

# Econometria para Avaliação de Impacto

2º semestre de 2021

Segundas e Quartas de 14:00 a 16:00, sala virtual no Teams

Professor: Rafael Terra

Atendimento: Segundas-feiras das 10:00 as 12:00 (favor marcar com antecedência).

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Material: Teams e <https://sites.google.com/site/rflterra>

## 1 Objetivos do Curso

O curso de Econometria do Setor Público busca ensinar os métodos quantitativos de avaliação de impacto. O curso tem um enfoque prático, com uso intensivo do pacote R.

## 2 Conteúdo

### 1. Módulo de Revisão de Econometria

#### (a) Regressão Linear

- i. Estimador MQO, Variância do Estimador, Variância Robusta, Endogeneidade.

#### (b) Painel

- i. Mínimos Quadrados Empilhados, Efeitos Fixos, Primeiras Diferenças, Efeitos Aleatórios, Teste de Hausman.

#### (c) Variáveis Instrumentais

- i. Estimador de Variáveis Instrumentais, Mínimos Quadrados em Dois Estágios, Estimador de Wald.

### 2. Módulo de Avaliação

#### (a) Modelo estrutural de Roy/Heckman/Borjas: Seleção amostral

- i. Descrição da intuição do modelo de Roy e a derivação do modelo econométrico estrutural de Borjas (usando a estratégia desenvolvida por Heckman).

#### (b) Métodos experimentais/Experimentos randomizados

- i. Tamanho da amostra, tamanho do efeito e poder do teste.
- ii. Desenho de avaliação.

#### (c) Métodos quase-experimentais: seleção em observáveis

- i. Matching e o uso dos propensity scores e regressão com covariadas
- ii. Controle sintético

- (d) Métodos quase-experimentais: seleção em não-observáveis (Experimentos Naturais)
  - i. Método de diferenças em diferenças e suas extensões
  - ii. Local Average Treatment Effect
  - iii. Regressão com descontinuidade (RDD).
  - iv. O efeito do tratamento nos quantis. IVQTE

### 3 Cronograma Aulas

O Cronograma inicial encontra-se na tabela 1.

Tabela 1: Tópicos de aulas

<b>Tópicos</b>	<b>Sequência</b>
Estimador MQO, Variância do Estimador, Variância Robusta, Endogeneidade.	Aula 1
Prática com R	Aula 2
Mínimos Quadrados Empilhados, Efeitos Fixos, Primeiras Diferenças, Efeitos Aleatórios.	Aula 3
Prática com R	Aula 4
Estimador de Variáveis Instrumentais, Mínimos Quadrados em Dois Estágios, Estimador de Wald.	Aula 5
Prática com R	Aula 6
Modelo de Roy/Borjas	Aula 7
Prática com Stata ou R	Aula 8
Experimentos randomizados.	Aula 9
Prática com R	Aula 10
Tamanho da amostra, tamanho do efeito e poder do teste.	Aula 11
Prática com R	Aula 12
Matching e o uso dos propensity scores e regressão com covariadas	Aula 13
Prática com R	Aula 14
Controle sintético	Aula 15
Prática com R	Aula 16
Método de diferenças em diferenças e suas extensões	Aula 17
Prática com R	Aula 18
Local Average Treatment Effect	Aula 19
Prática com R	Aula 20
Regressão com descontinuidade (RDD).	Aula 21
Prática com R	Aula 22
O efeito do tratamento nos quantis. IVQTE	Aula 22
Prática com R	Aula 24

## 4 Requisitos

Os requisitos para acompanhamento ótimo do curso são:

1. Cálculo Básico (funções de várias variáveis, Derivada parcial).
2. Álgebra linear Básica (Operações básicas com matrizes, matriz transposta, matriz quadrada, Identidade, matriz inversa, determinantes).
3. Teorema do Limite Central, LGN, Consistência e Eficiência dos estimadores, Inferência Estatística.
4. Regressão Simples e Múltipla (com notação matricial).
5. Ter **acesso ao software estatístico R**.

## 5 Avaliação

A avaliação será composta de:

- Três listas de exercícios: 40% da nota
- Participação: 10% da nota
- Uma Prova (take-home de 1 dia): 50% da nota

O aluno que zerar algum item da avaliação ficará com zero de média. Ausência de alguma das avaliações requer atestado médico.

## Referências

### Livros

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### Artigos

#### Introdução ao curso: Revisão

- [11] Angrist, J. D. and A. B. Krueger (2000), “Empirical Strategies in Labor Economics,” in A. Ashenfelter and D. Card eds. Handbook of Labor Economics, vol. 3. New York: Elsevier Science. Sections 1 and 2.
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## **Introdução à Avaliação de Políticas Públicas**

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## **Um Modelo Comportamental: O Modelo de Roy**

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## **Experimentos/RCT**

- [23] Angrist, J., E. Bettinger, E. Bloom, E. King, e M. Kremer. (2002). Vouchers for Private Schooling in Colombia: Evidence from a Randomized Natural Experiment. *American Economic Review*, December.
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## Seleção em Observáveis

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## **Seleção em Observáveis: Tratamentos Contínuos - Propensity Score Generalizado**

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## **Análises de Sensibilidade, comparação entre os métodos, “overlapping” e eficiência**

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## **Experimentos Naturais e o Método de Diferenças em Diferenças**

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## **Seleção em Não-Observáveis**

### **O Método de Variáveis Instrumentais**

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## **O Modelo de Seleção de Heckman, O Efeito Marginal do Tratamento e o Efeito sobre os Não-Tratados**

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## **Efeitos distributivos do tratamento e identificação parcial**

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## **Viés de Publicação**

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