

# The contagion and spillover effects of stock returns between quasi-vertically integrated firms in Taiwan semiconductor industry

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## ABSTRACT

The study intends to investigate whether there are contagion effects resulting from supply-chain stock returns interaction and spillover effects deriving from returns volatility causation in quasi-vertically integrated Taiwan semiconductor industry. 17 paired groups (34 companies) of parent and subsidiary companies were found. The unit root test, LB-Q test, ARCH tests, Bi-GARCH model, parametric t test and nonparametric sign test, ranked sign test and Kruskal-Wallis test are applied. The major findings are as follows: Positive stock returns contagion effect exist in both parent-to-subsidiary and subsidiary-to-parent. Stock returns volatility spillover main and minor effects exist in quasi-vertically integrated supply chain. In general, the contagion effect and volatility spillover effect of parent-to-subsidiary are greater than those of subsidiary-to-parent.

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## Keywords:

Contagion effect, Spillover effect, Bi-GARCH, Semiconductor industry.