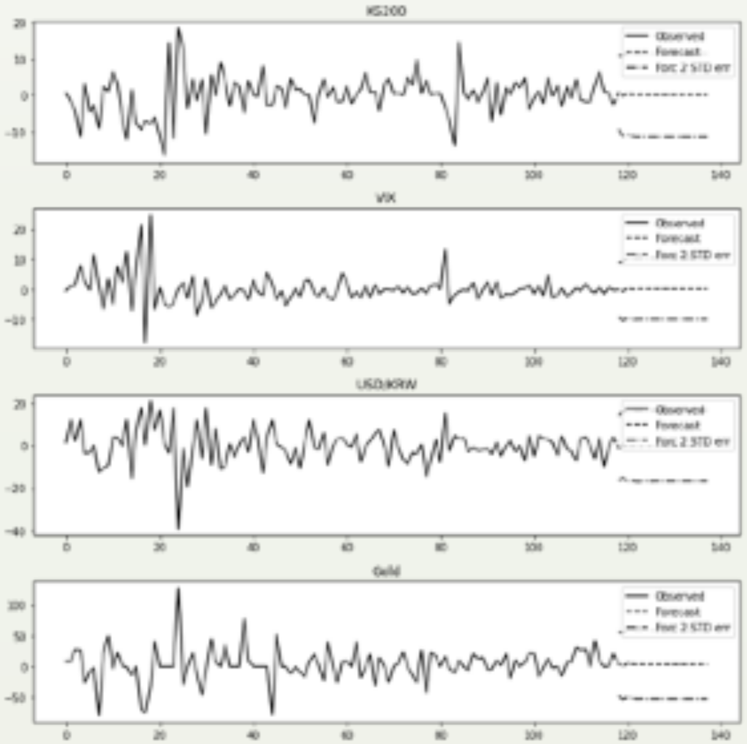
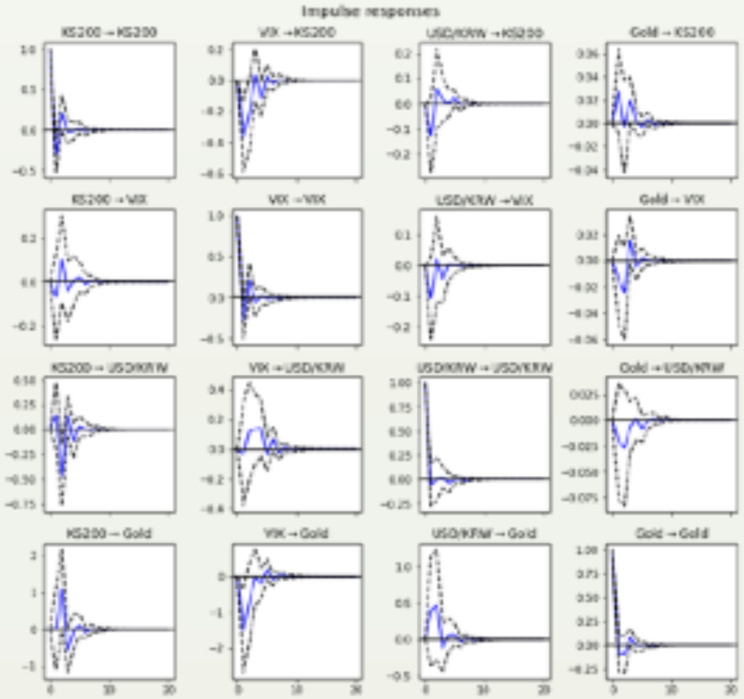
VAR 모델

예측값 확인



충격반응함수



VAR 모델

Granger Causality 테스트(KS200, VIX)

```
# Granger Causality 테스트 (KS200, VIX)

# 비정상성 차수 추론
target = df_.KS200.copy()
integ_result = pd.Series(sm.tsa.stattools.adfuller(target)[0:4],
                         index=['Test Statistics', 'p-value', 'Used Lag', 'Used Observations'])
Y1_integ_order = 0
if integ_result[1] > 0.1:
    Y1_integ_order = Y1_integ_order + 1

target = df_.VIX.copy()
integ_result = pd.Series(sm.tsa.stattools.adfuller(target)[0:4],
                         index=['Test Statistics', 'p-value', 'Used Lag', 'Used Observations'])
Y2_integ_order = 0
if integ_result[1] > 0.1:
    Y2_integ_order = Y2_integ_order + 1
print('Y1_order: ', Y1_integ_order, 'Y2_order: ', Y2_integ_order)
```

```
Y1_order:  1 Y2_order:  1
```

```
# Granger Causality 테스트 (KS200, VIX)

print('\n[VIX -> KS200]')
granger_result1 = sm.tsa.stattools.grangercausalitytests(df_.diff(1).dropna().values, maxlag=4, verbose=True)
print('\n[KS200 -> VIX]')
granger_result2 = sm.tsa.stattools.grangercausalitytests(df_.diff(1).dropna().iloc[:,[1,0]].values, maxlag=4, verbose=True)
```