

THE LIVING DEAD: AN INVESTIGATION OF ELECTRICITY DISTRIBUTION COMPANIES IN PAKISTAN AS ZOMBIE COMPANIES

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ABSTRACT

NEPRA approved the Implementation Roadmap of Competitive Trading Bilateral Contracts Market (CTBCM) in November, 2020 to channelize competition in the power sector under power sector reforms. The financial statements of all 10 Distribution Companies (DISCOs) reveal their financial unviability to procure power without sovereign guarantees of government. This conclusion begs the question that even after reveling 20 years of monopoly, DISCOs have failed to establish themselves as a financially viable utility, would they be able to absorb competitive market regime? This study attempts to analyze whether DISCOs will continue as bleeding financially protected by government or will they participate in the competitive market efficiently.

Keywords: Reforms, DISCOs, Financial Viability, Performance, Zombies, ICR.

1. INTRODUCTION

The electricity distribution sector of Pakistan is currently being operated by K-Electric (KE), a private monopoly in the service area of Karachi while ten Distribution Companies (DISCOs) exercising monopoly in rest of Pakistan. DISCOs were spined-off from WAPDA when power sector reforms rolled out during late 1990s whereas KE was privatized in 2005. All 10 DISCOs and KE enjoy monopolistic rights guaranteed by “exclusivity” in their licenses issued by the sole electricity regulator, National Electric Power Regulatory Authority (NEPRA) during 2000s. As part of reforms, although NEPRA approved the Implementation Roadmap of Competitive Trading Bilateral Contracts Market (CTBCM) in November, 2020 to channelize competition in the power sector. Among various actions to be performed under the Implementation roadmap of CTBCM, a report on financial health assessment of DISCOs was conducted by Sustainable Energy for Pakistan (SEP) Project of USAID.

In a dramatic turn of events, the said assessment concluded that all ten DISCOs are financially unviable to procure power without sovereign guarantees of government. This conclusion begs the question that even after reveling 20 years of monopoly, DISCOs failed to establish themselves as a financially viable utility, would they be able to absorb competitive market regime that is inevitable considering the myriad of issues power sector currently faces? Using the analysis of Zombie Companies (companies with weak interest coverage ratio), a diagnostic can be made to settle that the DISCOs are most likely to continue as financially bleeding companies protected by government rather than participating in the competitive market to usher an era of efficiency for the stability starved power sector.

The table below gives a list of distribution companies with their exclusivity rights protected by respective licenses:

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DISCO	Term of License	Number of Consumers as of FY 2021-22
MEPCO	25.04.2002 to 24.04.2022	7.61 Million
LESCO	01.04.2002 to 31.03.2022	5.88 Million
FESCO	02.03.2002 to 01.03.2022	4.86 Million
GEPCO	23.04.2002 to 22.04.2022	4.15 Million
PESCO	30.04.2002 to 29.04.2022	4.03 Million
IESCO	02.11.2001 to 01.11.2021	3.48 Million
KE	21.07.2003. to 20.07.2023	3.40 Million
HESCO	23.04.2002 to 22.04.2022	1.19 Million
SEPCO	18.08.2011 to 17.08.2031	0.81 Million
QESCO	30.04.2002 to 29.04.2022	0.67 Million
TESCO	12.08.2013 to 11.08.2031	0.44 Million

Source: NEPRA

This paper analyzes the (i) concept of zombie companies and explores the englutting of Tariff Differential Subsidy (TDS) as possible indication of zombification in the power sector; (ii) calculates Interest Coverage Ratio (ICR) of Distribution Companies to diagnose traces of zombification; (iii) To further solidify the argument of guaranteed protection causing zombification, the study compares exclusivity provided to KE and privatization of both KE and PTCL to assess the effects of government mandated monopoly; (iv) discusses the results of ICR calculations, and (v) conclusion.

2. Review of Literature: The Apocalyptic Zombie Companies Summoning Zombification of Economy

Zombie Companies were initially referred to as weak Japanese firms supported by the Japanese banks during late 1990s crisis (Binh, Thuan, Ngana, & Suong, 2020). The banks financially supported such firms instead of allowing them to go bankrupt. Bank of International Settlements defines Zombie Company as a company having Interest Coverage Ratio (ICR) less than one for at least three consecutive years while the company is in business for at least 10 years (McGowan, Andrews, & Millot, 2017). ICR is the ratio of Earnings before Interest on tax (EBIT) relative to interest expense.

The issue of Zombie Companies was initially identified by (Caballero, Hoshi, & Kashyap, 2008) in Japanese companies, however, the indication of practices leading to zombification have been identified in UK (Papworth, 2013), Ireland (Fahy, 2010), Spain (Parada, 2010), Indonesia (Elazhari, Tampubolon, Siregar, Parinduri, & Prayoga, 2022) and China (Tan, Huang, & Woo, 2016).

Zombie Companies are debt-ridden and inefficient companies showcasing very low and even negative productivity. It means that a Zombie Company barely survives due to the continuous refinancing of its debt even after re-structuring and soft budget constraints and is financially unstable to cover its interest expenses with operating profit rather than repaying the principal amount.

It can be argued that though Zombie Companies are barely functioning, they have kept the jobs alive. But realistically, Zombie Companies create a Zombified Economy which rewards the unproductive and penalizes the productive by offering a perverse incentive as a result protecting nothing in the long run. These companies underperform but their debts are refinanced again and again under protective regime whereas productive firms have no easy access to credit i.e. hard budget constraints. When economies run out of easy money, Zombie Companies are the first ones to collapse while the productive companies are robbed of the chance to survive.

Zombification tends to halt economic expansion; under this regime, scarce resources are transferred from healthy companies and productive persons in the form of taxes or subsidies to incompetent and archaic business models. The survival of Zombie Companies on taxpayer's money is a huge impediment to productive growth and reduces the overall productivity in the economy. Zombie Companies are uncompetitive survivors that gulp market share while confining scarce resources that

should be available to risk taking productive entrepreneurs who come up with efficient productivity solutions. Ahearne & Shinada (2005) argued that companies that prevent market entry to impede competent and efficient firms wither economic development.

The access of Vietnamese state-owned-entities (SOEs) to credit from state owned commercial banks on preferential basis absorb 49% of investment while providing a minute share of new jobs. The borrowing of SOE crowds out private sector borrowing and hemorrhages capacity of private firms to expand. Irrelevant of the poor performance of SOEs, these entities, virtually, cannot go bankrupt; thus, inflating the Vietnamese government debt (Coxhead, 2016).

In mainstream literature, zombie companies have been primarily identified based on bank protection (Urionabarrenetxea, Garcia-Merino, San-Jose, & Retolaza, 2018). However, (Jiang, Li, & Song, 2017) studied China's Shanghai and Shenzhen A-share listed companies from 2009 to 2016 to examine the virtually unbankruptable feature of zombie companies. The authors found that these companies were able to survive breathlessly because of government support provided through subsidies and bank loans. The government was granting subsidies to these companies in hope of providing more jobs. However, the blood transfusions in the form of subsidies to these zombie companies could not boost up their operational efficiencies. The study concluded with the necessity and urgency of cleaning up zombie enterprises.

2.1. Englutting Tariff Differential Subsidy

The saga of power sector of Pakistan is nothing short of phantom reforms and ad hoc policies that target short-term problems while the mountains of long-term issues that not only cripple power sector but also the whole economy remain unaddressed. One such issue is mammoth circular debt and other is the generous stream of subsidies. The circular debt of power sector stood at Rs. 2,252,750 million during FY 2021-22. In an attempt to put the genie of circular debt back in the bottle, the government incorporated Power Holding (Pvt) Ltd (PHL), a state owned Special Purposed Vehicle (SPV), in 2009 under the Companies Ordinance, 1984 to secure financing for the cash starved power sector. PHL borrows from commercial banks on regular basis under state guarantee to pay off the liabilities of power sector. The huge volume of payables to IPPs is picked up by PHL while the markup on borrowing is passed on to the electricity consumers who were provided subsidies in the first place to ease the burden of costlier electricity. Further than that, no cash flows exist for PHL to service the principal amount of the debt.

Prior to the amendment in the NEPRA Act, 2018, the recommended tariff determined by NEPRA was notified as Schedule-I and the rates at which a distribution company shall receive payment from its consumers was notified as Schedule-II from time to time. The difference between the two was to be paid by the Federal Government, as tariff differential subsidy to exercise uniform tariff across the country.

Afterwards, the targeted subsidy allocation in the federal budget was declined. Consequently, the methodology of TDS mentioned above was revised. Since 2014-15, the national average for each category was taken as the benchmark and afterwards for such distribution companies where the determined rate for a category by NEPRA was higher, subsidy was specified and for such distribution companies where determined rate was less, surcharge in terms of section 31(5) of NEPRA Act was specified. This exercise was undertaken based on the available targeted subsidy to transfer the effects of higher determined tariff to the lower determined tariff through the surcharge thus creating a pool of cross subsidies for poor performing DISCOs to relish at the cost of consumers of better performing DISCOs that could have been charged low tariff had there been no uniform tariff policy. The surcharge was initially referred to as Universal Obligation but recently it is referred as Tariff Rationalization Surcharge. TDS is reported as exempted income of the distribution companies as it is excluded from the turnover of the companies.

Awan, Samad, & Faraz (2019) established that Tariff Differential Subsidy is an untargeted subsidy that benefits the urban rich segment of the society majorly instead of the marginalized segment. Also, the elimination of TDS will result in higher electricity prices and will consequently affect the

welfare of poor households particularly in rural areas. The study recommended for TDS needs to be phased out or be made more targeted to reap the full benefits.

Based on the findings of Jiang, Li, & Song (2017), a similar approach is used in this study while analyzing the traces of zombie companies in electricity distribution sector of Pakistan since it is majorly state owned, heavily relies on TDS, and it goes without saying that the DISCOs have been enjoying soft budget constraints without any responsibility of bringing efficiency because of uniform tariff policy. The recent available data for at least eight (08) years is derived from financial statements of DISCOs. Nine DISCOs have been used in this investigation, the data for tenth DISCO i.e. TESCO was unavailable to arrive at meaningful evaluation. One private sector distribution company that is K-Electric has also been examined based on the fact that all distribution companies, including privatized KE, receive TDS to sell electricity at uniform rates and further, all Distribution Licensees holders enjoyed exclusivity in their service area that kept away competition.

3. Distribution Companies and Interest Coverage Ratio

ICR is the ratio of Earnings before Interest on tax (EBIT) relative to interest expense. For the purpose of calculation, ratio of operating profit and finance cost has been used from the data provided in the annual financial statements of distribution companies. The financial statements data for LESCO is unavailable beyond 2018 while data for MEPCO and SEPCO was available till 2021 at the time of conducting these analysis.

According to Finance Corporation, if the ICR is less than 1.25 for a utility company, then the company is inefficient in discharging its interest obligations and it will lead to bankruptcy. Conversely, a higher ICR ratio means that the company has sufficient funds even after paying interest to provide utility services to its consumers.

In a situation where ICR actually falls below 1, it means that the company is not generating adequate revenue. It goes without saying that this is a solid indicator of default.

Based on the available data, the ICR of DISCOs has been calculated for at least five years.

3.1. Islamabad Electricity Supply Company (IESCO):

Islamabad Electricity Supply Company (IESCO) is responsible to provide electricity services to the districts of Rawalpindi, Chakwal, Attock, Jhelum and Federal Capital Islamabad under the Distribution License granted by NEPRA for a term of 20 years from issuance of license in 2001. Article 7 of IESCO's Distribution License empowers it to enjoy "exclusive right" to provide distribution service, make sale of electricity, formulate power schemes and engage in incidental activities in its service territory. (Grant of Distribution License (IESCO), 2001). IESCO serves 9% of the electricity consumers of the Pakistan (State of Industry Report, 2022).

The data in **Table 1** reveals that IESCO has been showing negative ICR for past 5 consecutive years. The outstanding ICR values from 2010 to 2015 can be explained by significant increase in Tariff Differential Subsidy (TDS) after 2012 to 2020 and share of TDS in cost of electricity. As soon as the volume of TDS started shrinking after 2015, IESCO's ICR plunged to negative raising red flags all the way. Evidently, IESCO has been relying on government funds to perform the functions of Distribution Company in its service area.

Table 1: ICR of IESCO

Years	ICR of IESCO	TDS) (Rs. Mln)	Share of TDS in Cost of Electricity
2010	52.38	15816	28%
2011	-3.35	10744	17%
2012	24.94	10160	13%
2013	11.26	29698	36%
2014	27.60	34207	37%
2015	3.98	11240	16%
2016	-8.58	6502	8%

2017	-7.94	8503	10%
2018	-13.98	11181	10%
2019	-3.95	16965	13%
2020	-7.91	23400	16%
2021	-1.46	22411	16%

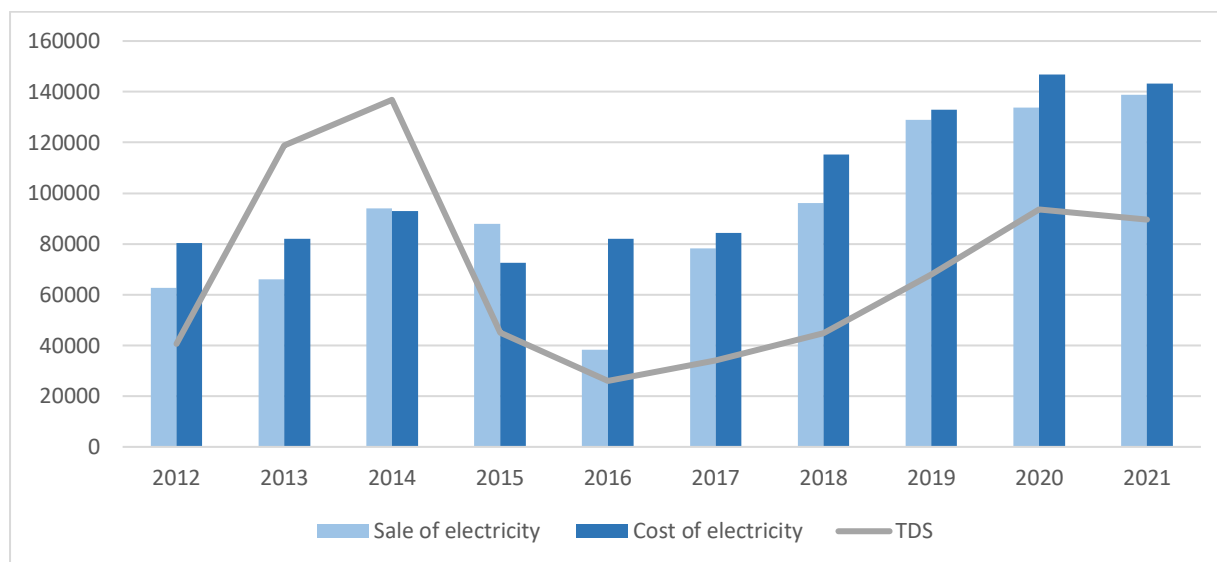


Figure 1

Figure 1 shows that the sale of electricity for IESCO throughout the past decade remained lower than the cost of electricity. The cost of electricity represents the units of electricity purchased by the company at NEPRA determined rate. The gap between sale of electricity and cost of electricity represents the losses incurred by the company in turning its purchased units into sold units (revenue). Such losses include technical and administrative losses. Interestingly, during 2014 and primarily 2015, sale of electricity exceeded the cost of electricity, yet the TDS (Rs. Million) for IESCO was observed to be highest during 2014 and started declining sharply. The highest gap between cost and sale of electricity i.e. cost greater than the sale, can be observed during 2016 where TDS hit its minimum. The sale of electricity remains below cost of electricity throughout the reported period.

3.2. Peshawar Electricity Supply Company (PESCO):

Peshawar Electricity Supply Company (PESCO) was granted Distribution License by NEPRA to serve all civil districts of Khyber Pakhtunkhwa, including the Federally Administered Tribal Areas (FATA) and Frontier Regions of Peshawar, Kohat, Bannu, Lakki, Tank and Dera Ismail Khan (the Frontier Regions) for a term of 20 years from issuance of license in 2002 (Grant of Distribution License (PESCO), 2002). Article 7 of PESCO’s Distribution License empowers it to enjoy “exclusive right” to provide distribution service, make sale of electricity, formulate power schemes and engage in incidental activities in its service territory. The Government of Pakistan, envisaging the privatization of PESCO, decided to create a separate company to engage in distribution of electricity services in the areas of FATA and Frontier Regions. Therefore, FATA and Frontier regions were carved out of the service territory of PESCO while a new distribution company namely Tribal Area Electricity Supply Company Limited (TESCO) was incorporated with exclusive rights to sell electricity, formulate power schemes and engage in incidental activities in its service territory. (Modification-I in Distribution Licence (PESCO), 2013). PESCO is responsible for 11% of the electricity consumers of the country (State of Industry Report, 2022).

The data for PESCO to calculate ICR was available from 2012-2020. **Table 2** shows that during the observed period of nine years, ICR remained negative for PESCO, thus qualifying PESCO for a Zombie Company.

Table 2: ICR of PESCO

Years	ICR	TDS (Rs. Mln)	Share of TDS in Cost of Electricity
2012	-16563.54	25225.43	24%
2013	-5.97	36825.69	34%
2014	-3.26	37636.40	32%
2015	-3.20	29411.12	28%
2016	-3.86	27932.35	31%
2017	-8.28	31664.23	29%
2018	-12.76	34744.75	24%
2019	-10.69	58433.59	35%
2020	-30.46	73409.30	37%
2021	-55.23	51,930.00	18%
2022	39.07	61,816.00	33%

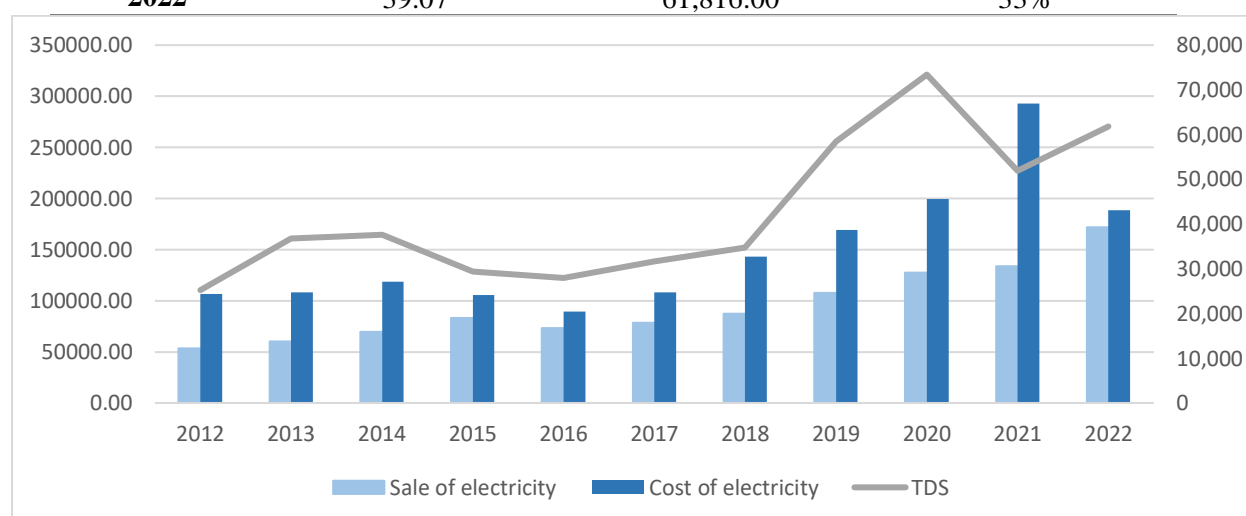


Figure 2: PESCO

The cost of electricity for PESCO throughout the reported time period i.e. 2012 to 2020 remained significantly higher than the sale of electricity as shown in Figure 2 above. The TDS for PESCO peaked during 2014 and dropped briefly only to increase steadily and sharply after 2018 till 2020 and then starts increasing. The sale of electricity has remained consistently below the cost of electricity for PESCO from 2012 to 2020 while significantly higher in 2021.

3.3. *Quetta Electricity Supply Company (QESCO):*

Quetta Electricity Supply Company (QESCO) has been granted Distribution License by NEPRA to serve the entire Balochistan Province for a term of 20 years from issuance of license in 2002 (Grant of Distribution License (QESCO), 2002). QESCO holds “exclusive right” to provide distribution service, make sale of electricity, formulate power schemes and engage in incidental activities in its service territory as per Article 7 of its license. QESCO serves the largest province of Pakistan with respect to area having 2% of the electricity consumers of the country (State of Industry Report, 2022).

The ICR ratio of QESCO from 2011 to 2021 is negative. During 2016, 30% of the cost of electricity was recovered through TDS, revealing it to be a Zombie Company.

Table 3: ICR of QESCO

	ICR	TDS (Rs. Mln)	Share of TDS in Cost of Electricity
2011	-41.53	3608.892	9%
2012	-2.79	10264.96	21%
2013	-5.81	5312.41	11%
2014	-8.27	9480.707	19%
2015	-11.43	7646.516	15%
2016	-22.38	13382.91	30%
2017	-9.34	14454.31	27%
2018	-28.66	11084.37	17%
2019	-9.03	3608.892	11%
2020	-12.78	13507.91	15%
2021	-5.89	21850.04	27%

Figure 3 reveals the ordeal of QESCO as reflected through its cost of electricity that is significantly higher than the sale of electricity. The figure shows that QESCO received fluctuating TDS from 2010 to 2015, peaking during 2017 and declining sharply after 2017 and then increasing abruptly afterwards. The sale of electricity was slightly yet briefly higher than cost of electricity during 2015 but as the cost of electricity increased dramatically after 2016, it is evident that QESCO has been relying significantly on TDS to cover its cost of electricity.

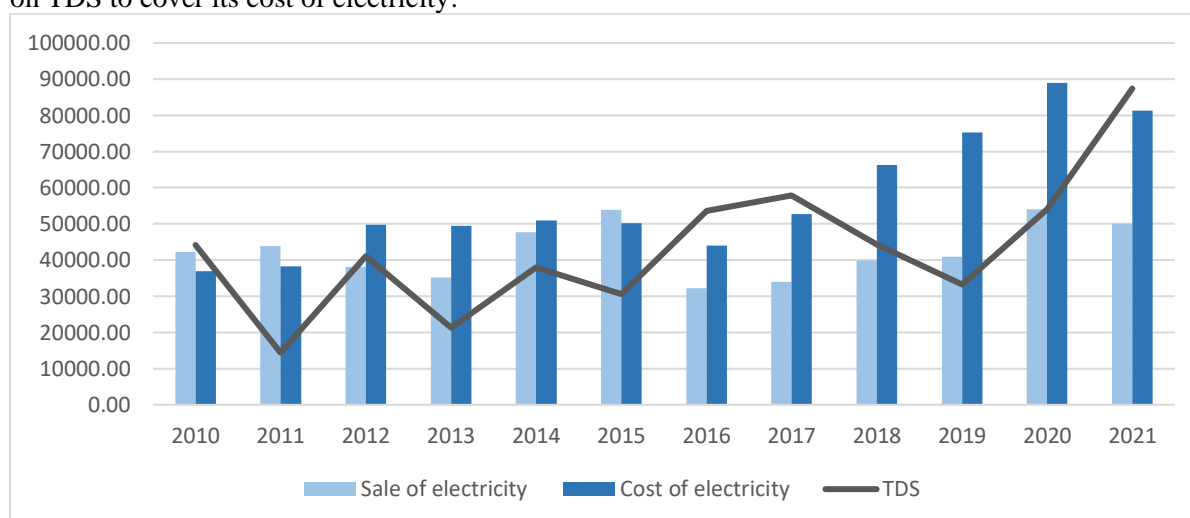


Figure 3: QESCO

3.4. Multan Electricity Power Company (MEPCO):

Multan Electricity Power Company (MEPCO) has been licensed by NEPRA to operate its distribution network from Sahiwal to Sadiqabad, Bahawalnager to Bahawalpur, Tounsa Sharif to Rajanpur, bordering with Sindh, Balochistan and KPK. The term of license is 20 years from issuance of license in 2002 (Grant of Distribution License (MEPCO), 2002). MEPCO enjoys “exclusive right” to provide distribution service, make sale of electricity, formulate power schemes and engage in incidental activities in its service territory as per Article 7 of its license. MEPCO is the largest DISCO with respect to number of consumers as the company serves 21% of the electricity consumers of Pakistan (State of Industry Report, 2022).

Table 4 shows ICR values for MEPCO from 2014-2020. A very healthy ICR has been observed during 2014-2015 but afterwards MEPCO has been showing a significantly negative ICR. Therefore, the largest distribution company of Pakistan with respect to consumers falls in the Zombie Company category.

Table 4: ICR of MEPCO

	ICR	TDS (Rs. '000)	Share of TDS in Cost of Electricity
2012	1949.64	14918.02	12%
2013	-29.80	37899.75	32%
2014	16.45	45293.82	35%
2015	13.39	53598.78	37%
2016	-9.10	24719.65	23%
2017	-21.54	31085.76	22%
2018	-31.88	40264.74	21%
2019	-10.61	69964.63	31%
2020	-0.13	79587.95	32%

Figure 4 MEPCO

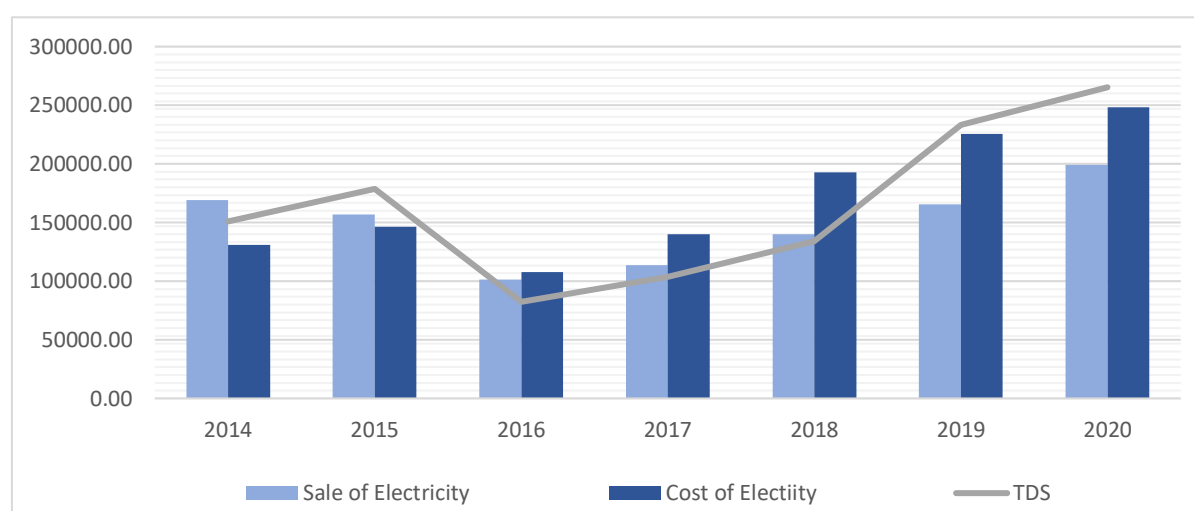


Figure 4 reveals that the sale of electricity for MEPCO remained higher than the cost of electricity during 2014 and 2015. This is the time when ICR is significantly higher (**Table 3**) and TDS is relatively lower compared to 2019 and 2020 but share of TDS in cost of electricity remained highest during 2014 and 2015 (**Table 3**). MEPCO's case indicates that the higher sale of electricity with significant share of TDS in the cost of electricity helped MEPCO keep healthy ICR. However, after 2016, as the ICR dipped to negative, the cost of electricity increased significantly with steady increase in TDS for MEPCO.

3.5. Gujranwala Electricity Power Company (GEPCO):

Gujranwala Electricity Power Company (GEPCO) holds Distribution License to distribution to serve Districts of Gujranwala, Hafizabad, Sialkot, Narowal, Gujrat and Mandi Bahauddin for a term of 20 years from issuance of license in 2002 (Grant of Distribution License (GEPCO), 2002). Article 7 of Distribution licence allowed GEPCO to exercise its "exclusive right" to provide distribution service, make sale of electricity, formulate power schemes and engage in incidental activities in its service territory. GEPCO provides electricity distribution services to 11% of the power consumers of Pakistan (State of Industry Report, 2022).

The ICR for GEPCO (**Table 5**) kept fluctuating from 2013 to 2020. The strong ICR during 2013, 2017 and 2019 can be attributed to higher TDS during the same period. The ICR of GEPCO plunged to negative during 2020, however, it remained healthy during 2019, making it ineligible for zombie companies.

Table 5: ICR of GEPCO

	ICR	TDS (Rs. '000)	Share of TDS in Cost of Electricity
2013	38.07	31447.17	45%
2014	-10.01	23978.50	28%
2015	1.00	24573.92	32%
2016	1.66	23418.68	32%
2017	7.97	28499.70	33%
2018	-2.45	28477.06	26%
2019	4.29	24213.46	19%
2020	-8.63	28418.04	20%
2021	-0.24	15,083.49	10%

Figure 5 shows that the cost of electricity remained lower than the sale of electricity from 2013 to 2020 except for 2019 when the cost and sale of electricity were equal approximately and TDS was also observed to be lower during 2019 with 19% of cost recovered from the TDS. It is further significant to note that during 2013 with GEPCO's healthiest ICR, 45% of the cost of electricity was recovered from TDS which is relatively higher than the case of other DISCOs.

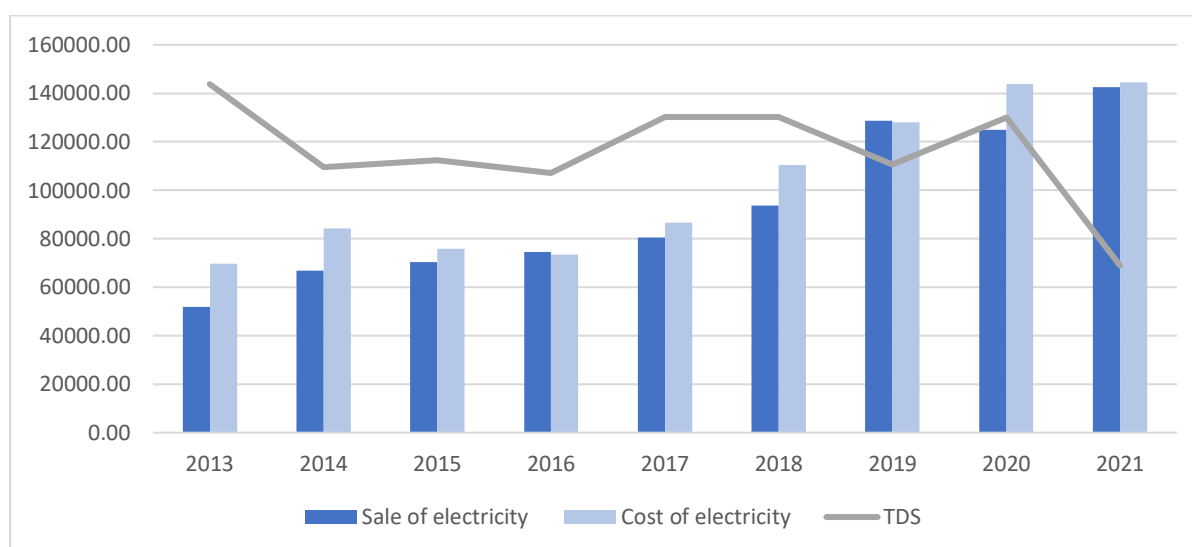


Figure 4

3.6. Faisalabad Electricity Supply Company (FESCO):

Faisalabad Electricity Supply Company (FESCO) holds Distribution License to engage in distribution of electricity to Districts of Faisalabad, Sargodha, Mianwali, Khushab, Jhang, Bhakker, T.T Singh for a term of 20 years from issuance of license in 2002 (Grant of Distribution License (FESCO), 2002). FESCO has “exclusive right” to provide distribution service, make sale of electricity, formulate power schemes and engage in incidental activities in its service territory under Article 7 of its license. FESCO provides electricity distribution services to 13% of the power consumers of Pakistan (State of Industry Report, 2022).

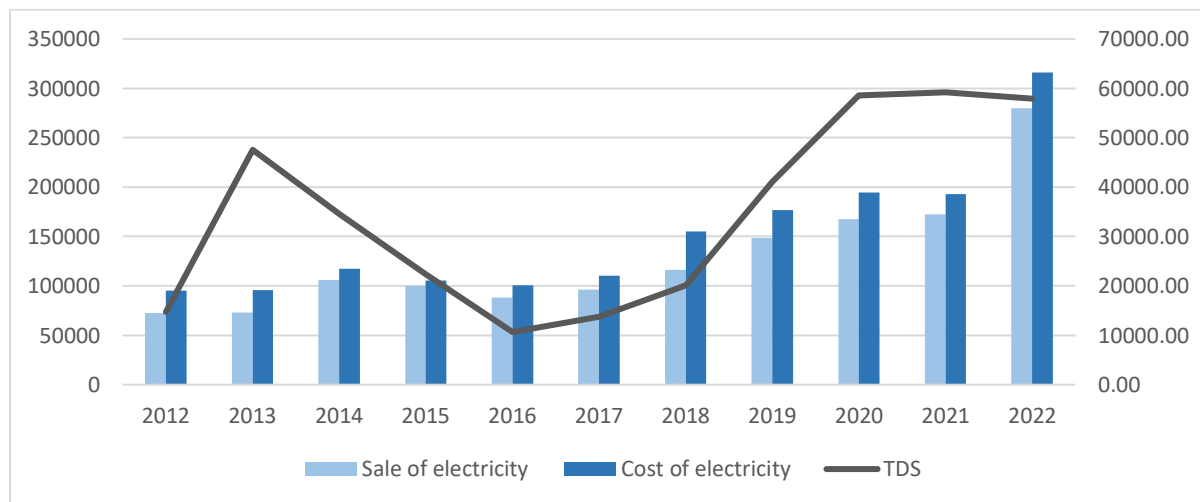
The ICR for FESCO (Table 6) kept fluctuating from 2012 to 2020. The strong ICR during 2013 to 2015 can be attributed to higher TDS during the same period specifically for share of TDS that stands at 50% if cost of electricity incurred by FESCO during 2013. The ICR of FESCO plunged to negative throughout 2016 to 2019, however, it remained healthy during 2020, making it eligible to fall in category of zombie companies because the healthy ICR has not been consistent for consecutive years and can be explained by sharp increase in TDS (5.8 Rs. Billion) received by FESCO during 2020. It can be

observed that though the share of TDS in cost of electricity decreased from 50% in 2013 to 11% in 2016, yet the TDS has been increasing steadily.

Table 6: ICR of FESCO

	ICR	TDS (Rs. Mln)	Share of TDS in Cost of Electricity
2012	-1164.99	14712.986	15%
2013	54.56	47526.018	50%
2014	48.67	34588.712	29%
2015	16.50	22422.785	21%
2016	-69.93	10660.951	11%
2017	-89.96	13756.205	13%
2018	-242.71	20132.058	13%
2019	-35.78	41038.912	23%
2020	3.95	58561.450	30%
2021	30.44	59178.041	31%
2022	-9.33	57944.697	18%

Table 6 above reveals that the sale of electricity for FESCO throughout the 8 years remained lower than the cost of electricity. After 2013, a sharp decline in TDS can be observed till 2016. However, from 2016 to 2020, the TDS has been steadily increasing for FESCO while ICR is alarmingly negative except for 2020 and 2021 where TDS exceeds its level from 2013. But ICR for 2022 again becomes negative and cost of electricity is consistently higher than the sale of electricity.



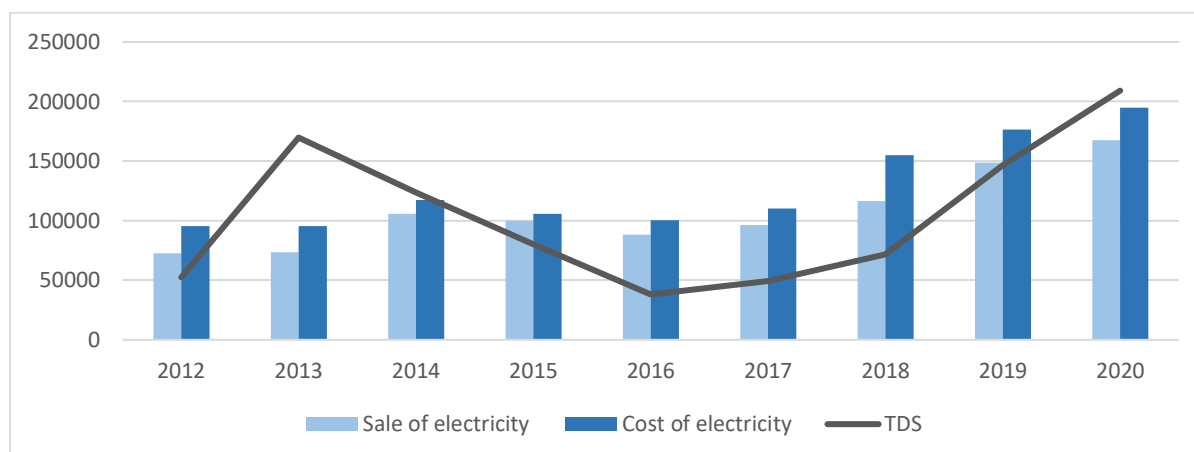


Figure 5

3.7. Hyderabad Electricity Supply Company (HESCO):

Hyderabad Electricity Supply Company (HESCO) was granted Distribution License by NEPRA to provide power distribution services in all Province of Sindh except Karachi, Sukkur, Ghotki, Khairpur, Kashmore/Kandhkot, Jacobabad, Shikarpur, Larkana, Kambar/Shahdadkot, Dadu and Some Portions of Jamshoro, Naushehro Feroze, Shaheed Benazirabad and Rahimyar Khan Districts of Faisalabad, Sargodha, Mianwali, Khushab, Jhang, Bhakker, T.T Singh for a term of 20 years from issuance of license in 2002 (Grant of Distribution License (HESCO), 2002). HESCO was granted “exclusive right” to provide distribution service, make sale of electricity, formulate power schemes and engage in incidental activities in its service territory under Article 7 of its license. In 2014, NEPRA modified the Distribution Licence of HESCO to carve out the districts of Sukkur, Ghotki, Khairpur, Kashmore/Kandhkot, Jacobabad, Shikarpur, Larkana, Kamber/Shandadkot, Dadu, some portions of Jamshoro, Naushehro Feroze, Shaheed Benazirabad and Rahimyar Khan from the Service Territory of HESCO (Modification-I in Distribution Licence (HESCO), 2014). The carved-out territory is being served by Sukkur Electric Power Company (SEPCO) under separate Distribution license granted by NEPRA. HESCO serves 3% of the electricity consumers of Pakistan (State of Industry Report, 2022).

Table 7 shows that ICR for HESCO remained significantly negative from 2012 to 2020 categorizing HESCO into Zombie Companies.

Table 7: ICR of HESCO

Years	ICR	TDS (Rs. Mln)	Share of TDS in Cost of Electricity
2012	-5737.03	18547.48	28%
2013	-2783.24	26586.18	54%
2014	-4025.50	20131.41	38%
2015	-2749.34	11013.12	20%
2016	-35.91	3889.94	9%
2017	-35.69	4690.27	9%
2018	-14.31	15860.16	25%
2019	-1.22	34139.82	48%
2020	0.64	35806.0	43%
2021	0.59	30927.02	41%

Figure 7 shows that from 2012 to 2020, the sale of electricity remained considerably lower than the cost of electricity.

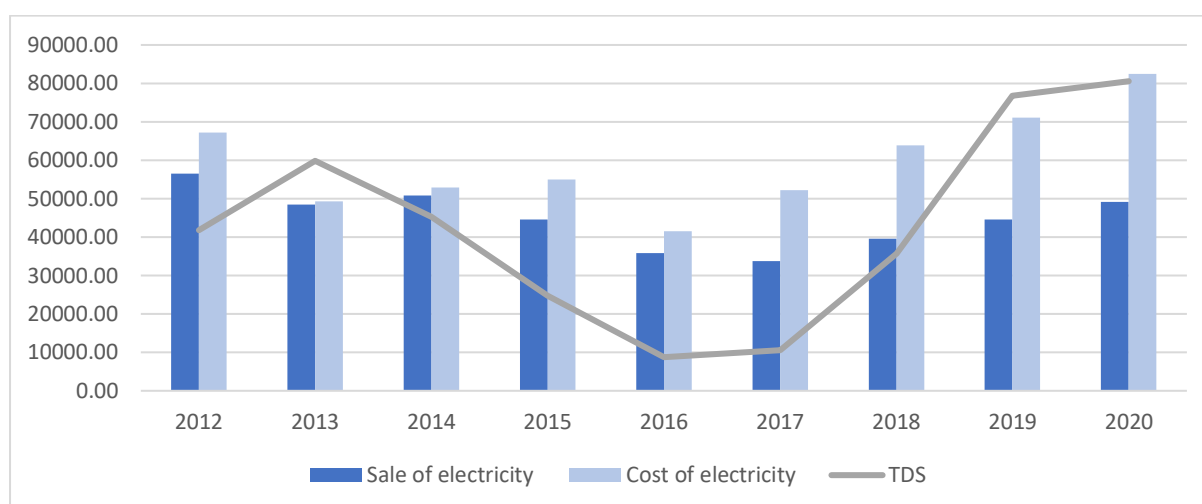


Figure 6: HESCO

3.8. Sukkur Electricity Power Company (SEPCO):

Sukkur Electric Power Company (SEPCO) has been granted Distribution License by NEPRA to provide power distribution services to the districts of Sukkur, Ghotki, Khairpur, Kashmore/Kandhkot, Jacobabad, Shikarpur, Larkana, Kamber/Shandadkot, Dadu and some portions of Jamshoro, Naushehro Feroze, Shaheed Benazirabad and Rahimyar Khan for a term of 20 years from issuance of license in 2011 (Grant of Distribution License (SEPCO), 2011). SEPCO has “exclusive right” to provide distribution service, make sale of electricity, formulate power schemes and engage in incidental activities in its service territory under Article 7 of its license (Gra). SEPCO serves 2% of the electricity consumers of Pakistan (State of Industry Report, 2022).

Table 8 shows that ICR for SEPCO remained significantly negative from 2012 to 2016. However, from 2017 to 2019, the ICR for SEPCO started improving yet remained unhealthy. The poor ICR for consecutive three years qualifies SEPCO for Zombie Companies category.

Table 8: ICR of SEPCO

Years	ICR	TDS (Rs.Mln)	Share of TDS in Cost of Electricity
2012	-1.79	4162.73	20%
2013	-8.12	11711.71	26%
2014	-2.66	12761.33	27%
2015	-8.91	14196.44	33%
2016	-8.04	6133.86	18%
2017	0.68	6757.83	18%
2018	0.36	11115.33	24%
2019	-0.50	18027.47	34%
2020	0.65	20795.70	38%

The figure below shows that from 2012 to 2019, the sale of electricity remained below cost of electricity for SEPCO. On the other hand, TDS kept crawling upwards till 2015 after which a sharp decline can be observed. However, after 2017, a sharp increase in TDS is evident with cost of electricity significantly higher than the sale of electricity.

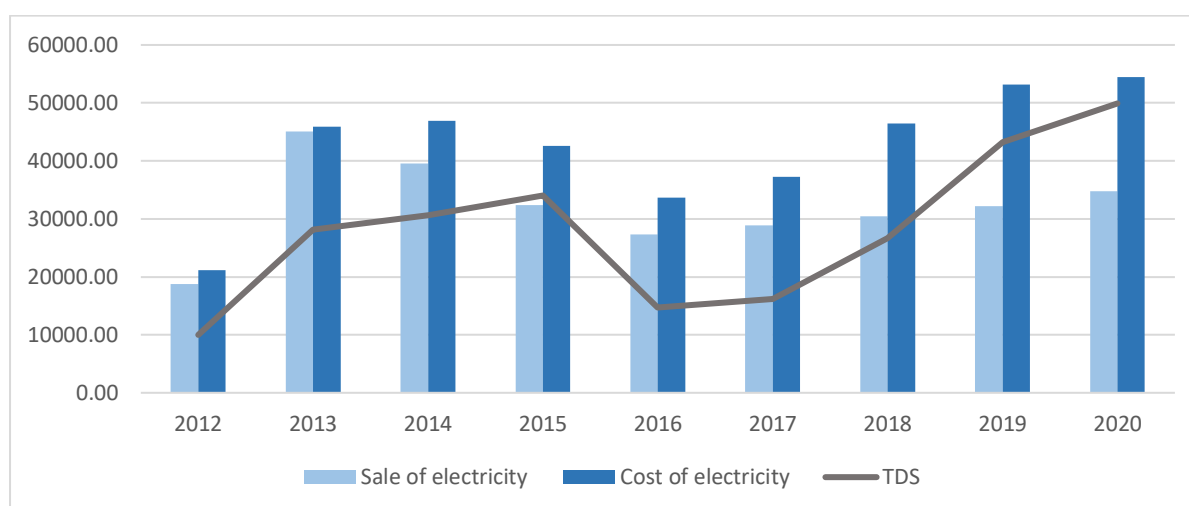


Figure 7: SEPCO

3.9. Lahore Electricity Supply Company (LESCO):

Lahore Electricity Supply Company (LESCO) holds Distribution License issued by NEPRA to provide power distribution services to the districts of Lahore, Kasur, Okara and Sheikhpura for a term of 20 years from its issuance (Grant of Distribution License (LESCO), 2002). LESCO has been guaranteed “exclusive right” to provide distribution service, make sale of electricity, formulate power schemes and engage in incidental activities in its service territory under Article 7 of its license (Gra). LESCO ranks second largest distribution company of the country that serves 16% of the total electricity consumers of Pakistan (State of Industry Report, 2022).

Table 9: ICR of LESCO

Years	ICR
2009	-62.64
2010	-34.20
2011	-90.78
2012	-31.89
2013	10.54
2014	20.61
2015	-276.02
2016	-4.17
2017	22.08
2018	-10.55

Table 9 reveals that the ICR remained significantly negative from 2009 to 2018 except for 2013 and 2014 for LESCO. The negative ICR from 2015 to 2018 qualifies LESCO for Zombie Company. The financial data for LESCO was only available from 2009 to 2018. The data on TDS was not available for the reported year.

Table 10 shows the ICR of nine DISCOs for past five years.

Table 10: ICR of DISCOs

Years	IESCO	PESCO	MEPCO	QESCO	GEPCO	FESCO	HESCO	SEPCO	LESCO
2015	3.98	-3.20	13.39	-11.43	1.00	16.50	-2749.34	-8.91	-276.02
2016	-8.58	-3.86	-9.10	-22.38	1.66	-69.93	-35.91	-8.04	-4.170
2017	-7.94	-8.28	-21.54	-9.34	7.97	-89.96	-35.69	0.68	22.08
2018	-13.98	-12.76	-31.88	-28.66	-2.45	-242.71	-14.31	0.36	-10.55

2019	-3.95	-10.69	-10.61	-9.03	4.29	-35.78	-1.22	-0.50	-
2020	-7.91	-30.46	-0.126	-12.78	-8.63	3.95	0.64	-0.65	-
2021	-1.46	-	-	-5.89	-0.24	30.44	0.59	-	-
2022	-	-	-	-	-	-9.33	-	-	-

Figure 1 to 7 reveal that the cost of electricity remained higher than the sale of electricity for every DISCO throughout the reported time period. This revelation coupled with obvious reliance of DISCOs on TDS which covers a considerable chunk of the cost of electricity points towards sheer operational inefficiency commonly rampant in all DISCOs irrespective of the territory and type of consumers each DISCO serves. The objective of government to sell electricity at uniformly affordable rates to all consumers will always result in a tradeoff between expensive rates and TDS that government has to pay from its treasury rather than relying on the ability of DISCOs to sell electricity efficiently without incurring losses. This implies that electricity consumers, who also happen to be taxpayers, pay for the uniform electricity rates that are in reality powered by TDS which is financed by government revenue through taxes.

4. Exclusivity: Does Guaranteed Protection Foreshadow Zombification?

Exclusivity Periods and Telecommunication Sector

A study conducted on the real effects of exclusivity periods for telecommunication companies privatized in developing countries concludes that exclusivity periods are associated with significant increases in the firm's sale price and are correlated with a significant decrease in the privatized firm's investment in the telecommunications network. Hence, converting a public monopoly into a private monopoly may not necessarily generate the envisioned reforms. The study makes a curious case for KE that was privatized in 2005 with exclusivity rights to operate in the service area of Karachi. Though the telecommunication sector and power sectors are different, the case of exclusivity period under privatization and then market liberalization in telecommunication sector of Pakistan makes it important to draw meaningful comparisons.

The ICR of K-Electric Ltd:

Karachi Electric Supply Corporation Ltd (KESC), now K-Electric Ltd, has been granted Distribution License by NEPRA to provide power distribution services to entire Karachi and its suburbs up to Dhabeji and Ghara in Sindh and over Hub, Uthal, Vindhar and Bela in Baluchistan for a term of 20 years from issuance of license in 2003 (Grant of Distribution License-KESC, 2003). KE has "exclusive right" to provide distribution services in its service territory protected by Article 7 of its license. In April 2021, NEPRA decided to honour the terms of Distribution Licence of KE and maintain its exclusivity till the expiry of its Distribution Licence i.e. July 02, 2023 subject to certain conditions including the right of any Bulk Power Consumer (BPC) to buy electricity from any other generation company and KE's obligation to allow use of its system to any third party for supplying/wheeling of electric power to any BPC (Authority Proposed Modification in the Distribution License of K-Electric Ltd, 2021). Currently, KE serves 9% of the electricity consumers of Pakistan (State of Industry Report, 2022).

The ICR of KE for past decade is significantly healthy implying that KE has been producing funds sufficiently to fulfil its financial obligations. This implies that KE cannot be regarded as a Zombie Company.

Table 11: ICR of KE

Years	ICR	TDS (Rs. Million)	Share of TDS in Cost of electricity
2010	-1.16	29.45	30%
2011	-0.96	44.58	38%
2012	1.33	70.03	53%
2013	1.28	76.62	52%
2014	1.85	55.38	38%

2015	2.54	41.84	32%
2016	6.08	22.88	17%
2017	3.41	15.29	11%
2018	5.24	32.97	19%
2019	2.41	97.44	41%
2020	1.02	94.93	39%

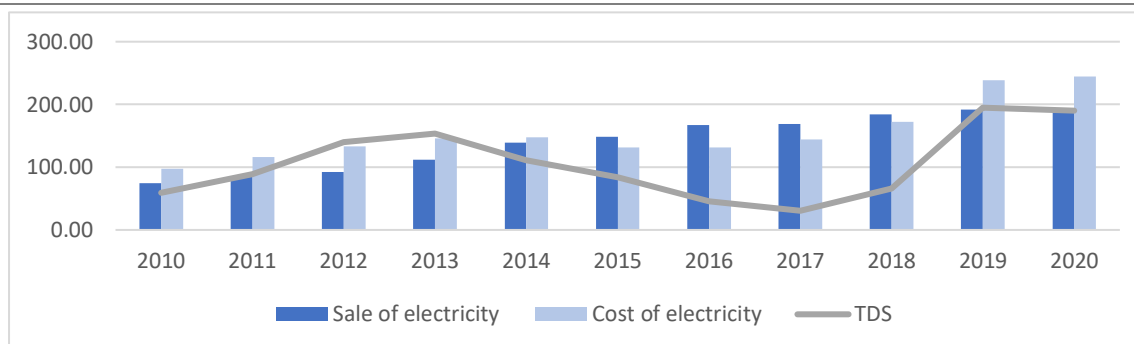


Figure 8

Figure 9 shows that the sale of electricity remained less than the cost of electricity for KE until 2014. Afterwards, as the sale exceeded cost of electricity, TDS dropped significantly from 2013 to 2017. There is a sharp increase in TDS after 2018 where the sale of electricity is significantly higher than the cost of electricity. It may further be noted that after 2017 though there is a sharp increase in the TDS, but share of TDS in the cost of electricity is lowest compared to previous years (**Table 11**). After 2019, the cost of electricity increased significantly and TDS stayed higher. However, it can be observed from **Table 11** that the share of TDS in the cost of electricity remained significant throughout the decade. The observed period shows fluctuating TDS for KE but healthy ICR. Although, ICR is relatively healthy for KE and it cannot be regarded as a Zombie Company, the fact remains that KE still bags huge sum of TDS to cover its cost of selling at uniform tariff and it may slip into zombification if costs escalate.

Case of Pakistan Telecommunication Company Limited:

Another relevant example of exclusivity and financial viability can be extracted from PTCL that lost its control on landline monopoly market primarily because of wireless mobile phones. PTCL enjoyed landline monopoly since its creation but after privatization the telecommunications market was opened, and cellular mobile companies offered mobile and internet services in metropolitan areas. The Deregulation Policy of July 13th, 2003 liberalized the fixed line telecommunication sector and exclusivity of PTCL was abolished in basic telephone services. The case of PTCL and telecommunication market further strengthens the argument that competitive firms invent efficient ways to cut costs, increase productivity and eradicate waste. But entry of competitive firms does not mean that PTCL was thrown out of market though its exclusivity ended in December 2002. Currently, PTCL owns all public exchanges, the nationwide network of local telephone lines, principal long-distance transmission facilities and international telephone gateways in Pakistan providing services like high speed Broadband internet as well as wireless internet and other such services. According to Pakistan Economic Survey 2022-21 (PES-2022), Telecom Sector, with a revenue of Rs. 163.3 billion (estimated) during July-March FY 2022, is a considerable source of income for the government in the form of taxes and license fees etc. PTCL exhibits outstanding ICR for past five year's evident from the table below:

Table 12

Years	ICR
2017	23.47
2018	11.76

2019	15.54
2020	7.50

Table 13: Comparison of KE and PTCL after Privatization

Privatization	KE	PTCL
Change of ownership	✓	✓
Monopoly (Exclusivity)	✓	✗
Reliance on subsidies	✓	✗
Quality Service	✗	✓
Sector growth	✗	✓

5. Results and Discussion

State of Industry Report, 2022 (published by NEPRA) recommends privatization of DISCOs with public-private partnership and contribution from provinces. The analysis of Interest Coverage Ratio of DISCOs to fulfil their financial obligation through operating profits renders DISCOs as Zombie Companies. This comes with an exception for KE and GEPCO, though both rely on TDS for covering cost to sell electricity at uniform tariff. The privatization of KE with exclusivity period makes it a financially viable company but it brings up the issue that whether sole purpose of privatization was to turn KESC into a profit-making entity or make electricity affordable and reliable for consumers of Karachi? Is there a trade-off between profitability and affordable prices or exclusivity and privatization cannot go hand in hand and foretell competition? It is important to understand how such companies become monopolistic. The answer simply lies in a company's ability to charge monopolistic price (Ludwig, 1998). A monopolistic price is charged when the monopolist sells smaller quantity of product at higher price compared to selling larger quantity at lower price. KE, on the other hand, recovers electricity cost through TDS and acts as a legal monopoly because of the government granted exclusivity right rather than its ability to sell smaller quantity of units at higher prices. In the absence of TDS to implement uniform tariff policy and with the presence of other market players, KE would have to increase unit prices and thus lose consumers, a situation that is likely to emerge when market opens for Bulk Power Consumers (BPCs). Currently, government cannot afford KE to charge higher prices because of the actual higher cost of electricity, so KE receives TDS and is not only enjoying the status of monopoly but soft budget constraints as well (Maskin, 1999).

Generally, governments around the globe grant legal monopolies to specific water, electricity, and natural gas companies or provide the services through state owned entities to prevent heavy competition among utilities (Rothbard, 1970). Pakistan's power market operates on a single-buyer market principle and tariffs are determined by the regulator (NEPRA) rather than a well-groomed competitive market. The managers of a monopolistic utility company assume that the optimal means to produce the service is already known to them. Based on this assumption, the consumers of electricity are charged on "Cost-Plus" basis. The "Cost-Plus" regime presumes that there is a fixed cost of supplying electricity which can be determined in advance along with a revenue that needs not to be dependent on market fluctuations governed by demand and supply of electricity. This practice misinterprets the role of prices as source of knowledge about the genuine value of a service that does not exist in some fixed static state. NEPRA determines the consumer-end tariff by adding the "cost" of the service and a guaranteed revenue requirement on the capital goods used in providing electricity. In this way, consumers are charged a price determined by the cost incurred by the supplier of electricity and not by the price the consumers are willing to pay (Stolyarov, 2006).

An economy is constantly changing so it acts as an active web of actions of entities where each action is composed of numerous individual decisions and motivations. Similarly, in a pure economic sense, market is not a state rather a process (Stolyarov, 2006). The assumption that every economic actor holds perfect information about the entire economy and his/her particular value for a good or

service reflects the value exhibited by all the actors in the economy is false. Similarly, the managers of a utility (or a regulator) do not have information at their disposal about the optimal price of their service. Nobel laureate Frederik Hayek postulated that market is a process and called competition as a discovery procedure (Carden, 2008). It is an observed fact that all market participants hold imperfect and incomplete knowledge. Question raises that how the market facilitates the acquisition and dispersal of knowledge? According to Hayek, there is no single value scale in a market economy, no single goal exists towards which the economy moves and consequently achieves.

Kling (2016) in his book *Specialization and Trade: A Re-introduction to economics* argues that there are outsiders who see a flaw in how the market serves consumers, those outsiders have the option of starting a business to address the problem. That is what entrepreneurs do all the time, and they are the main engine of economic progress. However, entrepreneurs at times make mistakes, and new businesses often fail. Similarly, economists and policymakers are also capable of making errors. This argument compels to compare the market process of error correction with the political process of error correction.

The discrepancies in information when applied to the utility market means that some individuals who are excluded from it by government (in case of exclusivity in service area of distribution companies) know valuable data that the monopoly managers do not possess. Such individuals might know about more economical techniques of procuring and distributing electricity or technical knowledge enabling them to design better electric grids. They might even have unspoken or inarticulate knowledge that is difficult or impossible to put into words and communicate to another that helps them run a business on a day-to-day basis.

In a competitive market where there are no exclusive rights, private entrepreneurs with their hard budget constraints are driven by profit motive. They ceaselessly discover better ways to provide utility services by figuring out previously unknown ways to cut costs, increase productivity and eradicate waste. A government mandate like exclusivity right prevents the birth of these discoveries and compels all the consumers to pay far more than they otherwise might have.

This implies that the whole purpose and practicality of competition melts down to determining the optimal costs and prices for a given set of goods that may not be possible if certain economic agents are not allowed to participate in the market through government granted monopoly in the form of exclusivity. Still, there is no way to predict what these optimal prices and costs would be in advance and then expect competition to set them at some predicted level. On the contrary, competitive activities result in discovery of optimal prices and costs which otherwise could not be obtained before the start of competition. This argument infers that like market, competition cannot be some optimal end state. It is a continuous process of discovering the optimal mode of production in an economy. Competition works out better answers to the challenge of finding optimal prices and costs compared to situation where there is no competition. It can safely be deduced that though different market participants can possess useful knowledge about improving provision of electricity; however, the full advantage of this knowledge can be obtained if a market price system is firmly in place. In a competitive market, price, that is the willingness of consumers to pay for electricity, gives signals to suppliers to produce electricity in a manner that minimizes their cost and maximizes profits. If consumers' demand for electricity increases, so does the opportunity of profit for producers. The increase in profit margin of service providers like distribution companies will encourage new players to enter the market to reap higher profits by increasing the capital required to distribute electricity efficiently. The higher investment in the capital required to distribute electricity more efficiently will help reduce the cost of service. Consequently, consumers' willingness to pay will have a definite influence on demand, supply, and cost of electric power service and all these factors will in turn affect the price which asserts that demand, supply, cost, and price are interrelated. (Mises 1998)

6. CONCLUSION

The analyses reveal that all DISCOs are Zombie Companies except for GEPCO which goes in and out of red zone. KE is not a Zombie Company but apparently relies on TDS to cover its cost of selling electricity at uniform tariff. Yet the threat of default in the event of TDS abolishment is more imminent for all distribution companies under consideration.

Nonetheless, to execute privatization of DISCOs, government must either make these companies profitable or guarantee legal monopoly to attract investors as no sane investor will buy financially bleeding companies at the dawn of competition. Privatization of DISCOs with grant of exclusivity periods will delay the dream of affordable electricity to all consumers. This presents rather gloomy picture of power sector, but the solution lies in providing business friendly environment for power market participants where competition is allowed to breathe and thrive without threat of government protection to any particular participant, ad hoc policy directives and overburdening regulatory costs yet under the presence of prudent regulatory watch. The CTBCM regime has already passed the test run phase and is ready for operationalization which is anticipated by mid of 2023. However, privatization and deregulation must be done very carefully otherwise significant risks of making these DISCOs even bigger white elephants lurk in hasty processes.

Therefore, to avoid further bleeding of power sector from these zombies, serious efforts should be made to discipline these distribution companies with full scale competition under the CTBCM regime, ensuring that level playing field is provided to all.

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