Financial Econometrics 1 - M2 FTD

Empirical Applications

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Introduction

something, probably describe how all applications make sense one after the other and what is the research question we could have made ourselves when doing the applications, try to give a coherent look to the whole thing.

This document compiles all our applications of the Financial Econometrics course. Each section represents a specific application, but we tried to make them coherent across them around a broad question:

1 Series Dynamics

Note: Depending on each exercise along these applications we might use different series. In this first section, we performed the stationarity and component analysis of all of them to be able to use them rapidly without having to worry about seasonality or the presence of UR. Therefore, this section encompasses more than the 3 series that were asked in the exercise.

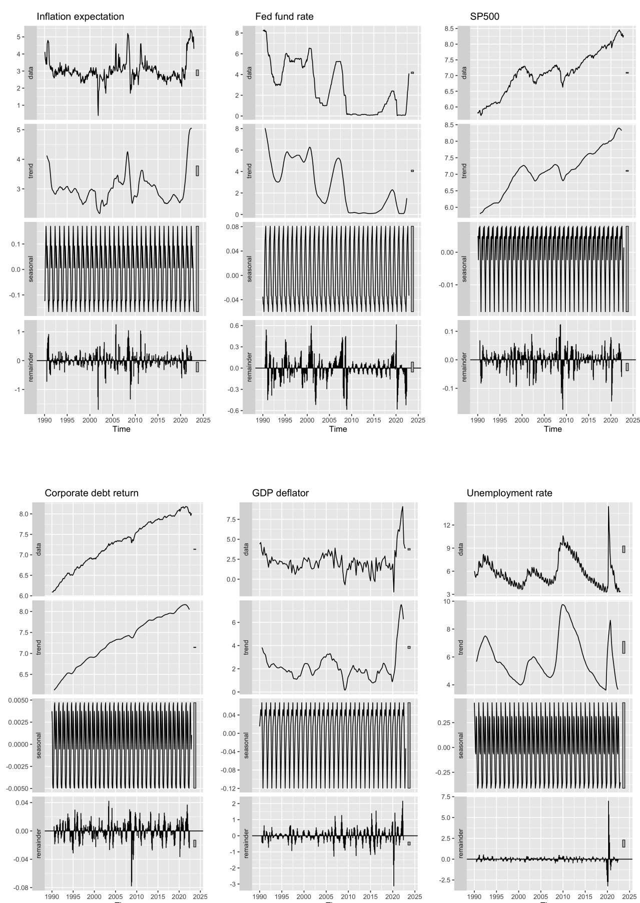

Figure 1: Time series decomposition

ADF - Test jointly for deterministic and stochastic trend 1st regression

- Inflation expectation, $t_\gamma = -4.650 < -3.420$ we can reject HO ie we can't say that the series has an UR

  need to test β_0 and β_1 with standard models

- Fed fund rate, $t_\gamma = -1.709$

Table 1: ADF test - 1st regression with drift, deterministic trend and stochastic trend

	infl_e	rate	corp_debt	deflator	unempl	splong	CV 1pct	CV 5pct	CV 10pct
tau3	-4.650	-1.709	-1.975	-1.867	-5.197	-3.763	-3.980	-3.420	-3.130
phi2	7.375	2.015	3.875	10.326	9.097	4.769	6.150	4.710	4.050
phi3	11.061	2.917	1.997	4.247	13.644	7.134	8.340	6.300	5.360

2 Canonical VAR model application

3 Cointegration theory

4 Impulse Response Analysis

4.1 Canonical IRF

4.2 Structural IRF

5 Introduce non-linearities

5.1 Markov-switching model

5.2 STR model

6 Difference-in-Difference

https://www.tidy-finance.org/r/difference-in-differences.html