

## Part IIB

### Supervision 10 - Revision II

### Policy and International

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# This Class

- ▶ Your Questions.
- ▶ Faculty Essay 2: Macroeconomic uncertainty.
- ▶ International Essay: 2016 Exam.
- ▶ Revision: Some guidance.

Your Questions.

## Question 1 - Policy: Lecture 1 - EPF

- ▶ What makes the Efficient Policy Frontier (EPF) a long run concept?
- ▶ Policy targets the **current level** of variables (e.g.  $\pi_t$ ).
- ▶ Taking into account today's shocks (e.g.  $\eta_t$ , and  $\varepsilon_t$ ).
- ▶ But the EPF exists in **variances** (e.g.  $\sigma_\pi^2$ ):

$$\sigma_\pi^2 = \left( \sqrt{\sigma_\varepsilon^2} - \theta \sqrt{\sigma_Y^2} \right)^2.$$

- ▶ So we need to observe **multiple shocks** to trace it out.

## Question 2 - Policy: Lecture 5, Slide 10 - Tax Smoothing

- ▶ What is the intuition behind the tax rate smoothing result?
- ▶ We assume policymakers face **convex** losses today and tomorrow in tax rates.
- ▶ This optimally implies **smoothing**, with  $\tau_1$  and  $\tau_2$  jointly determined.
- ▶ To fund a given level of government spending it's better to tax a little in both periods than all in one.
- ▶ This means better to have small losses in each argument of loss function than the same loss in one argument.
- ▶ If the market price moving loss between periods is equal to the rate of preference for doing so, then **perfect smoothing**.

## Question 3 - Policy: Lecture 5 - Tax Smoothing

- ▶ Does Ricardian equivalence only apply under the golden rule?
- ▶ From what you have seen in lectures **no**.
- ▶ Ricardian equivalence says the source of financing a given level of expenditure is irrelevant.
- ▶  $G_1^I$  is an expenditure component, so does not influence the potential differing ability to repay via tax or bond income.
- ▶ Ricardian equivalence requires perfect credit markets and non-distortionary taxes.

## Question 4 - Policy: Lecture 5 - Tax Smoothing

- ▶ Does our derivation of the optimal tax rate only apply under the golden rule?
- ▶ Again, **no**. Steps in the derivation would look the same.
- ▶ This is given on slides 10 and 11 in the notes.
- ▶ But, in general, it will not be possible to **simplify** further.
- ▶ In particular many of the special case (permanent level) results from slide 12 onwards will not apply be lost.

## Question 5 - Policy: Lecture 6 - Debt Dynamics

- ▶ How do we justify the phase lines' graphical positions?

$$\Delta b = d_p + (r - g)b$$

- ▶ Start by marking intercept  $d_p$ . Could be above or below 0.
- ▶ Unlike the problem set, as  $\Delta b$  is **linear** in  $b$  we are **always** guaranteed a **unique** equilibrium at:

$$b^* = \frac{d_p}{g - r}.$$

- ▶ But **sign** of  $b^*$  determined from assumed sign of  $d_p$  and  $r - g$ .
- ▶ Locate  $b^*$  and join with  $d_p$  in a straight line.
- ▶ Finally check dynamics from **any** initial  $b$ .

## Question 6 - Policy: Unconventional Monetary Policy

- ▶ Does unconventional monetary policy work after ELB hit?
- ▶ **Yes**, by design.
- ▶ Typically ELB is for “short” end of yield curve.
- ▶ Lectures reference Bernanke-Blinder model
- ▶ This has a very clear interpretation of a liquidity trap: no Keynesian interest rate channel.
- ▶ But bank lending channel still in operation.

## Question 7 - IFS: Original Sin

- ▶ Can you give some more detail on original sin?
- ▶ See: Eichengreen and Hausmann (1999), Page 337-340.

## Faculty Essay 2: Macroeconomic Uncertainty.

## Faculty Essay 2 - Set up

- ▶ *Macroeconomic policymakers currently face great uncertainty. Discuss the different types of uncertainty they face and explain the best ways to respond to them.*
- ▶ Is this an AND or an OR question?

## Faculty Essay 2 - Initial Steps

- ▶ Recall Lecture 2: Slide 3.
- ▶ Monetary policymakers face uncertainty about:
  - ▶ Economic shocks ( $\eta_t$  and  $\varepsilon_t$ ).
  - ▶ Additive model parameters ( $\bar{Y}, \bar{r}$ ).
  - ▶ Multiplicative model parameters affecting transmission ( $\theta, \alpha$ ).
  - ▶ Structure of economy ( $Y_t^n, r_t^n$ ).
  - ▶ Economic variables ( $\pi_t^e, \pi_t, Y_t$ ).
- ▶ Your task is simple. Go through **all in turn**, describing how uncertainty may matter for policy.

## Faculty Essay 2 - Current Interpretation I

- ▶ Let's instead see if possible to interpret in terms of COVID-19.
- ▶ Fundamental economic shocks.
  - ▶ How big is the COVID shock?
  - ▶ How much is in demand,  $\eta_t$ , and how much is cost push,  $\varepsilon_t$ ?
  - ▶ How long will these shocks last?
- ▶ Additive model parameters.
  - ▶ Must mention **certainty equivalence**.
  - ▶ Might we need new additive variables to capture non-traditional impacts from a lockdown or health?

## Faculty Essay 2 - Current Interpretation II

- ▶ Multiplicative model parameters affecting transmission.
  - ▶ Must mention **Brainard principle**.
- ▶ Structure of economy.
  - ▶ Return to “normal” will not be a return to pre-COVID.
  - ▶ Clearly means  $Y_t^n$  is lower.
  - ▶  $r_t^n$  also lower, as investment is less productive now.
  - ▶ But how much?

## Faculty Essay 2 - Current Interpretation III

- ▶ Economic variables.
  - ▶ Possibly the source of uncertainty we know most about.
  - ▶ We can **calibrate** to some extent on experience of other countries (China, lesser extent Italy).
  - ▶ Current economic forecasts vary wildly, e.g. Box 4 in BoE's [MPR May 2020](#).
  - ▶ Data **quality** varies too, e.g. with the ONS considering error range for GDP data, [Reuters 27 April](#).

## Faculty Essay 2 - Time Permitting, Something Special?

- ▶ Literature.
- ▶ Data.

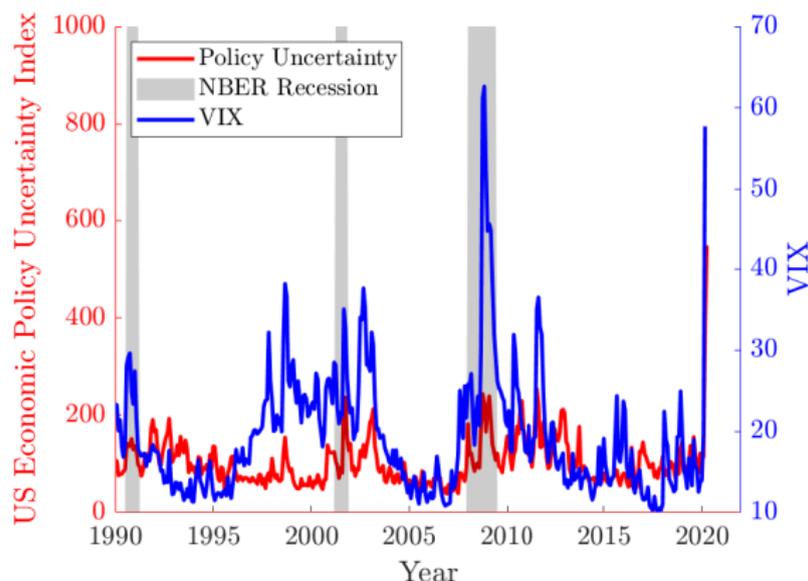
## Faculty Essay 2 - Literature

- ▶ Empirical studies conclude elevated uncertainty leads to a **decrease** in output. E.g. Bloom et al. (2018), Baker et al. (2016) and Jurado et al. (2015).
- ▶ Theory less clear e.g Leduc and Liu (2016).
- ▶ Elevated uncertainty increases precautionary saving, which should **increase** investment.
- ▶ A range of plausible implications e.g. a flatter Phillips curve cf. Freund and Rendahl (2020).
- ▶ Current debate: Baker et. al. (2020) [VoXEU post, 13 April](#).
- ▶ **Be careful here.** Top journals only. I knew where to look.

## Faculty Essay 2 - Collect Some Data on Uncertainty

- ▶ Huge increase in latest data, similar to GFC.
- ▶ **Be careful here:** time is precious.

Uncertainty Measures.



Sources: Baker, Bloom and Davis (2016) and FRED.

## International Essay: 2016 Exam.

## 2016 Exam - Set up

- ▶ Question 1: What are the attributes of an international reserve currency?
- ▶ What are the advantages and policy trade-offs for the country issuing it?
- ▶ In your answer discuss whether the recent global financial crisis has influenced economists' views on these issues.
- ▶ This is a classic Essay of 3 parts.

# Attributes of an International Reserve Currency I

Immediately cite **Eichengreen (2013)** who gives three:

1. **Scale** to capture the public good nature of money.
  - ▶ **Network Externalities** are required for an asset to provide the services of money as one agent's utility from using an asset as money is increasing in the number of agents also using it as money.
  - ▶ Currencies may retain international vehicle status long after relative economic size/ power of the supplier have declined.
2. **Stability** to retain confidence of international markets.
  - ▶ Especially not subject to arbitrary manipulation.
3. **Liquidity** for easy conversion into other goods/services/assets.
  - ▶ Minimal loss of value during transactions.
  - ▶ Countries with a large share of world GDP or centrality of a given market may satisfy (1), but U.S. Treasury markets are the deepest and most liquid in the world.

## Attributes of an International Reserve Currency II

- ▶ During the financial crisis **confidence** became a key issue, with (2) and (3), above, extremely important.
- ▶ The reserve issuer must be able to withstand external and internal shocks **without** resorting to bouts of inflation or debt defaults to repay obligations.
- ▶ **Bernanke (2016)** therefore adds **safety** as an additional consideration, alongside the ability to act as a **Lender of Last Resort** by providing funding (liquidity) through currency swaps during distress.

## Advantages and Trade-off for Issuer I

- ▶ Historically, a key advantage for the issuer was the ability to borrow in its own currency at relatively low interest rates, known as the **exorbitant privilege** (a large positive differential between returns on the US foreign assets and liabilities).
- ▶ IRC issuers potentially face a trade-off between maintaining **domestic stability** and providing **international liquidity**.

## Advantages and Trade-off for Issuer II

- ▶ Discussed by **Triffin (1960's)** during the Bretton Woods gold-exchange standard, where only USD was convertible into gold. All other currencies were pegged to USD.
- ▶ Rapid global growth increased demand for international payments. US had to supply dollar monetary assets at the appropriate pace or trade and growth would suffer real costs from a liquidity shortage.
- ▶ Yet, continual expansion of US dollar liabilities at the rate of world growth would be bound to lead to the stock of dollar liabilities exceeding the US stock of gold.
- ▶ To the extent that foreign central banks could ask the Federal Reserve to exchange their USD for gold, the US would become vulnerable to a **“run on the dollar”** or confidence crisis.

## Influence of Recent Global Financial Crisis

- ▶ Is there a similar dilemma today? **Yes** - growing demand for safe international money and short-term assets.
- ▶ The US can expand their supply in different ways:
  - ▶ given foreign liabilities,  $\uparrow$  short-term instruments,  $\downarrow$  long-term;
  - ▶ given current account deficit,  $\uparrow$  both gross liabilities and assets;
  - ▶  $\uparrow$  external deficit, financed by short-term USD liabilities.
- ▶ In satisfying international demand for USD denominated monetary assets, the US needs to make sure that a high issuance of own short term/monetary liabilities does not undermine its ability to pursue macroeconomic, fiscal and financial stability, or create potential confidence crises.
- ▶ Ultimately, the US must have the **capacity to stabilize** even large shocks without generating high trend inflation and depreciation, or “tampering” with its debt.

## 2016 Exam - Time Permitting, Something Special?

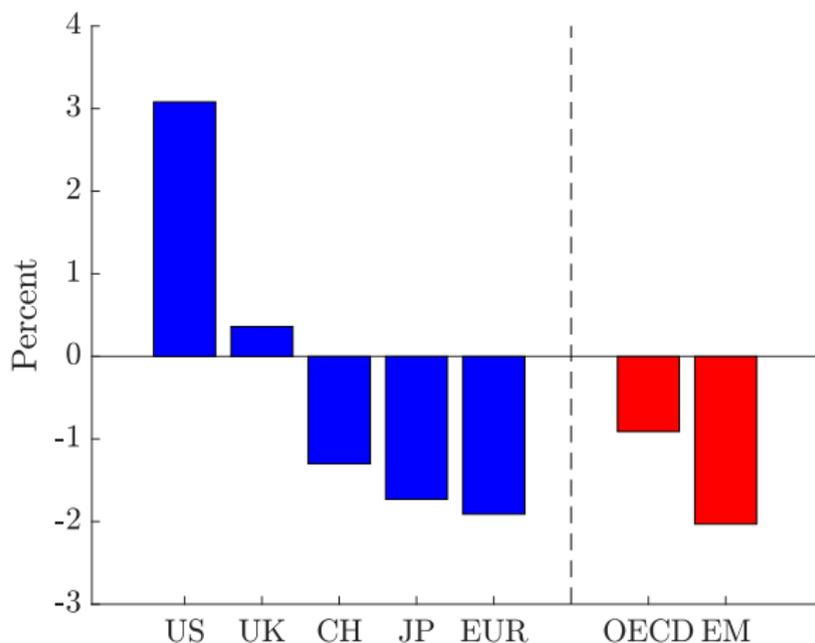
- ▶ Literature.
- ▶ Data.

## 2016 Exam - Literature

- ▶ Forbes (2010): Financial development is the reason why countries overinvest in US.
- ▶ Gourinchas and Rey (2007): Rising globalisation over past 30 years, particularly of the global equity markets has led to increased capital flow into the US.
- ▶ Habib (2010): The US continues to enjoy substantial exorbitant privilege.
- ▶ Lane and Milesi-Ferretti (2018): An important data source. 1970–2015 international asset and liability positions.
- ▶ Again, **be careful here.**

## 2016 Exam - Evidence of Exorbitant Privilege

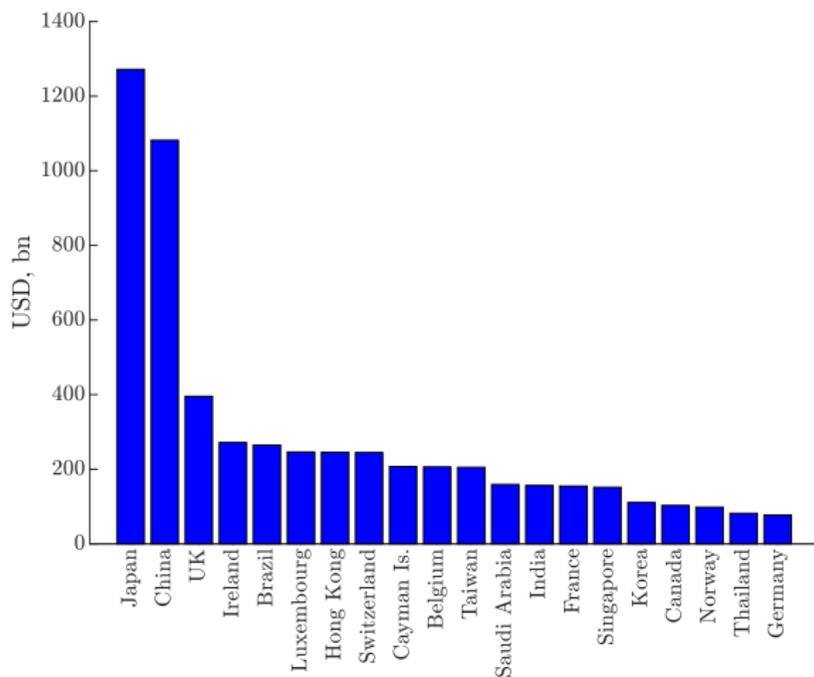
Differential Real Total Returns on Foreign Assets and Liabilities.



Source and Notes: Habib (2010). Data include capital gains and reflect the 1981–2008 average.

# 2016 Exam - US Treasury Holders Data

U.S. Treasury Securities Held by Foreign Residents (March 2020).



Source and Notes: US Treasury International Capital System. Top 20 holders total asset holdings shown.

Revision: Some Guidance.

## Revision: Ahead of Time

- ▶ Create document (including auto word count).
- ▶ Add all literature references in bibliography (group by topic).
- ▶ Your “known knowns”
  - ▶ Have you already done that question?
- ▶ Practise open book essays using previous exams.

## Revision: During the Exam

- ▶ Give both questions a chance.
- ▶ Quickly determine if question is an AND or an OR?
- ▶ Determine your answer approach:
  - ▶ Build a model.
  - ▶ Graphical explanation.
  - ▶ Critical essay.
- ▶ You **must** plan the essay (start with base essay, add detail).
- ▶ You **must** read over and check your full answer.

## Revision: What to Avoid

- ▶ Factual mistakes (including in literature).
- ▶ Not understanding the **main** point of question.
- ▶ Extensive use of lecture material (a false friend).
- ▶ Long derivations that go nowhere.

## Revision: Keep in Mind

- ▶ Like regular exam answers, the essay should be self-contained.
- ▶ Sufficient detail should be provided to understand it.
- ▶ The word limit of 2000 excludes mathematical expressions.
- ▶ The more precise and informative the essay is in addressing the question, the higher the mark.

## Final Thoughts

# Final Thoughts

- ▶ How to prepare for open book exams.
- ▶ Covid-19?
- ▶ Good luck!