Endogenous Potential Output in the EU

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Overview

1. Simple statistical methods good enough to tell the right "story"

2. Persistent output losses lead to "defeatism": Can lead to self-fulfilling loss in potential output.

3. Existing measures treat potential output as exogenous, but increasing evidence that it's affected by fiscal and monetary policy
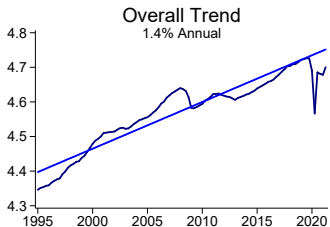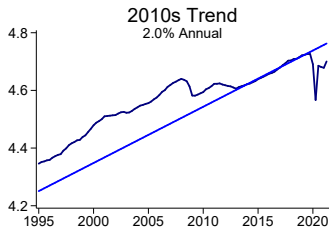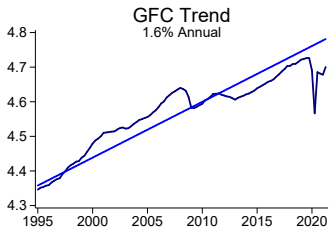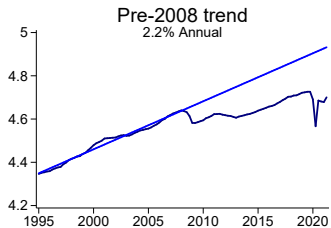
Two sidebars:

1. No "the" output gap: Output gaps should be made to purpose
2. What is the correct level of aggregation?

Simple Detrending

Simplest ways to measure GDP trends tell a "reasonable" story.

Following figures show GDP with simple piece-wise linear trend lines.

Eurozone (log) GDP and trends

Sources: Eurostat and the author

The Eurozone Trend-Cycle
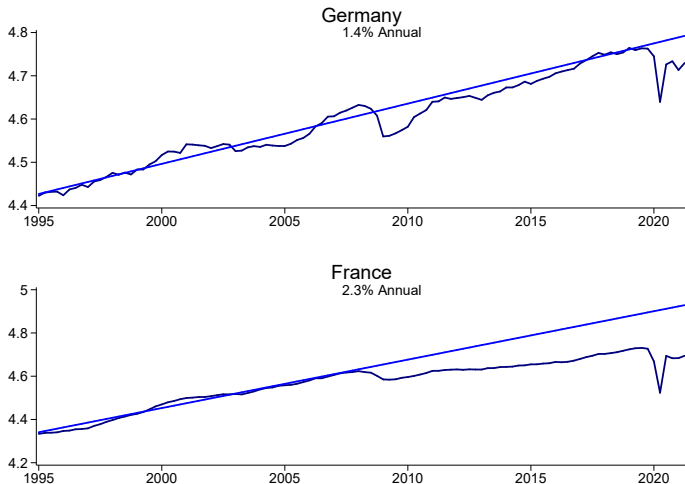
EZ GDP trend growth is 2% a year

Punctuated by some disasters
- GFC and EZ crisis causing permanent damage
- Covid 19?

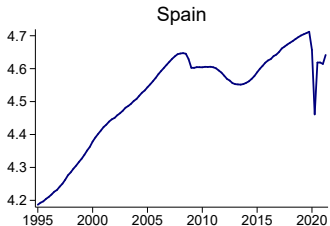Can visually (and statistically) detect random walk with a drift
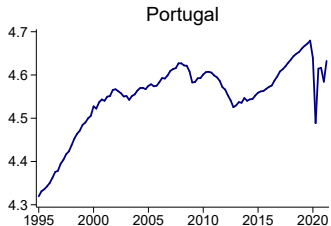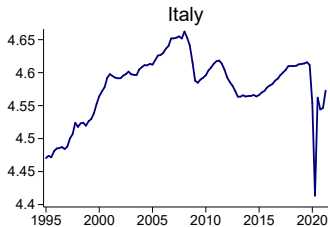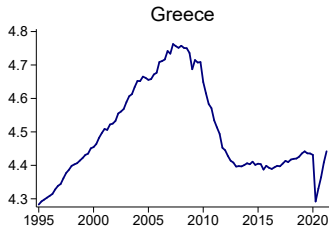
But not all countries are the same...

Germany and France (log) GDP and trends

Germany
1.4% Annual

France
2.3% Annual

Sources: Eurostat and the author

Southern Europe (log) GDP and trends

Sources: Eurostat and the author

Simple Story

Germany has followed the classical trend-and-cycle paradigm

Most countries (also outside the EZ) have followed the "cycle is the trend" paradigm during GFC.

- Economies never return to their pre-crisis trend
- Aguiar and Gopinath (2007)

Aside: Lead to interesting questions about the correct level of aggregation.

Perhaps this is because I am using to simple a method? Au contraire... More "sophisticated" methods give less "reasaonable" and far more dangerous results

Italy (log) GDP and HP-Filter trend

Good times to tighten?
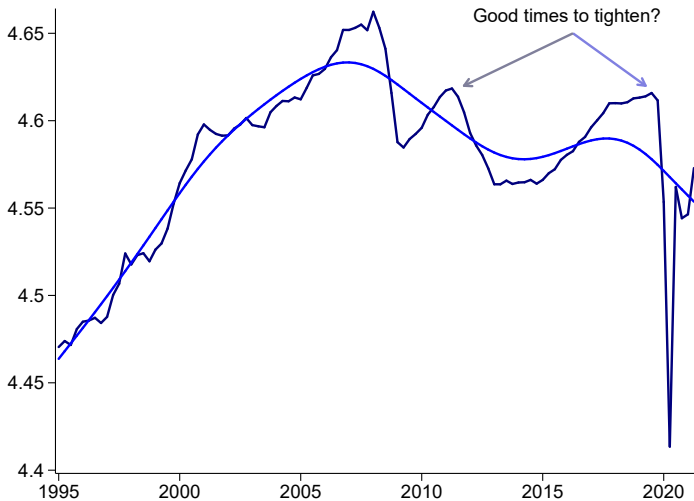
Sources: Eurostat and the author

Potential Output Defeatism and its Consequences

Statistical cycle-trend methods are sluggish defeatists

- Can't distinguish permanent disasters from cycles
- Facing a disaster, gradually acknowledge the new trend.
- This means that output gap closes not because GDP recovers, but because faulty potential GDP estimates converge to reality.

Lead to misguided policy advice:

- Quash any delayed recovery.
- Potential output estimates declare defeat

There are of course production function methods of estimating potential output, but these too require us to take a position on whether losses in jobs, capital, TFP.

Output Gap Measures for Different Purposes

Output gaps are studied for a variety of purposes and the "correct" answer depends on the question.
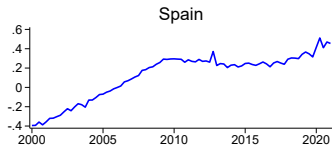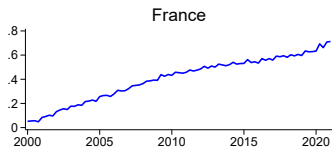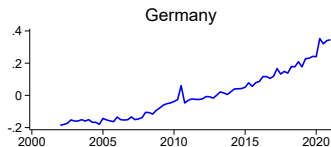
- Are inflation pressures around the corner?

- How well is capacity (labor force) utilized?

- **Cyclically-adjusted budget measures**

Government spending in the Eurozone
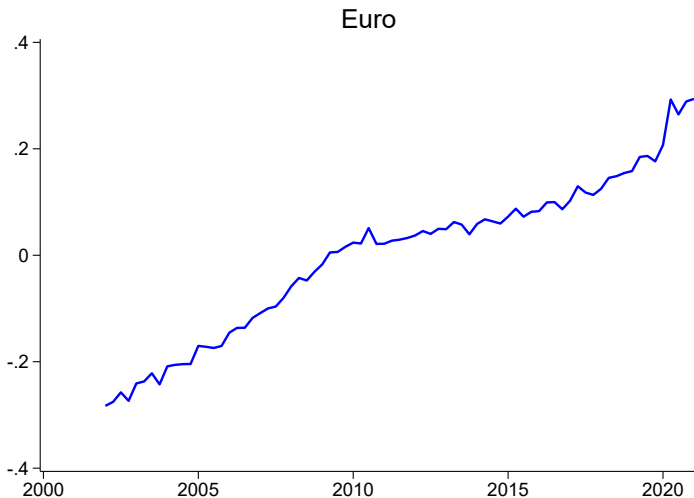
Euro

Natural logs, seasonally adjusted. Sources: Eurostat and the author

Government spending in the Eurozone
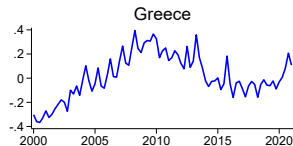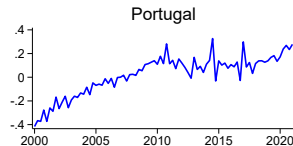
Natural logs, seasonally adjusted. Sources: Eurostat and the author

Public Spending and Endogenous Potential Output

Countries cut spending more the more permanent the economic damage.
(Not making a causal statement)

This is the right policy **if** potential GDP is exogenous.

But increasing theories and evidence point in a different direction.

New views on endogenous potential output

(New) Keynesian view:

- Potential output (supply) is exogenous

- Aggregate demand management (fiscal/monetary) $\rightarrow$ output gap

New views macro policy and potential output

- Low demand $\rightarrow$ scarring effects on potential output
  - ▶ Imnplied in endogenous growth literature: Romer (1992), Young (1991, 1998); Lucas (1993); Jones (1995)
  - ▶ More recently formalized in: Benigno & Fornaro (2018); Anzoategui et al (2019); Fornaro & Wolf (2021).
  - ▶ Evidence: Jordà, Singh & Taylor (2020); Ilzetzki (2021)

- "Hysterisis"
  Cera, Fatás, & Saxena (JEL, forthcoming) for review

Ilzetzki (2021): Learning by Necessity

Use archival data from US aircraft manufacturing in WWII.

Changes in strategic needs provides quasi-random shifts in demand for different aircraft types.

Government demand $\rightarrow$ higher TFP

This effect holds primarily when capacity utilization is high: **Learning by Necessity**

Call for erring on the side of running the economy "hot"

TFP Response to Demand

High vs. Low Capital Utilization Plants