

Exploring formal & de facto power in regulatory space

Network analysis of regulatory arrangement in India's
electricity sector

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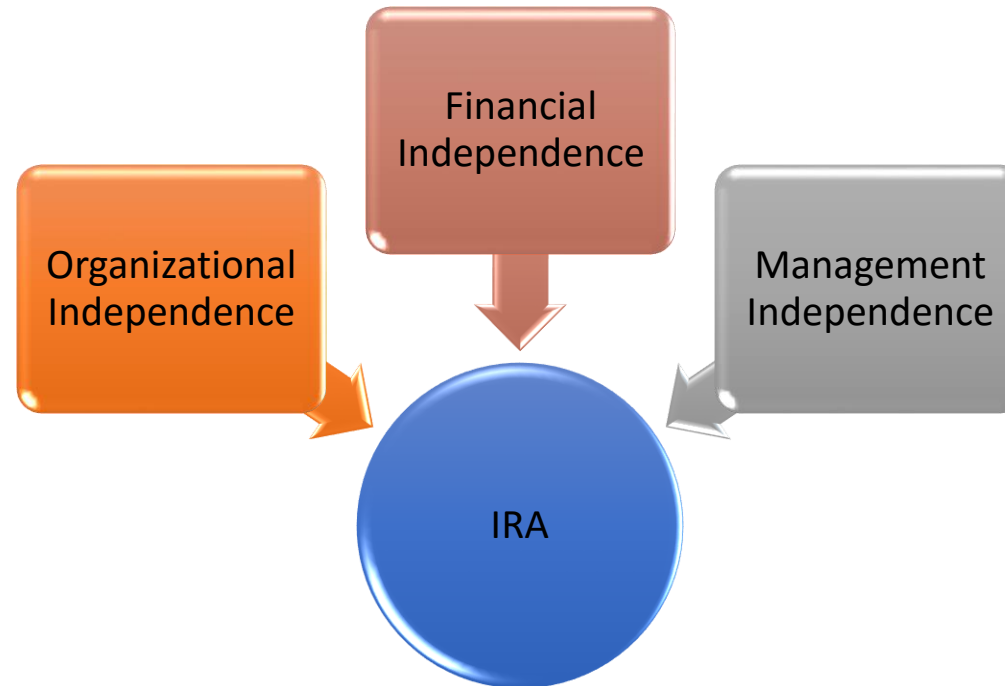
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1. Introduction

- Independent Regulatory Agencies (IRAs) – During 1990's attracted scholarly attention
- What is an IRA?



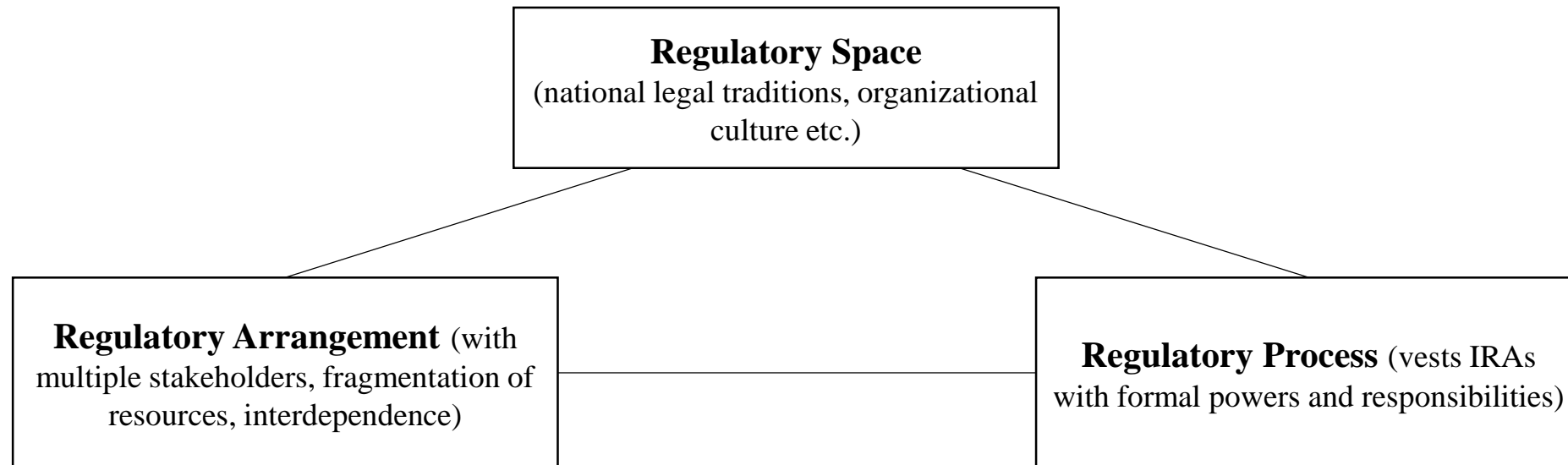
- Key characteristic – **Independence in decision making**

1. Introduction

- Viewed as best practice measure to alleviate institutional problems of emerging economies
- Conditionalities imposed by the World Bank/IMF/WTO etc. led to diffusion of IRAs to Latin America, Africa, Asia
- IRAs embedded in pre-existing institutional settings (Jordana & Sancho 2004)
 - Adjusted to particular political and sectoral context or emulated as it is due to isomorphic pressures (Bianculli, Fernandez-i-Marin, Jordana 2013)
- Formal delegation of regulatory responsibilities, autonomy and decision-making powers to IRAs
- BUT (a) formal legal authority isn't indicative of actual authority ; (b) fragmentation of resources (information, wealth, human resources) among the stakeholders (Scott 2001)
- Complex set of interaction between organizations in the regulatory process (Aubin & Verhoest 2014, Jordana & Sancho 2004)

2. Objective

- Interaction between organizations create a macro-unit i.e. ‘Regulatory Arrangement’
- Regulatory Arrangement – Refers to the complex web of actors whose intervention and interactions sustain the regulatory process in a given policy field (Mathieu et. al 2016)



2. Objective

- **Objective - To measure dispersion of power in formal and de facto regulatory arrangement**
- **Relevance – will provide an insight into evolution of the institution of independent regulator and of sectoral regulatory governance**
- **Case – Indian Electricity Sector**
- **Why?**
 - Isomorphic pressures – IRA model transplanted without taking any cognizance of pre-existing institutional structures
 - To explore evolution of regulatory process over two decades
 - Absence of systematic research on regulatory functioning in infrastructure sector (Dubash 2017) esp. after two decades of existence

3. Literature Review

Literature on Regulation (How it should be)

- Organizational independence
- Management independence
- Financial Independence
- Unbundling of State Owned Electricity Boards
- Increasing Privatization
- Civil Society Participation
- Depoliticization of tariff-setting and other regulatory decisions

Literature from India (How it is)

- Establishment of organizationally separate ERCs (1996 – 2008)
- Management independence but personnel on deputation (continues to be & feel like a govt employee); understaffed
- Financially independent by raising their own revenues
- Unbundled (timespan 1998 to 2012)
- Privatization in Gen & Trans but not in distribution
- Weak civil society participation except MH and Delhi
- Strong regulatory procedure involving all stakeholders
- Limited progress on depoliticization of tariff

Research Question

Decades after institutional innovation in regulation of a sector, how does the distribution of power in de facto regulatory arrangement stand vis-à-vis formal regulatory arrangement?

Hypothesis

H: Even though in the formal regulatory arrangement more power will be vested with the independent regulator, due to continued politicization of electricity sector in the de facto regulatory arrangement maximum power would reside either with the State Govt. or State Owned Enterprise (SOE)

Note – Power sector in India is under concurrent list whereby both Central and State govts can make laws. As a result each state has its own regulatory commission. This study is confined to the State of Maharashtra

4. Conceptual Framework & Methodology

Conceptual Framework

- **Regulatory Space:** Regulatory space is defined by the “range of regulatory issues subject to public decision” (Hancher & Moran 1998)
- departure from the conventional hierarchical top-down view on power and influence.
- Regulatory space available for occupation + unevenly divided b/w actors
- resources are fragmented within the regulatory space between actors, so will be the influence
- Prompts one to look at specifics such as national legal tradition, Organizational structure, interdependence etc.

4. Conceptual Framework & Methodology

Methodology

formal regulatory arrangement

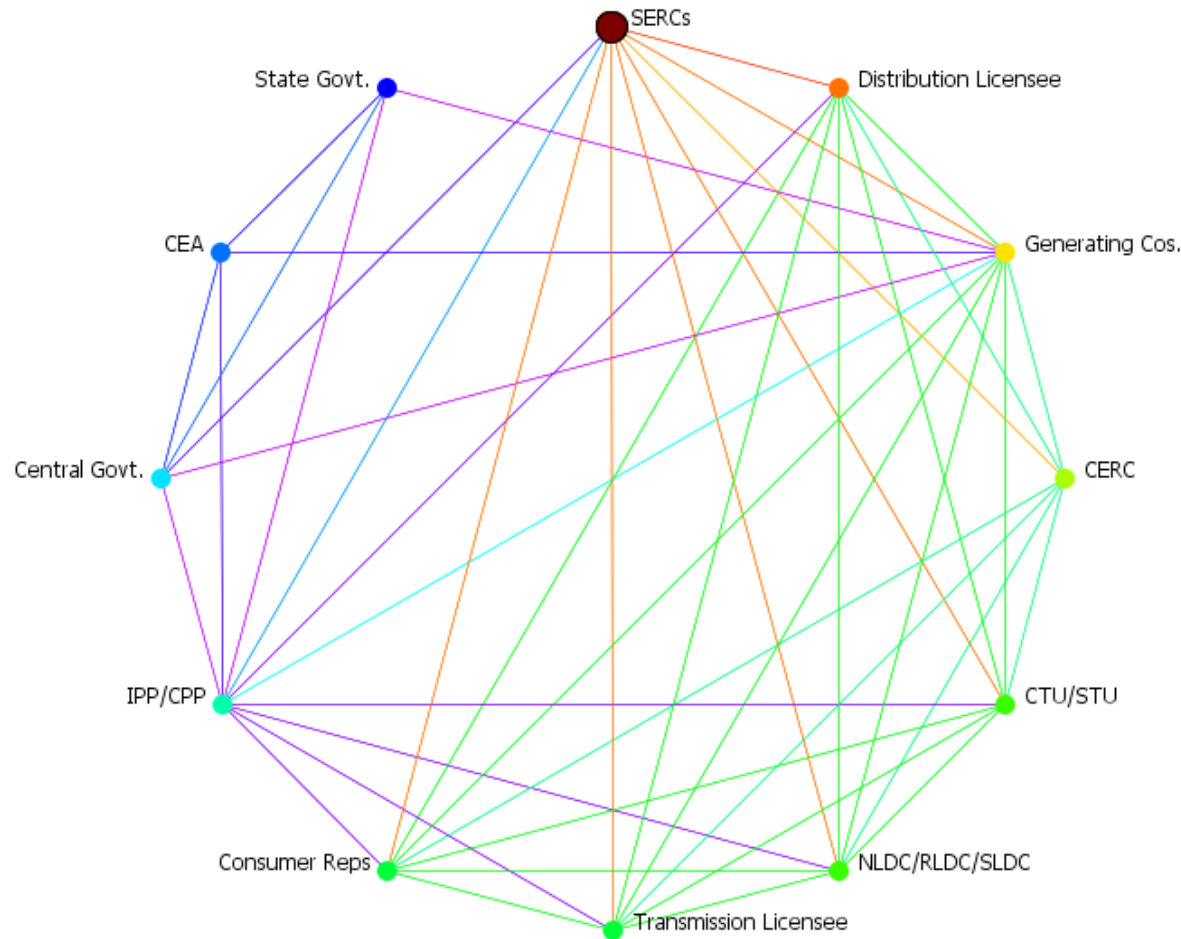
- Methodology of indices (Mathieu et al 2016)
- Data collected from Primary (Electricity Act, 2003) & Secondary legislations
- Scores awarded to actors on a scale of 0 to 1 based on their involvement regulatory decision-making
- Matrix of Actors X Regulatory Issues
- Eigenvector Centrality using ORA software

de facto regulatory arrangement

- Survey (using questionnaire) - actors in Maharashtra Power sector
- Rate influence of other actors (as of 2018) on a scale of 1 to 5 in two key decision-making areas i.e. Policy Making and Tariff determination (Attributed Influence, Dur 2008)
- Bipartite network - Actors X Regulatory Issues
- Eigenvector Centrality using ORA software

5. Findings (formal regulatory arrangement)

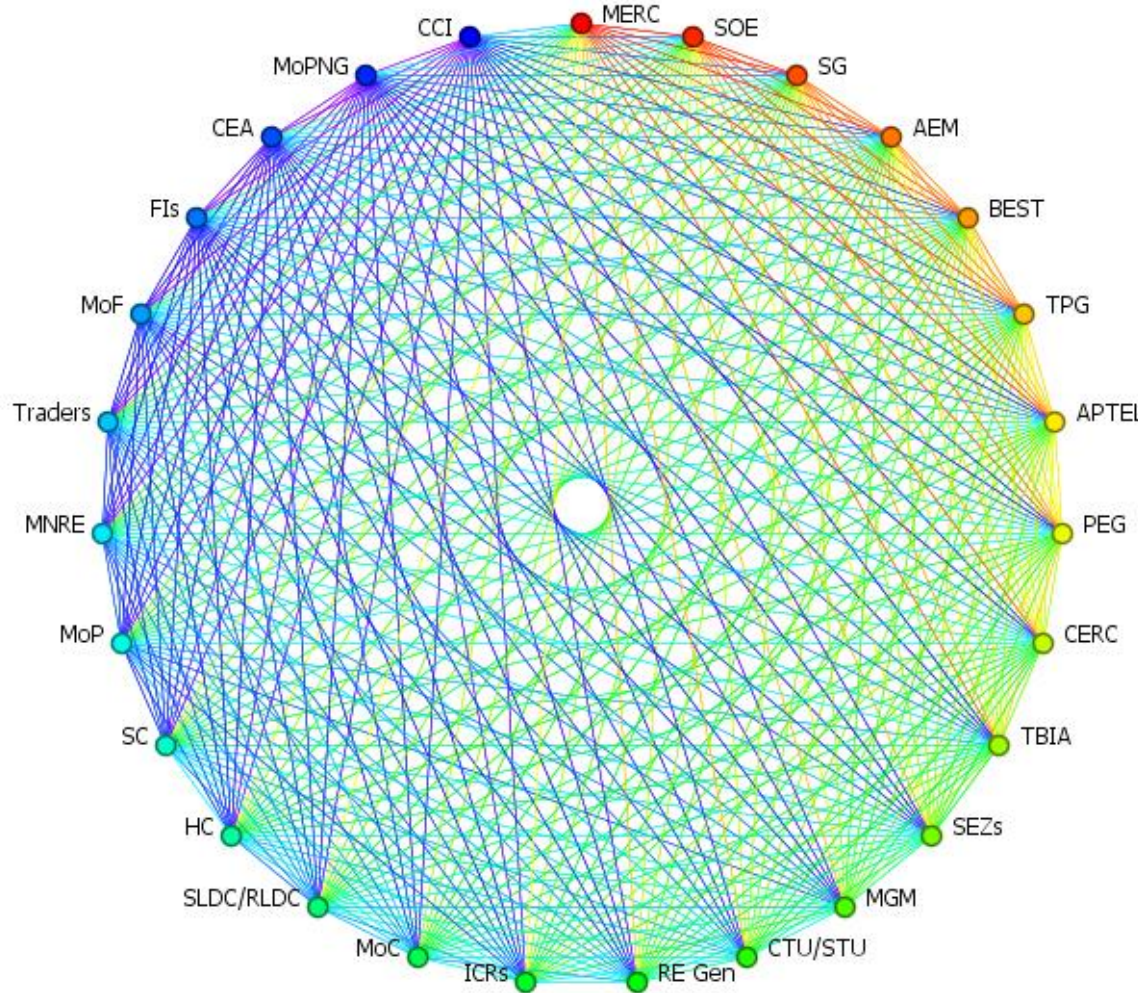
Formal Regulatory Arrangement - May



Rank	Agent	Eigenvector Value
1	SERCs (IRA)	0.966
2	Distribution Licensee	0.402
3	Generating Cos.	0.398
4	CERC (IRA)	0.390
5	CTU/STU	0.388
6	NLDC/RLDC/SLDC	0.388
7	Consumer Reps	0.379
8	Transmission Licensee	0.379
9	IPP/CPP	0.073
10	Central Govt.	0.019
11	CEA	0.009
12	State Govt.	0.004

5. Findings (de facto regulatory arrangement)

Tariff Influence network 30 May



Rank	Agent	Type	Eigenvec tor Value
1	MERC	State IRA	0.445
2	SOE	State Utility	0.397
3	SG	State govt.	0.372
4	AEM	Pvt. Utility	0.344
5	BEST	Local Authority	0.342
6	TPG	Pvt. Utility	0.339
7	APTEL	Appellate	0.332
8	PEG	Consumer rep.	0.325
9	CERC	Central IRA	0.304
10	TBIA	Consumer rep.	0.300
15	ICRs	Consumer rep.	0.245
16	MoC	Central Ministry	0.231
20	MoP	Central Ministry	0.200
21	MNRE	Central Ministry	0.198
25	CEA	Technical Authority	0.153
26	MoPNG	Central Ministry	0.129

6. Discussion & Conclusion

- More number of actors in de facto regulatory arrangement
- **State IRA has the highest eigenvector value in both, formal and de facto regulatory arrangement**
- Formally more power vested with State IRA, at de facto level it is shared between many actors
- Appellate authority finds a place in de facto regulatory arrangement
- Role of State govt. very limited in formal design, whereas at de facto level it yields more influence
- SOE ranked higher than State Govt.

6. Discussion & Conclusion

- Formal Regulatory Arrangement – IRA is the powerful actor
- de facto Regulatory Arrangement – comparatively lesser power with IRA but still is ranked the highest
- Maharashtra appears to be an exception vis-à-vis general findings from literature
- Probable reasons for deviation in case of Maharashtra:
 - Robust tariff procedure
 - Active civil society engagement
 - Exercise of autonomy by the regulator
 - Presence of multiple stakeholders i.e. private utility (G,T,D), State utility, consumer groups etc.

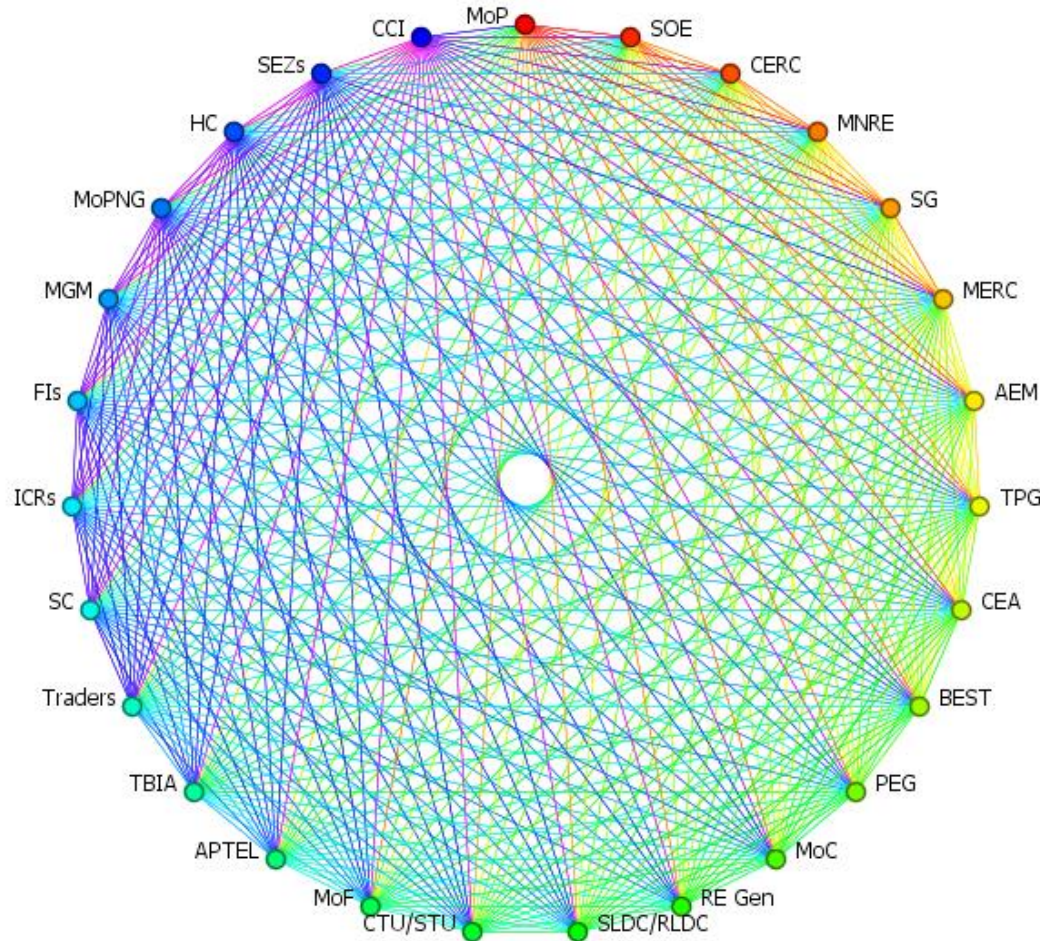
Thank You

Back up – 1 (List of respondents)

Organization	Category	Interviewee
Maharashtra Electricity Regulatory Commission	state regulator	Ex-chairman (2008-12)
Maharashtra Electricity Regulatory Commission	state regulator	Ex-chairman (2015-17); Secretary MERC (2003-05)
Maharashtra Electricity Regulatory Commission	State regulator	Director, MERC
Maharashtra Electricity Regulatory Commission	state regulator	Executive Director, MERC
Maharashtra Electricity Regulatory Commission/MSEDCL	State regulator + Utility	Secretary on deputation from SOE
Brihanmumbai Electric supply & Transport Undertaking (BEST)	Utility (local authority)	C.E. Regulatory
Maharashtra State Electricity Distribution Company Limited (MSEDCL)	Utility (SOE)	Add. Executive engg.
Tata Power Company Limited	Utility (Private)	Head (Platform services), ex-Head (Regulatory Affairs)
Adani Electricity Mumbai	Utility (Private)	COO
Adani Electricity Mumbai	Utility	General Manager
Mindspace SEZ	Utility	Head, Mindspace power division, SEZ
Nidar Power SEZ	Utility	Regulatory officer at SEZ, ex-regulatory officer MERC (10+ years at MERC)
Nidar Power SEZ	Utility	SEZ (ex-employee MSLDC)
Prayas Energy Group	Consumer rep	Group coordinator
Thane Belapur Industries Association	Consumer rep	Designated Consumer Representative
ABPS Infrastructure Advisory Pvt. Ltd.	Consultant/think tank	Director
Regulatory Assistance Project	Consultant/think tank	Principal & India Program Director
Regulatory Assistance Project	Consultant/think tank	Senior Advisor
Regulatory Assistance Project	Consultant/think tank	Associate
Ex-Chief Minister, Maharashtra	state govt	ex-CM of Maharashtra State

Back up – 2 (Policy Influence Network)

Policy Interaction network 30 May



Rank	Agent	Value
1	MoP	0.399
2	SOE	0.343
3	CERC	0.328
4	MNRE	0.328
5	SG	0.326
6	MERC	0.312
7	AEM	0.311
8	TPG	0.303
9	CEA	0.294
10	BEST	0.290
11	PEG	0.287
12	MoC	0.279
13	RE Gen	0.275
14	SLDC/RLDC	0.275
15	CTU/STU	0.269
16	MoF	0.267
17	APTEL	0.255
20	SC	0.215
24	MoPNG	0.200
26	SEZs	0.191
27	CCI	0.127