Discussion of "Data, Privacy Laws and Firm Production: Evidence from the GDPR"

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We know a lot about Industrial Production

But very little about Digital Production

Harrigan et al. (2023): "Techies"

Lashkari et al. (AER, 2023): In-House IT

This Paper: Cloud Computing

Misallocation: Hsieh & Klenow (QJE, 2009)

Frictions: Taxes on Output and Capital

Identification: Wedges in Production FOCs

Counterfactual:

India has US frictions: 40-60% increase in TFP

Misallocation in This Paper

Frictions: Tax on Data from GDPR Regulation

Identification:

$\sigma_{D,C}$ = Location/Time Shocks in Pricing

λ_i = Post-GDPR Difference in Production FOC Wedge

What's the net distortion?

Negative Externalities of Data: Privacy, Data Security

1. Direct Effects of GDPR

2. GDPR as tax on data

What's the net distortion?

Negative Externalities of Data: Privacy, Data Security

1. Larger distortions for web services

2. Larger distortions for small firms

How large is the distortion?

P_{Data} ⇑ **20%**

P_{Info} ⇑ 4%

Byrne, Corrado, Sichel (2018):

 -12%/yr   -17%/yr   -7%/yr

How large is the distortion?

P_{Data} ⇧ 20%

P_{Info} ⇧ 4%

Wu et al (2018):

aws

-20%/yr

1. How are Prices Measured?

Data: $/TB

Compute: $/core-hour (w/ negotiated firm prices)

Lashkari et al. (2023): Relative IT Price, 1995-2007

    Official Series: -28%

    Hedonic Correction: -60%

1. How are Prices Measured?

1. Do hedonic correction.

2. Provide price indices over time / across location.

2. How is distortion identified?

$$\log(1 + \lambda_i) = FE_{i,postGDPR} - FE_{i,preGDPR}$$

$$\omega_i^c$$

2. How is distortion identified?

$$\log(1 + \lambda_i) = FE_{i,postGDPR} - FE_{i,preGDPR}$$

$$\omega_i^c$$

Follow Hsieh-Klenow:

Compare EU distribution to US distribution.

3. Where is the counterfactual exercise?

80% EU firms linked to ORBIS ➡ Y, K, L, M

Counterfactual: TFP effect of removing distortions
    1. Level
    2. Dispersion

3. Where is the counterfactual exercise?

Production Function: CES Across All Inputs?

Here: $\sigma_{D,C} \approx 0.3 - 0.4$

Raval (RAND, 2019): $\sigma_{K,L} \approx 0.3 - 0.5$

Lashkari et al. (2023): $\sigma_{IT,non-IT} \approx 0.2$

4. Is Macro PF Different from Micro?

Oberfield and Raval (ECMA, 2021)

$$\sigma_{agg} = (1 - \chi)\sigma_{micro} + \chi\varepsilon$$

Lashkari et al. (2023): Micro $\sigma_{IT,non-IT} \approx 0.2$

Macro $\sigma_{IT,non-IT} \approx 1$

4. Are Macro PF Different from Micro?

Oberfield and Raval (ECMA, 2021)

$$\sigma_{agg} = (1 - \chi)\sigma_{micro} + \chi\varepsilon$$

Dispersion in:

1. Data/Compute
2. IT/non IT inputs
3. GDPR distortions

We need help!

FTC Explores Rules Cracking Down on Commercial Surveillance and Lax Data Security Practices

Agency Seeks Public Comment on Harms from Business of Collecting, Analyzing, and Monetizing Information About People

FACT SHEET: President Biden Issues Executive Order on Safe, Secure, and Trustworthy Artificial Intelligence