

4. Conclusion

This study examines whether a tax on capital gains can reduce the stock market volatility. We explain the market volatility by the speculators' holding adjustment considering both effects of capital gains and the conditional variance of stock price. It could be concluded that a tax on capital gains does not smooth the effect of all shocks:

1. If only the issuing shock occurs, it will cause a lowering-price effect so that the speculators would increase their holdings with an expectation of a rising stock price. In this case, as the tax rate rises, the speculators would buy more stocks, leading the current price to deviate less from the equilibrium price. Therefore, raising the tax rate would temper the stock price's response to the issuing shock.
2. If only the dividend shock occurs, it will cause a raising-price effect so that the speculators would reduce their holdings with an expectation of a falling stock price. In this case, as the tax rate rises, the speculators would sell more stocks, leading the current price to deviate less from the equilibrium price. Therefore, raising the tax rate would temper the stock price's response to the dividend shock.
3. If only the margin-rate shock occurs, it will cause both the lowering-price and the margin-rate effects. The speculators would reduce their holdings because of the greater impact of margin-rate effect. In this case, as the tax rate rises, the speculators would sell more stocks, leading the current price deviate more from the equilibrium price. Therefore, raising the tax rate would dampen the stock price's response to the margin-rate shock.

Our analysis provides an interpretation of the relationship between the tax on capital gains and the stock market volatility; however, some aspects are worth future study. First, in our model, the welfare function is only defined for the rational

speculators. Thus, the welfare for the other two types of agents are ignored. The further study can make up this deficiency. Besides, as the international capital controls are decreasing in recent years, international capitals move more freely in the stock markets around the world and therefore, the impact of foreign capitals on the stock market has increased. Hence, it would be important in the future study to introduce the foreign exchange market into the model.