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Letter to the Editor

Effects of Law Regarding Prevention of Dishonest Solicitation on the Korean Pharmaceutical Industry

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Dear Editor-in-Chief

Since 2016, the Republic of Korea has introduced the Law Regarding Prevention of Dishonest Solicitation (LRPDS), which prohibits the provision of certain items and oversized items to individuals in the government and the public sector. This has resulted in significant limitations in the marketing activities of all companies (1).

In particular, the pharmaceutical industry has already been banned from fraudulent marketing activities since the rebate dual punishment regulation was implemented in 2010. The impact of implementing LRPDS is expected to be small in other industries. Therefore, the purpose of this study was to analyze the impact of LRPDS on the pharmaceutical industry.

In general, the expenses of a seller for rebates or promotions to consumers can be in various forms. In other words, it can be accounted for payment transactions such as rebates using various accounts in financial statements such as entertainment, promotion, donation and advertisement expenses (EPDA expenses). In particular, those doctors and medical staff are more likely to receive gifts from pharmaceutical companies than politicians (2). Moreover, pharmaceutical companies rely on their marketing activities to influence physicians (3). Moreover, the pharmaceutical companies succeeded to manage physicians prescribing behavior in developed countries (4, 5).

Therefore, we aimed to investigate how the expenses of EPDA in the pharmaceutical industry changes before and after LRPDS.

In Table 1, the dependent variable is regressed by the coefficients of LRPDA and pharmaceutical industry variables as LRPDA, pharmaceutical industry and interaction variable, on the change rate of EPDA expenses from *t-1* to *t* year. In addition, the results presented in this table showed that VIFs are all less than 4, so the problem of multicollinearity is not severe.

In Model 1, 3 and 4, *LRPDS* shows statistically significant coefficients of –0.198 (±0.007), –0.194 (±0.007) and –0.196 (±0.007) at the 1% level, respectively. This indicates a decrease in EPDA expenses across the country. However, in the Model 2, 3 and 4, the *Pharmaceutical Industry* showed statistically significant coefficients of 0.126 (±0.027), 0.131 (±0.027) and 0.076 (±0.031) at the 1% level, respectively. This result shows that the EPDA expenses of the pharmaceutical industry are relatively higher than those of other industries, and that EPDA expenses have increased after the introduction of LRPDS.

In particular, in Model 4, *LRPDS X Pharmaceutical Industry* shows a statistically significant coefficient of 0.208 (±0.061) at the 1% level, which means that even though LRPDS is implemented, the EPDA expenses have increased, unlike the other industries.

The effect of LRPDS on the pharmaceutical industry

does not appear because the rebate dual penalty regulation, which has been introduced to Korean pharmaceutical companies since 2010, has been more powerful than the LRPDS. In other words, it is because the cultural and institutional environment where marketing such as fraudulent solicitation is not recognized in the pharmaceutical industry is effectively settled.

Table 1: Results of Ordinary Linear Regression

Variables	*Dependent variable: Change of Entertainment, Promotion, Donation and Advertisement Expenses = log(EPDAt/ EPDAt-1)*			
	Model 1	Model 2	Model 3	Model 4
Intercept	−1.039(±0.070)***	−1.021(±0.070)***	−1.032(±0.070)***	−1.029(±0.070)***
LRPDS [0,1]	–0.198(±0.007)***		–0.194(±0.007)***	–0.196(±0.007)***
Pharmaceutical Industry [0, 1		0.126(±0.027)***	0.131(±0.027)***	0.076(±0.031)***
LRPDS X Pharmaceu Industry				0.208(±0.061)***
BIG Auditor [0,1]	−0.058(±0.008)***	−0.080(±0.008)***	−0.059(±0.008)***	−0.059(±0.008)***
Audit Opinion [0,1]	0.312(±0.009)***	0.321(±0.008)***	0.312(±0.009)***	0.312(±0.009)***
Log(Asset)	0.011(±0.003)***	0.013(±0.003)***	0.011(±0.003)***	0.011(±0.003)***
Leverage	−0.002(±0.004)	−0.001(±0.004)	−0001(±0.004)	−0.001(±0.004)
ROA	0.001(±0.000)**	0.001(±0.001)**	0.001(±0.000)**	0.001(±0.000)**
CFO	0.001(±0.003)	0.001(±0.003)	0.001(±0.003)	0.001(±0.003)
F-stat.	316.83***	188.37***	280.20***	250.36***
Adj.R^2	0.012	0.007	0.012	0.12
Observations	217,750			

Note: 1) *** < 0.001, ** < 0.05, * < 0.1.

2) LRPDS, Pharmaceuticla Industry, Big Auditor and Audit Opinion variables are dummy [0,1]. And Log(Asset), Lverage, ROA and CFO variables are natural logarithm of total assets, total liabilities, pretax net income, and cash flow from operating activities to total assets, respectively

These results indicate that LRPDS, which generally affects all industries, has a smaller regulatory effect on the pharmaceutical industry than the rebate dual penalty regulation, which directly affects the pharmaceutical industry.

The control variables, BIG Auditor and Audit Opinion, respectively, show statistically significant levels of negative and positive coefficients, indicating that the companies with higher audit quality and the better audit opinions had lower EPDA expenses. In addition, Leverage is not statistically significant, but ROA shows a statistically significant positive coefficient, indicating that the higher return per assets, the higher EPDA expenses.

The results of this study provided the policy implication that Korea should not treat the pharmaceutical industry as it regulates fraudulent or unfair trade in other industries because the pharmaceutical industry maintains fair and transparent marketing relations with other industries.

Conflict of interest

The author declares that there is no conflict of interest.

References

1. Ma,JG (2016). Core Problems and Its Improvement Suggestions of the Improper Solicitation and Graft Act. *Ins For Legal Studies of Hanyang Univ*, 27(4): 167-199. (In Korean)
2. Wazana A (2000). Physicians and the Pharmaceutical industry: Is a Gift Ever Just a Gift?. *JAMA*, 283(3): 337-380.
3. Khazzaka M (2019). Pharmaceutical marketing strategies' influence on physicians' prescribing pattern in Lebanon: ethics, gifts, and samples. *BMC Health Res*, 19: 80.
4. Alosaimi F, AlKaabba A, Qadi M, et al (2013). Acceptance of pharmaceutical gifts Variability by specialty and job rank in a Saudi healthcare setting. *Saudi Med J*, 34(8): 854-860.
5. Saito S, Maeno T, Miyata Y, Maeno T (2018). Medical students' attitudes toward interactions with the pharmaceutical industry: a national survey in Japan. *BMC Health Res*, 18: 286.