aggression models (Bartusevičius and Leeuwen, 2022). The Poor Prospects theory demonstrates that relative deprivation in isolation is unlikely to be a catalyst to political violence (Bartusevičius and Leeuwen, 2022). It instead states that although the motivations of an individual are notable, group based perceptions on projected future losses and resistance towards change in living conditions are more likely to fuel people toward political violence. The paper's findings also support the proposition that violent conflict is a group phenomenon and findings that macro-level proxies of individual-based grievances are not reliable predictors of civil conflict (Bartusevičius and Leeuwen, 2022). The Poor Prospects theory does not disavow the individual as a field of study, but seeks to regard decision making of individuals which constitute group attributes as a fertile field of study in the factors causing political violence. Such groups may include location-based, family based, some age or class based, and some culturally differentiated. It has been strongly supported that political violence varies directly in magnitude with the intensity of relative deprivation, with such deprivation as is attributable to discrimination, political separatism, economic dependence, and religious cleavages tends to contribute at a constant rate to civil strife which is inclusive of political violence (Stewart, 2001). The key finding of the study, attributes greater chances of political violence to temporal group relative deprivation (Bartusevičius and Leeuwen, 2022). The temporal aspect relates to resentment and risk-seeking; the group aspect should further contribute to mobilization (Bartusevičius and Leeuwen, 2022). Temporal changes are more likely to lead to anger and stronger motivations constitute higher probability of actual violence (Bartusevičius and Leeuwen, 2022). It is thereby argued that the existence of Relative Deprivation directly does not lead to political violence. It has a positive impact on mobilization which, in turn, influences ethnic conflict behavior (Stewart, 2001). Researchers such as Tilly (1978), have analyzed the contribution of social solidarity to movement mobilization and the ways movements function as organizations, recruiting members and mobilizing other resources to achieve collective ends. In the present instance, university students in Bangladesh perceived the reintroduction of the Bangladesh Quota Reforms as a dynamic change which detrimental to their future prospects of employment based on merit. The magnitude of the perceived deprivation was immense (Ethirajan and Ritchie, 2024). This individual perception precipitated mobilization in the form of an Anti-Discrimination Student

Movement (Ethirajan and Ritchie, 2024), which led to collectivization of students to resist perceived future losses. This collectivization later led to political violence which eventually resulted in the change in government. This conclusively establishes that the Poor Prospects Theory is better suited to explaining the trajectory of events and the decision making of individuals within groups here, university students, facing prospective losses.

b. Relationship Mechanism

The Relative Deprivation Theory entails that perceived inequality is the main factor influencing an individual's decision to participate in political violence. RD as a type of cognitive dissonance (between the value expectations and the belief that it will not be fulfilled) which produces psychic tension, leading to tension-reduction activities such as "organized group action to change the structural source of the blockage" (Mars, 1975). Relative Deprivation is a perceived discrepancy between expectations and reality and authors have argued that there need not to be any objective evidence to cause such perception. The perception stems from economic variables such as the income gap between two communities in a country, which could result from a government policy. In such a scenario, provided the rational choice theory and Gary Becker's economic approach to crime and punishment, the individual's participation would also depend on the expected benefits (a change in status quo) and the costs (punishment) (Becker, 1968). Where β_p represents the benefits an individual expects from participation, and C_p represents the costs, the choice the individual makes will be as follows:

$$\text{If, } \beta_p > C_p \text{ the individual will participate}$$
$$\text{If, } \beta_p < C_p \text{ the individual will not participate}$$

The student uprising in Bangladesh in July 2024 was a result of the existing adverse economic conditions. Unemployment among the youth rose to 18 million (India Today, 2024). In July 2024, the consumer price index of Bangladesh reached 11.66%, and food inflation exceeded 14% in the same month (India Today, 2024). Despite recording significant economic growth in the past decades, a discrepancy emerged in the distribution of resources between the general populace of Bangladesh and the beneficiaries related to the Awami League (India Today, 2024), the latter being heftily favoured by the Sheikh Hasina government. The conditions created a sense of animosity between the public and the government.

If the costs imposed by the status quo are enough to create a gap between the individual's value expectations and capabilities, the individual would be inclined to participate in the violence. Bangladesh had faced similar protests in 2018 as well. The macroeconomic trends in 2018 reflect a 12.27% unemployment rate among the youth, as compared to 4.38% among the total workforce. The statistics also reflect a 12.70% hunger rate (Macrotrends, 2024).

The application of the prospect theory can be understood through the various accounts of Bangladeshi citizens and protesters. The quota would have reserved 30% of government jobs for the kin of freedom fighters in the Liberation War of 1971 (Reuters, 2024). The policy has generated feelings of inequality among the general population in the past as well. The ultimate effect of the quota on the population is a loss of job opportunities in the future.

An individual belonging to the populace would speculate, with respect to the quota, a loss in job opportunities upon its implementation. Theoretically, the projected losses would be greater than the cost of participating since the individual's livelihood is compromised. Accordingly, the cost of not participating would be equal to the projected losses if the individual remains indifferent to the prospective losses and does not participate in the violence.

If such is the case, the individual would be compelled to participate in political violence, provided that the prospect theory also suggests an individual's sensitivity is more towards potential losses than gains (Barberis, 2013). The participation would be an attempt at minimising the prospective losses because the individual displays risk aversion in the prospect theory model. Kanheman and Tversky also introduced the critical "certainty effect", which shows the tendency of an individual to underweight merely probable outcomes. The framework around this particular effect explains an individual's risk aversion (Kahneman and Tversky, 1979). It is pertinent to note that the weighting of the outcomes does not depend on objective probabilities (Kahneman and Tversky, 1979).

Under prospect theory's framework, an individual would perceive higher projected losses and be compelled to participate in the violence when the economic conditions of a country impose costs on an individual that are greater than the cost of participating in the violence (prosecution, sanctions, etc.) The sanctions, therefore, must necessarily impose a lower cost than the projected losses. Such conditions can be inferred through macroeconomic variables such as the unemployment rate, the consumer price index, growth in the national income and any other variables of equitable growth (Yeniçırak, 2021).

The considerations for an individual under a political predicament that endangers their livelihood would also depend on the probability-weighting done by the individual. The costs for participating and not participating would depend on how the success of the revolt (the violence) is weighted. The certainty effect indicates that an individual is more likely to overweigh the outcome of certainty (Kahneman and Tversky, 1979). The costs of the alternatives would, therefore, be a function of the weighted probabilities. In Bangladesh's context, the costs of not participating would mainly consist of the losses that would be faced as a result of the successful implementation of the quota system in the form of loss in future employment opportunities. The cost of participation would include the risk of conviction and facing a prison sentence (India Today, 2024). Where C_p is the cost of participation, C_{np} is the cost of non-participation, and wP refers to weighted-probabilities assigned to an outcome, the function of the cost of each alternative can be explained as an inverse relation between the costs, and the perceived probability of the corresponding outcome.

$$f(C_p) = \frac{1}{wP\ (successful\ revolt)}$$

$$f(C_{np}) = \frac{1}{wP\ (successful\ implementation\ of\ the\ quota)}$$

The ultimate decision, therefore, depends on the determined cost that also accounts for the weighted probabilities of the respective outcomes.

IF, $C_{np} > C_p$, the individual would participate.

IF, $C_{np} < C_p$, the individual would not participate.

If not participating would impose a higher cost on the individual than participating, the individual is virtually condemned to take part in the activity. Profits become a secondary consideration and the individual resorts to instinctive risk and loss-aversion (Grewal et al, 2016). The prospect theory explains the loss-aversion to the higher disutility associated with a prospective loss, as compared to the utility of a gain (Grewal et al, 2016). The loss-aversion also leads the individual to expose himself to risk as he attempts to avert the losses. Simply put, the individual will choose the alternative that saves him from the projected losses.

3. Costs and Benefits under the Prospect Theory Model (Participation in Political Violence)

The Prospect Theory model for the given paper analyses the costs and benefits for the individual in two scenarios: first, where he participates in the political violence, and second, where he does not participate in the political violence. The considerations for both alternatives are different. Keeping the weighted probabilities the same for both the alternatives, the individual's decision would depend on the costs and benefits he perceives in either choice.

Scenario 1: The Individual participates in the Political Violence

The reason why an individual would decide to participate in political violence, according to the prospect theory, is that the individual has perceived projected losses that must be averted. Therefore, the benefit accrued unto the individual who decides to participate, depending on the probability of the revolt's success, is the aversion of the perceived projected losses. The aversion is achieved through the realisation of the objectives of the political violence, in the form of economic rewards, political gains, etc.

The individual would face costs in the form of sanctions imposed by the relevant legislation. In Bangladesh, the range of crimes committed falls under Chapter VIII of the Penal Code (1860), which deals with offences against public tranquility. The ultimate cost, as determined by the individual, would take into account the weighted probability assigned to being convicted for any of the following offences.

Section no.	Offence	Sentence	Fine/s
143	Being member of an unlawful assembly	6 months	Unspecified
144	Unlawful assembly, armed with a deadly weapon	2 years	Unspecified
147	Rioting	2 years	Unspecified
148	Rioting, armed with deadly weapon	3 years	Unspecified

152	Assaulting or obstructing public servant when suppressing riot, etc.	3 years	Unspecified
153B	Inducing students, etc. to take part in political activity	2 years	Unspecified

Table 1:-Ultimate Cost of committing offences against public tranquility as determined by the individual (Source:- Chapter VII of the Indian Penal Code 1860)

Along with the costs imposed as a result of sanctions, the ancillary costs would include litigation costs, social costs in the form of stigmatisation, and a decline in social standing because of the criminal record. Moreover, a violent situation like a riot, etc., entails the endangering of the life of the participant itself.

Scenario 2

The benefits for an individual, considering not to participate in the case are only in the forms of protection against the costs that are imposed on an individual when he chooses to participate. In other words, the benefits to the individual would simply be protection from the corresponding costs including sanctions, and physical injury etc.

The costs for an individual in this scenario surface when the projected losses are realised. This depends on the probability of the failure of the revolt. The quota envisaged to be implemented in Bangladesh would have reserved 30% of the government jobs in Bangladesh for the kin of freedom fighters from the 1971 war (Barberis, 2013). If an individual chooses not to participate, it would be an active acceptance of the fact that the individual will accept the implementation of the quota. The economic effects would be aghast with a loss in economic opportunities for the part of the population that falls outside the purview of the quota and would also impact the efficacious distribution of economic resources.

4. GAME THEORY

Two players emerge in the prevalent situation in Bangladesh: the individual and the government. The individual chooses between participating (+) and not participating (-) in the revolt, while the

government has to decide how to tackle the unrest, either through suppression (+), by using force to quell the protests, or negotiation (-), by engaging in dialogue to address concerns and introduce reforms.

Based on the choices presented to both the players, different combinations can be formed, providing a different degree of benefits and costs to the players.

i. When the government chooses to suppress the participants in a revolt, coercive measures are undertaken such as Marshall law, curfews with few restrictions on the authorities responsible for supressing the revolt. In this situation, the cost of participating would be the highest. The government still benefits as the suppression allows the government to maintain order. The equilibrium for both the players lies here despite the existence of a better outcome. (+ , +)

ii. When the government chooses to negotiate as an alternative, the individuals would gain benefits as they try to reach a middle-point with the government, ultimately resulting in the partial success achieved by the revolt, and a loss in legitimacy of the government. (+ , -)

iii. When the government chooses to suppress any kinds of activities that might give rise to a revolt, the measures that are undertaken may cause a discernible loss to the individuals such as preventive detention, loss in livelihood, violation of fundamental rights etc. The government wouldn't be the benefitting party either because of the resources that will be wasted on maintaining a higher threshold of public tranquility. (-,-)

iv. The best outcome for both the parties is a peaceful approach to the situation. In this case, the individual does not participate because the government does not choose to suppress. The individuals refrain from participating, and negotiate with the government to reach common ground. (-,+)

The first combination is the least optimal combination in terms of the benefits it delves unto the participants but as discussed earlier, the projected losses would compel the individual to participate. The government would also be compelled to suppress, since negotiating against a revolting side leads to a loss in the legitimacy and control of the government. Therefore, the nash equilibrium rests in the first outcome

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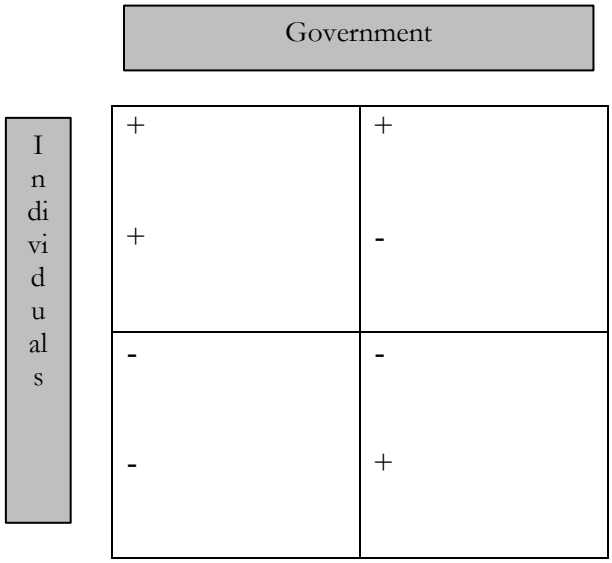

Figure 1:- The Nash equilibrium rests in the first outcome (Source- Author)

5. RECOMMENDATIONS

The in-depth discussion on the conceptual framework surrounding the relative deprivation theory and the prospect theory reveals that individuals are inclined to revolt when, due to public policies, they feel economically deprived or face projected losses respectively, which compels them to participate in a revolt.

The recommendations must focus on the aspects that could influence the decision-making of the individuals, which, as we have seen, depends on the costs and benefits he expects to derive from his actions. Bangladesh has a weak penal system covering the offences in question. The penal system in Bangladesh provides for concurrent sentencing. Therefore, the maximum sentence a person can face under Chapter VIII of the Penal Code, 1860, is three years, despite facing multiple charges (Barberis, 2013). The best way to tackle the response to projected losses is to increase the costs of participation through an augmentation in the concerned statute (India Today, 2024).

The game theory reveals that the most optimal outcome for both parties is where the problem is approached peacefully and both parties are ready to negotiate. The government should establish transparent communication channels and appoint mediators to negotiate with the individuals. In the long run, the government should aim to make infrastructural changes in education, politics, and the election process in a bid to address socio-political divisions. The same opinion is taken by Hasan Yanicirak, who urges the state to make improvements to the living conditions while

rectifying the conditions that give rise to revolts, instead of just focusing on changing the status quo (India Today, 2024).

It is also helpful to look at collective conflicts as emanating from economic conditions that foster such behaviour among the participating individuals, rather than approach the conflicts as simply ideological conflicts. Governments can strategize their development plans in order to avoid the macroeconomic pre-conditions to conflict.

6. CONCLUSION

The paper presents an alternative to the relative deprivation theory in understanding the factors and decision-making of the individuals behind political violence. The findings show the role of the certainty effect that the individuals employ in providing a weighted probability of a particular outcome influences their ultimate choice. If an equal-weighted probability is assigned to the different alternatives, the decision-making is based on a cost-benefit evaluation of the outcomes. The game theory applied also provides a government perspective and the cost-benefit analysis of the alternatives available to the government in tackling the unrest.

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THE HIDDEN COST OF CHEAP LABOUR: AN ANTITRUST REASSESSMENT BEYOND CONSUMER AND LABOUR LAW

- *Tejaswini Kaushal[1] and Madhav Tripathi[2]*

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ABSTRACT

The article examines the intersection of labour issues with antitrust law, highlighting a shift from traditional consumer-focused perspectives. Historically, antitrust authorities have approached issues from the vantage of consumer protection, labour law, and human rights, often overlooking the antitrust implications of labour practices. Recently, however, there has been increased scrutiny on non-poach and non-compete agreements, with competition authorities drawing analogies between the labour market and retail markets, where workers are seen as products and companies as colluding entities.

This article advances the discussion by exploring a novel antitrust concern within the labour market. By analyzing recent controversies involving Dior and Armani, accused of exploiting workers through inhumane conditions and low wages, the authors argue that labour costs, an integral component of production costs, should also be examined under antitrust frameworks. Specifically, they propose that extremely low labour costs, which can significantly reduce production costs, should be scrutinized as a form of predatory pricing.

The authors suggest that current antitrust laws, which do not typically address such labour practices, should evolve to incorporate new tools to address these challenges. They draw comparisons with European antitrust approaches to propose potential solutions for integrating labour market concerns into traditional antitrust analyses.

Key Words: *Labour law, Consumer law, Competition law, Antitrust, Predatory pricing, Non-poaching agreement*

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1. INTRODUCTION

The pursuit of low prices often conceals a troubling reality: many industries exploit labour to meet the relentless demand for cheap merchandise (Nair, 2016). Retailers, driven to lower costs, fragment their orders across multiple suppliers, undermining stable and ethical relationships (Costanza, 2020) This constant competition and erratic order volumes pressure suppliers to cut costs by underpaying workers and resorting to informal subcontractors, who impose even harsher conditions to keep up with rising demand and low prices (Pons-Vignon, 2011).

To grasp this dynamic, consider the recent allegations against Armani and Dior for exploiting workers in Italian factories while misleading customers about the ethical manufacturing of their products (Online Bureau, 2024). In this case, in its usual order of practice, the Italian Competition Authority (ICA) is focussing on consumer and labour rights, (Online Bureau, 2024). While labour and consumer law violations are serious, the authors highlight another often-overlooked concern: the economic antitrust angle in the labour market. **This aspect, though latent, is significant and frequently neglected by regulators.** The authors argue that antitrust concerns should extend beyond consumer welfare to include broader policy issues related to general welfare. They suggest that addressing these concerns through an antitrust lens from the outset is crucial.

In support of this argument, the authors draw on Indian, American, and European jurisprudence to advocate for a greater focus on antitrust issues in labour law. Their paper is structured as follows: Part II provides a brief history of the intersection between labour law and competition law, detailing how authorities have historically applied an antitrust perspective to labour issues and setting the stage for their argument. Part III examines the economic impact of cheaper labour costs, exploring how the labour market affects the product market. It argues that declining wages in the fashion industry present an antitrust issue alongside consumer and labour law concerns. The paper further proposes a test to reconcile antitrust considerations with consumer and labour law in the product market and analyses the creation of a new school of thought—referred to as 'the European School,' in addition to the Chicago and Harvard Schools. This approach aims to ensure that the hidden cost of labour as a component of pricing is no longer overlooked in investigations into corporate labour exploitation.

2. HISTORY OF COMPETITION LAW AND LABOUR LAW: WHERE THE REGIMES INTERSECT

a. Lower the Wage, Higher the Competition? Analyzing the China-India Case Study

For years, China has dominated global trade and exports from developing countries, leveraging its inexpensive labour, among other factors, to solidify its position as the world's manufacturing powerhouse (Baldwin, 2024). However, in the 19th century, China was thought to have reached the Lewis turning point (the stage at which a country's surplus labour becomes scarce), where it exhausted its supply of cheap labour while maintaining near-constant real wages (Das & N'Diaye, 2013). Since China acceded to the World Trade Organisation (WTO) in 2001, real wages in the manufacturing sector have increased and now align with those in other low-cost Asian countries such as Thailand and the Philippines (Chandrashekhar, 2014).

A 2002-2009 empirical study by C.P. Chandrasekhar highlighted that China's wage levels were initially lower than India's (Chandrashekhar, 2014). By 2009, however, Chinese compensation costs had surged ahead (Chandrashekhar, 2014). Despite these increased costs, China's compensation remained lower than in many other regions, which, paradoxically, enhanced the competitiveness of countries like India (van Ark et al., 2010). Given the significant role of labour compensation costs in determining product competitiveness, this unusual shift in competitiveness raises questions. Chandrasekhar suggests that this change may be due to various factors, including infrastructural constraints and the strategic focus of businesses on competitive global markets (Chandrashekhar, 2014). To gain a deeper understanding of this shift and the variables affecting different aspects of the labour market, as well as the dynamics of wages and their impact on the product market, it is essential to examine the concept of 'monopsony' at this stage.

b. Understanding Monopsony in the Labour Market: The Rise of a Phenomenon Dismissed

While the term 'monopsony' might be less familiar than 'monopoly,' it operates on a similar principle: a firm with monopsony power can pay lower prices for its inputs (Council of Economic Advisers, 2016). In the labour market, a monopsonistic employer can offer lower wages than would be seen in a competitive market without losing all its workers to other employers (Council of Economic Advisers, 2016). Like monopoly power, monopsony generally leads to economic inefficiency and results in a redistribution of income from workers to employers (Naidu & Dube, 2024).

Similar to the retail market, in the labour market, the forces of supply and demand dictate the price, output level, and quality of the input (Naidu & Dube, 2024). The interaction between workers and firms in a labour market is often governed by a bargaining process which directly impact the cost of the product/total labour cost (Naidu & Dube, 2024). The relative bargaining strength of the parties involved depends on their available options (Denk et al., 2019). For workers, outside options might include other potential employers offering higher wages or better conditions. Conversely, employers might have the option to hire other workers willing to accept lower wages. These outside options influence supply and demand, thereby affecting wages and employment levels (Denk et al., 2019).

In a perfectly competitive labour market, numerous workers and firms exist, with neither side holding significant bargaining power, leading to competitive wages that reflect workers' incremental contributions to production (Michaelides, 2010). Firms compete to attract the same pool of workers, meaning no firm can offer wages lower than its competitors without losing employees (Alderman & Blair, 2024). Consequently, competitive firms must align their wages with market rates, ensuring equal compensation for similarly productive workers in comparable roles (Alderman & Blair, 2024). In contrast, when barriers inhibit wage competition among firms, the market discipline that typically enforces wage standards is weakened (Alderman & Blair, 2024). When one side gains stronger bargaining power, wages diverge from competitive levels: stronger worker power leads to higher wages, while greater firm power results in lower wages. The latter of the two scenarios is known as monopsony power. In such scenarios, a monopsonistic firm faces a choice: it can either offer higher wages to attract workers or restrict employment to those willing to work for lower wages, thereby maintaining lower overall wage levels (Boal & Ransom, 1997).

The monopsonistic scenario is problematic for several reasons: *Firstly*, though this results in lower wages and increased profits for firms, it is inherently inequitable, especially since firm owners are generally wealthier than their employees. *Secondly*, lower wages reduce labour supply as workers are less inclined to work, which constrains output and economic growth, resulting in inefficiency (Manning, 2004). These two negative impacts of monopsony, inequality and inefficiency, often occur together, which suggests that addressing monopsony power will simultaneously enhance efficiency and reduce inequality (Council of Economic Advisers, 2016). Monopsony wage-setting in concentrated labour markets has also been shown to reduce wage levels and has been associated

with sluggish Gross Domestic Product (GDP) growth both in the United States (US) and the European Union (EU) (U.S. Department of the Treasury, 2022; Araki, 2022). Since both these implications align with improving the domestic market, it is important to note the concept's presence and evolution in both theoretical and practical contexts.

Well, not so long ago, economists largely dismissed the notion of monopsony in labour markets (Karatzas, 2009). In recent memory, academic economists and influential policymakers widely believed that minimum wage legislation was a misguided and even detrimental approach to assisting workers (Ashenfelter, 2010). Wage inequality was often attributed to temporary skill mismatches resulting from technological changes, with solutions typically involving investment in education rather than minimum wage regulations, collective bargaining, or labour law reforms (Ashenfelter, 2010). An antitrust response to labour market issues was considered unthinkable.

Moreover, the reluctance to use antitrust law as a tool for regulating wages and employer monopsony power is notable, particularly given that antitrust laws have historically been used to oppose and undermine labour movements (Marinescu & Posner, 2020). The lack of antitrust enforcement in labour markets is partly due to the antagonism that labour unions have felt towards these laws (Marinescu & Posner, 2020). Naidu, Posner, and Weyl highlight the obstacles workers face in pursuing antitrust actions, such as low damage awards for individual claims and difficulties in class action lawsuits (Naidu et al., 2018). Labour unions, which are better positioned to navigate these challenges and advocate for favourable public policies, including antitrust reforms, have largely opted not to pursue this route (Naidu et al., 2018). Their avoidance of antitrust advocacy suggests a significant aversion to these laws.

However, there is now growing discussion among scholars about employing antitrust law to counteract employer wage-setting power (Dimick, 2023). This shift is noteworthy, and though not the first, one of the most influential pieces of research in this context is the work by Professors Piketty and Saez on income inequality in the United States, which challenged the traditional supply and demand model by suggesting that minimum wages might not lead to reduced employment as previously thought (Piketty & Saez, 2003). Their study argued that employers exercise significant wage-setting power, creating a "monopsonistic" labour market where wages are set below competitive levels, leading to a lower labour supply and reduced output (Piketty & Saez, 2003). Contrary to conventional wisdom, minimum wages could thus increase employment and enhance market efficiency (Piketty & Saez, 2003). Recognizing that employers wield market power in

labour markets as much as they do in product markets opens the door to applying an antitrust approach to labour market regulation.

c. Antitrust Tools in Action: A New Approach to Labor Market Regulation

To study the regulation of the labour market with antitrust mechanisms, a few important trends must be examined. *Firstly*, consider the scenario of a merger to demonstrate the relevance and under-representation of antitrust considerations in labour issues (Dimick, 2023). An Issue Brief from the Council of Economic Advisors, US, reported that while antitrust laws do apply to reductions in competition for employees resulting from mergers, just as they do to reductions in product market competition, there have been few merger complaints citing employment monopsony as a reason for challenging transactions (Council of Economic Advisers, 2016). The Issue Brief argues that this might be because mergers that raise concerns about labour market monopsony are also likely to raise issues regarding product market competition, an area with more established legal precedents (Council of Economic Advisers, 2016). Even when the harms in product and labour markets do not overlap, antitrust authorities are mandated to protect competition in both spheres.

Secondly, labour market 'dynamism' (the frequency of changes in employment relationships) has been a prevalent trend for several decades in countries like India (Anant, 2006). Referring back to the initial example, fast fashion is a major arena in which this trend is reflected. Here, casual labour is more common than permanent positions (Vaidyanathan, 2020). Many fashion firms exploit India's cheap labour to lower production costs and boost profit margins. Brands such as Gucci, Saint Laurent, Louis Vuitton, Fendi, Christian Dior, Burberry, Mulberry, Marks & Spencer, Tesco, Sainsbury's, and Ralph Lauren, among others, hire skilled craftsmen and embroiderers in India at wages that often rival or fall below those of unskilled workers (Whiteside, 1979). This employment comes with minimal social security and job stability (Vaidyanathan, 2020). 'India's low wages and lax labour laws, coupled with widespread corruption and inefficiencies in inspections and scarcity of labour unions, make it an attractive destination for foreign brands seeking to outsource (Araki, 2022). This is highly indicative of a monopsonistic labour market dynamic.

Economic theory demonstrates that firms with monopsony power tend to hire fewer workers at lower wages compared to a competitive labour market (Araki, 2022). The trade-off for these firms is that while they lose potential output and revenue, they save significantly on costs by paying reduced wages (Araki, 2022). An important consequence of this is that monopsonistic employers

can be encouraged to hire more labour if their ability to set wages below competitive levels is restricted, for example, through collective bargaining agreements or minimum wage laws (Dimick, 2023). Additionally, limited competition in a labour market can facilitate collusion among employers, either implicitly or explicitly, allowing a few employers to coordinate their actions (Dimick, 2023). This collusion might involve agreements not to hire each other's workers or coordinating wage offers to avoid competitive bidding (Dimick, 2023).

Policy interventions and practices resembling collusion and abuses of dominant positions include:

1. *Non-Solicit Agreements:* In "non-solicit" or "no-cold-calling" agreements, employers agree not to actively seek out employees from other companies with job offers. These agreements can be sector-wide or involve just a few parties and can be bilateral or multilateral, affecting either one party or both. (Dentons Link Legal, 2024).
2. *Non-Compete Agreements:* Employers may use non-compete clauses in employment contracts to limit 'workers' employment options after leaving their current job. This unilateral action shifts bargaining power in favour of employers, independent of market concentration (Lavetti, 2021).
3. *Information Sharing*: This involves the exchange of sensitive information regarding employee terms and conditions between businesses. These generally take place informally in the form of verbal agreements or general practices but can equally constitute infringements of antitrust laws (Cooley, 2023).
4. *No-Poach Agreements:* In no-poach agreements, employers agree not to hire each other's employees, ranging from explicit no-hire clauses to coordinated policies on hiring, pay, and benefits. This collusion, often hidden from workers, resembles horizontal market allocation but on the demand side (Saveri Law Firm, 2023).

Out of the above, no-poach agreements, specifically, have had their own set of criticisms due to their economic impacts (Aresu, 2024). *Firstly*, wage-fixing and no-poach agreements depress wages and benefits for employees. Wage-fixing sets wages at monopsony levels, reducing labour demand and output while increasing consumer prices. No-poach agreements stifle labour market dynamism, negatively impacting compensation and productivity. *Secondly*, by curtailing wage competition, no-poach agreements prevent firms from offering higher wages to attract or retain employees. Typically secret, these agreements leave workers unaware and unable to negotiate for better compensation, increasing search costs and reducing incentives for training. *Thirdly*, no-

poach agreements hinder the efficient allocation of skilled employees, limiting productive firms' ability to attract talent and stifling innovation, as employees are less likely to move to firms where they can add the most value.

Across Europe, several notable no-poach case studies have surfaced in the past half-decade itself. In the EU, competition authorities classify naked no-poach agreements as market-sharing cartels and regard them as "by object" restrictions of competition (Aresu, 2024). Such agreements might theoretically qualify for an exemption under Article 101(3) of the Treaty on the Functioning of the European Union (TFEU), but if they do not meet the necessary conditions, they are generally considered void and subject to fines (*Treaty on the Functioning of the European Union*, 1958, art. 101(3)).

Moreover, the Portuguese competition authority uncovered a cartel among clinical laboratories for COVID-19 tests, which included an agreement not to hire workers (Rafferty, 2022). Additionally, the Portuguese Professional Football League and 31 clubs were fined €11.3 million for agreeing not to hire football players who had terminated their contracts due to COVID-19 (Portuguese Competition Authority, 2022). In Lithuania, the competition authority fined the Lithuanian Association of Real Estate Agencies and its members for including a no-poach clause in their code of ethics (*KT News*, 2022). Similarly, in Romania, an investigation was launched into no-poach practices involving Renault Technologie and other companies in the automotive engineering sector (Romanian Competition Authority, 2022). Furthermore, Spain's Catalan competition authority also examined no-poach agreements among members of the Association of Independent Private Schools (Posner, 2023).

Another significant development was in the United Kingdom (UK) in February 2023, when the Competition and Markets Authority (CMA) issued new guidance against anti-competitive agreements in labour markets (UK CMA, 2023). This marked the CMA's first explicit guidance on applying antitrust law to labour issues, emphasizing that collusion among employers regarding both freelancers and permanent staff is illegal and can lead to serious consequences (UK CMA, 2023). The CMA identified three main types of anti-competitive behaviours in labour markets, described as forms of business cartels: no-poaching agreements, wage-fixing agreements, and information sharing. This follows the CMA's increased focus on this issue in July 2022, when it investigated possible wage-fixing among sports broadcasters concerning freelance pay rates (UK CMA, 2024).

A similar positive trend is evident in the US, where most big brands have come under scrutiny and even been penalized for indulging in non-poach agreements, from McDonald's to Burger King, and Google to Apple (Dorminey, 2024; Papscun, 2022; Whitney, 2015). Most recently, in January 2023, the Federal Trade Commission (FTC) issued a notice of proposed rulemaking (NPRM) aimed at banning employers from using non-compete clauses with their employees (Morgan Lewis, 2024). The proposed rule would mandate that employers eliminate any existing non-compete agreements by the compliance date specified in the final rule (Morgan Lewis, 2024).

Global dynamics reflect how current practices align with economic theories more often than not. Nevertheless, the authors' focus remains specifically on how the exploitation of cheap labour affects competitors in the product market by driving down costs excessively. The authors will now present the most important part of this article, which offers a new perspective for regulators on analyzing antitrust law in the labour market.

3. EXPLORING THE ECONOMIC IMPACT OF ANTITRUST LAWS ON THE LABOR MARKET

a. Cost Price: The Deal Maker

In this part of the article, the authors provide a new interpretation of antitrust law in relation to labour issues. The discussion and relevance of the Harvard and Chicago Schools cannot be overlooked when considering antitrust interpretations. In giving the new interpretations, the authors would take a leaf out of the main thrust of the Chicago schools, which avers that "the end goal of competition law is consumer welfarism." In his highly influential work, *The Antitrust Paradox,* Robert Bork asserted that the sole normative objective of antitrust should be to maximize consumer welfare, best pursued through promoting economic efficiency (Khan, 2017). Although Bork used "consumer welfare" to mean "allocative efficiency," courts and antitrust authorities have largely measured it through effects on consumer prices (Khan, 2017). Here, the effect of this interpretation on consumer prices is that the lowest price a player can offer will dominate the market. The Chicago School argues that this is how competition should operate (Khan, 2017).

When we talk about lower prices, the first and foremost aspect which draws the ire of regulators is "predatory pricing" (Giocoli, 2014). Today, enforcement of this concept is well-established in global competition jurisprudence. As a result, each player aims to sell products at the lowest price possible, just above the threshold of predatory pricing.

While calibrating predatory pricing, the main consideration is comparing the selling price with the cost price, which involves assessing the price offered to consumers and the price that competitors must contend with (Bhattacharjea, 2018). Consider two players: one produces a pair of shoes for $100, while the other's cost is $110. The first player sells the shoes at $112, which is not considered predatory pricing and represents a 12% profit. Two scenarios might occur: the second player either matches the $112 price, resulting in negligible profits, or sets a price just slightly above, say, at $115. In the latter scenario, traditional views on competition would not typically raise concerns about anti-competitive behaviour.

The authors propose an alternative perspective on this situation. They argue that from the Chicago School's viewpoint, one key aspect of competition law is that a player can price a product as low as possible while still competing with other players, thus increasing overall market competition in the market (Khan, 2017). However, the condition is that achieving the lowest price and reaping profits must result from business strategy and acumen. In the Chicago School and modern competition law, every player tries and must try for a 'price cut.' Therefore, if we consider the selling price of two players to be constant, for instance, because the price has to be matched, then it is the cost price that makes or breaks the game for a player.

Taking a cue from the above example, if the second player tries to sell the shoes at the same price, they will soon fall significantly behind in profits, creating a large gap between the two entities. This could lead to a monopoly in the shoe market if the lower profits compel the second player to cease production and exit the market. This would eventually create a monopoly (assuming only two players are present in the product market). Looking closely at this example, it is evident that the cost price compelled the second player to earn lower profits and eventually exit the market. So, the question is: does competition law apply to the cost price? **Is there cost price scrutiny under the investigation of predatory pricing?**

b. Labour Cost: A Key Component of the Price Cost

Before elucidating the central idea of this article, it is imperative to trace the journey of the ideas discussed so far. We have seen that antitrust law was initially ignored when addressing labour issues (Grimes, 2024). Over time, authorities began using antitrust tools to consider labour as the "product itself" (Grimes, 2024). This interpretation led to the enforcement of cases involving non-poach and non-compete agreements, such as cartels or refusal-to-deal cases in the product market (Aresu, 2024). However, no competition watchdog has yet considered labour from the perspective

of being "one of the components of the cost price of the product" (Online Bureau, 2024) The authors contend that antitrust issues should be examined from the economic perspective of labour rather than focusing solely on it.

The authors argue that while antitrust discussions on labour typically address non-poaching agreements and their impacts, this analysis usually emphasizes the overall investment in compensation and the total cost to the company (CTC). It often overlooks how labour costs factor into the final product's economic equation. Recognizing that labour costs are a significant component of the final product's cost structure is crucial. By examining antitrust concerns through this broader economic lens, a more comprehensive understanding can be gained of how these issues affect labour markets and the economic dynamics of the products and services involved.

Even Italy's most recent court findings against luxury fashion titans Dior and Armani reflect similar dynamics (Online Bureau, 2024). The two fashion brands have been thrust into the spotlight for their suppliers having been implicated in egregious worker exploitation and mistreatment (Online Bureau, 2024). The allegations against the fashion giants have come in waves. In April 2024, allegations emerged against an Armani subsidiary after a court revealed that the company had outsourced production to Chinese suppliers with Italian factories where workers were paid as little as €2-3 ($2.16-3.25) per hour for gruelling 10-hour days, often working seven days a week (Supply ChainBrain, 2024). These bags, purchased by Armani subcontractors at €93 each, were sold to the brand for €250 and ultimately retailed to consumers for €1,800 (Supply ChainBrain, 2024). A Milan court criticized Giorgio Armani Operations for negligently enabling a cost-cutting production system that ignored legal and labour standards. By June 2024, Dior faced judicial scrutiny in Milan for failing to address labour exploitation in its Italian supply chain, with authorities citing inadequate measures to prevent such abuses (Danziger, 2024). By July 2024, similar concerns arose, with reports indicating that the companies' handbag production was subcontracted to Chinese firms that breached numerous ethical labour standards (Online Bureau, 2024). Workers at these facilities, owned by Chinese entities and linked to Dior, were found to have been subjected to unsafe working conditions, including the removal of safety equipment from machines and being forced to live and sleep in the factories (Online Bureau, 2024).

The recent investigation by ICA into the conditions at Armani and Dior's factories, alongside the substantial markups on their handbags, is just another instance of a longer tale of human exploitation by the fast fashion industry (Pons-Vignon, 2011). The ICA examines whether these

luxury brands misled consumers by promoting their products as exemplars of "craftsmanship and excellence" while potentially exploiting cheap labour (Pons-Vignon, 2011). This is not the first instance of major fashion brands facing allegations of labour exploitation and human rights abuses (Whiteside, 1979). In 2023, similar concerns were raised about H&M, Primark, and Zara regarding the exploitation of workers in Bangladesh (Clean Clothes Campaign, 2024). Additionally, labourers in Mumbai, India, particularly embroiderers, have suffered from poor working conditions for decades (Schultz et al., 2020).

Such issues involve a complex interplay of legal violations, including labour regulations and consumer protection. From a labour rights perspective, relevant labour laws, such as India's Contract Labour (Regulation and Abolition) Act of 1970 and other labour regulations, come into play. From a consumer rights perspective, buyers have a right to be informed that their products have not been produced through unethical practices (The Contract Labour (Regulation and Abolition) Act, 1970; OECD, 2024). Misleading claims, including those related to greenwashing, also fall under scrutiny (OECD, 2024). ESG (Environmental, Social, and Governance) standards are crucial in this context, as they ensure transparency and accountability in corporate practices (Suleymanova, 2021). When consumers expect that the premium they pay for high-end products reflects ethical production practices as implicitly outlined in a corporation's ESG policy, any deviation from this can be addressed under consumer protection laws, such as the Consumer Protection Act, 2019 in India (Consumer Protection Act, 2019).

c. The Scrutiny of Cost Price under Predatory Pricing

So far, it has been observed that when there is a significant gap between the cost price and the selling price of luxury brands due to extremely low payments to labour, the issues raised or the laws under which these activities can be addressed are primarily consumer and labour laws. While these approaches are necessary, the authors argue that such activities also violate antitrust laws.

In the preceding paragraphs, the dynamics of cost price were explored, raising the question: Is there cost price scrutiny in the investigation of predatory pricing? This part of the article addresses that question.

To fully understand the legal implications of low prices, it is necessary to grasp the concept of predatory pricing. Although the article does not focus on any specific jurisdiction, recent inquiries in European countries concerning luxury brands offer a relevant context. According to Richard Whish's definition under European Competition Law: ***"The idea of predatory price cutting is***

simple enough: that a dominant firm deliberately reduces prices to a loss-making level when faced with competition from an existing competitor or a new entrant to the market; the existing competitor having been disciplined, or the new entrant having been foreclosed, the dominant firm then raises its prices again, thereby causing consumer harm." (Whish & Bailey, 2011)

For many years, Bork and his proponents have argued that predatory pricing is not practical because a market player must endure losses over a long period, and the player will not enjoy monopoly profits for long until competitors exit the market. Additionally, if it is easy for any firm to exit, the market structure allows for new entrants to enter while the monopolist attempts to reap monopoly profits. However, this position has largely changed. The practice of predatory pricing is now considered to infringe **Article 102 of the Treaty on the Functioning of the European Union (TFEU).**

Today, every market player clearly understands that it cannot sell products at prices lower than the cost price without attracting the regulator's scrutiny. Therefore, the new tactic practised under the guise of business endeavour is "reducing the cost price of the product" to a competitive level. The authors do not suggest that players cannot reduce the cost price; in fact, this is a legitimate way to create a profitable business without engaging in anti-competitive conduct.

However, the authors assert that this steep cost reduction must also stem from the player's skill. To illustrate, the authors contend that, as seen in the aforementioned examples, luxury products—being dominant players in the market—can exploit their influence to bypass labour laws and subject workers to squalid conditions. These dominant players often operate in an oligopoly, with many options to replace a labourer with another; thus, workers become dependent on them for employment. In such situations, these players may abuse their dominant position by offering extremely low wages.

Before going into the explanation, for the sake of the reader's clarity, here are a few definitions to understand the analysis. Predatory pricing as mentioned above occurs when a dominant company deliberately sets its prices below cost to force competitors out of the market or discourage new entrants, with the ultimate goal of raising prices once competition has been eliminated (Whish & Bailey, 2011).

Similarly, Predatory Labour Cost refers to the deliberate suppression of wages or the imposition of exploitative working conditions to undercut competitors or create high barriers to entry (Gürkaynak & Özgümüş, 2024). By artificially lowering labour costs to an unsustainable level,

this practice distorts fair market wages and undermines healthy competition. (Whish & Bailey, 2011).

From an economic standpoint, predatory labour cost can be examined in a manner similar to predatory pricing, where a firm lowers prices below its average variable cost (AVC) to eliminate competition. In this case, a firm engages in predatory labour cost when its wage expenditure per unit of output drops below a sustainable labour AVC, i.e. the minimum level at which competitors can operate while adhering to fair labour standards. If a firm artificially suppresses wages beyond this threshold, it can create conditions where ethically operating competitors cannot remain viable. This can ultimately reduce market competition and pave the way for monopolistic control, as illustrated in the in the shoe-maker example. Returning to the same, Player A, who is abusing their dominant position by paying extremely low wages, produces the same quality shoe at $100 and sells it for $112. In contrast, Player B, who adheres to basic labour laws, produces the same shoe at $110. Reiterating the earlier assertions, this ongoing practice would likely drive Player B out of the market. This example clearly demonstrates that such conduct—predatory pricing in the form of reducing labour costs i.e predatory labour cost to an extremely low level—is a clear case of anti-competitive behaviour.

d. The Test to be Undertaken

But for this to happen in real-life scenarios, competition authorities must change the way they view labour issues, and, most importantly, there must be an adoption of the new idea that predatory pricing can also be examined through the lens of cost price. So far, the definition of predatory pricing involves comparing the product's cost price and selling price. The new approach to predatory pricing should include a detailed investigation of how a player has reached a particular price, followed by a comparison with the average cost price of other players.

From an EU legal standpoint, predatory pricing is addressed under Article 102 of the Treaty on the Functioning of the European Union (TFEU). The Commission's Guidelines on the enforcement of Article 82 of the EC Treaty outline two key criteria for identifying predatory pricing: (i) sacrifice and (ii) anti-competitive foreclosure.

The 'sacrifice' element requires the European Commission to evaluate whether a dominant firm has incurred avoidable losses by reducing prices or increasing output over a specific period. This assessment helps determine whether the firm is intentionally pricing below cost to eliminate competition. However, in the present scenario, firms remain highly profitable due to significantly

reduced cost prices. The prevailing industry selling price allows them to generate substantial profits, ultimately leading to the exclusion of competitors from the market.

As far as 'sacrifice' is concerned, the authors suggest that while assessing the harm, the new approach must include the percentage of profits derived from an uncompetitive cost price. The analysis of predatory pricing should not only investigate the difference between the selling price and cost price, where a firm incurs temporary losses to foreclose the market, but also consider scenarios where high profits are sufficient to foreclose competition. This includes examining the average cost price and the factors contributing to it, such as predatory labor costs.

One may argue that if labour laws were strictly enforced, there would be no need for competition intervention from regulators, and the authors agree with this point. However, the grim reality is that this does not happen. When it does not, it constitutes a violation of labour laws through the payment of extremely low wages to workers. The offender should be punished not only under labour laws but also under competition law.

Another way to understand the antitrust concern is that, by engaging in such conduct, the dominant player infringes on the basic human rights of workers and is thus punished under labour laws. These practices also harm consumers, warranting penalties under consumer laws. However, the competitor of the dominant firm is impacted even more severely than the general consumer. This type of practice violates neither the Chicago School nor the Harvard School of thought. However, it still constitutes an attack on the market player, potentially driving them out of competition and thereby violating competition law in the traditional sense. Therefore, this conduct must be investigated under competition law, as per the aforementioned analysis.

4. SCOPE FOR NEW INTERPRETATIONS: AN ANALOGY WITH THE EUROPEAN SCHOOL

So far, the crux of this article has been to expand the interpretation of competition law. The philosophy that competition law exists to unleash the potential of all players by protecting them from monopolistic or monopsonistic market structures and the unsolicited conduct of other players has many supporters. However, in modern times, it is not enough to analyze this issue solely through the lens of the Harvard School, which focuses on market structuralism. This approach is more useful in the digital market, where the concept of "winner takes all" prevails" (Sipe, 2003). Also, if scrutiny is conducted through the lens of the Chicago School, proponents of Robert Bork's theory and the adherents of the antitrust paradox would only analyze the rate card of the end

product, which does not occur in either the digital market or traditional brick-and-mortar markets. In fact, the focus is on how low the price can go (Sipe, 2003).

In such a scenario, players might opt for tactics that help them escape legal scrutiny, allowing them to engage in conduct that erodes competition in the market like a proverbial termite. This conduct is so latent that it does not fit within the jurisprudence of traditional predatory pricing, where the dominant player pushes competitors out of the market by incurring losses and then recoups after attaining a monopoly.

In this new form of predatory pricing, the dominant player's conduct causes the competitor's profits to shrink daily, potentially leading the competitor to exit the market by indulging in predatory labour cost.

At a time when antitrust academia's interest is heavily focused on the activities of Big Tech, this article serves as a reminder of the need for new interpretations in the brick-and-mortar market and new tools for antitrust law.

One of the suggestions for the new tool is that another school of thought that could be useful and is closest to the new interpretation of the authors is the European School. The European School, like the Chicago School, discusses the market and calibrates its efficiency by the total producer and consumer surplus. Both are largely based on market economics, but there is a distinction as well. The distinction or divergence lies in the interest in social equality (EE&MC, 2016).

Furthermore, consider some important insights from the Competition Competence Report (2016). It highlights that within the European School of thought, social equality is attained by valuing the wealth gains of both producers and consumers equally (EE&MC, 2016). Proponents believe that the benefits of the market must be distributed equitably within society (EE&MC, 2016). These 'rules of the game' are incorporated into EU competition law, which functions as **a pillar of the "social market economy" concept by aligning economic policy with social policy objectives** (EE&MC, 2016)**. The report also notes that: "*In the European School, the well-being of people includes, besides price elements, a holistic perception of consumer utilities and preferences. Interests of the 'average consumer' or citizen lie at the heart of the European School*"** (EE&MC, 2016)**.**

Therefore, the authors suggest that any new interpretation by regulators examining cases in the labour market using the new tool analyzed in the article could draw inspiration from the European School of the "Social Market Economy." This approach extends beyond just "consumers" to

include citizens, such as workers in factories, who are a necessary variable cost component of the end product.

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EXAMINING THE ROLE OF NON-TARIFF BARRIERS IN TRADE REGULATION AND TRADE FLOWS: INSIGHTS FROM THE INDIA-ASEAN FREE TRADE AGREEMENT

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ABSTRACT

Within the framework of the India-ASEAN Free Trade Agreement, this study examines the effects of non-tariff trade barriers on trade flows between India and ASEAN. The study assesses the effect of non-tariff measures on trade flows between India and ASEAN members using the Frequency Index (FI), Coverage Ratio (CR), and Prevalence Ratio (PR). Our findings show that import and export volumes are negatively impacted by non-tariff measures. The paper also emphasizes how this effect varies in strength across various industries and nations, showing that certain sectors and nations have more severe repercussions than others. Decision-makers seeking to strengthen economic links between India and ASEAN must consider the implications of these findings, emphasizing the importance of this research.

Keywords: *ASEAN, FTA, India, Non-Tariff Barriers.*

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1. INTRODUCTION

International trade is important for economic development as countries exchange goods and services through the foundation of Absolute and Comparative Advantage theories of trade. Many countries are using trade restrictions by creating tariffs, quotas, and other non-tariff measures which alters the volume and pattern of trade flows and impacts competitiveness. Regional trade agreements (RTAs) are one of the new popular methods to decrease trade barriers and foster free trade among its members. This trend applies globally, and India is also heavily involved in RTAs, for example, India-ASEAN Free Trade Agreement (FTA) signed in 2009 aims to increase trade by reducing tariffs on several goods and services between India and ASEAN countries. However, as previous studies have cited, manifested into operational or non-tariff measures of trade, are an ongoing issue against trade, tariff reduction, and trade policies.

This study employs panel data covering the years 2000 to 2021 to analyze the influence of non-tariff trade barriers on trade flows between India and ASEAN in the context of India-ASEAN FTA. The evidence suggests that coordinated actions to reduce non-tariff trade barriers are necessary for trade flows between the two partner countries, with considerable implications for policy officials interested in enhancing economic ties between India and ASEAN.

2. LITERATURE REVIEW

Trade theorists have put forward numerous theoretical explanations regarding the potential effects of regionalism and bilateralism on global trade flows. These theories elucidate the manner in which regional trade blocs impact the welfare of their members as well as that of the global community. Additionally, they explain the impact of regionalism on the liberalization of international trade. Mainstream trade theory advocates for open, transparent, and undistorted trade flows of goods and services under a regime based on World Trade Organisation (WTO) norms, with the case for a global trade bloc (i.e., world free trade) being based on this premise. The idea of regional integration was first articulated by Viner in his seminal essay "The Question of the Customs Union" published in 1950(Michaely, 1976). Subsequently, significant advancements in regional integration theory were developed (Lipsey, 1960). Economic theory postulates that the most ideal trading bloc is the one that generates the most trade, and this bloc is worldwide. This group of nations has the widest range of comparative advantages, offering the most potential for new trade and the least potential for trade divergence (Schott, 1991). In this context, various studies have

been conducted to evaluate the impact of the India-ASEAN FTA (Jagdambe & Kannan, 2020; Nag & Sikdar, 2011; Sikdar, 2011; Veeramani & Saini, 2010).

After the Cold War, India introduced its Look East Policy as a crucial foreign policy strategy in 1991 to boost economic integration, improve security cooperation, and enhance political ties with Southeast Asian countries. This initiative represented a significant shift in India's perspective by acknowledging the strategic and economic importance of Southeast Asia in the country's national interests. The second phase of the policy, which began in 2003, centered on ASEAN and extended its scope beyond East Asia to include Australia. The latest phase moves beyond trade and concentrates on wider socioeconomic and military collaboration, political ties, and promoting physical connectivity via the development of transportation networks (Ahmed, 2009; Haokip, 2011).

India has identified ASEAN as its top trading partner and aims to strengthen its commercial relationship with them as part of its Act East Policy. In analyzing the trade pattern between India and ASEAN, (Banik & Kim, 2020) utilized appropriate methods for developing a comparative advantage in a particular market, such as the comparative advantage by country (CAC) and market comparative advantage (MCA). The findings reveal that India's significant ASEAN exports lack competitiveness, and governments use tariffs and non-tariff barriers to protect domestic industries, which hinders further economic integration. The research also points out sectors where India has the potential to compete but is constrained by local policy inefficiencies. Additionally, Indian businesses face challenges in joining the ASEAN supply chain network due to regional barriers, which is crucial for deeper economic integration. This study presents case reports on two sectors, aluminium vehicle components, and ready-made apparel. Despite these obstacles, India remains a significant market for businesses. The country's ability to provide affordable chemicals and reasonable medical products is advantageous, particularly during the COVID-19 pandemic (Banik & Kim, 2020).

Chakravarty & Chakrabarty (2014) applied the basic gravity model to analyze India's trade orientation between 1971 and 2010. They found that distance had a more significant impact on India's trade than the economic size of the trading partner. In a different study, the bilateral external relations of India with surrounding and landlocked nations were examined using Frankel's modified gravity model. To show the importance of size and distance in trade interactions, the research was expanded to include parameters like population and per capita income.

A literature study of India's relations with ASEAN was undertaken by (Khushboo Gupta & Shah, 2015), with an emphasis on evaluating the benefits and drawbacks of the India-ASEAN Free Trade Agreement (FTA). The authors concluded that India would see long-term economic growth, job creation, and improved productivity and competitiveness in the manufacturing sector with more liberalized trade policies. However, they also acknowledged that certain industries may face negative impacts due to increased trade openness. To identify the industries where India has a comparative advantage over ASEAN nations, (Renjini et al., 2017) conducted a study using the concept of comparative advantage and found that India has superior exporting competition in textile, grain, oilcake meals, and teas when compared to ASEAN nations.

According to (Nag & Sikdar, 2011), the full implementation of the FTA between India and ASEAN will bring significant benefits to India. ASEAN will have the advantage of supplying India's high and persistent import demand at lower prices than the average import prices in India. Ratna & Kallummal (2013) also suggest that there are enormous complementarities between ASEAN and India that have not been fully utilized yet, presenting opportunities for mutually beneficial economic cooperation. However, Veeramani and Saini's 2011 assessment of the RTA's effects on plantation commodities reveals that India's imports of agricultural goods from ASEAN countries may increase, resulting in a loss of tariff revenue but a rise in consumer surplus and net welfare. Meanwhile, Ahmed's (2009) investigation of India's ASEAN FTA sectoral dimensions reveals that the terms of trade for India deteriorated over time, with significant effects on processed food products, grain crops, textiles, and manufacturing, leading to an adverse impact on the trade balance.

A study conducted by (Ratna & Kallummal, 2013) found that the ASEAN-India FTA (AIFTA) had both positive and negative impacts on India's agricultural sector. This research focuses on the effects of AIFTA on the fishing, tea, and coffee industries. The study came to the conclusion that India's agriculture sector's internal inefficiencies reduced its ability to compete on the world market. Another study by Chandra (2012) used trade indices to analyse the trade structure between India and ASEAN and found that while India could purchase edible oil and other agricultural items, it could export food grains to smaller ASEAN nations. The importance of structural determinants in explaining India's exports to developed market countries was also underlined in research employing CMS analysis carried out by (Kapur, 1991), with the competitiveness effect at the disaggregated level highlighting the significance of India's export policy.

In recent years, policymakers and economists have grown increasingly concerned about non-tariff trade barriers (NTBs). Free trade agreements (FTAs) have multiplied, and tariffs have decreased, but NTBs continue to be a major roadblock to cross-border trade. When compared to tariff barriers, NTBs can cut commerce between nations by as much as 50%, claim Anderson and Van Wincoop (2004).

Several investigations have explored the impact of NTBs on international trade. As in SMR's analysis of NTBs on trade flows between the United States and Canada. They find that NTBs can significantly impede trade flows, particularly for the agricultural and foods sector. They also examined the impact of NTBs on trade with the United States and China in a similar fashion. They find that NTBs impede trade flows across a variety of industries, including equipment, chemicals, and agricultural (Cipollina & Demaria, 2020; Anderson & Yotov, 2016; Anson et al., 2005; J. Beghin et al., 2012; J. C. Beghin et al., 2015).

The India-ASEAN FTA launched in 2009 sought to promote trade among India and ASEAN member countries by reducing tariffs on numerous products and services. However, despite the reduction of tariffs, NTBs remain a major constraint to trade between India and the ASEAN countries.

The evidence supports that even amid FTAs, NTBs can have an important negative impact on trade flows. In order to explore the effects of NTBs on trade flows among India and the ASEAN member states, and to identify feasible corrective efforts, this case study is appealing as India and ASEAN have a FTA in place

3. INDIA-ASEAN TRADE RELATIONSHIP

The land and sea boundaries that ASEAN shares with India create a strong economic foundation for their collaboration. This partnership was significantly strengthened by the signing of the India-ASEAN Free Trade Agreement (FTA) on commodities in January 2010. Consequently, ASEAN became India's fourth-largest trading partner, and India held a similar position for ASEAN. The 'Act East Policy' implemented by India has led to numerous positive outcomes, which are quite evident. Additionally, India has been forging manufacturing linkages with nations like Singapore (digital and financial services), Thailand (vehicles), Malaysia (electronics), and others. Economic connections between ASEAN and India are anticipated to get even better as trade barriers are lowered. However, the number of non-tariff measures (NTMs) has increased, which is preventing

India and ASEAN from promoting their trade. Even if exports did rise, the gain lagged behind imports and led to a widening trade deficit. Figure 4.1 illustrates this tendency.

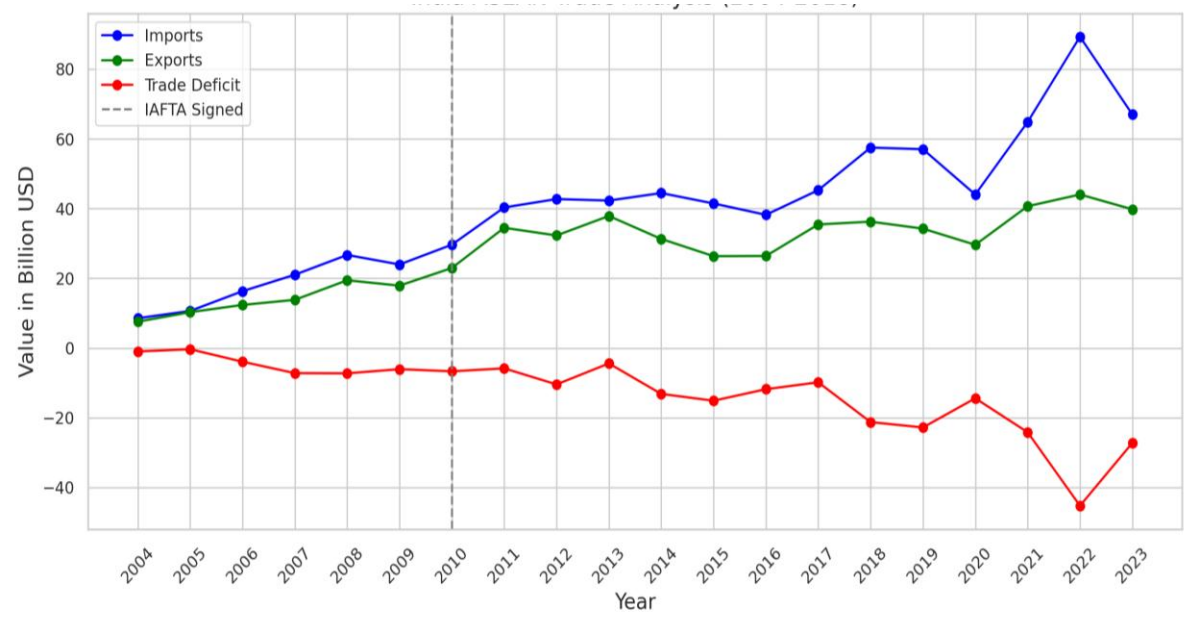

Figure 1: India-ASEAN International Trade from 2004 - 2023

Source: ITC Trade Map Database of United Nations

The India-ASEAN trade data from 2004 to 2023 reveals a significant increase in trade volume, with imports rising from 10 billion USD to 75 billion USD and exports growing from 10 billion USD to 40 billion USD, largely influenced by the 2010 India-ASEAN Free Trade Agreement (IAFTA). However, the trade deficit widened from near zero to -35 billion USD by 2023, driven by faster import growth (11% annually) compared to exports (7.5% annually), indicating India's growing reliance on ASEAN goods and limited export competitiveness. This imbalance aligns with challenges highlighted in the focus group discussion, such as regulatory barriers and standardization issues for Ayurvedic exports, which could target ASEAN markets to reduce the deficit. Strategic policy interventions, including renegotiating IAFTA terms and enhancing export capabilities, are essential to address this economic disparity and leverage post-COVID interest in traditional medicine.

The bar chart and accompanying table illustrate the average export, import, and trade deficit values between India and ASEAN before and after the India-ASEAN Free Trade Agreement (FTA), signed in 2010, using data from the World Integrated Trade Solution (WITS) and World Bank. Before the FTA, India's average imports from ASEAN were 17.9 billion USD, which surged to

50.3 billion USD after the FTA, marking a 32.4 billion USD increase. Exports also rose from 13.6 billion USD to 33.7 billion USD, an increase of 20.1 billion USD. However, the trade deficit widened significantly, growing from -4.3 billion USD to -16.6 billion USD, an increase of 12.3 billion USD. This data indicates that while the FTA substantially boosted trade volumes, it disproportionately favoured ASEAN exports to India, exacerbating the trade imbalance. The findings align with the focus group discussion's emphasis on export challenges, such as regulatory barriers, suggesting that India must address these to leverage opportunities like Ayurvedic exports and mitigate the growing deficit

	Before FTA	After FTA	Increase
Import	17.9	50.3	32.4
Export	13.6	33.7	20.1
Trade Deficit	-4.3	-16.6	-12.3

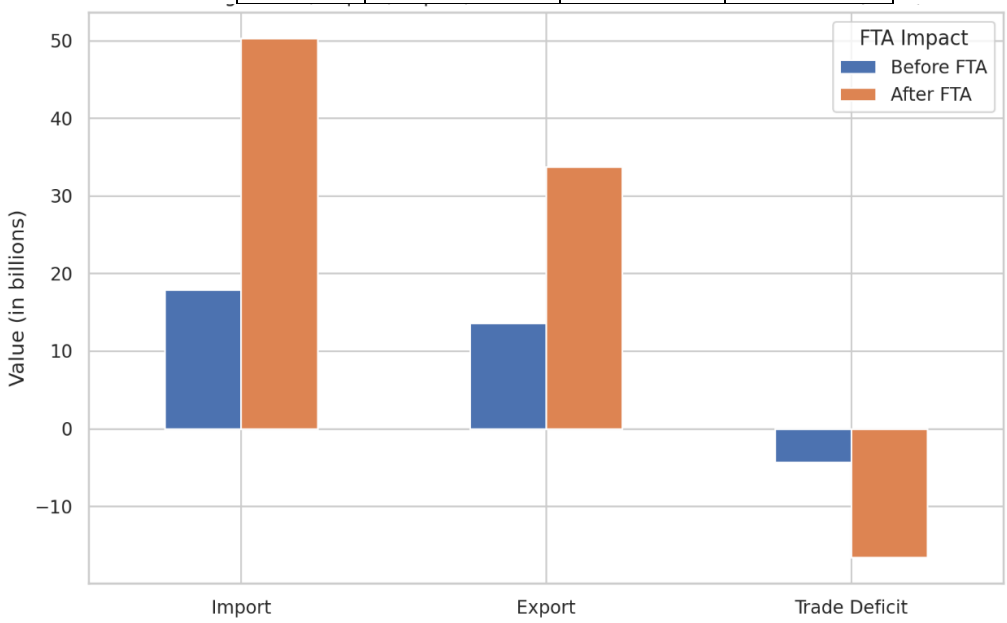

Figure 2: Average Export, Import and Trade Deficit-Before and After FTA

Source: ITC Trade Map Database of United Nations

Figure 3: ASEAN Imports from India and Rest of the World from 2001-2019

Sources: ITC Trade Map Database of United Nations

The import trends of ASEAN nations from India and the rest of the globe are shown in Figure 4.3. The graph clearly shows that, in comparison to trade with India, ASEAN countries' overall commerce and imports from the rest of the world have grown dramatically. India's trade intensity still behind several other economies, which have seen their trade with ASEAN rise significantly over the past two decades. In 2002, India's share in ASEAN's total export was a mere 2.6%, which increased to 6.5%, but remains minimal. Thus, there is a possibility of increasing India's share in ASEAN imports, which would reduce the trade deficit with ASEAN. Consequently, this study identifies the goods in which India has a competitive advantage and predicts the potential products in which India can increase its exports to ASEAN.

The fact that India's trade with ASEAN is still a meager $91 billion is evident. ASEAN is a significant trading bloc with a total GDP of nearly $2.95 trillion (Countryeconomy.com). China alone conducts an enormous two-way trade of $642 billion yearly, while the EU, the US, and other countries also have substantial trade relationships with ASEAN. India's inability to compete in the majority of product categories under the FTA with ASEAN resulted in a sharp rise in imports due to lower tariffs. Therefore, there is an urgent need for India to improve its performance in the area

of trade and commerce. Additionally, there are long-standing religious and cultural ties that both parties could strengthen for their mutual benefit.

4. Trends of NTMs imposed by ASEAN member Countries:

Currently, the interconnected economy on a global scale has led to considerable importance being placed on regional trade agreements as countries want to improve economic cooperation and create cooperative trade relationships. In this regard, the India-ASEAN Free Trade Agreement (FTA) will serve as an important milestone in the trade relationship between India and the Association of Southeast Asian Nations (ASEAN) comprising 10 member countries. The agreement has been implemented since its initial signing, with a key aim of maximizing trade liberalization, improving economic integration, and enhancing the flow of investment between two dynamic regions.

Yet, in the context of a changing global trade environment, non-tariff measures (NTMs) have emerged as an important factor affecting trade patterns and market access. Non-tariff measures is a broad term encompassing an array of policies and regulations that affect trade flows, including technical standards, sanitary and phytosanitary measures, licensing measures, customs procedures, etc. Assessing the impact of NTMs on the India-ASEAN Free Trade Agreement is essential to understand the challenges and opportunities presented by both sides.

Rank	Sum of NTM affected trade due to NTMs imposed by Asean Countries	Sum of Total Trade of Asean Countries	Percentage
Pre-Shipment Inspection And Other Formalities	1217051469	5756338221	21.14%
Technical Barriers To Trade	6150607992	36608494713	16.80%
Export-Related Measures	2771376745	17087788341	16.22%
Price-Control Measures, Including Additional Taxes And Charges	851000165	8157160606	10.43%
Finance Measures	180899420	1771273359	10.21%
Sanitary And Phytosanitary Measures	3088827671	34527799647	8.95%

Non-Automatic Licensing, Quotas, Prohibitions And Quantity-Control, Measures Other Than For Sps Or Tbt Reasons	1010889651	11381439449	8.88%
Measures Affecting Competition	87997246	1278274849	6.88%
Contingent Trade-Protective Measures	6292587	479780001	1.31%
Distribution Restrictions	2235109	702191442	0.32%
Grand Total	15367178056	117750540628	

Table 1: Sum of NTM affected trade due to NTMs imposed by ASEAN Countries
Source: The World Integrated Trade Solution (WITS), World Bank

The table 1 provided offers insights into the ranking and impact of various non-tariff measures (NTMs) imposed by ASEAN countries on intra-regional trade. Here is an analysis of the information presented:

The effects of non-tariff measures (NTMs) across ASEAN trade groups vary greatly. The pre-shipment inspection and formalities group had the largest impact among all NTMs, with a 21.14% impact on total trade. This group includes measures designed to follow trade regulations before goods are imported or exported and could facilitate trade improvement within the region if procedures are simplified and streamlined. The second significant NTM category affecting 16.80% of intra ASEAN trade is Technical Barriers to Trade (TBT). TBT members are measures that include standards and regulations that assist in protecting human health, safety issues, and environmental protection while providing for trade. The region could better facilitate trade for goods and services if the region was to tackle the issues surrounding TBTs by regulatory alignments and harmonization of standards. The third NTM impacting ASEAN trade were export-related NTMs which include licensing requirements, quotas, and prohibitions, imposing regulations and controls on the export of specific goods, accounting for a 16.22% impact on total ASEAN trade. If export NTMs were reduced, this would facilitate trade, provide more opportunities for trade growth, and open up new markets to trade-based businesses and enterprises. Price-control measures, which include additional taxes and fees, impact 10.43% of ASEAN trade. These measures intend to ensure pricing stability while promoting fair trading practices.

Nevertheless, it is essential to strike a balance between price intervention while securing market competitiveness in support of economic development. Measures related to finance, which include financial requirements such as a bank guarantee or an advance payment requirement, affect 10.21% of intra-ASEAN trade. Improved transparency, predictability and access to financial services can further enhance trade and provide seamless transaction pathways. Sanitary and Phytosanitary (SPS) measures which are related to protecting human, animal and plant health impact 8.95% of ASEAN trade. Compliance to SPS measures is necessary to ensure food safety and prevent the transmission of disease. Improvements in coordination, mutual recognition and harmonization of SPS measures could improve trade of agricultural and food products. Non-automatic licensing and quotas that restrict the import or export of goods for reasons other than SPS and TBT, account for 8.88% of ASEAN trade. Streamlining licensing, and eliminating unnecessary trade obstacles to facilitate trade and contribute to regional market integration is needed.

The influence of measures that affect competition, such as antitrust laws and policies against unfair competition, ranked eighth - accounting for only 6.88% of intra-ASEAN trade. Promoting fair competition and protecting intellectual property rights in order to secure a level playing field may facilitate trade and enhance investment. Trade measurements that can be used to protect trade (for example, safeguards and countervailing duties) is only valued at 1.31% of ASEAN trade. These measures are generally used to protect domestic industries from some form of specific trade impediments. Improving transparency, predictability, and compliance with international trading rules can deepen trust and confidence between trade partners. The last area, distribution restrictions, governs the distribution and sales of products in the region only represents 0.32% of all intra-ASEAN trade. Improvements in the distribution process through a reduction of unnecessary trade barriers would lead to more fluid intra-regional trade. In conclusion, consistent improvements on NTMs through regulatory harmonization, simplification, and cooperation could have major impacts on trade facilitation in ASEAN improving economic integration and increased sustainable growth.

Sector	Count of NTM Coverage ratio	Count of NTM Frequency ratio	Count of NTM affected product - count
All sectors	100.00%	15.27%	582

Animal	56.87%	8.68%	331
Chemicals	67.35%	10.28%	392
Food Products	63.75%	9.73%	371
Footwear	14.78%	2.26%	86
Fuels	23.20%	3.54%	135
Hides and Skins	13.40%	2.05%	78
Mach and Elec	24.40%	3.73%	142
Metals	24.57%	3.75%	143
Minerals	35.40%	5.40%	206
Miscellaneous	33.51%	5.12%	195
Plastic or Rubber	30.24%	4.62%	176
Stone and Glass	26.63%	4.07%	155
Textiles and Clothing	23.20%	3.54%	135
Transportation	20.79%	3.17%	121
Vegetable	64.26%	9.81%	374
Wood	32.65%	4.98%	190
Grand Total			3812

Table 2: Sector specific Non-Tariff Measures (NTMs) imposed by the ASEAN

Source: The World Integrated Trade Solution (WITS), World Bank

The study of non-tariff measures (NTMs) implemented by ASEAN nations across industry sectors demonstrates their high prevalence and impact on trade. The total coverage ratio shows that NTMs exist in all industry sectors while the frequency ratio shows that NTM impact an industry on average at 15.27%. This indicates that NTMs are vastly present across the ASEAN economies. Examining each sector, the animal sector shows an NTM frequency rate of 8.68% with a high coverage ratio of 56.87% signifying NTM coverage in a portion of the industry. The chemicals, food products and vegetable sectors show high coverage ratios in the range of 63.75% to 67.35% indicating the extent of NTMs prevalence; however, they frequency ratios showing moderate NTM impact on trade in the range of 9.73% to 9.81%. The footwear, fuels, hides and skins, and textiles and clothing sectors all have low coverage and frequency ratios indicating the limitations of NTM

coverage across trade in these industry sectors. Other industries including machinery and electronics, metals, minerals, miscellaneous goods, plastics and rubber, stone and glass, transportation and wood show varying coverage and frequency ratios demonstrating the extent of NTMs across individual industry sectors. Additionally, the count of NTM-affected products across ASEAN countries stands at 3,812, signifying that a substantial number of products are subject to NTMs, thereby influencing trade across multiple sectors.

NTM Type	NTM Description	Count of NTM affected product - count
B	Technical Barriers To Trade	1250
A	Sanitary And Phytosanitary Measures	1110
P	Export-Related Measures	651
F	Price-Control Measures, Including Additional Taxes And Charges	283
E	Non-Automatic Licensing, Quotas, Prohibitions And Quantity-Control, Measures Other Than For SPS Or TBT Reasons	257
C	Pre-Shipment Inspection And Other Formalities	174
G	Finance Measures	47
H	Measures Affecting Competition	26
J	Distribution Restrictions	10
D	Contingent Trade-Protective Measures	4

Table 3: Major classification of Non-Tariff Measures (NTMs) imposed by the ASEAN

Source: The World Integrated Trade Solution (WITS), World Bank

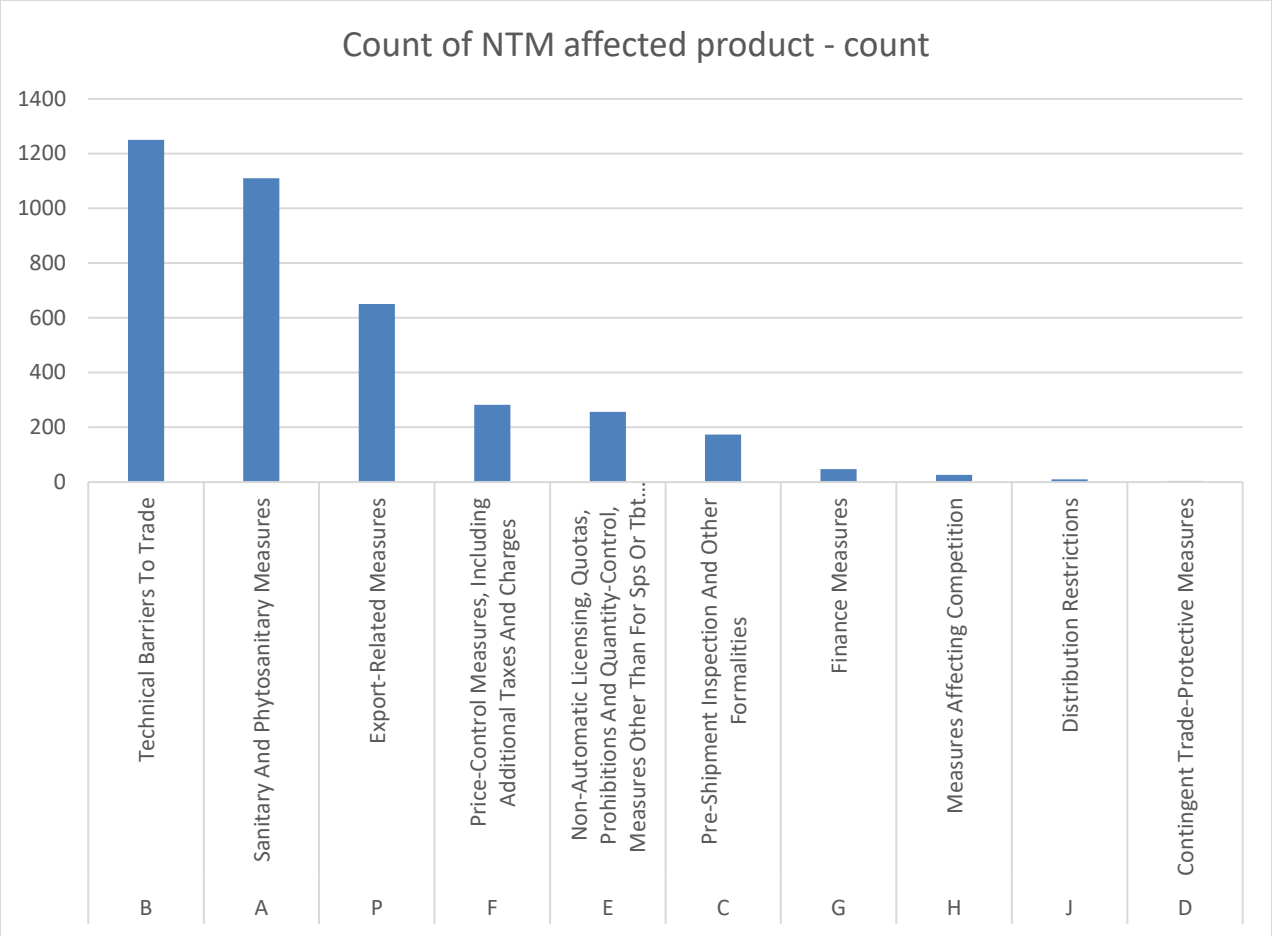

Figure 04: Count of NTM affected product

Source: The World Integrated Trade Solution (WITS), World Bank

The table above indicates the number of products impacted by each kind of non-tariff measure (NTM) with the corresponding terminology for those measures. The following is an evaluation of the data provided. The category for Technical Barriers to Trade NTMs (B), which include laws and standards on product quality and performance, impacts 1250 distinct commodities. Technical requirements, testing standards, and certification procedures, among others, are examples of these sorts of safety, quality, and standard compliance efforts. The Sanitary and Phytosanitary Measures (A) NTMs impact 1110 products, and deal with policies relating to sanitary or phytosanitary measures meant to protect public, animal, or plant health. These measures typically include regulations and inspections regarding plant protection, animal health, and food safety. Export-related measures (P) NTMs impact 651 products, including export licenses, export restrictions, and export prohibitions. These measures and regulations pertaining to the export of good control

trade effects, and protect domestic businesses. Finally, price-control measures (F) NTMs impact 283 goods, including greater taxes and fees.

These regulations, which often aim to support local businesses or stabilize local markets, are aimed at regulating prices and ensuring fair trade. 257 products are affected by non-automatic licencing, quotas, prohibitions or quantity control measures (E), except those that relate to sanitary and phytosanitary or technical barriers. They are regulatory policies associated with the importation of specific products, including import licences, import quotas, import prohibitions, and quantity control. 174 products are affected by Pre-Shipment Inspection and Other Formalities (C) NTMs, which are linked to pre-shipment inspection and formalities. These measures require goods to be inspected or certified before shipment to ensure compliance with quality standards, labeling requirements, or other regulations. 47 products are affected by Finance Measures (G) NTMs, which fall under the category of finance measures. Such regulations entail monetary requirements, such as bank guarantees, an upfront payment, or trade transaction documentation requirements. (H) Measures Affecting Competition NTMs impact the ability of 26 products to compete. Some examples include antitrust legislation, laws prohibiting unlawful commercial conduct, and regulations to promote ethical trade behavior and fair competition in the market. (J) Limits on distribution refers to laws or restrictions prohibiting or limiting the sale and distribution of specific products within ASEAN countries. Ten products are impacted by this group of NTMs. (D) Safeguards, countervailing duties, and other forms of trade protection are used in response to unfair trade practices or points of trade concern. Four products are impacted by this type of NTMs that are used to respond to specific trade-related concerns or protect domestic industries.

5. Research Methodology:

This investigation will rely on secondary data. First of all, to address the various challenges and issues in the India-ASEAN FTA on product-specific trade, supporting information was sourced from various studies and academic papers. This research has leveraged secondary data from a number of sources, like Trade Map, WITS, Export-Import Data bank, and India's Trade portal, to evaluate possible impacts of the India-ASEAN FTA on India and ASEAN Member. This research examined trade flows between India and ASEAN member countries by estimating the influence of non-tariff measures using the Frequency Index (FI), Coverage Ratio (CR), and Prevalence Ratio (PR) estimates. This work used "FI, CR and PR" models to reflect the prevalence of NTMs across

India and ASEAN. The FI, which simply evaluates the presence or absence of an NTM, generates a ratio of the commodities for which one or more NTMs are implemented. More specifically, the FI for NTMs imposed by country j is calculated as follow:

$$Fi = \left[\frac{\sum DiMi}{Mi}\right].100$$

The CR measures the incidence of NTMs on net exports by showing the ratio of net trade value with NTMs for the importing country. The HS 6-digit PR shows the average number of NTMs that are applied at each item level. The CR is a measure of the share of imports affected by NTMs. It demonstrates the importance of NTMs to imports overall. To obtain the coverage ratio (Cj) for importing country j.

$$Cj = \left[\frac{\sum DiVi}{\sum Vi}\right].100$$

Vi = value of imports in product j

The FI and CR, by contrast, do not accommodate the prospect of employing more than one type of NTM to the same product. In many instances, there are a range of regulatory measures applied to a single product. The prevalence ratio technique to utilize prevalence to compute prevalence of NTMs. The PR indicates the average number of NTMs affecting imports. It captures the actual prevalence when more than one NTM is used on a single product (not captured by FI and CR). The following illustrates how PR is calculated:

$$Pj = \left[\frac{\sum NiMi}{\sum Mi}\right]$$

Where, Ni = Count of NTMs

Mi = Dummy variable indicating whether there are imports of product i

6. Results and Discussion:

India -ASEAN FTA reduce the tariff barriers by lowering the import duties, therefore the trade between these India-ASEAN increased significantly. As discussed earlier, India's imports increase more than export. Therefore, in this section, we tried to learn the different non-tariff barriers imposed by ASEAN nations.

	Frequency Index	Coverage Ratio	Prevalence Score
Brunei	46%	60%	2.4

Cambodia	96%	98%	4.4
Indonesia	61%	70%	3.0
Laos	99%	99%	3.2
Malaysia	48%	63%	2.4
Myanmar	88%	88%	2.6
Philippines	84%	88%	4.0
Singapore	47%	60%	2.6
Thailand	28%	38%	2.1
Vietnam	89%	92%	5.0

Table 4: Non-tariff barriers imposed by ASEAN

Source: Authors calculation on the basis UNCTAD database

The non-tariff obstacles implemented by ASEAN economies are discussed in Table 4. The FI, CR, and PR were used to determine these non-tariff barriers. According to the Frequency index, Cambodia (96%), Laos (99%), Myanmar (88%), and Vietnam (89%), have placed the most non-tariff barriers on products originating in other countries. Secondly, the CR is used to compute the ratio of trading subjected to non-tariff measures for the importing nation. According to the CR, Cambodia (98%), Laos (99%), Myanmar (88%), the Philippines (88%), and Vietnam (92%) have the greatest share of commerce subjected to NTMs. Finally, if the country has more than one NTM, they are all implemented to the identical item and the PR is determined. The ASEAN prevalence score indicates that Vietnam, the Philippines, and Cambodia each have more than one NTM for items entering these markets.

7. CONCLUSION

In conclusion, our research offers important new insights into the impact of non-tariff barriers on trade flows between India and the Association of Southeast Asian Nations (ASEAN) under the India-ASEAN Free Trade Agreement. We are able to quantitatively estimate the effects of non-tariff measures on bilateral trade using applied metrics including, the Frequency Index (FI), Coverage Ratio (CR), and Prevalence Ratio (PR).Our findings clearly show that non-tariff trade barriers have an overall negative and significant impact on the flow of goods and services, resulting in substantial reductions in trade imports and exports between India and ASEAN member

countries. These non-tariff trade barriers prevent trade from occurring in an efficient manner, hindering the full advantages the free trade agreement offers, as well as stifling regional trade growth.

The investigation also shows that the extent of this effect varies across the different nations and sectors in question. While some countries and sectors appear to be negatively impacted at a greater level than others, some nations and sectors appear to be negatively impacted at a lesser degree. This variability illustrates the multifaceted nature of the problem and the requirement for solutions tailored to non-tariff measures according to individual sector- and country-specific attributes. The implications of our research for both trade negotiators and policymakers are considerable. There must be a sustained priority placed on addressing and eliminating non-tariff barriers to ensure that the benefits of the India-ASEAN Free Trade Agreement are maximized, and economic integration is enhanced. If the barriers to trade are addressed, both India and the ASEAN countries will be better positioned to reap the benefits of the many opportunities for development and wealth creation.

Coordination is necessary to converge non-tariff measures, enhance transparency, and facilitate smoother trade logistics to bolster India-ASEAN economic ties. In addressing these impediments to trade and investment, we need policymakers to be constructive and coordinated in their discussions about unnecessary and obstructive non-tariff measures. More specifically, our study serves as a call to action for policymakers to recognize the importance of non-tariff measures and their impact on trade flows between India and ASEAN. The elimination of these measures will enable us to realize the full gains from the India-ASEAN Free Trade Agreement, resulting in a win-win scenario that facilitates economic growth, enhances regional cooperation, and elevates both India and ASEAN as relevant players in the global economy.

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ASSESSING THE MACROECONOMICS IMPLICATIONS OF THE UNIFIED PENSION SCHEME IN INDIA: AN ANALYSIS OF THE EFFECTS ON FISCAL SUSTAINABILITY

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ABSTRACT

The fiscal impact of pension schemes has long been a subject of concern for policymakers due to their significant role in shaping public expenditure and economic stability, with the debate on welfare and efficiency continuing in this aspect as well. In this direction, the newly introduced Unified Pension Scheme (UPS) was expected to give perfect solutions to the problems rather than to escalate the problems further. In light of the present circumstances, the study presents an opportunity to evaluate the interplay between fiscal sustainability and individual financial behaviour through the empirical methods of debt sustainability analysis and cross-sectional regression.

The findings are intended to advise policymakers for balancing fiscal prudence with broader socioeconomic goals of pensionary reforms. Concepts of behavioural economics and comparative analysis comprising the case studies of the US, Sweden and Argentina are also made to give valuable insights and recommendations for successful pensionary reform.

Keywords: Unified Pension Scheme (UPS), National Pension System (NPS), Fiscal Sustainability, Auto-enrolment, Three-pillar approach.

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1. INTRODUCTION

Old age security plays a significant role in a welfare state, with pensions being one of its key components. Developed countries usually provide a pension scheme which caters to the needs of old-aged people working in all kinds of jobs depending on the contribution of the workers to the pension scheme, whereas developing countries have to refrain from such practice given the minimal contribution an ordinary worker would make in the process (Schwartz & Kant, 2010). In this situation, countries like India resort to targeted or voluntary pension funds where the benefits are initially given on a discretionary basis (Sanyal & Singh, 2013).

The pensionary benefits in India can be classified into defined contribution and direct benefit. In this case, the subscribers are more involved in funding the scheme than the latter (Watson, 2008). Nonetheless, both pension schemes create long-term liabilities by their nature, restarting the debate on fiscal sustainability and social welfare (Blake & Orszag, 1988). The recently introduced Unified Pension Scheme (UPS) is endeavoured to be implemented in an environment where India is already facing pressures to maintain fiscal discipline amidst competing demands for social welfare spending. In this direction, an economic analysis is warranted to evaluate the fiscal sustainability as has been legally mandated and the impact on economic growth on both micro and macro levels, thereby assessing its long-term viability.

The scope of this paper, therefore, is to provide a comprehensive micro and macroeconomic analysis of the UPS scheme in India. The paper will primarily focus on the design, structure, and implementation of the UPS scheme and explore its effects on national savings, investment behaviour and fiscal deficit. While primarily focused on the Indian context, global comparisons with pension systems in other developed as well as emerging economies provide a broader perspective. The analysis is based on available theoretical frameworks and secondary data, ensuring a detailed exploration of the pension scheme's sustainability. By examining the long-term fiscal health of the UPS, the paper also aims to highlight potential areas of reform or enhancement in India's social security landscape.

In this regard, the paper has adopted both doctrinal as well as empirical methods to evaluate the pension schemes in India. On the doctrinal side, the author has applied principles and theories of behavioural economics along with the supporting data to comprehend individual financial behaviour towards income and savings. The empirical analysis has been conducted in the form of applied Debt Sustainability Analysis and time series regression to understand the impact of the pension schemes (OPS and NPS) on the deficits and debts of the country. Given the UPS scheme is still on the road to implementation, the empirical analysis is forecasting in

nature based on the trends shown by the data of both OPS (Old Pension Scheme) and NPS (National Pension System) regimes. The research also employs a comparative analysis for analysing pension schemes from countries with similar economic contexts and draws lessons for potential improvements in the Indian pension schemes.

In light of a comprehensive and organised analysis of the scheme, the paper is structured as follows. Section 2 provides a historical perspective on social security while also referring to the comparison of past and present pension schemes, including the UPS. In Section 3, the microeconomic perspective has been covered to analyse the financial behaviours of individuals through behavioural economics. Section 4 provides an evaluation of the fiscal impact of UPS on government finances and its long-term sustainability, and for that purpose, empirical analysis has been conducted in the form of time series regression as well as debt sustainability analysis. Section 5 assesses the UPS scheme in light of a comparative study of successful pensionary reforms conducted in other countries. Section 8 concludes the findings and analysis and gives final recommendations on the policy.

2. PENSION SCHEMES IN INDIA: FROM OPS TO UPS

Since the pre-independence era, chronically high levels of poverty and unemployment have precluded India from establishing a comprehensive social security system to safeguard the elderly from economic hardship (Rajan & Prasad, 2008). Therefore, historically, India has implemented a pension system that is primarily dependent on the monetary contributions made by both employers and employees. Nonetheless, the history of the pension schemes dates back to the Colonial period, when the schemes were largely centred on government employees.[2] After independence, retirement schemes like provident fund, gratuity and pension schemes were launched, thus giving primacy to the occupation and the earnings of the employee (Rajan & Prasad, 2008).

Pensionary benefits were still limited to the public sector workers on a defined benefit basis. In this regard, the private sector employees were less fortunate. The Employees' Provident Fund (EPF) was based on a defined contribution system, requiring employees also to contribute to the fund from their salaries (Jain, 1997). Much less fortunate were the unorganised workers who had access to only voluntary schemes offered by the insurance companies. On these lines, the formal, old-age income security system in India can be classified into three categories:

[2] The Royal Commission on Civil Establishments did not grant government employees pension benefits until 1881. These programs were expanded upon by the Government of India Acts of 1919 and 1935. It was eventually combined and made available to all public sector workers as a retirement benefit plan. After independence, many provident funds were formed to increase coverage among private-sector workers (Goswami, 2001).

upper tier (public sector employees), middle tier (private sector employees) and lower tier (unorganised sector workers) (Goswami, 2001, p. 5-7).

As time went on, though, the pension reforms were considered; however, their execution was marked by a great deal of inconsistency and ad hocism. It has been concluded by some researchers that perhaps the actions were indeed intended for sequencing the overall financial sector reform process, and the inconsistencies were due to the hit-and-trial runs given the complex nature of the pension reforms (Bali, 2014). The 1990s saw some advancements in this area, including the launch of the Employees' Pension Scheme (EPS), the Bank Employees' Pension Scheme (BEPS), and the Insurance Employees' Pension Scheme (IEPS).

The EPS, which was a defined benefit program, was not only mandatory but also provided with the lump sum EPF option, which, though initially sounded attractive, the mounting pension expenditure finally exploded in 1998-99 to discontinuation of the scheme (Singh, 2013). While in 1998, the Old Age Social and Income Security (OASIS) was being commissioned, demand for a fully funded, defined contribution scheme was being raised by the Indian Pensions Authority (Bhattacharya, 2008).

A systematic approach in this regard was taken in 2004 with the introduction of the NPS scheme for the central and state employees joining post-2004. Unlike the then-existing pension funds of the government, which offered assured benefits, NPS is based on the defined contribution and market-linked approach that provides higher returns but does not guarantee a fixed pension amount.[3] The basic difference between the old and new schemes is that while the earlier system was direct benefit and stability, the new one has included a facet of employee contribution and investment returns.[4] The government has implemented several policies to protect the interests of NPS subscribers, such as a flexible investment framework, the creation of a regulatory agency, and the construction of an affordable, modern NPS infrastructure (Kim et al, 2012).

[3] According to the Department of Financial Services, NPS contains the provision for receiving accumulated savings along with market-linked returns with no fixed pension amount. Moreover, the government contribution is low at 14%, with employees contributing at 10%.

[4] According to the Department of Financial Services, contrary to NPS, OPS contains the provision for receiving a pension of 50% of the last drawn salary. Moreover, the scheme was of a direct benefit nature with no employee contribution. In this regard, UPS is a hybrid of both OPS and NPS where the policy gives the following conditions:

- The scheme provides for a 50% assured pension over Basic Pay last drawn over the last 12 months before superannuation. For that purpose, a minimum qualifying service of 25 years is required.
- The scheme provides for an assured minimum pension of Rs 10, 000 per month for employees with a minimum of 10 years of service
- The scheme provides for Inflation indexation where the pension will be adjusted based on the CPI – IW. However, this component is applicable only for employees with more than 25 years of service.
- The scheme provides for a higher govt contribution which increased to 18.5%.. In this regard, the employee contribution remains the same at 10% further coupled with the amount of Dearness Allowance.

Unfortunately, the contributory new pension program has received a lukewarm response thus far, with its expansion limited outside the domain of government employees. It has been unsuccessful in reaching individuals who cannot save for long-term consumption (Pandey, 2018). Further, less than half the states have notified their intention to implement the NPS for their respective state employees, with only some states – Assam, Bihar, Jharkhand, MP and Chhattisgarh mandating the NPS for their employees, with some others offering an optional basis (Kim et al, 2012, p. 112-128). From a social welfare perspective, it is considered that the NPS's "welfare" orientation goal is defeated because it does not even provide a minimum pension.[5]

In response to the lukewarm response to the pension reforms and several academicians recommending reforming the new policy reforms, the Somanathan Committee suggested the UPS for the first time in 2023 by incorporating the best practices of both OPS and NPS,[6] thereby locating a middle path in between both the schemes. With the new UPS policy being proposed and accepted by the Cabinet, the government seeks to provide a more streamlined and equitable pension system, offering consistent benefits across sectors while addressing some of the core issues raised in the context of the NPS. One of the central goals of the UPS is to reduce the administrative complexities that have plagued the NPS and other state-specific schemes, which often result in delays and inconsistencies in pension disbursements (Magazine, 2024). A unified system would ensure that all beneficiaries receive similar benefits, irrespective of their sector of employment or geographic location.

Furthermore, an important aspect of the UPS is the return to stable pension schemes rather than the market-linked NPS while retaining the defined contribution model of the scheme. This, in turn, could alleviate one of the major concerns surrounding the NPS— that retirees' post-retirement income may be insufficient or inconsistent due to market performance. Nonetheless, the scheme has not been received well among the employees who demand the return of the direct benefit schemes (OPS) (Sharma, 2024).

3. BEHAVIOURAL IMPACT OF UPS

[5] It is for this reason that the government came out with the Atal Pension Yojna (APY) as per which the pensionary benefits were extended to private employees and unorganised workers through a defined contribution scheme. However, it is a non-market linked scheme unlike the NPS and further the benefits only range from Rs. 1000 to Rs. 5000 on attaining the retirement age of 60 years, thereby negating the scope of voluntary retirement. Nevertheless, the contributors are eligible for similar tax benefits as the NPS subscribers.

[6] While the report is still yet to be submitted, the suggestions have been given directly to the Cabinet which the Cabinet Secretary has later revealed (Magazine, 2024).

The retirement planning process is too painstaking, with individuals or families taking months or even years of thought, ideas, and discussions before their first major decision that will improve efficiency and welfare. Planning for retirement is intricate, and the major decision has always rested with individuals, so it gives rise to an analytically important issue of analysing any pension scheme's behaviour pattern to ascertain the macroeconomic impact of UPS.

a. Nudge Theory

The nudge theory considers that slight changes in the environment, be it in terms of defaults, framing, or presenting choices, substantially affect outcomes, especially when people are faced with abstract or multi-period decisions (Cai, 2020). Rather than relying on mandates or penalties, nudges exploit these predictable biases to help people make choices that serve their long-term interests (Abdukadirov, 2016).

In terms of UPS, the other significant behavioural challenges include procrastination or delaying retirement savings with present bias where immediate consumption precedes long-term financial security. In this sense, automatic enrolments to the UPS could be a good nudge nudging savings behaviour of people at the initiation stage of saving without feeling that they have to go through the inconvenience of the necessity for actively opting into it. Contributions at default rates could also be a second nudge that the scheme might be giving to the participants to keep them steadily saving and thus overcome the impediments from inertia and be well-prepared for retirement. This is further supported by the studies conducted in the USA and New Zealand, where few workers moved out of their occupational pension plans (Szczepanski, 2018).

b. Prospect Theory

The theory states that people make different judgments regarding potential gains and losses in comparison to each other, relying on the separate principle of loss aversion, according to which individuals are more sensitive to possible losses than equivalent gains (Levy, 1992). A crucial reflection of prospect theory concerns how individuals overestimate outcomes with low probability and undervalue those with high probabilities (Levy, 1992). This introduces the value function, concave for gains and convex for losses and shows that people take much greater risks to avoid losses than to obtain gains, deviating from the rational choice theory.

Even though people realise that contributing to a pension is good for them in the long term, an immediate reduction in disposable income may be framed as a loss, and hence, such people procrastinate or make lower contributions (Hardcastle, 2012). Policy interventions, like matching contributions or concentrating the future monetary benefit of saving, could minimise

this loss aversion by framing the contribution decision as one of gain rather than one of loss. In addition, an American study has shown that framing the options selected in a manner that emphasises likely losses or gains helps workers choose the correct pension option (Szczepanski, 2018; Kahneman & Tversky, 2013).

The risk aversion behaviour brought about by this response of loss aversion may prevent them from optimising their retirement savings. Policymakers can address this by providing default investment options that balance some degree of risk and reward or offering contextual financial education that assists the individual in making a better decision. A clear understanding of what drives perceived risk and loss aversion will further enable UPS to better design its structure so it fits with the psychological tendencies of savers.

c. Hyperbolic Discounting (Present Bias)

Hyperbolic discounting is the cognitive phenomenon whereby people prefer smaller immediate rewards to larger delayed rewards-they discount the immediate benefit less than later ones (Rubinstein, 2003). This leads to instant gratification choices: people choose to spend money now rather than save for retirement, as the total long-term payoffs of saving are dramatically greater (see Fig. 3.1). This temporal bias then results in suboptimal choices because the potential benefits of incredible future payoffs are given up for satisfaction now (Newall and Peacey, 2021).

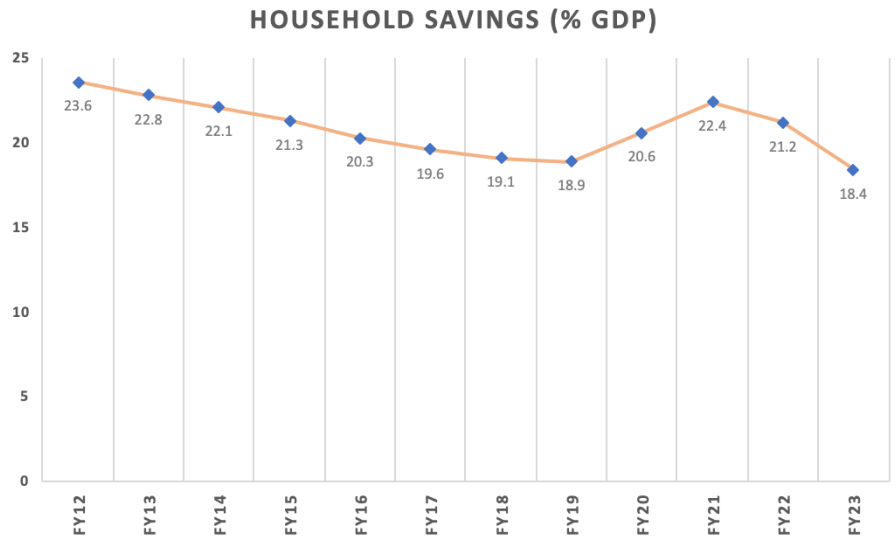

Figure 3.1: Trends in Household Savings as % of GDP

Source: NSE, CEIC and CRISIL

Such a phenomenon that has been generally associated with hyperbolic discounting has some important implications for the design and implementation of the UPS. The tendency on the part of people to favour current rewards may discourage them from participating in pension plans because they are not willing to allocate even any portion of their income towards saving at this age, which does not go towards generating any immediate benefits (see Fig 4.1). As a countermeasure to this behaviour, features that facilitate commitment towards long-term savings through automatic enrolment in pension plans or default contribution rates that increase over time can be integrated into the UPS. It is strategic because it uses the insights of behavioural psychology to overcome the immediate appeal of consumption by building a structure favouring long-term savings.

d. Status Quo Bias

Status quo bias refers to the inclination of individuals to favour the existing situation rather than embrace change, even when such change could yield significant advantages, due to concerns or perceived risks (Samuelson & Zeckhauser, 1998). A case in point is the UK's auto-enrolment pension scheme, wherein more than 90% of the subscribers continue with the default contribution rates and investment allocations (Price, 2008). The individuals may prefer to maintain their financial practices or investment plans the same even in the light of better alternatives that could potentially yield efficiency or value because the individual perceives any change as risky, resulting in sub-optimal results (Price, 2008).

UPS may still alienate people from what they are used to and, therefore, continue sticking to the current pension arrangements despite the probable benefits of UPS in terms of financial sustainability and longer-run returns. To overcome status quo bias, the UPS could have default enrolment or auto-switching, so people are enrolled into the new system unless they specifically opt out. Also, clear and continued communication of the benefits of the UPS, especially about how it compares to older schemes, can help alleviate concerns and build confidence in the new system.

4. FISCAL SUSTAINABILITY OF UPS: IS IT OR IT ISN'T?

Pension liabilities make up a rapidly increasing proportion of general government expenditures at a time when demographic transition in the country is taking place at a quickened pace, thus exerting strain on public finances. In the absence of prudent management, the pension expenditure burden might jump sharply, thus leading to higher deficits, reduced capital investments, and possibly inflationary deficit financing.

Pension, welfare and behavioural economists have taken sides considering the debate on the fiscal sustainability of expansionary pensions and the demand to revert to the direct benefit model (Asher, 2008). From the traditional CBA, individual workers are likely to be more in favour of the OPS (Direct Benefit Scheme), while the government will be more interested in the UPS (Defined Contribution Scheme).

However, from the point of an economist, the CBA will not yield any desired results with costs and benefits changing and substituting on varied perspectives. With limited empirical studies available, it is pertinent to conduct a suitable debt sustainability analysis as well as other methods of regression to test the proposition of either side statistically (Ranganathan, 2017; Narayana, 2014; Asher & Zen, 2016).

a. Debt Sustainability Analysis

The object of the DSA is to compare the two pensionary regimes of OPS and NPS on the lines of the devised model to address the question of – Which pension scheme is more debt-sustainable. The author has collected data from the last five years before the launch of a new regime, i.e. FY2015 to FY2019 (NPS) and FY1999 to FY2003 (OPS).[7] Moreover, the author has used secondary sources of data collected from authentic government documents and online websites, which include Annual economic surveys, Annual union budgets and documents of RBI and CEIC.

i. Model Specification

The author has established a model as per the classical theories behind the DSA. Given the object of the analysis is to study the effects of OPS/NPS on the total fiscal deficit and debt accumulation, variables including Fiscal deficit, Debt stock, Pension liabilities, GDP growth and Interest rate should be incorporated into the model. Therefore, the model is as follows –

$$\Delta Debt_t = (g\text{-}r)/(1+g) * Debt_{t-1} + Fiscal\ Deficit_t$$

where, $\Delta Debt_t$ = Change in debt as a percentage of GDP

$Fiscal\ Deficit_t$ = Fiscal deficit

$Debt_{t-1}$ = Debt to GDP ratio of the previous year

[7] The author has intentionally refrained from including FY2020 to FY2023 in the case of NPS for the purpose of analysis. With economic factors like GDP in negative during COVID (FY2020 onwards) and growth rates calculated with previous year figures as a base, a huge inconsistency was found, which was attributable to the natural circumstances (COVID19).

r = Real interest rate on govt debt

g = Real GDP growth rate

The model was devised by following the principles of debt dynamics that the change in the debt-to-GDP ratio is influenced by the difference between interest payments on the existing debt and GDP growth, adjusted by the primary balance, which gives the basic model (Debrun et al., 2019). To achieve the objective, variables like inflation, fiscal deficits, and other revenue expenditures were added to refine the primary balance term to include the revenue and expenditure impacts of the pension scheme. Further, it is pertinent to note that the author has chosen a baseline scenario where it assumes the current rate of pension liabilities under the pension scheme and projects the debt accumulation under typical economic conditions.

ii. Results

The DSA exhibits the trending of interest-growth differential, determining critically the sustainability of debt. As shown by Fig 3.1, from 2015 to 2019, the interest-growth differential is negative, meaning that the real GDP growth rate (g) surpasses the real interest rate on government debt (r). This bad differential, therefore, means the government is in a relatively better position to service debt. The highest adverse differential was recorded in 2015 at -0.58, followed by diminishing but still adverse values for subsequent years. This means the economy was growing fast enough to keep debt levels manageable, provided the fiscal deficit was kept under control. However, this debt-to-GDP ratio has risen at the end of the period under review to 52.3% in 2019 (see Annex B). This could signal potential problems in the future, assuming that growth is decreased or interest rates rise.

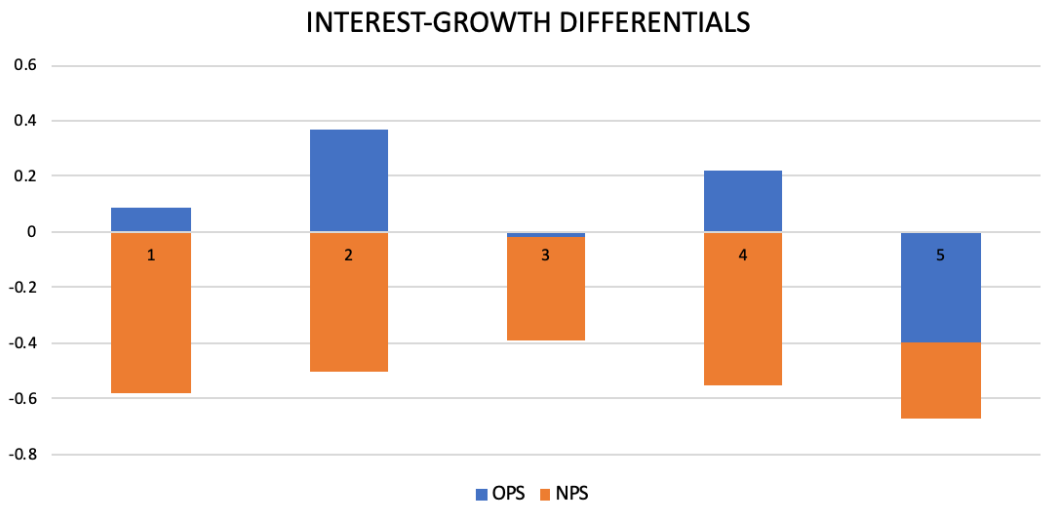

Figure 4.1: Interest-Growth Differentials in both OPS and NPS regimes

Source: Author's own Construction

The earlier period appears distinct. The differential of interest growth is more fluctuating and positive at times, such as in 1999 and 2000 (0.09 and 0.37). These positive differentials indicate that real interest rates on government debt were higher than real GDP growth over such years, which indicates unsustainable debt dynamics. Even though the fiscal deficit decreased over time, the ratio of debt to GDP increased significantly, reaching 84.2 per cent in 2003 (see Annex B). Such a high, fast increase in the change in debt ($\Delta Debt_t$) captures an unsustainable situation with debt, maintaining a balance between growth and debt-borrowing costs so as not to face increasing unsustainable debt burdens that can quickly become unsustainable in case of increased interest rates or a decline in growth (Fig. 3.2).

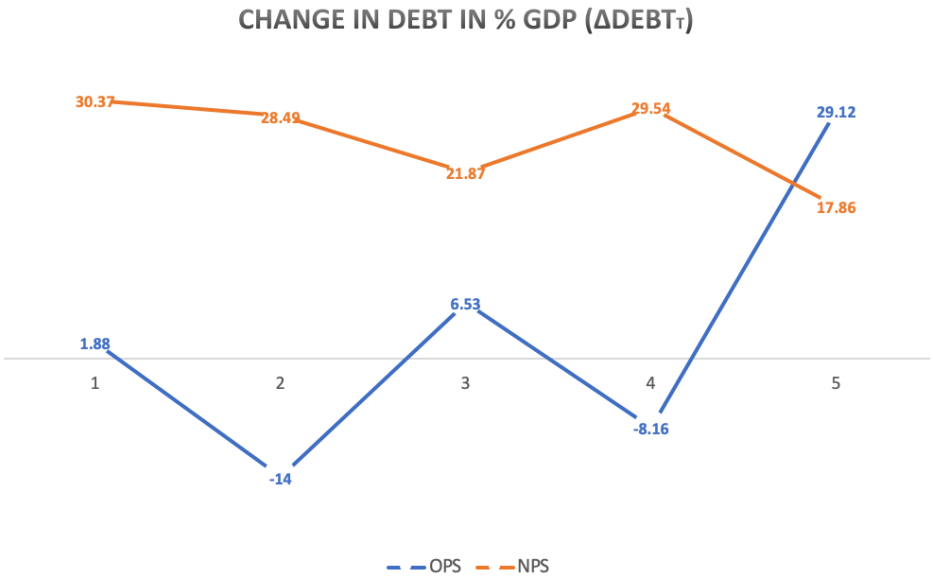

Figure 4.2: Changes in the debt in proportion to GDP under both OPS and NPS regimes

Source: Author's own Construction

This more recent period (2015-2019) saw the Indian government sustain debt through robust growth of GDP and low interest rates, even though fiscal deficits remained steady (see Annex B). The sharp increase in the debt-to-GDP ratio in 2019 raises long-term sustainability concerns, especially if growth slows or if fiscal discipline weakens. Enhancing ongoing reforms that would help boost economic growth, even as fiscal deficits are controlled, is therefore important. This underlines the policies to make borrowing costs manageable relative to growth and to avoid a repetition of the unsustainable debt dynamics of the early 2000s.

b. Cross-Sectional Regression

i. Model Specification

The basic cross-sectional regression model has been adopted for deciding the proposition as set out by the author earlier in this chapter. The model consists of a dependent variable, i.e. Revenue Deficit (RD) and ten independent variables. The independent variables can further be classified into expenditure variables, control (economic) variables, dummy variables and interaction variables. A detailed description of the variables is provided in Annexure A. The dummy variable (D_PS) is introduced in the model, with 0 indicating the 2004 period (OPS regime) and 1 indicating the 2004 period (NPS regime). The two interaction terms of pension variable with OADR and dummy variable (D_PS), respectively. While the former will indicate whether the effect of pension expenditure on the revenue deficit is amplified or mitigated by the ageing population, the latter will capture how the effect of pensions may differ depending on the demographic transition. Thus, my regression model looks as follows:

$$RD_{it} = \beta_0 + \beta_1 Pension_{it} + \beta_2 Salaries_{it} + \beta_3 Def\_Exp_{it} + \beta_4 Debt\_Service_{it} + \beta_5 GDP_{it} + \beta_6 Inflation_{it} + \beta_7 D\_PS_t + \beta_8 (Pension_{it} \times D\_PS_t) + \beta_9 OADR_{it} + \beta_{10} (Pension_{it} \times OADR_{it}) + \gamma_t + \epsilon_{it}$$

Further, as the model is adjusted to time series data, coefficient γ_t is introduced to account for time and entity constant factors, respectively. The study, apart from the linear (LS) regression, has conducted several other tests to check the suitability of the model and avoid wrong presumptions about the results.

Firstly, an ordinary correlation analysis was conducted to establish the magnitude of the correlation between the dependent variable and independent variables. The results indicate that several independent variables show a high degree of correlation among themselves (Annex C), thus necessitating the serial correlation LM test. In this regard, the author has considered both 2 and 3 lags as per the appropriateness of data. The results indicate a p-value > 0.05, indicating no serial correlation (Annex D). Secondly, the heteroscedasticity of the model is tested through the Breusch–Pagan–Godfrey (BP) test (Annex E). Fourthly, the normality of errors is tested through the Histogram, Skewness and Jarque-Bera test, as well as the Q-Q plot of the residuals (Annex F).

ii. Results and Analysis

The coefficients in the regression results indicate that pension liabilities have a tremendous fiscal effect since, for all three specifications of pension, the coefficient is not only positive but

also statistically significant (p-value <0.05). This means the more that pension obligations are heightened, the greater the revenue deficit, and hence, pension weighs heavily upon public finances. Salaries also have a very strong positive and significant correlation with the deficit, meaning that the wage bill of public servants is the biggest player in inducing the idea of fiscal pressure. Further, defence spending significantly contributes to the deficit, which proves that core recurring expenditures are burdening public finances.

Interestingly, the debt servicing and subsidies, despite carrying negative coefficients, have not proven to be statistically significant, implying that alterations in these factors do not significantly change the deficit in this model. Nonetheless, the negative significance between real GDP growth and deficit suggests stronger economic growth does ease fiscal pressures, perhaps through more tax collection and better economic activity. Simultaneously, inflation adversely impacts the deficit, as expected from the view that moderate inflation lowers real levels of debt and hence relieves the fiscal burden.

Variable	Coefficient	Standard Error	t-Statistic	Prob.
Pension	33.97819	8.377639	4.055820	0.0384
Salaries	7.191857	1.240930	5.795538	0.0006
Def_Exp	11.55359	2.851996	4.051054	0.0000
Debt_Service	-0.855409	0.886628	-0.964789	0.3456
Subsidies	-0.399139	0.242588	-1.645338	0.1148
Real_GDP	-0.231138	0.065343	-3.537287	0.0020
Inflation	-0.089013	0.042918	-2.074030	0.0506
Pension * D_PS	0.481687	0.742298	0.648914	0.5234
OADR	1.794070	0.540632	3.138466	0.0033
Pension * OADR	-2.798439	0.587452	-4.763686	0.0001

R-squared	0.848087	Mean Dependent VAR	3.356250
Adjusted R-squared	0.775748	S.D. Dependent VAR	1.161183
S.E. of regression	0.549881	Akalke Info Criterion	1.908058
Sum squared resid	6.349759	Schwarz Criterion	2.411905
Log Likelihood	-19.52893	Hannan-Quinn Criterion	2.075069
F-statistic	11.72373	Durbin-Watson Stat	1.884859
Prob(F-statistic)	0.000002		

Table 4.1: Time series regression results (1991-2022)
Source: Author's own Construction

The interaction terms between pensions and the old-age dependency ratio (OADR) and between pensions and the dummy variable yield further insights. The negative and significant interaction between pensions and OADR suggests that though there is an increment in the fiscal pressure due to ageing, there are dynamics like reforms or behavioural adjustments that decrease the fiscal pressure imposed by pension expenditures over time. On the other hand, the results indicate that pension expenditures and changes in regimes (from OPS to NPS) have no significant interaction, which implies that the regime change does not change the overall effects of the liabilities of pension on the fiscal deficit. Therefore, for final clarity, the author has provided a breakpoint test to test the proposition.

Regarding the fit of the model, the high R-squared value is 0.848, which indicates about 85% explanation of the variation in revenue deficits. Adjusted R-squared value at 0.775 provides similar evidence for the robustness of this model after adjustment to the number of predictors. The F-statistic in this case is highly significant, thus showing a statistically sound model. The standard error of the regression is low enough to give sound support to this reliability.

c. Breakpoint Test Results

The Breakpoint Test provides useful insights into whether the regression model is stable for the period in question or not. In this regard, the author has preferred a Chow breakpoint test for its ability to assess structural stability in regression models at specific time points (Chow, 1960). With the assumption of the null hypothesis that there are no structural breaks at the assumed breakpoint date of 2004, the computed F-statistic of 2.65 yields a p-value of 0.09. Thereby, although some structural change does exist, it is still not quite significant at conventional levels (i.e., 0.05). This would, therefore, imply that the parameters of the model differ before and after the year 2004, but the evidence in the table is not very strong to reject in favour of the null hypothesis of stability.

Chow Breakpoint Test : 2004			
Null Hypothesis: No breaks at specified breakpoints			
Varying regressors: All equation variables			
Equation Sample: 1991 2022			
F-Statistic	2.651804	Prob. F(2,28)	0.0882
Log likelihood ratio	5.550759	Prob. Chi-Square(2)	0.0623
Wald Statistic	5.303608	Prob. Chi-Square(2)	0.0705

Table 4.2: Chow Breakpoint Test results with breakpoint at FY2004-05
Source: Author's own Construction

The log-likelihood ratio of 5.55 also points to changes in the model structure as a function of the number of years with a p-value of 0.06. This outcome supports the suggestion that changes in economic conditions or policy frameworks have had an impact on the relationships found by the model. Again, using a Wald statistic of 5.3 with a p-value of 0.07 further supports this interpretation as possibly indicative of some noteworthy changes in the data-generating process after 2004, but certainly not at traditional levels of statistical significance.

The results of this study, in the context of the findings above, underscore a highly justifiable rationale for including time variables in analysing the impacts of pension schemes and other fiscal variables on economic indicators. Although the uninterrupted nature of the data may have hinted at certain continuities among the relationships over time, the p-values were closely located to the thresholds of significance; therefore, care has to be taken in this regard. Future analyses may be especially useful in studying which factors impact these potential structural changes, allowing for a more sophisticated interpretation of how policy or economic shifts affect pension scheme dynamics and fiscal sustainability.

5. PENSION REFORMS: A CROSS COUNTRY EXPERIENCE

Pension schemes for civil service employees across several countries vary significantly, however, the fundamental issues that sparked pension reform campaigns were largely analogous. While pension programs were originally designed for civil servants, the evolution of social security systems made it impractical to develop separate schemes for civil servants,

resulting in comprehensive pension schemes in various European and Latin countries (Bhattacharya, 2003).

Pension systems in most countries are based on the three pillars. The first tier denotes the universal statutory basic state pension system (Direct Benefit for welfare purposes); the second tier signifies the supplementary occupational pension system; and the third layer encompasses personal pension insurance and other savings. The pension schemes in the West are ordinarily financed through the Pay-as-you-go (PAYG) system (Defined contribution system). In most of the reforms initiated, three pillars are common – (a) unfunded mandatory, (b) funded mandatory and (c) voluntary private. However, a deeper analysis is required to understand the crisis every nation faces and the reforms to amend them.

a. USA

In the USA, the pensionary scheme was part of the Civil Service Retirement Scheme (CSRS), which started in 1920, much before the concept of a "welfare state" (Burt, 2008). Deriving on the New Deal of Roosevelt and the shift to a monetarist school of economics in 1983, new hires were transferred to the Federal Employees Retirement System (FERS), and existing employees were allowed to transfer (Burt, 2008; Purcell, 2007).

Under the FERS, employees may retire with reduced benefits at age 55 or 57, while under the CSRS, employees with 30 years of service may retire at age 55 with unreduced benefits. Additionally, a price-indexed retirement benefit is offered by the CSRS. It was discovered that federal employees with higher incomes had greater retirement benefit inflation indexation than private employees.

On the other hand, FERS offers a three-tier retirement plan that includes social security, a Direct Benefit plan, and the Thrift Savings Plan (TSP), a Defined Contribution plan. The US pension reform, in a sense, shares a success story, even taking into account the initial protests that ensured due to the inclusivity and greater scope of the scheme, privatisation of the pension scheme with private investments invited and enhanced portability of the federal employees.

b. Sweden

The Swedish pension system has a long history of trial and error, with revisions beginning in 1935 and concluding in 2001 (Pierson, 1996). The old Swedish pension scheme faced a crisis in the 1990s that stemmed from the unsustainability of its traditional pay-as-you-go (PAYG) system (Bergmark & Palme, 2003). The economic downturn of the early 1990s, coupled with

high unemployment and fiscal deficits, further exacerbated the problem (Pierson, 1996, p. 145). The existing system, which promised defined benefits, was no longer financially viable.

In response, Sweden introduced major pension reforms in 1994, transitioning to a more flexible and sustainable system (Viraj, 2018). The new system combined a notional defined contribution (NDC) model, where contributions were linked to individual earnings, with a funded component that allowed for personal investment accounts. However, the pension crisis, coupled with the Currency crisis of 1992, revealed the politicised nature of the pension reforms, which resulted in a blame-shifting game every time the reforms failed instead of learning from the lessons (Backstrom, 1997).

In response to these criticisms and search for an effective solution, the Swedish government adopted the three-pillar system – (a) PAYG notional defined contribution system, (b) privately managed individual accounts, and (c) guaranteed pension for individuals for low-income groups (Direct Benefit) (Palmer, 2000). By shifting part of the responsibility for pensions to individuals through personal savings accounts, the system incentivised greater individual savings and reduced long-term pressure on the state (Viraj, 2018, p. 22-27). Additionally, the introduction of automatic stabilisers, such as adjusting benefits based on life expectancy and economic growth, ensured that the system could adapt to future demographic changes without major overhauls.

c. Argentina

The pension system in Argentina originated in the early 20th century, initially covering specific worker groups. By the 1950s, labour policies, a growing internal market, and urbanisation expanded coverage but led to financial strain due to stagnant retirement ages and contribution levels (Betranou et al., 2011). A major reform in 1968 unified various schemes into three funds for self-employed workers, the public sector, and the private sector (Rofman, 2002). However, by the early 1990s, the system faced significant deficits, with unpaid pensions amounting to 3% of GDP (Bertranou et al., 2003).

In response, a two-pillar pension system was introduced – the first pillar, financed by employer contributions, provided a defined benefit administered by social security, and the second pillar provided defined contributions based on either PAYG or an individual savings account model. Initially, the economic boom of 1991-94 made these reforms seem promising. However, transition costs in light of the ongoing crisis in Mexico and Russia, coupled with Argentina's fiscal mismanagement, led to a financial crisis (Rofman, 2005).

The state struggled to control its income and expenditures, often resorting to printing more money, issuing debt, and using privatisation proceeds, ultimately triggering a financial crisis worsened by restrictions on withdrawals from banks and heavy losses in the financial system. Nevertheless, the lessons learnt by the government were highlighted in the new policy (Pension Moratorium), where the direct contributory approach on the lines of the three-pillar approach was adopted (Arza, 2012).

6. CONCLUSION AND RECOMMENDATIONS

In the complications of pension reforms lie deeper questions of economic security, social equity, and fiscal responsibility (Orszag & Stiglitz, 2001). The sustainability of pension systems becomes an important issue in the face of demographic transitions in which societies may change, reflecting broader economic and political dynamics of relevance to fiscal stability. Changes to pension schemes, and specifically the introduction of the UPS, can shift long-term fiscal stability and individual behaviour, which remains the question at the heart of this study. The findings of the empirical study (DSA and cross-sectional regression) suggest that the DC schemes (NPS) are more fiscally sustainable than the DB scheme (OPS), thus proving the endeavour of the government to relax the strain on public finances. On these lines, therefore, it can also be concluded that UPS, with its lesser employee contribution, will be a less sustainable option. However, at the same time, UPS is not a perfect solution that can satisfy the employees and become a significant cog in the wheel of economic growth and progress of the country.

In this regard, it is pertinent to note the individual perception towards the scheme as well as political motivations that surmise the debate of a new pension reform in India. Therefore, while the author is not propounding a new sustainable pension scheme to replace UPS, some final suggestions based on the detailed analysis in the above chapters are given, which can act as a guiding light for the policymakers –

a) Firstly, it is suggested that the DC should prevail over the DB scheme. In this respect, state contribution should remain minimal, with employer contribution being instead adjusted. Moreover, to resolve the issue of conflicting choices, the employees can be given either option, subject to the fact that DB scheme employees will get fewer retirement benefits through means-tested schemes than the DC ones.

b) Secondly, for shifting household savings to investments, lessons can be taken from NPS, which contains provisions for tax exemptions.[8] However, instead of a market-linked scheme, the employees can be given the mandate to invest a certain threshold of their pensionary income in the secured government bonds along with a provision of tax exemption on that part of income.
c) Thirdly, based on the various facets of behavioural economics, small amendments like automatic enrolment in the UPS can greatly contribute to higher savings and subscription rates, thus acting as a nudge.
d) Finally, the 3-pillar approach, as has been observed from the international practice towards pension reforms, should be adopted in India as well.

Apart from the suggestions, it should be pointed out that this study also suffers from several limitations which can be taken on in future studies. The most peculiar limitation was the absence of data in the UPS regime. In this regard, with the scheme still in the formulation phase, a proper investigation of fiscal sustainability can happen only after some years of its implementation. In this paper, the author has attempted to make a forecasting analysis and, therefore, suffers from various assumptions and biases, which need re-investigation.

The balance between long-term systemic sustainability and immediate social goals frames policy arenas worldwide. Understanding the interaction of these factors that pull institutions in various directions poses a fundamental inquiry into what constitutes progress, especially in studies of institutional reform. Systems that deal with uncertainty cannot excessively grapple between regarding individual welfare and increasing the overall pie, in a way, they must lead in unison. Given that societies must cope with changing demographics and fiscal constraints, the interaction of policy, economics, and human behaviour will continue to be key in addressing these persistent problems, thereby underlining the importance of transformative solutions beyond business as usual.

[8] The tax exemptions on the pension investments in the New Pension scheme (NPS) are currently provided under Section 80CCD(1B) of the Income Tax Act 1961.

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ANNEXURE

ANNEXURE A

Variables	Description	Source
RD	Revenue Deficit (% GDP)	Economic Surveys, MoF
Pension	Expenditure on pensions of central govt employees (in Lakh Cr)	Economic Surveys, MoF
Salaries	Salary expenditure of central govt employees (in Lakh Cr)	Economic Surveys, MoF
Defence Expenditure	Expenditure on salaries/pensions of defence personnel (in Lakh Cr)	Economic Surveys, MoF
Subsidies	Expenditure on social welfare schemes (in Lakh Cr)	Economic Surveys, MoF
Debt Service	Interest payable on the public debts (in Lakh Cr)	Economic Surveys, MoF
Real GDP	GDP not adjusted to inflation (in Lakh Cr/%)	Union Budgets, MoF
Inflation	Inflation rate (in %)	Press Information Bureau (PIB)
OADR	Old Age Dependency Ratio	MoSPI
Fiscal Deficit	Fiscal deficit (in %)	Economic Surveys, MoF
Debt to GDP Ratio		Union Budgets, MoF
Real interest on Govt Debt	Interest rate on govt debts not adjusted to inflation (in %)	RBI, CEIC

Table A.1: Source and description of the variables

Source: Author's own construction

ANNEXURE B

Year	Fiscal Deficit	Debt to GDP Ratio	Real interest on govt debt (r)	Real GDP growth (g)	$\Delta Debt_t$	Interest Growth differentials
2015	3.9	49.96	2.71	7.9	30.3748315	-0.583146067
2016	3.51	49.4	3.05	7.1	28.49	-0.5
2017	3.5	47.58	4.15	7.2	21.8743902	-0.37195122
2018	3.4	49.3	2.2	6.1	29.535493	-0.549295775
2019	4.59	52.3	2.8	4.2	17.8630769	-0.269230769

Table A.2: Debt Sustainability Analysis under the NPS Regime

Source: Author's own construction

Year	Fiscal Deficit	Debt to GDP Ratio	Real interest on govt debt (r)	Real GDP growth (g)	$\Delta Debt_t$	Interest Growth differentials
1999	6.5	51.35	7.08	6.4	1.876	0.091891892
2000	5.1	55	5.86	4	-14.0022	0.372
2001	5.58	61.09	5.29	5.4	6.5253125	-0.0171875
2002	5.3	61.7	5.59	4.4	-8.1624259	0.22037037
2003	4.57	84.2	4.72	8.5	29.1201053	-0.397894737

Table A.3: Debt Sustainability Analysis under the OPS Regime

Source: Author's own construction

ANNEXURE C

Correlation	RD	Pension	Salaries	Def_Exp	Debt_Services	Subsidies	Real_GDP	Inflation	OADR
RD	1.000000								
Pension	0.275957	1.000000							
Salaries	0.336923	0.973473	1.000000						
Def_Exp	0.228061	0.985247	0.951594	1.000000					
Debt_Services	0.238096	0.982231	0.985030	0.982598	1.000000				
Subsidies	0.495999	0.877401	0.883345	0.849194	0.854441	1.000000			
Real_GDP	0.172193	0.967919	0.930143	0.994161	0.972444	0.824717	1.000000		
Inflation	0.028861	-0.310447	-0.261821	-0.330752	-0.320171	-0.186806	-0.350982	1.000000	
OADR	0.183867	0.878771	0.887591	0.924482	0.929895	0.779610	0.934737	-0.337279	1.000000

Table A.4: Correlation matrix among variables

Source: Author's own comstruction

ANNEXURE D

Breusch-Godfrey Serial Correlation LM Test			
Null hypothesis: No serial correlation at up to 2 lags			
F-Statistic	0.056915	Prob. F(2, 19)	0.9448
Obs*R-squared	0.190572	Prob. Chi-Square(2)	0.9091

Table A.5: BG test for testing serial correlation up to 2 lags

Source: Author's own construction

Breusch-Godfrey Serial Correlation LM Test			
Null hypothesis: No serial correlation at up to 3 lags			
F-Statistic	1.5554	Prob. F(3, 18)	0.2348
Obs*R-squared	6.587713	Prob. Chi-Square(3)	0.0863

Table A.6: BG test for testing serial correlation up to 3 lags

Source: Author's own construction

ANNEXURE E

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
Null hypothesis: Homoscedasticity			
F-Statistic	2.148035	Prob. F(10, 21)	0.0673
Obs*R-squared	16.18092	Prob. Chi-Square(10)	0.0946
Scaled explained SS	7.49143	Prob. Chi-Square(10)	0.6784

Table A.8: BP test for verifying Heteroscedasticity

Source: Author's own construction

ANNEXURE F

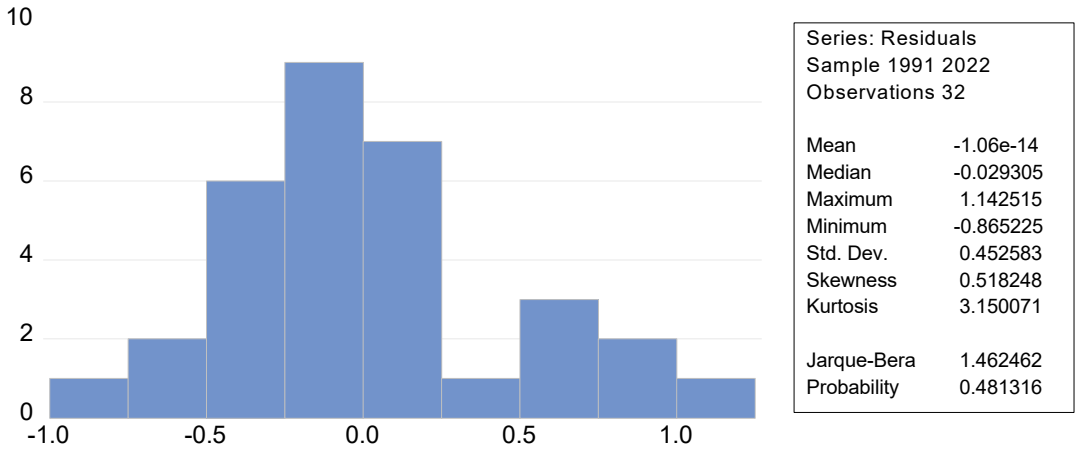

Fig A.1: Normality Histogram

Source: Author's own construction

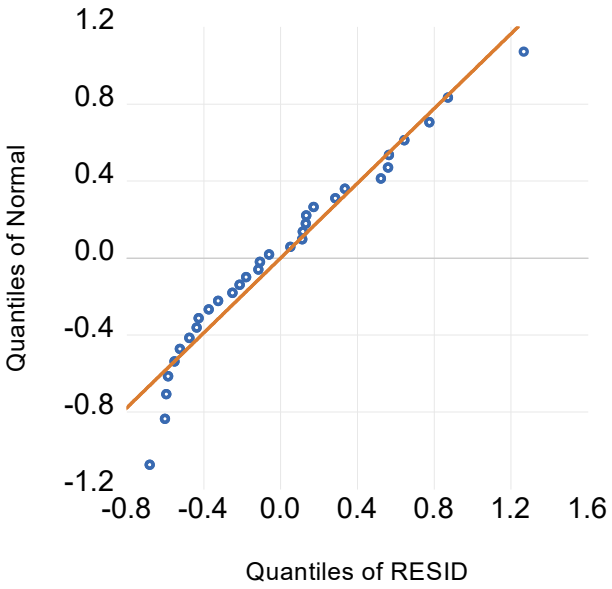

Fig A.2: Residual graph (Q-Q plot)

Source: Author's own construction

BEYOND LANDES POSNER MODEL: MODELLING INDEPENDENT JUDICIARY BASED ON SOCIAL CHOICE THEORY

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ABSTRACT

The paper presents a novel model of an independent judiciary based on moderate and rational assumptions within the framework of Social Choice Theory. This model seeks to address a fundamental question: Why is the judiciary granted structural and functional independence, greater than constitutionally envisioned, in modern democratic political institutions, despite certain constitutional authority of other branches of government to curtail such independence? This model improves upon earlier frameworks, such as the Landes-Posner model, which relies on rigid assumptions and when tested to its limitations, the Landes-Posner model fails to accurately reflect judicial institutions. The key finding of this paper is that other branches of government allow judicial independence as a rational mechanism to resolve issues arising from cyclical preferences in decision-making (preference deadlocks). By providing a stable and impartial resolution, the judiciary plays a crucial role in maintaining institutional equilibrium.

Keywords: *Independent judiciary, Social Choice Theory, institutional equilibrium, judicial independence, democratic governance, preference cycling, Landes-Posner model*

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1. INTRODUCTION

This paper examines the importance of judicial independence from an economic perspective, addressing the fundamental question of why an independent judiciary is a nearly universal feature in all democratic countries. This study explores why democratic countries maintain independent judiciaries despite powerful interests that might seek to control them. It examines the gap between how independent courts are structured to be (e.g., legal protections) versus how they actually function in practice. The paper examines the Landes-Posner model, which portrays the judiciary as a contractual enforcer acting as a buffer between the legislature and interest groups. While the Landes-Posner model suggests that judicial independence is pivotal for legislative durability and the enforcement of original intent, this paper proposes an alternative framework. The proposed model challenges the rigid assumptions of the Landes-Posner framework, offering a flexible and broadly applicable approach to understanding judicial operation in pluralist societies. Drawing on public choice and social choice theory, the alternative model conceptualizes an independent judiciary as a form of delegated legislative power that mitigates issues inherent in collective decision-making. This perspective advances our understanding of the judiciary's role within the political economy, offering new insights into the relationship between judicial independence, institutional dynamics, and democratic governance. The study asks two key questions: (1) Does the Landes-Posner model truly reflect how independent courts work in democracies? and (2) Do lawmakers rationally delegate power to courts to serve their own interests? By analyzing existing research and decision-making theories, the paper explains how independent courts help stabilize democracies and resolve strong political gridlock.

2. LITERATURE REVIEW

Landes and Posner (1975) is a classic in forming a model for Independent judiciary and will be a primary component of this paper. The paper argues that an independent judiciary is essential for interest-group theory of government. The authors explain that an independent judiciary is necessary for the functioning of interest-group theory and discuss several implications of their theory, including the relationship between judicial independence and administrative regulation, interest-group legislation, judicial tenure, and constitutional adjudication. However, it is important to note that the article's perspective on interest-group theory assumes that legislation is

a set of contracts brought by special interest groups. This assumption has been criticized for perpetuating a cynical view of legislation, and for failing to fully explain the complexity of the legislative process and the range of factors that may influence the passage of laws. Therefore, while the article provides valuable insights into the relationship between the independent judiciary and interest-group theory, it is important to consider other perspectives and factors that may impact legislative decision-making and the role of the judiciary in shaping policy. The exact gap that the newly proposed model will try to understand in an improving manner.

The Landes-Posner model is not without its critics. Buchanan (1975) provides a critical commentary on the model by evaluating the merits and demerits of the model through the lens of Public Choice Theory. Buchanan agrees with certain assumptions of the model, such as rational wealth maximization and a positivist approach to the judiciary, but disagrees with the assumption that legislation is a set of contracts brought by special interest groups. Buchanan's critique highlights a fundamental flaw in the Landes-Posner model, legislations as set of contracts, as it perpetuates a grim sense of any laws passed and fails to thoroughly explain all laws passed. Nevertheless, his commentary serves as a basis for the development of the newly proposed model that accounts for the concerns he raised. He posits that public choice theory presents a superior alternative for understanding the structural workings of the judiciary as an institution. Along a similar line of reasoning, Boudreaux and Pritchard (1994) critique this theory, highlighting its significant shortcomings. They contend that the "strong" positive version of the theory fails to account for collective-action problems faced by both the legislature and the judiciary in fostering judicial independence. Additionally, they argue that the "weak" descriptive version inadequately captures the full historical context of judicial independence. Boudreaux and Pritchard reinterpret empirical findings previously thought to support the Landes-Posner theory, offering a revised perspective. They conclude that the independence of the United States federal judiciary is not merely a byproduct of interest-group bargains but was intentionally designed by the Constitution's framers to promote sound governance. This re-evaluation underscores the constitutional foundations of judicial independence, challenging the economic-centric view and emphasizing its role in ensuring effective and impartial governance.

Shetreet and Deschenes (1985) provide that in the realm of constitutional law, the concept of judicial independence is a crucial element to ensure the effective functioning of the judiciary. The study provides a comprehensive and concrete understanding of the very concept of judicial

independence. However, to understand the practical implications of this concept, it is necessary to examine its application in different legal systems. Although conducted in Israel, this study on the different aspects of judicial independence in Israel provides valuable insights into the conceptual roots of the judiciary, the increasing role played by the judiciary in society, and the constitutional role of the judiciary in reviewing legislative acts. Although this study is focused on judicial independence in Israel, the fundamental ideas and concepts discussed can be extrapolated to understand the concept of independence of judiciary in other contexts. However, Salzberger and Fenn (1999) provide a critique to the Landes-Posner model in its exploration of the intersection between political influence and judicial decision-making. While Landes and Posner argue that judicial independence enhances the durability of legislative deals with interest groups by ensuring credible enforcement, Salzberger and Fenn provide empirical evidence that political considerations, such as promotion prospects influenced by the Lord Chancellor, may affect judicial behavior. This challenges the Landes-Posner assumption of a purely independent judiciary acting as a neutral enforcer of interest-group bargains. Instead, Salzberger and Fenn suggest that judicial independence can be compromised by political incentives, raising questions about the extent to which judges remain insulated from external pressures.

Kenneth Arrow (1950) introduces the impossibility theorem, a foundational result in social choice theory, which demonstrates that no ranked voting system can translate individual preferences into a collective ranking while satisfying unrestricted domain, non-dictatorship, Pareto efficiency, and independence of irrelevant alternatives when three or more options are involved. The theorem highlights the inherent challenges in resolving the cycling problem, where ranked voting systems produce cyclic preference orders that fail to meet these criteria. This paper uses Arrow's theorem to explicate the cycling problem in a democratic system, arguing that an independent judiciary plays a critical role in mitigating such issues within ranked voting systems.

3. RESEARCH METHODOLOGY

This study employs an interdisciplinary approach by including established research from legal theory, political economy, and social choice theory to understand the need for judicial independence. The methodology combines theoretical modeling and empirical validation in two phases. First, a conceptual critique of the Landes-Posner model is conducted highlighting flaws in its assumptions about legislative demand and judicial behavior. Second, a novel social choice-based model is developed, formalizing judicial independence as a mechanism to resolve

legislative cycling through spatial voting frameworks and veto-player theory. The theoretical framework synthesizes public choice theory (legislators as rational actors), social choice theory (preference aggregation challenges), and new institutionalism (structural rules shaping delegation). The methodology ensures rigor in addressing the question of - why democracies delegate power to courts despite self-interested incentives.

4. BASIC THEORETICAL ASSUMPTIONS

In Law and Economics, there exist certain sets of assumptions that schools of thought take to derive and guide their models in understanding rational behavior. The strong Chicago school and the moderate Yale school exist. They are categorized as strong and moderate based on the rigidity of their assumptions. The Chicago School is based on three sets of assumptions: First, the individual's behavior is determined by the immediate pursuit of their personal objectives. Second, the primary objective of the individual is to optimize their own well-being and welfare. Third, the well-being of a person is exclusively reliant on their individual consumption and needs (Sen, 1985). The moderate Law and Economics school adopts the first assumption about individuals pursuing self-interest or objectives, however, it tries to alternate between the second assumption and the third assumption. The moderate school of Law and Economics incorporates a reasoned approach to assumptions by considering principles beyond just wealth maximization as its normative goal (Sen, 1985). It acknowledges principles such as distribution and recognizes the importance of fairness and equity in decision-making. Furthermore, the moderate school derives its normative principles through decision-making rules as it draws inspiration from social contract theories that predate utilitarianism, emphasizing the significance of collective agreement and societal consensus. The rational assumptions of moderate law and economics are regarded as an advancement over the strong school.

This paper adopts the moderate approach to law and economics. In doing so, the paper analyzes the independence of the judiciary by considering the motives and incentives of other branches of government. It assumes that individuals are rational actors primarily driven by self-interest however, the paper takes the moderate approach by recognizing that self-interest can encompass considerations beyond self-welfare or self-centered welfare. Individuals may also prioritize the welfare of others while pursuing their own interests. This broader interpretation of self-interest

aligns with philosophies like civic virtuism and common good communitarianism, as exemplified by India (Jayal, 2006).

5. UNDERSTANDING JUDICIAL INDEPENDENCE

The purpose of this chapter is to understand the concept of independence and to arrive at a tentative analytical definition. However, before understanding the independence of the judiciary, it is crucial to have a clear understanding of what exactly constitutes the judiciary. Further elaboration on this topic may lead to a circular argument since one of the fundamental characteristics of the judiciary is its independence. Therefore, this paper will adopt a general definition of the judiciary. Therefore, the judiciary can be defined as a body of individuals primarily responsible for resolving disputes by applying established rules and standards, and structurally, the judiciary is considered an institution of the state and is distinguished from other entities by its characteristic features of impartiality and independence (Ref. to U.S. Const. art. III; US Constitution' definition of judiciary aligns with the definition taken in the paper).

The subsequent focus of this chapter will be understanding independence. To derive an analytical understanding of the independence of the judiciary, the paper will utilize the works of Israeli comparative constitutional law scholar Shimon Shetreet. In a 1985 book with Justice Deschenes, they derive four elements that comprise judicial independence: substantive, collective, personal, and internal (Shetreet & Deschenes, 1985). Substantive independence ensures that judges make decisions based solely on the law, free from any political or external pressures. Personal independence pertains to the stability and security of judicial terms and office. Collective independence entails the judiciary's involvement in the governance and management of the entire judicial system. Internal independence means that individual judges maintain autonomy from their superiors within the judicial hierarchy. However, the analysis of judicial independence by Shetreet lacks clarity. The categorization of the components of independence, such as personal independence, collective independence, internal independence, and substantive independence, raises confusion. There is a failure to clearly differentiate between the definition of independence and the institutional arrangements aimed at achieving it. For example, The distinction between personal independence and substantive independence becomes blurred, as both ultimately seek decision-making free from external influence.

Salzberger rightfully criticizes Shetreet's notion of independence, describing it as a mere list of components rather than an analytical definition. In his analysis, Salzberger introduces a

distinction between dynamic independence and static independence (Salzberger, 1993). The dynamic independence relates to the expression of independence by judges, while static independence focuses on the institutional arrangements established to safeguard this independence. By collapsing the diverse features proposed by Shetreet, Salzberger categorizes independence into two main types: a functional form that pertains to the adjudication process, and a structural form that encompasses the institutional nature of the judiciary.

This study focuses on a two-fold phenomenon observed in various judicial system. Firstly, no constitutional system has managed to establish absolute structural judicial independence. Secondly, there tends to be a disparity between the degree of structural dependency and functional independence of the judiciary, with the latter taking precedence. Functional judicial independence, as defined earlier, pertains to judges making decisions or functioning free from government or legislative influence. It is to be noted that the term "government" here and throughout this paper refers to the executive and legislative branches, unless explicitly referring to the judiciary. On the other hand, structural judicial independence encompasses the institutional arrangements that facilitate functional independence, such as salaries, appointment, age of retirement and removal. This observation implies that no legal system guarantees complete structural independence for the judiciary. Moreover, despite having the authority to do so, governments often refrain from fully exerting their power to curtail functional judicial independence. In essence, the legislature and executive typically allow a certain level of judicial independence that surpasses the provisions outlined in the structural framework.

Let's take the example of Britain. The nature of judicial independence in Britain is problematic and paradoxical. The judiciary is structurally dependent on Parliament, as there are no restrictions on legislative powers through some written Constitution. While legislation guarantees some components of structural independence, such as tenure and fixed salaries, these arrangements can be changed easily (McIlwain, 1913). The judiciary is also structurally dependent on the executive through appointments and other administrative aspects. However, the government does not take advantage of the dependency and allows functional independence—an example of this functional independence is the judiciary adjudicating against the preferences of the government. Similar observations regarding judicial independence can be found in other constitutional states like the United States and India (Ref. Article: U.S. Const. art. III, §§ 1-2; United States *v.* Klein). India's judicial system has grappled with a complex separation of power

battle that has preserved judicial independence, particularly following the ruling on the National Judicial Appointments Commission (NJAC). However, prior to the ruling, the scenario was similar, with the judiciary having to navigate challenges to its independence (Ref. SCAORA *v.* Union of India, (2015) AIR 2015 SC 5457).

Despite the dependency of the judiciary on the government, both the executive and legislature possess the power to restrict judicial independence. However, they often choose not to fully exercise this power, even in the face of judicial actions that go against their interests. This phenomenon, where politicians have the ability to limit independence but refrain from doing so, calls for an explanation within the framework of law and economics, where individuals, including politicians, are driven by self-interest. Before we proceed, it is important to understand Public Choice Theory, as it forms the basis for the Landes-Posner model and the model proposed in this paper.

6. UNDERSTANDING PUBLIC CHOICE THEORY

Public choice theory applies economic models and tools to non-market issues. The foundation of the public choice theory was laid by James Buchanan and Gordon Tullock (Buchanan & Tullock, 1962). Emerging in the 1960s, it initially focused on collective decision-making and has since grown to encompass political and legal issues as well. It forms the basis for understanding how individuals' self-interest and incentives shape their behavior in the public sphere. In the context of the judiciary, public choice analysis explores the intersection between political science and law. The influential work by Landes and Posner on the independence of the judiciary forms the center of discussion in this paper. However, this article will first discuss the challenges of making decisions collectively, as it is a crucial component of Public Choice.

The public choice approach in law is based on two key foundations: the theory of Interest-groups and the Social choice theory. Unlike the Pluralists and Republicans, Public choice theorists argue that the legislature, despite being democratically elected, may not truly represent the general public's views. Instead, powerful interest groups tend to influence legislative decisions due to their organizational and informational advantages, as well as the issue of free riding (Landes & Posner, 1975). Landes-Posner argues that politicians actively seek and support these interest groups, treating legislation as a market transaction of contracts. However, the model proposed in this paper deviates from this strong and superstitious view of legislative and does not rely heavily on the interest-group perspective of legislation and rather relies on the Social choice

theory. While interest-group theory focuses on individual actors and their behavior, collective decision-making theories such as Social choice theory examine the aggregation of individual preferences to reach group decisions. As significant decisions in the public sphere are made by collectives, this analysis is crucial in understanding law from an economic perspective.

Social choice theory examines the three key elements of the decision-making process: the range of possible decisions, the group responsible for making the decision, and the rules governing the decision-making process. The collective decision is the result of a process in which the group responsible for making the decision utilizes the established rules to select one option from the range of possible decisions (List, 2022). The public choice school offers a positivistic interpretation of legislation, viewing it as a series of contracts sold to interest groups. However, there are differing perspectives within this school of thought. Some scholars, like Posner, argue that legislation is sold to one interest group at the expense of others. In contrast, this paper takes a different view, arguing that legislation should seek consensus among competing interests so as to exclude as few people as possible. This approach aligns with the assumption of self-interest in public choice theory, as it maximizes gains for legislators.

However, this paper seeks to critically examine the fundamental process of legislation. It views legislating as a process wherein multiple members of parliament vote on a variety of alternative bills, guided by the rule of a simple majority. This definition of legislating is consistent with various constitutional states such as the United States and India (Ref. U.S. Const. art. I, § 7, cl. 2; Ind. Const. art. 107). The fundamental problem with simple majority legislating is found in a problem called Cycling. However, prior to exploring the inherent issue of cycling and delving deeper into it, the paper now proceeds to offer a primary critique of the Landes-Posner Model. This critique is presented after providing a background understanding of the public choice school and its fundamental assumptions.

7. FLAWS OF LANDES-POSNER MODEL

In their article titled “The Independent Judiciary in an Interest-Group Perspective,” Richard Posner and William Landes aimed to develop a model of an independent judiciary by bridging the Chicago School of Law and Economics with behavioral assumptions from the Public Choice School (Landes & Posner, 1975). Building upon the previous critiques provided by Salzberger, this paper will offer a comprehensive analysis of the Landes-Posner model, challenging two

fundamental positions they presented in their article (Salzberger, 1993). The first problem being the inaccurate determination of legislative demands and the second problem being exogenous assumptions made about the behavior of an independent judiciary. The Landes-Posner Model can be divided into five supposedly causal elements. Legislation is a tradeable commodity, bought by specific interest groups from the legislature. The value of legislation depends on its durability, but it can change if the legislature sells alternative laws to competing interest groups. Two ways to extend contract duration: procedural rules in the legislature and an independent judiciary. A dependent judiciary serves the current legislature and changes meaning according to the current legislature, while an independent judiciary upholds the original legislative intent. An independent judiciary benefits the legislature by ensuring original contract enforcement and increasing legislative profits. To formally analyze the model, we can represent it using algebraic notations. This allows for a systematic approach to studying the model and performing subsequent evaluations.

i. Formalizing Landes-Posner Model

Let P be the price of legislation in the market, Q be the quantity of legislation sold, and D be the demand curve for legislation. Let C be the cost of producing legislation, and let π be the profit of the legislature from selling legislation which can be formalized in an algebraic manner like this $\pi = P(Q) * Q - C$. The durability of legislation is determined by its ability to withstand legal challenges in court. Let D be the durability of legislation, and let $f(D)$ be the demand curve for such a durable legislation. Therfore, $f(D) = \frac{k}{D}$ where k is a constant that represents the value of durable legislation to interest-groups.

The legislature can extend the duration of contracts by enacting procedural rules that hinder the enactment of new laws or the repeal of old ones. Let R be the effectiveness of these procedural rules, and let $g(R)$ be the demand curve for legislation that is protected by effective procedural rules. Therfore, $g(R) = \frac{m}{R}$ where m is a constant that represents the value of legislation protected by effective procedural rules to interest-groups.

An independent judiciary can also extend the duration of contracts by enforcing the original intent of the legislature. Let J be the independence of the judiciary, and let $h(J)$ be the demand curve for legislation that is protected by an independent judiciary. Therefore, $h(J) = \frac{n}{J}$ where n is

a constant that represents the value of legislation protected by an independent judiciary to interest-groups. The optimal level of independence for the judiciary is the level that maximizes the profits of the legislature:

$$\max_{Q} \quad \pi = P(Q) \cdot Q - C$$
$$\text{s.t} \quad Q=\min(D, R, J)$$

where Q is the quantity of legislation sold, and $\min(D, R, J)$ represents the minimum of the durability of legislation, the effectiveness of procedural rules, and the independence of the judiciary. The optimization problem seeks to find the value of Q that maximizes the profits of the legislature subject to the constraints of Q. In practical terms, the equation implies that the legislature can increase its profits by finding the optimal balance of durability, effectiveness of procedural rules, and independence of the judiciary. The optimal level of independence for the judiciary is determined by finding the value of J that results in the maximum profit. By enforcing an independent judiciary and ensuring the durability of legislation, the legislature can attract interest groups and increase the demand for legislation. This, in turn, leads to higher profits for the legislature. The Landes-Posner model shows that an independent judiciary can increase the profits of the legislature by extending the duration of contracts and that the optimal level of independence for the judiciary depends on the demand for durable legislation and legislation protected by effective procedural rules.

ii. Flawed Economic Assumptions on Demand of Legislation

In their analysis, Landes and Posner introduce a Supply-Demand Model of Legislation where the demand curve is (d0) and the supply curve is (S0). The demand curve represents the willingness of certain groups to pay a higher price for protective legislation, as they anticipate greater benefits from it and the supply curve represents the constant costs incurred by the legislature in creating the legislation. The equilibrium (E0) occurs where the quantity of legislation sold (L0) intersects with the price (P0). Despite acknowledging multiple problems with the model, the authors downplay their significance by asserting that these issues have minimal impact on the overall model. This paper presents a contrasting viewpoint by arguing that the identified problems are indeed significant and each wrong assumption pointed out has taken the previous assumption as a given to delve deeper into the faults.

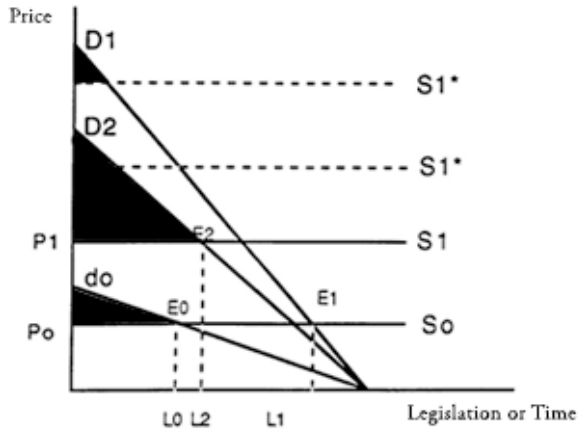

Figure 1: Supply - Demand Model of Legislation

(Source: Landes and Posner, 1975)

The first problem in the Landes-Posner model pertains to the nature of the supply curve, which is assumed to be perfectly horizontal. The supply curve represents the costs incurred by the legislature in creating specific legislation. However, the model incorrectly assumes these costs to be constant and unchanging. This assumption does not align with the reality of the legislative process, where the process of legislating is dynamic. The correct assumption would be an upward-sloping supply curve. As more legislation is introduced, it consumes additional time and resources of the legislators. These increased demands on their time and resources can be quantified as costs, taking into account opportunity costs associated with allocating resources to different legislative tasks. Consequently, the assumption of a constantly flat supply curve fails to capture the increasing marginal costs of legislation production. While the omission undermines the accuracy and applicability of the model, it can still be accepted for the sake of simplicity or other reasons. The way Landes-Posner assumes the surplus from the deal between the legislature and interest groups is distributed raises some more issues in their economic model. The surplus is identified by the triangle formed by the Price axis, the Demand curve(d0), and the Supply curve(S0). In a competitive market, all the surplus would go to the interest groups. In a perfect discriminating monopoly, the entire surplus would be gained by the legislature. However, if we consider the legislature as a simple monopoly, the market would not reach the expected equilibrium point, resulting in less legislation being produced. The only way for there to be a shared surplus is if there is a upward sloping supply curve as identified earlier and if the

legislature does not generate any profits, as evident from the Landes-Posner, it would lack the public choice incentive to maintain an independent judiciary in the first place.

The second problem in the Landes-Posner model lies in their misunderstanding of the dynamics of creating new legislation. According to Landes-Posner, if a certain piece of legislation could be guaranteed to last beyond the current legislature's term or to last for an infinite period without the risk of removing the marketed legislation, the demand for it would causally reflect the long-term profits it would generate. This new demand, referred to as (D1) in the graph, would be a multiple of the single-period demand. Assuming no changes in the costs of producing legislation, the equilibrium point would shift to a new point where more legislation is produced, resulting in increased profits for both the legislature and interest groups. This would result in more surplus to be shared among the legislators and the interest groups derived through the triangle formed by the new demand curve (D1), the constant supply curve (S0), and the price axis. However, the problem is that when a legislature sells long-term legislation, it essentially exhausts the opportunities for future legislatures to sell similar legislation. This is because the long-term legislation remains in effect beyond the term of the current legislature, limiting the availability of similar legislation that can be sold in the future. Landes-Posner model fails to account for the diminishing supply of legislation over time. It assumes that each legislature has an unlimited pool of legislation to sell, without recognizing the depletion of opportunities caused by previous sales of long-term legislation.

The third problem with the Landes-Posner model is their misunderstanding of the dynamic costs associated with the durability of a particular legislation. It is assumed, ignoring earlier arguments, that the legislature has the ability to produce long-term legislation, but it cannot be assumed that this is without costs. As mentioned earlier, one Landes-Posner Model argue that legislation can be made durable through procedural constraints or by an independent judiciary that enforces the original meaning.

The first method of increasing durability is by implementing procedural constraints in legislation and this comes with associated costs. These costs include the difficulty of repealing or removing old legislation, as well as the increased costs of creating new legislation due to the added complexity. In their original paper, Landes and Posner acknowledge that the introduction of procedural constraints leads to an upward shift in the supply curve, from (S0) to (S1). This shift reflects the higher costs incurred in the legislative process. However, they argue that despite the

increased costs, the new equilibrium point at (E2) is still more favorable compared to the previous equilibrium point at (E0). According to Landes and Posner, the benefits of durability and stability brought about by the procedural constraints outweigh the additional costs incurred. This assumption regarding the effectiveness of procedural constraints in legislation can indeed be challenged. The introduction of the ($S1^*$) supply curve, which represents scenarios where the costs of implementing constraints outweigh the benefits, suggests that there can be situations where the equilibrium with constraints is not preferable. In order for this to function, one must make the assumption that the legislature will have complete awareness of the restrictions that are imposed and the ability to purposefully assess the advantages and costs of this measure. This presumption is patently unfounded, and it is not reasonable to adopt it at face value in the absence of supporting evidence.

The second method proposed by Landes and Posner to increase durability is by having an independent judiciary. While it is not the intent of this paper to delve into the specifics, some basic critique can be provided. This approach, like the first method, is not without costs, such as the potential non-enforcement of contracts. This could lead to a decrease in demand, as represented by the demand curve (D2). Landes and Posner argue that this new demand curve will still yield better outcomes than the single-period demand curve (d0). They support this claim with statistical evidence based on the analysis of judicial nullification of statutes and legislation. However, their argument overlooks the possibility of implicit nullification through interpretation against the government. This introduces a level of uncertainty and potential drawbacks similar to the previous method.

iii. Flawed Behavioral Assumptions on Judiciary

The Landes-Posner model heavily relies on an exogenous assumption regarding the behavior of a judiciary and its independence. An exogenous assumption is an assumption made in a model or analysis that is external to the model itself. It is typically taken as given and not derived within the model. In other words, it is an assumption that is imposed from outside the system being analyzed and is not endogenously determined by the model's internal dynamics. To streamline the study and zero in on details, economic models often include exogenous assumptions as starting points. However, before digging into the assumption, it is essential to have a clear understanding of what Landes and Posner mean when they refer to independence. There are two different meanings within the context of Landes-Posner model: First, Independence is defined as

the judiciary being loyal to the original legislature, and measures are taken to ensure this loyalty. Second, there is an external, objective definition of "independence," and the legislature seeks to make the judiciary independent because it believes that an independent judiciary will be loyal to the original legislature and increase the profits from selling legislation.

The exogenous assumption in Landes-Posner model is that by providing the judiciary with structural supports such as salaries and immunities, it is possible to establish an independent judiciary. This independent judiciary is expected to make decisions based on the intentions of the original legislature, free from political influences or control. The assumption suggests that specific institutional arrangements can create an alignment between the judiciary and the original legislature's intentions. While Landes-Posner model argues that an independent judiciary, as defined by their model, aligns with the intentions of the original legislature, it is evident that this assumption lacks logical support. Merely establishing that an independent judiciary does not decide based on the wishes of the current legislature does not imply that it will act in accordance with the intentions of the original legislature. The relationship between independence and aligning with the original legislature's intentions requires a more substantive explanation. It is not a matter of logical deduction such as - If not this, then that. Consequently, this unverified assumption undermines the foundational causal chain on which the Landes-Posner model is constructed.

The Landes-Posner model is plagued by two critical issues: the unverified and highly limiting assumptions regarding legislative demand, and the unverified external assumptions about the behavior of an independent judiciary. In the next chapter, this paper will introduce a novel model rooted in Public Choice theory, emerging from the theory of social choice and collective decision-making. However, before exploring the new model, it is crucial to grasp the concept of cycling, a fundamental problem intrinsic to the legislative process that can undermine the stability of governance structures. Understanding The cycling issue is crucial since it provides one of the underlying premises around which the new model is constructed.

8. CLASSIC PROBLEM OF CYCLING IN VOTING SYSTEMS

Imagine a situation where there are two options, A and B, being discussed for new legislation. There is also the choice to keep things as they are, represented by the status quo option, S. Three legislators are involved in the decision-making process, and each of them has their own order of

preference among the three options which also satisfies the criteria for transitivity. In certain scenarios, a simple majority vote may not lead to a stable decision, despite the common expectation that the option preferred by the majority would be chosen. This situation can be demonstrated through the table shown below.

Table 1: Instability and Cycling as per Arrow-Condorcet Theorem (Source: Author's Own)

Legislator	Preferences
L1	A > S; S > B
L2	A > S; B > S; B > A
L3	S > A; S > B; B > A
Pairwise Comparison	Result
A vs. S	A wins (2 votes to 1)
S vs. B	S wins (2 votes to 1)
B vs. A	B wins (3 votes to 0)

Now, let's analyze the pairwise majority votes. The pairwise majority vote is a voting method where each option is compared against another option in a pairwise manner. Each legislator casts a vote indicating their preferred option in each pairwise comparison, and the option that receives a majority of votes in each comparison is considered the winner. The pairwise majority vote involves comparing these options in all possible pairwise combinations: A vs. S; S vs. B; B vs. A. However, as shown in the example, due to conflicting preferences among the legislators, no option consistently receives a majority of votes in all pairwise comparisons, resulting in a cycling of preferences and the absence of a stable and non-arbitrary winning option. A procedural constraint may prevent the endless cycling but the chosen option will be an arbitrary one.

In decision-making processes, single-peaked preferences play a crucial role. When preferences are single-peaked along a one-dimensional spectrum, majority rule leads to a stable and non-arbitrary outcome, favored by the median voter (Niemi & Rasch, 1987). However, when dealing with multiple dimensions or issues, single-peakedness alone does not guarantee such an equilibrium. In multidimensional models, where positions are represented in a two or more-dimensional space, voters' preferences are captured by indifference curves. These curves connecting alternatives of equal preference contain each other, with inner curves indicating

higher preference. While single-peakedness ensures a simple majority equilibrium in one-dimensional settings, it does not guarantee the same outcome in multidimensional settings.

Furthermore, it is worth noting that a more comprehensive perspective on the cycling problem was put forth by Kenneth Arrow, leading to the formulation of Arrow's impossibility theorem (Arrow, 1950). This theorem highlights the inherent challenges and limitations associated with aggregating individual preferences into a coherent and consistent collective decision-making process. The theorem states that no ranked voting system can convert the ranked preferences of individuals into a community-wide ranking while also meeting the criteria of unrestricted domain, transitivity, non-dictatorship, Pareto efficiency, and independence of irrelevant alternatives. Despite the perception of unending doom in decision-making processes, legislatures demonstrate more stability in their decision-making than anticipated. This paper argues that one fundamental reason for this stability is the existence of an independent judiciary, which allows for the delegation of legislative powers to itself and contributes to overall system stability by preventing the issue of cycling from happening.

9. A NOVEL MODEL OF INDEPENDENT JUDICIARY

In legal systems, the judiciary is characterized by a certain level of independence, although it is not absolute and relies on the other branches of government to varying degrees (In the United States, all Justices are nominated by the President and confirmed by the Senate Judiciary Committee. See, U.S. Const. art. II, § 2, cl. 2.). This dependence can be seen as a gap between structural independence, which pertains to formal institutional arrangements, and functional independence, which refers to the actual exercise of judicial decision-making without undue influence.

The existence of this gap can be understood within the framework of the republican model of civic virtues, where it is acknowledged that no institution, including the judiciary, can operate in complete isolation from the larger political context and that they must uphold certain virtues commonly held by the people. However, from the perspective of Public Choice theory, which assumes that individuals act in pursuit of their self-interests, it can be argued that political actors have a vested interest in allowing the judiciary to possess a certain level of functional independence.

This paper presents the contention that legislators or parties stand to benefit from the existence of an independent judiciary. It is to be noted that the distinction between individual legislators and political parties is significant, particularly in constitutional contexts where the primary political responsibilities are vested either in their constituencies (e.g., United States) or through political parties (e.g., India) See, Indian Const., art. 102; sch. 10) It allows them to delegate some of their legislative powers, thereby relieving them of certain burdens and responsibilities. By entrusting decision-making to the judiciary, legislators can also address issues of uncertainty and information asymmetry. Delegating power to the judiciary can also facilitate the resolution of collective decision-making challenges that arise within multi-member legislative bodies, where reaching consensus can be difficult.

i. Assumptions of the Model

There are three theories that attempt to explain the legislative process: pluralism, republicanism, and public choice theory. Pluralists argue that the legislature represents the diverse interests of the population, with decisions reflecting the views of the plural majority. Republicans, on the other hand, contend that the legislature seeks the common good and acts based on civic virtues. Public Choice theorists posit that legislators are driven by self-interest (Tollison, 1988). Upon closer examination, it can be argued that pluralists and public choice theorists share a common thread as both groups acknowledge the influence of self-interest in legislative decision-making. Pluralists recognize the pursuit of interests within the majority, while public choice theorists explicitly focus on legislators' self-interested behavior. Pluralists and public choice theorists have distinct perspectives on the legislative process. Pluralists emphasize the role of the plural majority in shaping legislation, considering it as the outcome of majoritarian representation. In contrast, public choice theorists argue that the legislative process is influenced not only by the plural majority but also by interest groups. They contend that these interest groups hold significant sway and can override the preferences of the plural majority. Public choice theorists view legislation as a process of marketing commodities, where various actors, including legislators, pursue their self-interests (Tollison, 1988).

Both the Landes-Posner model and the model proposed in this paper are rooted in Public Choice theories. However, they diverge in their understanding of the sale of legislation. According to Landes-Posner's view in Public-Choice theory, legislation is a set of contracts that is sold to the highest bidding interest group, creating winners and losers in a zero-sum game. Without an

independent judiciary, the legislature can breach contracts and sell the same legislation to rival interest groups. This highlights the need for an independent judiciary as an enforcer to prevent such breaches and maintain the profits for the legislature. However, the public choice perspective on legislation does not entail that a particular legislation is marketed only to one interest group. Interactions among diverse interest groups often lead to mutually acceptable agreements that satisfy the concerns of multiple stakeholders. These compromises are a strategic response by the legislature to ensure the maintenance of political support while striving to minimize any potential exclusion. Therefore, this paper operates under the assumption that the legislative process aims to facilitate consensus-building and minimize the marginalization of any particular group or interest.

ii. Understanding Delegation of Powers

Delegating legislative powers is a well-discussed topic in legal literature, primarily focusing on situations where the legislature delegates law-making powers to administrative agencies for the purpose of rule-making. However, the concept of delegation, as explored in this paper, goes beyond this limited perspective. In most legal systems, the legislature holds the ultimate authority, or a monopoly, to create and modify laws, with certain limitations related to substantive and procedural considerations. For instance, constitutional rights in the United States and India cannot be violated by legislation. Foregoing these limitations, the legislature maintains full autonomy in law-making. Therefore, there is delegation of legislative powers, when a body other than the legislature exercises rule-making powers not constitutionally assigned to it.

Delegation of legislative powers can take two forms: explicit and implicit (Cheadle, 1918). In explicit delegation, the legislature directly instructs other bodies, such as the executive, and committees, to create rules in a specific area instead of legislating directly. Implicit delegation, on the other hand, occurs when the legislature does not regulate a particular legal field and leaves it to the courts to develop the law over time. However, the courts may always decline to use their discretionary authority and send the issue back to Congress. An example of implicit delegation can be observed in the extensive and longstanding system of Common Law. Delegation of legislative powers is often motivated by several key factors. Firstly, delegating legislative powers is driven by limited parliamentary time, technical complexity, the need for flexibility, and expedited decision-making in times of crisis. With the expanding scope of regulation due to the

welfare state and increased state intervention, lawmakers face constraints in addressing all issues directly. Secondly, delegation allows for efficient resource allocation and prioritization of pressing matters. Delegating to experts ensures context-specific rules. Thirdly, Flexibility is crucial to adapt regulations to evolving circumstances, allowing for quicker adjustments and responsive governance. Delegation empowers specialized entities to make timely rule changes. Finally, in emergencies, delegation facilitates quick decision-making and the implementation of measures. Granting specific entities authority ensures the legislative process keeps pace with changing circumstances.

However, when evaluating the delegation of powers to the courts, these factors alone are inadequate to justify the larger breadth of rulemaking delegation. They under-report the extent to which ex-post delegation and rulemaking powers have been delegated to the judiciary. For example, issues involving contracts and morality are not often considered technical problems that need specialized knowledge, nor are they issues that need to be regulated quickly or revised often. For example, the Indian Contract Act provides certain examples of morality, however, the broader gaps are to be filled by the Judiciary. (Ref. The Indian Contract Act, 1872, § 23) It is established that an even broader explanation is needed for this delegation of power.

The explanation put forward in this paper aligns with the principles of Public Choice theory, which asserts that individuals' actions are driven by self-interest. According to this perspective, the delegation of legislative powers can be understood in terms of self-interest. When the legislature voluntarily relinquishes its exclusive authority to create rules and laws, it does so with some level of self-interest in mind. Furthermore, delegation occurs when the collective decision-making process fails to reach an equilibrium. As explained earlier, the simple-majority system encounters cycling, where no clear consensus or majority position can be reached. As a result, delegation becomes a practical solution to address this impasse. This paper aims to elaborate on these foundational propositions and provide a comprehensive model that elucidates the dynamics of delegation in legislative processes and the Independence of the judiciary.

iii. Solving Cycling through Delegation to Judiciary

Delegation of legislative power can occur even in situations where there are no doubts or information issues concerning voter preferences and no anticipated political advantages for the legislator or party. This indicates that the decision to delegate is not solely motivated by these factors. Even if the entire constituency unanimously supports a specific arrangement, legislators

may still opt for delegation. This choice is influenced by the challenges of reconciling the preferences of individual legislators or parties during the process of collective decision-making. This situation shows the problems with traditional social choice analysis, especially the problems with depending only on the simple majority rule, which we already talked about. Delegation of legislative powers can be viewed as a way to address these limitations. By delegating powers, legislators strike a trade between normative majority rule and positive stability. Delegation offers a mechanism to overcome the complexities associated with collective decision-making, enabling a more streamlined and efficient legislative process. The social choice rule of simple majority simply cannot ensure a stable result. In this chapter, we will employ a two-dimensional policy framework to demonstrate how delegation can effectively address the issue of cycling.

In our analysis, we consider a scenario with five legislators or parties who know the preferences of their constituents. Choosing a pair of arrangements along two ideological axis can be referred to as the process of legislation. Each legislator's preferences follow a single peak within this two-dimensional space. They have specific points on the (x_i, y_i) axes that represent the expected support from their constituency. The current arrangement or the status quo arrangement is labeled as (x_0, y_0). The shaded areas on the graph represent all the arrangements that can be chosen using the simple majority rule essentially the possibilities of legislation. These areas are known as the preference-consistent alternatives or $P(x_0, y_0)$. Each distinct area within these alternatives represents a potential winner, as it is preferred over the current arrangement by a minimum of three legislators. In essence, these regions highlight the alternative options that have sufficient support from a majority of legislators, thereby making them eligible contenders for the winning position.

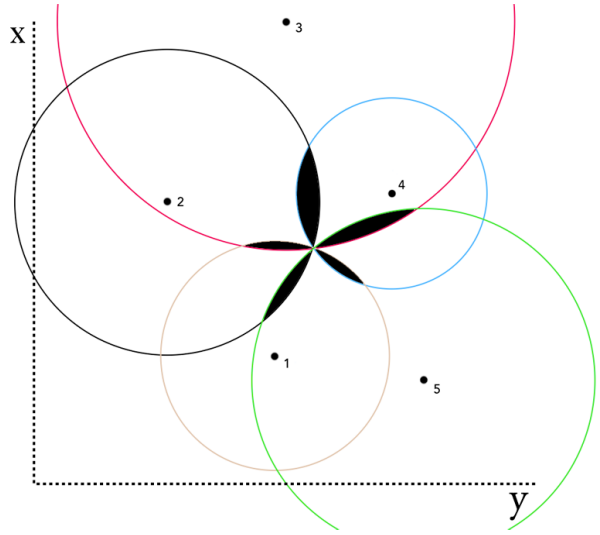

Figure 2: Preference-Consistent Alternatives in a 2D-Policy Space

(Salzberger, 1993)

However, we encounter here the fundamental problem of cycling. In the two-dimensional space, the set of preference-consistent alternatives that can win through the simple majority rule is not necessarily empty. This means that multiple possible winning options could be selected as the preferred arrangement. The presence of multiple options can lead to cycling, where different arrangements may be favored at different times, resulting in a lack of stability or a clear consensus. Cycling typically occurs when there are more than two options to choose from, and the preferences of the legislators or parties differ across these options. In order to address the problem of cycling and promote more stable decision-making processes, various institutional measures can be implemented.

One such approach is to establish controlled agenda setting, whereby the introduction of proposals to the legislative agenda is carefully regulated by assigning an authority the monopoly to set the agenda to a specific entity or subgroup. Monopoly over agenda can be addressed in a formal sense. Let $L = \{1,2,3,\ldots,n\}$ represent the set of legislators, where n is the total number of legislators. Each legislator i has their preferred arrangement represented by the coordinates (x_i, y_i) in the policy space.

Now, let's consider a subgroup of legislators $S \subseteq L$ who have the exclusive power to propose bills or amendments. Assuming legislator $L2 \in S$ has the monopoly on the legislative agenda, they will propose a motion represented by (x_2', y_2') within the policy space. The goal is to find

(x_2', y_2') that is the closest option to L2's most preferred arrangement (x_2, y_2) within the set of preference-consistent alternatives $P(x_0, y_0)$. To achieve this, we can select the arrangement (x_2', y_2') from the preference-consistent alternatives $P(x_0, y_0)$ that is nearest to (x_2, y_2). In other words, we want to find the point in the set of preference-consistent alternatives that minimize the distance to (x_2, y_2): $(x_2', y_2') = \text{argmin}_{(x,y)\in P(x_0,y_0)} D\big((x_2, y_2), (x, y)\big)$.

Here, the distance function $D\big((x_2, y_2), (x, y)\big)$ measures the proximity between (x_2, y_2) and (x, y). The preference-consistent alternatives $P(x_0, y_0)$ represent the set of arrangements that are acceptable according to the current arrangement (x_0, y_0). If this is plotted on our 2D policy-space framework, it would produce the following:

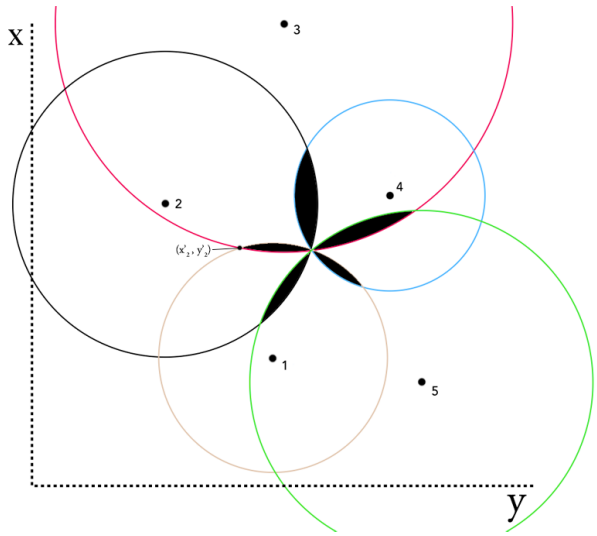

Figure 3: Monopoly Agenda Setting by Legislator 2

(Salzberger, 1993)

This graph illustrates the formal model, depicting the scenario where Legislator 2 holds the exclusive power to control the agenda. Acting in their self-interest, Legislator 2 aims to promote an arrangement that maximizes their own preferences, denoted by (x_2', y_2'). However, this proposed arrangement must also meet the majority preference criterion. Consequently, the outcome of this process will eventually converge on the derived arrangement, thereby eliminating the cycling problem.

However, as seen this leads to a concentration of power in a subgroup of legislators. Another method to eliminate this problem of cycling while still controlling the concentration of power to L2 by giving him a restricted power to create an agenda is through allowing an entity power to

merely remove the whole arrangement while still not being able to engage in the activities of legislation. This essentially be considered as a veto power or the power to judicial review. Now, if L2 being a rational and self-interested legislator understands that the area of operation has been reduced and will try to accommodate the needs of the veto-holder while also choosing the arrangement nearest to their peaked preference. To address the problem of cycling while maintaining power concentration in legislator l_2, one possible method is to grant a separate entity, denoted as V, the power to veto the entire arrangement without actively participating in the legislative activities. This veto power allows V to reject any proposed arrangement. Mathematically, we can represent the veto power as follows:

Let L be the set of legislators, and $L_2 \in L$ represent legislator L_2. Each legislator $L_i \in L$ has their preferred arrangement represented by the coordinates (x_i, y_i) in the policy space. Additionally, there exists a veto power holder V with their own preference curve represented by the coordinates (x_V', y_V'). Given this setup, legislator L_2 aims to choose an arrangement that is closest to their peaked preference while considering the preferences of others, including the veto holder V. Mathematically, we can express this as:

$$\min_{(x_2', y_2') \in P(x_0, y_0)} \quad d\big((x_2, y_2), (x_2', y_2')\big)$$
$$\text{s.t} \quad (x_2', y_2') \in (x_V', y_V')$$

In this formulation, the preference indifference curve of the veto holder V restricts the feasible set of arrangements that can be proposed by legislator L_2. The objective is to find the arrangement that minimizes the distance to legislator L_2's peaked preference while satisfying the preferences of the veto holder V.

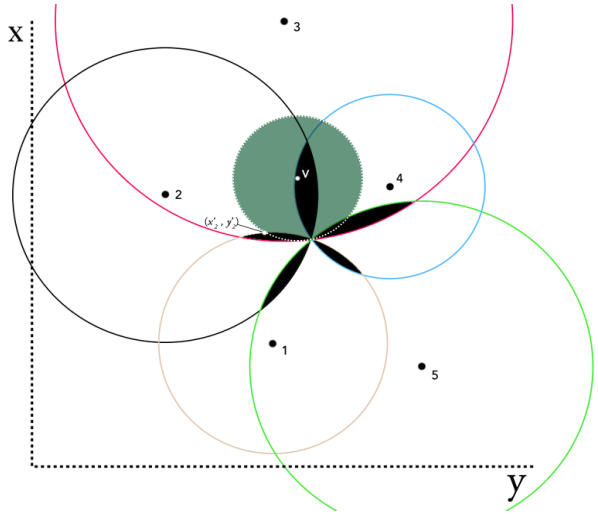

Figure 4: Veto Power and Restricted Agenda Setting

(Salzberger, 1993)

This graph illustrates the formal model derived in Eq. 2, depicting the scenario where Legislator 2 holds the exclusive power to control the agenda, however, they are still restricted by the preferences of the veto-holder V. Acting in their self-interest, Legislator 2 aims to promote an arrangement that maximizes their own preferences, denoted by (x_2', y_2'). However, this proposed arrangement must also meet the majority preference criterion and the newly created criterion of V. Consequently, the outcome of this process will eventually converge on the derived arrangement, thereby eliminating the cycling problem and the problem of concentration in one entity to control the agenda and the production of legislation. In this specific situation, the form of the extra limitation will show the distinctions between an individual with veto authority and a collective approving body, such as a second chamber. Specifically, the form of the additional restriction serves to highlight the contrasts between an individual with veto power and a collective approving body. However, given the scope of this paper, the chapter will not go into depth about these differences and their specifics.

The fundamental question of the paper though partially addressed, the question of Independent judiciary remains unaddressed. The core argument of this paper is that addressing the issue of cycling in decision-making can be effectively accomplished by granting the judiciary greater independence through the delegation of certain rule-making powers beyond its functional independence. This proposition challenges the customary normative restrictions typically associated with the role of the judiciary. Drawing upon insights from realist scholars'

perspectives of the judiciary, who posit that the functions of the judiciary and the legislature are converging, this paper highlights the significance of the judiciary as a crucial institution within the legal and political framework of a government. By recognizing the evolving nature of the judiciary and its alignment with legislative functions, this paper underscores the importance of granting the judiciary increased independence in addressing the problem of cycling.

The fundamental nature of the model presented in this paper may face criticism similar to the critiques raised against the Landes-Posner model. The Landes-Posner model aims to establish a linkage between an independent judiciary and the functions of parliament, as well as the rules governing legislatures. However, this contention emphasizes a clear distinction between the two models. The Landes-Posner model contends that the functional independence of the judiciary should be permitted to prolong the enforcement of legislation by interpreting it in accordance with the intentions of the enacting legislature and the original meaning. This approach imposes technical constraints on the judiciary and relies on normative conclusions concerning methods of interpretation.

The model presented in this paper contends that the judiciary plays a fundamental role in achieving stable and non-cyclical legislation, placing emphasis on the legislature's capacity in this regard. In contrast to this model, the paper adopts a more lenient stance on the functioning of the judiciary. Importantly, the model does not enforce any normative limitations on the functional independence of the judiciary, refraining from specifying a particular approach to interpretation. Instead, it assumes that the judiciary possesses the necessary authority to exercise decision-making power. The distinguishing factor lies in the fundamental nature of the judiciary. While the Landes-Posner model emphasizes the durability of legislation, the current model asserts that the judiciary's role is more profound, contributing to the legislature's ability to achieve a non-cyclical legislation.

Building upon the insights of realist scholars who contend that the judiciary and the legislature are increasingly converging in their functions, it is important to examine this phenomenon through the lens of delegation. Traditionally, delegation is understood as a process whereby the legislature, as the sole authority responsible for creating laws and rules, delegates the task of interpretation and application to the judiciary. While the executive branch is typically seen as the enforcer of these laws, the judiciary, through its decisions, effectively directs the executive on how to act. However, this paper challenges this traditional understanding. It argues that the

dynamics of delegation are more complex. While the legislature creates the rules, it often leaves considerable leeway in their specifics. Sometimes, the legislature fails to anticipate specific questions that may arise from the arrangements it establishes. On other occasions, legislative language intentionally remains broad and lacks detail. In these cases, where there is no explicit delegation to the administrative agencies, the legislature implicitly entrusts the courts with the authority to fill the gaps. In essence, the legislature is effectively delegating its monopoly over rule-making to the courts by granting them the power to decide on matters not explicitly addressed in the legislation. To formalize the model, let's take the usual example of five legislators on a two-dimensional policy framework:

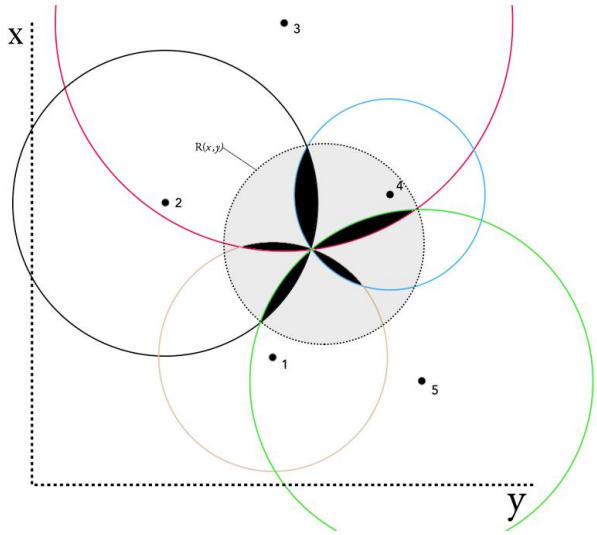

Figure 5: Delegation Region and Judicial Decision-Making

(Salzberger, 1993)

Legislative goals refer to the objectives that the legislature aims to achieve through the enactment of specific legal arrangements. These goals are represented by the point (x_0, y_0) in a two-dimensional space. Preference-consistent alternatives can be defined as:

$$P(x_0, y_0) = \{(x, y) \mid \text{preferred by } k \text{ legislators}\},$$

where k is the minimum number of legislators required for a legal arrangement to be considered a preference-consistent alternative. In this context, $k = 3$. The set $P(x_0, y_0)$, therefore, is a subset of the two-dimensional space that includes all legal arrangements satisfying this criterion. The delegation region represents a shift in the decision-making process. Instead of choosing a specific point within the set of preference-consistent alternatives, the legislature defines a

broader region, $R(x, y)$, that encompasses a range of possible legal arrangements. This region reflects the legislature's intent to allow flexibility while still aligning with its broader goals. Delegation to the courts occurs when the legislature assigns the task of selecting a specific legal arrangement within the region $R(x, y)$ to the judiciary. This delegation enables the courts to apply their expertise and judgment to determine the final legal arrangement, denoted by (x_c', y_c'), such that $(x_c', y_c') \in R(x, y)$. By delegating this authority to the courts, the model ensures a balance between stability and flexibility while preventing the excessive concentration of power in a single entity. Building on the previously proposed theoretical solution to address the issue of cycling through the implementation of veto powers, we can examine a scenario involving the judiciary and its authority to review and invalidate legislation that falls outside its preference indifference curve. In this framework, the preference region is defined by constitutional or legal constraints that establish the boundaries within which legislation must comply. This scenario prompts a critical question: why would a legislature, which holds a monopoly on rule-making and lawmaking, choose to delegate its authority to the judiciary? If the legislature is acting in its own self-interest, as suggested by theoretical models, there must be a balanced exchange that justifies delegating this power. This exchange would need to provide benefits to the legislature that outweigh the advantages of either retaining this authority internally or delegating it to administrative agencies.

iv. Some Empirical Evidences from United States

Substantive due process is a principle in United States constitutional law, empowering courts to establish and safeguard fundamental rights by protecting them from government interference (Wurman, 2020). Unlike procedural due process, which primarily examines the fairness of the procedures followed in enacting laws, substantive due process scrutinizes the substantive content and impact of legislation on the indiduals. While substantive due process raises significant normative concerns, particularly regarding the potential erosion of democratic rule in favor of judicial decision-making, this paper focuses on the understanding the positive extent of delegation by the legislature to the courts through the usage of substantive due process (Scalia, 2018).

An empirical research study delved into the nature of courts and the utilization of substantive due process across different states in the United States (Anderson, 1987). The study revealed a trend where state supreme courts in several states began shifting away from substantive due process

and instead emphasized procedural due process. However, it was also observed that in certain states, this shift did not occur. The crucial finding of this research was the striking negative correlation between the usage of substantive due process by state courts and the volume of legislative activity. In other words, in states where substantive due process was more prevalent, there tended to be less legislative activity. This negative correlation supports the established assumption that legislatures are indeed delegating their monopoly power to the courts as a means of achieving stability and reducing the problems associated with cycling preferences. By entrusting the courts with the responsibility of interpreting and applying substantive due process, legislatures seek to address the challenges inherent in formulating and maintaining stable legislation.

One prominent example that exemplifies the interplay between the current model's finding, the inverse correlation between legislation and the usage of substantive due process, is the landmark case of Roe v. Wade 410 U.S. 113 (1973). Prior to this Supreme Court decision, the legislature possessed full authority to enact laws concerning abortion. However, due to the cycling of preferences and the ensuing lack of stability, the legislature struggled to establish a durable and consistent framework for abortion legislation. To resolve this problem, the Court stepped in and, through its decision in Roe v. Wade, effectively legislated by recognizing a constitutional right to abortion. The legislature, recognizing the need for stability and resolution, allowed the Court's decision to govern the matter. This delegation of power to the courts to resolve the cycling problem and establish a stable framework for abortion laws highlights the significance of substantive due process in mitigating legislative challenges. The legislature too, without any interference, had permitted the court's decision to govern the matter until recently, when the court overruled the precedent in Dobbs v. Jackson, 594 U.S.(2021).

10. CONCLUSION

The primary aim of this paper was to examine the functioning of the judiciary within the framework of public-choice theory. Beginning with the theoretical foundations of law and economics, the paper adopted a balanced approach that recognizes the behavioral dimensions of political actors, moving beyond rigid assumptions. It explored the concept of judicial independence, analyzing its structural and functional aspects. A key finding was the paradoxical observation that, despite the ability of political entities to restrict judicial independence, they

have allowed functional independence to flourish. This presents a contradiction to the core assumption of public-choice theory, which posits that individuals act in their self-interest, seemingly at odds with the interests of the legislature. The paper first critiqued the Landes-Posner model, identifying flaws in its assumptions about the demand for legislation and the behavioral tendencies of the judiciary. It then addressed the challenges posed by majority rule and proposed a model of an independent judiciary to explain the paradoxical persistence of judicial independence. This model emphasized the critical role of an independent judiciary in resolving the cycling problem, supported by empirical evidence. Through this analysis, the paper successfully achieved its objective of providing a positive explanation for judicial independence within the public-choice framework. For future research, the paper may investigate the behavioral dynamics of individual legislators and their motivations for delegating power, potentially through an analysis of how public perception influences decision-making. Such studies would assist in the understanding of judicial independence and its interplay with political and legal systems, offering insights into the broader implications of public-choice theory.

As Justice William O. Douglas once said, “The independence of the judiciary is the bedrock of our constitutional democracy.” Recognizing the importance of an independent judiciary and its ability to provide profound stability, we pave the way for a deeper understanding of the delicate balance between legislative power and judicial authority.

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ASSESSING THE IMPACT OF LEGISLATIVE INTERVENTION ON CHILD MARRIAGE IN BIHAR, INDIA: UNTYING THE KNOTS BETWEEN LAW, ECONOMICS AND SOCIETY

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ABSTRACT

Child marriage across India has shown a declining tendency, however, the State of Bihar continues to exhibit this harmful practice at a staggering high percentage. It is considered as an economic solution to deal with the financial burden attached with the upbringing of a girl child. The author has used economic analysis of law to examine the efficacy and efficiency of the Prohibition of Child Marriage Act, 2006, in the state of Bihar. The study is based on secondary data available from National Family Health Survey-4 and NFHS-5, Census of India and Economic survey of Bihar. The use of descriptive and exploratory studies helped the author in yielding stimulative insights into the relationship between individual behaviour and social practices. Based on scientific and logical understanding, the study proves that a society would always prefer to choose, exercise and continue solemnising child marriage practices if the benefits (economic, social and psychological) of child marriage is higher than the opportunity cost of getting arrested and convicted under the law. The social benefits associated with child marriage for the poor, populous, patriarchal society like Bihar outweighs the social cost linked to the prohibition law.

Keywords*: Prohibition of Child marriage, economic analysis of law, Bihar, crime*

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1. Introduction And Context

International human rights agreements recognize that child marriage is a detrimental and discriminatory practice and have called for government action in response to the multiple hazards that child marriage poses to the health and development of child brides, their children, and their wider communities. As a result, governments across the globe have agreed to take measures to eliminate the practice of child marriage (Arthur et al., 2018). Child marriage is one of the forms of sexual violence that has a devastating consequence on a girl child since it denies reproductive rights and hampers her educational and employment probabilities. It is a violation of human rights and has the potential of adversely affecting society, economy and national growth. Moreover, it is a violation of various international instruments and the commitments contained in the directive principles of the Indian Constitution. The Universal Declaration of Human Rights of 1948 also recognises the right to free and full consent to a marriage which cannot be fulfilled in the presence of partner being immature (NCPCR, 2017). Furthermore, India being signatory of United Nation's Convention on the Rights of the Child in 1989, is committed to stop this social malpractice which essentially prevents both boys and girls from exercising their right to freedom, opportunity for personal development, right to education, health and well- being. In 2015 the Sustainable Development Goals were adopted by the United Nations. The governments across the world have committed to end child marriage by 2030. Target 5.3 of SDGs aims to "eliminate all harmful practices, such as child, early and forced marriage and female genital mutilations" by 2030.

Although child marriage across India have shown a declining tendency, the State of Bihar in India continues to exhibit the harmful practice at a staggering high percentage (nearly 40%) (UNICEF, 2019). As per the report and findings of UNICEF, one in three of the world's child brides lives in India and over half of Indian child brides live in just five states of India, Bihar being one of them. According to the report of National Family Health Survey-5 (2019-20), the percentage of women in the 20-24 age group, married before the legal age in rural areas is as high as 43.4% and in urban areas is nearly 28% (UNFPA, 2022). It is worth mentioning that India is still not a signatory to 'The Convention on Consent to Marriage, Minimum Age for Marriage and Registration for Marriages', which came into force in December 1964 (UN Treaty Collection, n.d.). The Convention reiterates the consensual nature of marriages and requires the parties to establish a minimum marriage age by law and to ensure the registration of marriages. However, in the case of India the law prohibiting child marriage has relatively

little influence on the practice of child marriage and even after two decades, fifty percent of all females are married before they reach marriageable age (Nguyen & Wodon, 2015).

Child marriage has a number of detrimental effects like physical, mental and emotional on both boys and girls (UNICEF, 2016). It results in early pregnancy and health issues resulting in increased maternal and neonatal mortality rate. The absence of economic rights or limited decision-making ability of child results in lower livelihood prospects. The negative consequences of child marriage are significantly higher for female child as compared to male child and is even acknowledged by the international community as a form of gender discrimination (UNICEF, 2014). Often a girl child is under the control of husband or in-laws which may limit her ability to voice her opinion. These child brides regularly encounter intersecting vulnerabilities, and they are mostly poor, young and undereducated (Parsons et al, 2015). The majority of households in India, do not consider a girl child as an asset; rather, they are regarded as an economic liability. This problem worsens in a patriarchal social set-up as girls are assigned lower status and are married at a young age, often too immature to understand the significance of their consent. Moreover, it is a common misconception that women are unable to actively contribute to economic growth or the advancement of society (Scolaro et al, 2015). Evidently, when marriage is solemnised at an early age, the vulnerability of such children increases manyfold due to their limited life options (Mikhail, 2002). Child marriage adversely affects both sexes, however, girls are more vulnerable and as a consequence, more likely to face the negative impact of early marriage. Economic factors like the inability to afford the costs involved in education and the economic benefits in reducing the burden of living costs on the poor families act as catalysts for child marriage (Lebni et al, 2020). In fact, economic reasons like poverty often underpin a family's decision to marry off minors. Child marriage serves as a measure to effectively cope with the economic problems faced by the poor families by reducing the size of the family and thereby lowering their cost of living (Goli, 2017). Unfortunately, economics is not the only reason for parents marrying their daughters early. In a study conducted by the International Centre for Research on Women (ICRW) and UNICEF in 2011, it was also found that traditional and religious beliefs of protecting the girl's sexuality also result in child marriage (Nanda, 2011). Several studies indicate that parents weigh the costs and the benefits associated with early marriage when they have to decide their daughter's marriage (Parsons et al., 2015). One cannot deny that child marriage is the economic solution to deal with the financial burden attached with the upbringing of a girl child. According to one of the studies done on the prevalence of child marriage, approximately 12 million girls are

married before they reach the age of 18 years worldwide (Paul et al, 2019). Child marriage remains pervasive, despite several efforts taken at international and national levels.

Even before the independence, India had a law the Child Marriage Restraint Act, 1929, popularly known as the *Sarda* Act which prohibited marriage of girls below the age of 15 years and boys below the age of 18 years. Later, in the year 1978, through an amendment in the Act the minimum age was raised to 18 years and 21 years for girls and boys respectively. The present law, which is the Prohibition of Child Marriage Act, 2006, has retained the minimum age of marriage to 18 years for girls and 21 years for boys.

The Prohibition of Child Marriage (Amendment) Bill, 2021, was introduced in the Lok Sabha on December 20, 2021. The Bill says that despite the Prohibition of Child Marriage Act, 2006, the practice of child marriage is still prevalent in society, and it has to be urgently addressed. The bill recommends raising the marriage age from existing 18 to 21 for girls. Moreover, it also says that the law will have a superseding effect on contrary provisions contained under different personal laws in India. Although, the law prohibits child marriage, the effective implementation of the law is a big challenge in India and particularly, in the State of Bihar. Over the past twenty years, the state government has launched numerous programs in collaboration with civil societies, NGOs, and other stakeholders for effective implementation and enforcement of the Act. However, evaluations of these programmes indicate mixed results, and there is a need to explore the reasons and driving forces behind this prevalent practice. In order to address the issue of social justice and improve the status of women in society, the state government of Bihar has initiated the Mukhyamantri Nari Jyothi Programme with the aim to empower women. Moreover, to tackle gender discriminatory norms and practices, a total of eight schemes operates in this domain. Mukhyamantri Kanya Vivah Yojana, a programme of the Government of Bihar, financially supports the girls of BPL families who get married at the age of 18 years. But unfortunately, the above schemes are not demand-driven, and also the benefits of the scheme are not availed by the intended beneficiaries and therefore are quite ineffective. The main issues or challenges related to various social welfare schemes in place are primarily inefficient and ineffective monitoring, lack of administrative coordination and clear directives, absence of various institutional level support, and most importantly, societal level resistance. As a result, the target set by the state government of Bihar is hardly achieved. However, they represent only one side of the story. The other side of the story demonstrates a web of more complex socio-economic drivers that contribute to early marriage in the state of Bihar. Poverty, illiteracy, prevalence of demand for dowry, tradition, customs, sexuality, and

chastity, along with deep rooted patriarchy, emerge as key drivers of early marriage in the state. At this juncture, it becomes crucial for the researcher to undertake a comprehensive and systematic study of the causative factors behind the prevalence of a high child marriage rate in Bihar and critically analyse, examine why, despite the implementation of the Prohibition of Child Marriage Act, 2006, the state remains unable to prevent this socially harmful practice.

The present research article is based on an economic analysis of the abovementioned law and its socio-economic impact in the state of Bihar. The author has explored and attempted to find out

- Whether criminalising child marriage through the PCMA Act, 2006 is an efficient and effective solution to handle the problem of child marriage.
- Whether the existing legislation that deals with issues of child marriage is economically efficient?

The present study highlights the mixed trend of increase as well as decrease in the child marriage, particularly during the pandemic in Bihar. The article also analyses the impact of Prohibition of Child Marriage Act, 2006 on society in general and identifies the socio-economic and cultural factors responsible for the prevalence of child marriage in the state of Bihar.

Economic analysis of law plays a very important role in the field of crime and punishment. It is based on one of the most important concepts of economics, i.e., rationality. The concept of rationality is based on the idea of maximizing one's own utility in a given situation. A rational person is capable of maximising his satisfaction. It implies that he is busy calculating the cost and the benefits attached to the different alternatives available to him. The decision maker, *i.e.,* the rational individual, has a reason and justification for his choice, and so there is no wild or inexplicable choice of object by him (Hix, 1994). Because of this understanding, the rational choice theory becomes very attractive, convincing, and reasonable for scholars to apply in other disciplines as well, where choice making is important. In fact, it is the central idea to the economic analysis of crime and punishment as well. The main reason could be economic theory being complete in explaining coherence in decision-making by an individual. Legal decisions can result in market like choices, and an individual is capable of evaluating these choices (Ulen, 1999). While committing a crime, a criminal calculates the expected social, economic, psychological and even legal cost attached to the crime. If he finds that the gain from committing crime is far more than the above cost, he intentionally commits crime. The

above economic considerations help the individual to engage in criminal behaviour *i.e.,* when he finds that the rewards attached to the crime outweigh the existing risks, he is inclined to commit crime. The present study uses economic analysis of the law on the Prohibition of Child Marriage Act, 2006, and uses microeconomic tools like rationality, cost benefit analysis, and Pareto efficiency criteria to examine and test the efficiency and efficacy of the law. By offering a thorough viewpoint based on the above analysis, the research aims to provide suggestions and recommendations to the policymakers as well as the state government of Bihar for making the current legislation more effective and efficient in curbing child marriage.

2. Research Design And Methodology

The present research is based on the secondary data available from the National Family Health Survey-4 (NFHS) and NFHS-5, the Census of India, and Economic survey of Bihar. It uses both qualitative and quantitative analysis and descriptive methods to understand the various socio-economic facets of child marriages. The use of descriptive and exploratory studies helped the author in yielding stimulative insights into the relationship between individual behaviour and social practices. The state of Bihar is administratively divided into nine divisions namely, Patna, Tirhut, Saran, Darbhanga, Kosi, Purnea, Bhagalpur, Munger and Magadh. The researcher has selected one district from each division with an aim to gather the facts, figures and insights needed for a comprehensive understanding of the child marriage incidents in the state. Accordingly, the nine districts from each division of Bihar namely East Champaran, Madhubani, Supaul, Kishanganj, Bhagalpur, Jamui, Jehanabad, Rohtas and Saran were selected for the study.

In a table given below, the percentage of child marriage among women below 18 years in the nine districts of the state of Bihar is taken for addressing this issue. (Refer Table 1). The data is collected from the NFHS-5 and NFHS-4 for a comparison. A comparative analysis shows that out of these 9 districts, 3 districts are high incidence districts namely East Champaran, Kishanganj and Bhagalpur showing an increasing trend in the cases of child marriage, whereas 5 districts namely Madhubani, Supaul, Jamui, Rohatas and Saran show a declining tendency of child marriage incidents. Jehanabad districts do not show any significant improvement and there is just a marginal fall in the rate of child marriage in recent times.

Districts	2019-20 (+-5)	2015-16 (NFHS-4)
East Champaran	**49.2**	44.1
Madhubani	39.2	42.7
Supaul,	55.9	60.8
Kishanganj,	**36.6**	25.4
Jamui,	51.9	60.2
Jehanabad	41.6	42.6
Rohtas	30.3	38.3
Bhagalpur	**42.4**	29.7
Saran	26.2	30.0

Table 1 Percentage of Women age 20-24 married before 18 years in Bihar

Source: National Family Health Survey, India (2019-20)

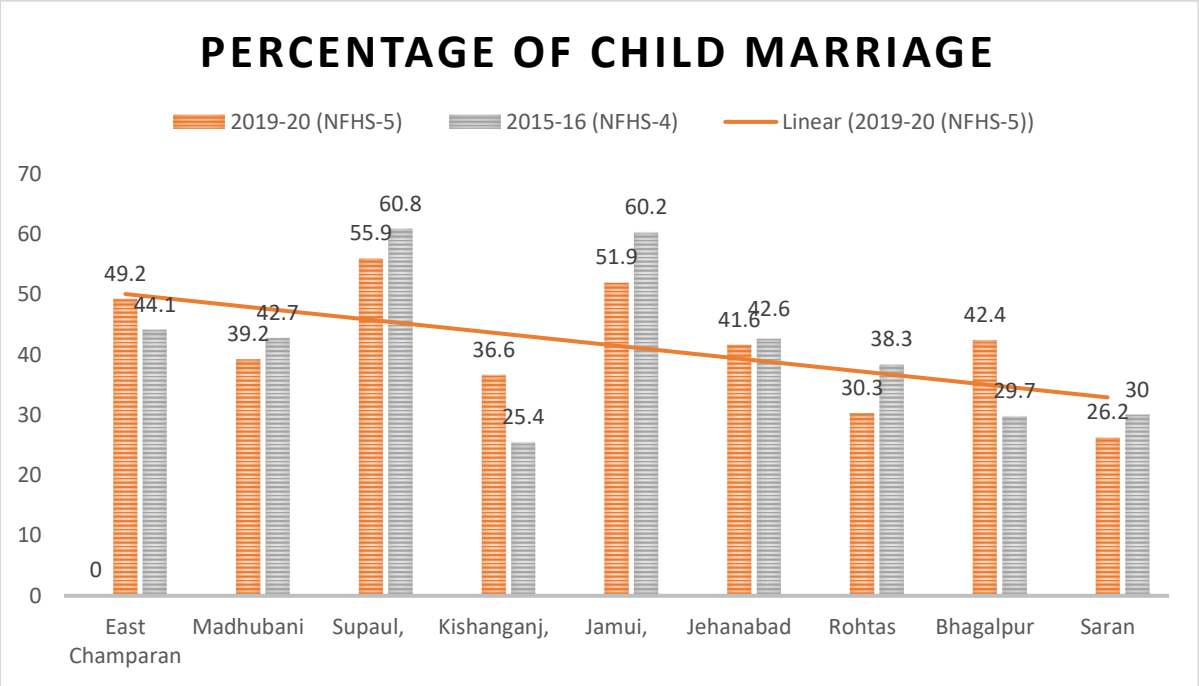


Chart 1 Percentage of Child Marriage

Source: National Family Health Survey, India (2019-20)

These data align with the findings of the other studies which have documented comparable patterns in the incidence of child marriage in the state of Bihar. Taking serious note of the pervasive incidents of child marriage, the government of Bihar issued a directive on July 28,

2022, stating village head (Mukhiya) and ward member will be held responsible for the forbidden act of child marriage in a particular locality, which would result in their termination from the post. The Panchayati Raj department of the state government of Bihar, ordered all the district collectors to strictly enforce the Prohibition of Child Marriage Act, 2006 (The Indian Express, 2022).

The NFHS 5, confirms that the child marriage exhibits a conflicting pattern in the state of Bihar with a deep-rooted socio-economic disparity. A report on child marriage in Bihar by UNFPA, based on the key insights from NFHS-5 (2019-21) also highlights the closeness of child marriage with poverty (UNFPA, 2022). Accordingly, girls with no education or below primary level education were more likely to experience child marriage. The report further indicates that, in terms of wealth index, child marriage displays variations across income groups. It indicates that 54% of the girls within the lowest income quintile are married before reaching the legal age of marriage as compared to only 9% of girls in the highest quintile who marry before the age 18 (UNFPA, 2022).

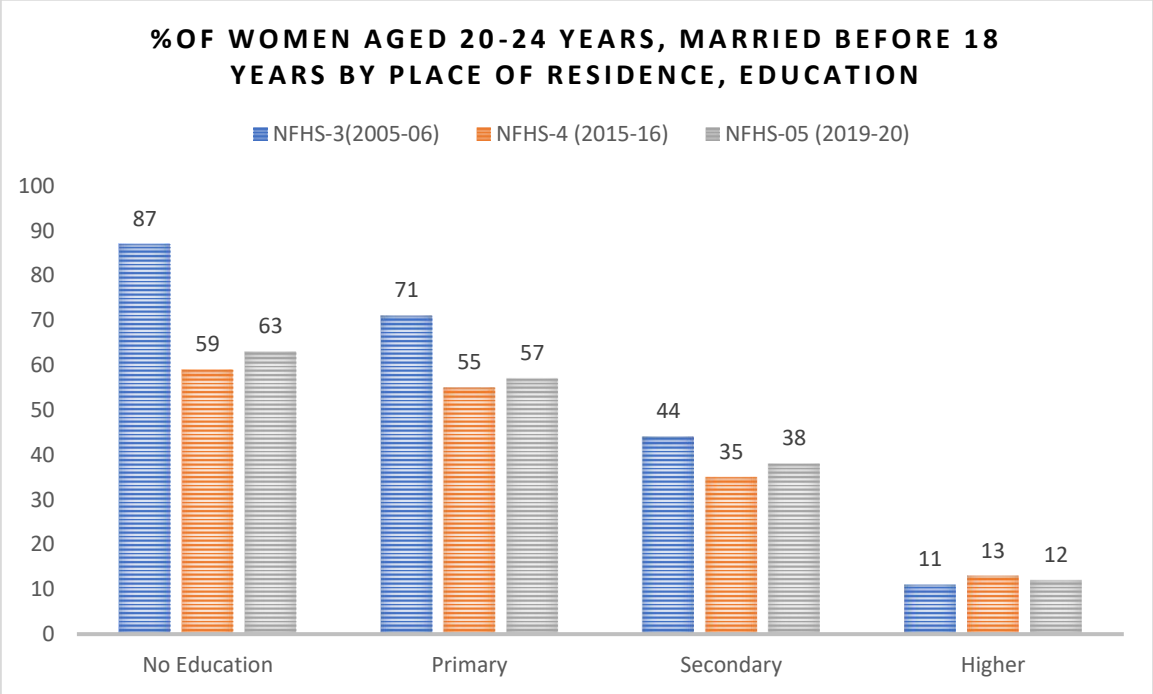


Chart 2 Percentage of women married before 18

Source: UNFPA, 2022. Analytical Paper Series1A

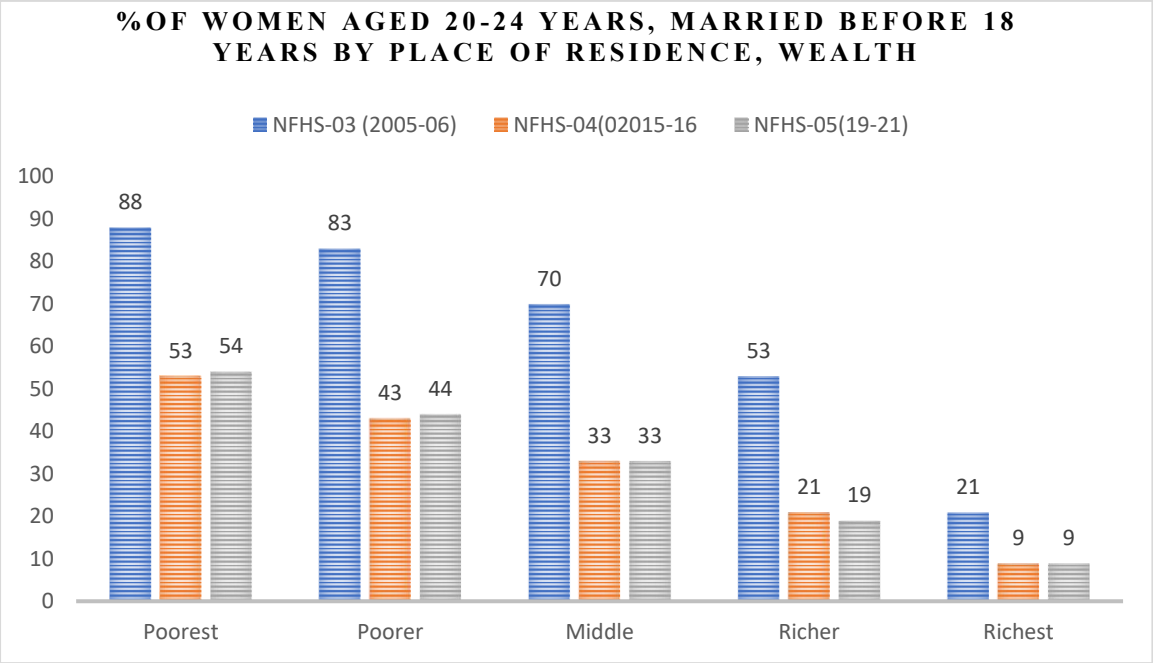


Chart 3 Percentage of women married before 18 years by place of residence, wealth

Source: UNFPA, 2022. Analytical Paper Series 1A

3. FACTORS RESPONSIBLE FOR SPIKE IN CHILD MARRIAGE IN HIGH INCIDENT DISTRICTS

Although there are specific legislations related to the legal age of marriage, their effectiveness in curbing the practice of child marriage remains limited. Particularly in Bihar, child marriages continue to be widespread and therefore, it is important to explore the direct and indirect socio-economic determinants influencing the occurrence of child marriage. The combination of social and economic variables like a child's education, parents' education, income level, religion, caste, social customs, and tradition are responsible for the prevalence of child marriage in these regions of Bihar. Moreover, 'lesser dowry for younger girls' is a significant contributing factor to child marriages in the state. The tendency to solemnise the marriage of a girl at an early age increases manyfold if there are more than one daughter in the family. However, what is more interesting is that poverty is not the main driving force behind child marriage. Even in some affluent families, the practice of child marriage continues because of parents' inability to challenge customs or cultural practices. The social norm of marrying a girl child early is considered a healthy practice and is internalised by parents. It is worth mentioning here that in a research study conducted by the CRY (Child Rights and You) it was revealed that majority of the parents in India were aware that child marriage is prohibited but very few of them were aware about the minimum legal age for marriage (CRY, 2021). A study done by

UNFPA on child marriages in Bihar highlights the strong link between education and delayed marriage. Based on the regression analysis the study showed that on every additional year of raising a girl's education, the age of marriage increased by 0.19 years (UNFPA, 2022). To put it differently, in order to raise the age at marriage of women in the state of Bihar, there has to be increase in the number of years of a girl's education by minimum five years (UNFPA, 2022). While the state government of Bihar has several schemes offering support to the girl child, like Mukhamantri Kanya Suraksha Yojana (MKSY) and Mukhyamantri Kanya Utthan Yojana (MKUY), providing financial assistance to supporting education at various stages of life of a girl child, the child marriage continues to prevail. The higher incidences of child marriage can be attributed to lack of public awareness and knowledge about these government policies and schemes in Bihar.

4. Economic Analysis Of PCM Act, 2006: Untying The Knots Between Law And Economics Based On The Application Of Economic Model Of Crime & Punishment And Pareto Efficiency

Nobel laureate Gary Stanley Beker in his famous article "Crime and Punishment: An Economic Approach (Becker, 1968)" says that *"crime" is an economically important activity or "industry," notwithstanding the almost total neglect by economists."* Most of the economists assumes that criminals are rational human beings and their decision to commit crime is based on cost-benefit analysis of the alternatives available to them. On that basis one can understand that committing crime is immoral but not an inefficient decision. If a theft of few dollars makes the thief richer and the other person from whom it is stolen poorer by few dollars, the total wealth of society still remains unchanged. However, theft can become economically inefficient if most of the productive resources of society are diverted from increasing investment, production and economic growth to the business of stealing (Becker, 1968). In that case, the victim's loss becomes a net social loss which of course results in an equation where:

i.) Social cost of theft > amount stolen by thief (if theft results in additional costs like defensive precautions by potential victims) and

ii.) Thief's net gain will be > social cost (if thieves become more skilful and capable)

However, this understanding can also have an interesting interpretation when theft is considered inefficient and illegal. But more importantly, in a legal system punishment can also become inefficient as it not only affects offenders but also other members of society. Punishments involve huge cost (imprisonment expenditures, supervisory, food, fine

collection cost, detention cost etc.) Therefore, the total social cost of punishments becomes higher,

i.) If more money is spent to prevent just a few dollars theft and

ii.) If reducing theft to the negligible level costs more to the state.

This simple explanation raises several issues, both practically as well as theoretically. Practically because it is unclear if high social cost of punishment is capable of deterring/discouraging crime. If affirmative, then by how much? Theoretically, punishments itself can be inefficient for the reasons like:

i.) Catching criminals is costly

ii.) Criminal's loss in the form of imprisonment does not result in net gain of anybody

iii.) Society has to pay for the jail

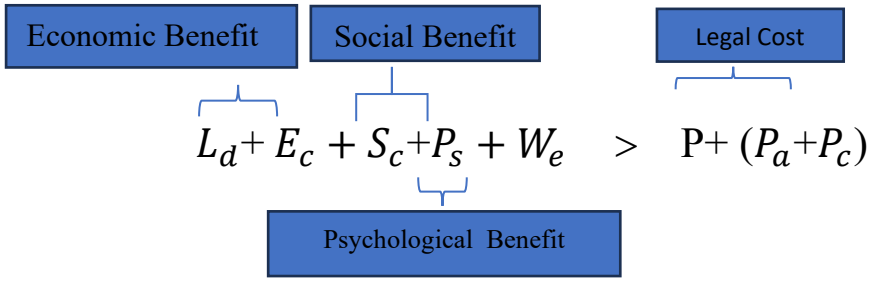
Before extending the same model to the Prohibition of Child Marriage Act 2006, it is important to highlight the actual situation related to child marriage in the state of Bihar. According to the report of International Centre for Research on Women (ICRW) on Empowering Girls to End Child Marriage, Bihar stands with the highest sustained level of child marriage at 60%, way above than the national average of 47% (DNA, 2015). In a study conducted by Kailash Satyarthi Children's Foundation in 2021, there was a 5% increase in the total number of crimes committed against children from 6,591 in the year 2020 to 6,894 in 2021 respectively, however, there was a staggering 160% increase in the number of victims of child marriage from 5 in 2020 to 13 in 2021 (Satyarthi, 2022). In contrast, during the same period, the national average increase of victims of child marriage increased by 34% from 792 victims in 2020 to 1050 cases in 2021 (Satyarthi, 2022). The numbers may though seem unappalling but the incident of child marriage prevails and it remains largely unreported because of poor legal enforcement and reluctance to challenge existing social norm in Bihar.

On the basis of cost-benefit analysis of crime explained above, child marriage becomes economically inefficient if it is adversely affecting the overall welfare of the children in the form of their physical, mental and emotional sufferings. The child victim's loss will become a net social loss if the practice of child marriage continues and the social cost of child marriage remains insignificant. The equation can be explained as

i.) **Social cost of child marriage > social benefit of child marriage** (if enforcement and the severity of the punishment are complemented and supported by society, and prohibition law expressly criminalise child marriages.)

ii.) **Social gain/benefit of child marriage will be > social cost of child marriage** (if legal enforcement is weak, poor families can easily reduce the economic burden of raising a girl child, early marriage reduces marriage cost in the form of dowry and continuance of tradition and customs believing in early marriage etc resulting in more social benefit derived by solemnising child marriage.)

In other words, it can be expressed in the form of the following equation:



L_d refers to less Dowry

E_c refers to the economic cost of raising a girl child and the economic liability of a girl child

S_c refers to the benefits of following societal customs and norms of solemnising child marriage and saving money on marriage

P_s refers to the intangible psychological benefits of upholding women's honour by marrying them before they reach puberty, thereby reducing the chances of women related crime like rape and other offences and the cost associated with it.

W_e refers to weak enforcement of prohibition law

P refers to the economic cost of punishment under the law for solemnising a child marriage

P_a refers to probability of arrest and

P_c probability of conviction

That is, in the above situation, a society would always prefer to choose, exercise and continue solemnising child marriage practices irrespective of the law prohibiting such acts. On the basis of the above cost-benefit analysis, it is evident that, if the benefits (economic, social and psychological together) of child marriage are higher than the opportunity cost of getting arrested and convicted, the PCM Act, 2006 would be economically inefficient legislation to deter crime and social evil like child marriage.

It is significant to analyse the specific provision of the Prohibition of Child Marriage Act, 2006, at this juncture. The punishment prescribed under Sec. 10 of the PCM Act, 2006 for

solemnising a child marriage and promoting or permitting solemnisation of child marriage does not seem very strict and therefore lacks deterrent effect (PMCA Act, 2006). Section 10 of the Act provides for the punishment of rigorous imprisonment extending up to two years and fine up to one lakh rupees only, for any person who performs, conducts, directs or abets any child marriage, unless he proves that he had reasons to believe that the marriage was not a child marriage. Furthermore, the absence of birth certificates in the rural areas act as a technical challenge in verifying age, which easily undermines the effectiveness of the law and reduces the social cost of engaging in child marriage.

Though Sec. 15 of the existing legislation considers the offence to be cognizable and non-bailable, the conviction rate is highly insignificant to prevent the offence (Sharma, 2022). According to Kailash Satyarthi Children's Foundation (KSCF), the conviction rate in child marriage cases in India is "extremely poor" at just 10%, with at least 96% of the cases still pending trial all over the country (Sharma, 2022). As per the research done by the Nobel Laureate's foundation (Satyarthi, 2022), the following table explains the current status of the number of convictions in India in matters related to child marriage

Year	No of Conviction
2019	12 (out of 1640)
2020	6 (out of 2,092)
2021	10 (out of 2865)

Table 2: No. of Conviction in India in matters related to Child Marriage

Source: Kailash Satyarthi Children's Foundation

Unfortunately, this represents the lowest conviction rate of all types of crimes committed against children. Child marriage in this state has not received the attention it deserves as a violation of human rights (Ali & Bharti, 2015).

a. The Pareto Efficiency

In a large and complex society like India, enacting or repealing a law to prohibit a social evil can make some people better off and some worse off. The cost-benefit approach of economic analysis of law, stems from 'Paretian Efficiency' criteria. In order to get a better finding in the above case, society's choice of whether or not to solemnise child marriage, should also be examined from the approach of Paretian criteria as well. Pareto efficiency is said to be

achieved when any change responsible for improvement in the well-being of some individuals does not reduce the well-being of others and therefore such activity should be undertaken. In the given situation, if the overall impact of the above law has to be examined, then it is important to consider its effects on different stakeholders involved:

b. Children (because the prohibition law aims to protect the children from the negative impacts of child marriage)
c. Families (dissuade the families from practising child marriage by imposing penalty and punishment on solemnising child marriage and thereby disrupting their old social and cultural practices)
d. Society (The law aims to improve the social, mental, physical, psychological, educational and economic well-being of the female child and thereby promoting gender equality.)

It is important to determine whether there is any possibility of 'Pareto improvement' with the implementation of above Law in the state of Bihar. If the existing law is capable of eliminating child marriage from the state of Bihar and thereby protects children from the negative consequences of early marriage, it makes them better off (in the long run, children's social, economic, physical, emotional and mental conditions improve). Society is benefitted from the reduced child marriages and improved health, education and economic outcomes. If no individual's economic condition is worsened, then the child marriage prohibition law can be considered a Pareto improvement.

However, in the present situation in the state of Bihar, based on data and analysis provided in the above segments, pareto improvement or even optimality seems to be a distant dream. The cultural and social traditions and practice related to child marriage is deep rooted and is capable of potentially making these families worse off if the law is strictly enforced. In fact, there are huge 'economic costs' involved, if the families are forced to adapt and adjust to new social condition. In the case of the state of Bihar, the existing cultural and social norms often conflict with the idea of economic efficiency. Besides, there are significant enforcement costs which varies across the state. Though, these conditions do not make the law inefficient in itself but makes the prohibition law less effective. Until and unless, education and awareness against the social practice of child marriage and related negative consequences are not spread and acknowledged, acceptance of the above law becomes difficult and families may find themselves in a worse-off situation. To achieve pareto efficient position, financial or economic support to the potentially affected families along with other alternative social

schemes and services have to be provided, so that the socio-economic benefits of raising a girl child can keep them in economically better-off condition.

A quick glance on the data provided by the Breakthrough campaign, which covered some 3,360 households in three districts of Bihar and Jharkhand for the survey testifies the above arguments (Jenkins, 2013). As per the findings of the survey, parents are aware of the ill effects of child marriage, but still, they prefer to practice this social evil because of huge social pressure and tradition. In the reports of the survey, it was found that 88.43% of the parents agree that child marriage results in ill-health and almost 76.56% accepted that it disrupts a child's education as well (Jenkins, 2013).

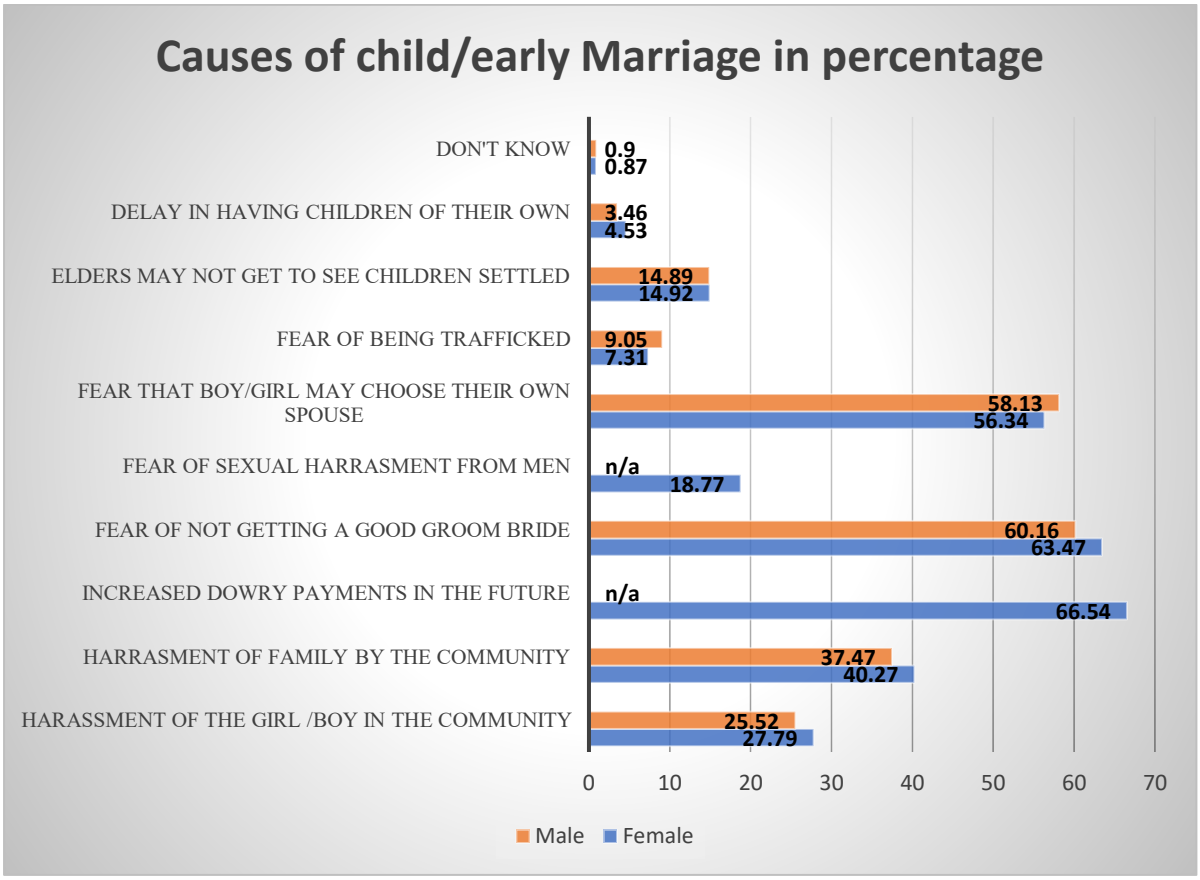


Chart 4 Causes of child marriage

Source: Breakthrough survey with Catalyst Management Services, 2012

The efficiency and effective implementation of the existing law, the PCM Act, 2006, much depends upon on the consistency and enforcement of other laws that define a child. Presently, in the Juvenile Justice (Care and Protection of Children) Act, 2000, a "juvenile" or "child" means a person who has not completed eighteen year of age, whereas as the Child Labour (Prohibition and Regulation) Amendment Act, 2016 defines a child as a person who has not

completed his fourteenth year of age or such as may be specified in the Right of Children to free and Compulsory Education Act, 2009, whichever is more. While the Prohibition of Child Marriage Act, 2006, defines a child as a person who, if a male, has not completed twenty-one years of age and if a female, has not completed eighteen years of age. The above contradiction in defining "child" makes the legal enforcement of the above statue very weak and less effective. Another important issue related to the PCM Act, 2006 is its conflict with the personal laws. The coexistence of multiple laws within the country complicates this problem (Scolaro et al, 2015). Though the PCM Act, 2006 was implemented with a purpose of uniform applicability to all religions, as a secular law, it has failed to supersede personal laws like the Muslim Personal Law, Jewish Personal Law, and even the Indian Christian Marriage Act. This complex legal structure highlights the existing contradictions, which can jeopardize children's ability to seek and obtain legal protection (Scolaro et al, 2015).

Justice A.K. Sikri's remark at the release of data related to child marriage in June 2017 validates the issue of discrepancy, inconsistency and conflict between PCM Act 2006 and some personal laws. In the words of Justice Sikri,

> "*Prevention of Child Marriage Act is a secular law. But the Muslim personal law says once a girl attains puberty, she is ready for marriage. Nowadays, a girl attains puberty at the age of 11,"* adding*, "child marriage was one of those laws that had failed to deliver because of non-acceptance by society*."

In recent times, the various courts, while deliberating upon the legality of child marriage, have upheld the child marriage. In a case *Yusuf Ibrahim Mohammed Lokhat v. State of Gujarat* (2014) the honourable High Court of Gujarat, upheld the child marriage, since it was keeping with the Muslim Personal Law. Likewise, in *Jitendra Kumar Sharma v. State* (2010) the Delhi High Court upheld the child marriage citing that the marriage must be viewed from the perspective of Hindu marriage and therefore is not void under it as long as Section 12 of PCM Act, 2006, is not violated. Yet the Delhi high court's three judge division bench in, *Court on its own Motion (Lajja Devi) v. State* (2012) held that

> "*This marriage, as per our discussion above, is voidable. Since she has not attained majority and is residing with her parents, this arrangement would continue. When she becomes major it would be for her to exercise her right under the PCM Act if she so desires and future course of action would depend thereon."*

Recently while delivering a 141-page judgement on a PIL, the hon'ble Supreme Court bench comprising of the then Chief Justice D Y Chandrachud and Justice J B Pardiwala and Justice Manoj Misra, highlighted the persistence of child marriage on an alarming scale even after 18 years of enactment of the PCMA, 2006 (Times of India, 2024). The bench said that

> *"The issue of the interface of personal laws with the prohibition of child marriage under PCMA has been subject of some confusion."*

When closely observed, it is seen that in the judgments related to the matter of child marriage, the High Courts of various states have not used the PCM Act 2006, to supersede personal laws, and therefore, such marriages are not declared void and continue to remain legal unless and until the guardian of the minor or minor after attaining maturity files an application for annulment of marriage. Interestingly, minors who are subjected to child marriage are often unaware of their rights, less educated, economically dependent and therefore chances of annulment of such marriages are rare and mostly nil. Therefore, the PCM Act, 2006 has to a very great extent failed to bring favourable change in society, and the practice of child marriage is still rampant. The abovementioned Act, to a certain extent, has created a great deal of misunderstanding and confusion by considering marriages are voidable at the discretion of parties involved and therefore marriages are valid until court nullifies it (Ganguly, 2015).

5. FINDINGS OF THE ANALYSIS

In a general parlance, a regulation is effective as well as efficient if reasonable individuals behave in a way that improves overall society's welfare. A close and careful examination of the above issue clearly reveals the following inferences about that the Prohibition of the Child Marriage Act, 2006.

- The PCMA, 2006, is not an efficient law and has a mixed impact in curbing the practice of child marriage in the state of Bihar because it does not increase the social cost of child marriage in the form of criminalising child marriage or in terms of punishment prescribed under the provisions of act.
- The social benefits associated with child marriage for the poor, populous, patriarchal society in the state of Bihar is higher than the social cost of child marriage therefore, child marriage is not considered a crime in the state.
- The coexistence of multiple laws within the country defining 'child' makes the legal enforcement of the PCM Act, 2006 very weak and less effective.

- The PCM Act, 2006 as a secular law, has failed to supersede personal laws like the Muslim Personal Law, Jewish Personal Law, and even the Indian Christian Marriage Act.
- The existing social schemes of the state of Bihar for the girl child are not demand-driven and the benefits of the scheme are not availed by the intended beneficiaries making these schemes less effective.
- In the absence of compulsory registration of marriages, there is limited deterring effect on child marriage.
- In the absence of birth certificates in the rural areas, verifying a child's age becomes difficult, thereby undermines the effectiveness of the law and reducing the social cost of engaging in child marriage.
- The government of Bihar till date has no focussed intervention in force to curb high rate of child marriage.

6. CONCLUSION

At this juncture, when countries across the globe are committed to ending child marriage by 2030, India and more importantly, the state of Bihar has inadequately addressed the root cause of child marriage. Persistent gender inequality, social and economic insecurity are majorly responsible for social evils like child marriage to prevail. To understand and assess the enormity of the situation, one can refer to the data provided by *Girls Not Bride* a global partnership of more than 1600 civil society organisations from over 100 countries working collectively towards ending child marriage (Girls Not Brides, 2025). According to it

> "*…every year 12 million girls are married before the age of 18 i.e., 23 girls every minute or 1 girl in every 2 second*."

The existing legislation, that is, the PMC Act, 2006 will be more effective if there is an equal focus of the government on empowering young girls and challenging existing gender inequality. Empowering girls through education and free access to education can play a very important role in curbing this social evil as it increases the social benefits of complying with the prohibition law. Moreover, improving the quality of secondary and higher education can provide more life-options for girls which will not only result in delayed marriage but will also

enhance a girl's social and economic opportunities, thereby strengthening the incentive for families to comply with the law.

Offence like child marriage should be treated as an offence affecting the health and material welfare of society as a whole and not just individual victims. In fact, social opposition from the community itself can control and eliminate this evil. A society's response to the issue of child marriage can play a vital role in resisting and reporting crime. Inclusive economic growth including all the marginalised sections of the society can tackle the issue of child marriage to a great extent. It's high time to address internalised inequalities, harmful practices, and gender issues in society by involving all the stakeholders of the society including men and boys. Their involvement is important as they are the decision makers in familial and societal structures and their active participation can go a long way in achieving the objective toward gender equality. A multi-sectoral approach capable of highlighting the challenges existing in education, health, social welfare and legal enforcement is the need of the hour. This approach will help in a better understanding and effective implementation of the Prohibition of Child Marriage Act, 2006. Policymakers can play a very important role in addressing the issue of high-incidence districts through microplanning and the implementation of specially designed programmes aiming to change the social norms and mindsets of the people. The state government of Bihar must undertake several other initiatives to improve the status of a girl child in order to discourage child marriages. The recent decision of the government to implement a focussed intervention to child marriage in the form of a state level 'task force' to monitor the actions taken against child marriage is a commendable step (PTI, 2025). While JEEViKA, a state level women's socio-economic empowerment programme plays important role in dealing with this issue, more such organisations and their comprehensive approach is required to combat this challenge. The state of Bihar needs many other civil society organisations and not just confining to international agencies like UNFPA, but other development partners to formulate a multidisciplinary action plan. While Sec 16 of the Prohibition of Child Marriage Act (PCMA, 2006) authorises the state government to appoint an officer or officers as the 'Child Marriage Prohibition Officers' known as 'CMPO', the state government has assigned this task to DMs and SDMs at district and subdivision levels respectively. It is only recently that the state government decided to develop and ensure an effective coordination through Special Juvenile Police Unit (SJPU) and Child Marriage Prohibition Officers. The Act authorises the CPMO's to prevent solemnising of child marriages by taking actions as they may deem fit, collect evidence for the effective prosecution of persons contravening the provisions of the Act. These

dedicated officers are also given the responsibility of counselling, creating awareness about the ill effects associated to child marriage.

Here it is worthwhile to mention that poverty often exacerbates the practice of child marriage and therefore, to some extent the relevance of 'Samoohik-vivah' or community wedding, can solve the economic issue related to child marriage to a very great extent. In the state of Rajasthan, many villages signed the petition to end child marriage, while extensive community-level measures were undertaken to raise awareness of the law criminalizing child marriage. As a part of 'Sajha Abhiyan' collaborative efforts of multiple stakeholders were taken to address this issue comprehensively (UNFPA, n.d.).

It is imperative to understand that child marriage is not just a legal issue but also an economic and social issue. A close and comprehensive understanding of social, cultural, economic, and legal aspects would make the law more progressive and pragmatic in its approach. An effective enforcement of the Prohibition of Child Marriage Act, 2006 is possible if it is implemented strategically and the with the requisite multi-sectoral approach to deal with the issue of child marriage in the state of Bihar.

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