

Empirical Assessment of Procurement Policies: Evidence from the Recent Practices in Brazil

New Trends in Public Procurement Research

Klenio Barbosa

Sao Paulo School of Economics-FGV

8th INGP Annual Conference on Public Procurement in the Americas

September 11-13, 2012 - Panama City, Panama

The Relevance of Procurement

- Public procurement
 - significant fraction of the public expenditures
 - 16 % of GDP in EU, and 20 % of GDP in the U.S.
 - goods and services: construction, public utilities, pharmaceuticals ...
- Government policies affect procurement costs
 - important impact on public budgeting.

Growing literature on empirical evaluation of procurement practices

- Discriminatory Programs in Government Procurement
 - Marion (2007, 2009), Krasnokutskaya et al. (2010), Athey et al. (2012)
- Auctions versus Negotiation
 - Bajari et al. (2009), Estache et al. (2009), Chong et al. (2010)
- Make-versus-Buy Decision
 - Hart et al. (1997), Levin et al. (2010), Bergman et al. (2010)
- Other Initiatives: Pooled Procurement, Competition Enhancing Policies...

Growing literature on empirical evaluation of procurement practices

- Discriminatory Programs in Government Procurement
 - Marion (2007, 2009), Krasnokutskaya et al. (2010), Athey et al. (2012)
- Auctions versus Negotiation
 - Bajari et al. (2009), Estache et al. (2009), Chong et al. (2010)
- Make-versus-Buy Decision
 - Hart et al. (1997), Levin et al. (2010), Bergman et al. (2010)
- Other Initiatives: Pooled Procurement, Competition Enhancing Policies...

Growing literature on empirical evaluation of procurement practices

- Discriminatory Programs in Government Procurement
 - Marion (2007, 2009), Krasnokutskaya et al. (2010), Athey et al. (2012)
- Auctions versus Negotiation
 - Bajari et al. (2009), Estache et al. (2009), Chong et al. (2010)
- Make-versus-Buy Decision
 - Hart et al. (1997), Levin et al. (2010), Bergman et al. (2010)
- Other Initiatives: Pooled Procurement, Competition Enhancing Policies...

Growing literature on empirical evaluation of procurement practices

- Discriminatory Programs in Government Procurement
 - Marion (2007, 2009), Krasnokutskaya et al. (2010), Athey et al. (2012)
- Auctions versus Negotiation
 - Bajari et al. (2009), Estache et al. (2009), Chong et al. (2010)
- Make-versus-Buy Decision
 - Hart et al. (1997), Levin et al. (2010), Bergman et al. (2010)
- Other Initiatives: Pooled Procurement, Competition Enhancing Policies...

Growing literature on empirical evaluation of procurement practices

- Discriminatory Programs in Government Procurement
 - Marion (2007, 2009), Krasnokutskaya et al. (2010), Athey et al. (2012)
- Auctions versus Negotiation
 - Bajari et al. (2009), Estache et al. (2009), Chong et al. (2010)
- Make-versus-Buy Decision
 - Hart et al. (1997), Levin et al. (2010), Bergman et al. (2010)
- Other Initiatives: Pooled Procurement, Competition Enhancing Policies...

Empirical Evaluation of the Recent Procurement Practices in Brazil

① Pooled Procurement:

Evidence from Price Registration System

- Barbosa and Fiuza (2011)

② Calling for a supplier of active substance:

A manner to procure for pharmaceuticals

Evidence from Sao Paulo State's Procurement Contracts

- Arvate, Barbosa and Gambardella (2012)

Pooled Procurement in Brazil

Evidence from the Price Registration System

Demand Aggregation and Credit Risk Effects in Pooled Procurement: Evidence from Brazil

Barbosa and Fiuza (2011)

The Relevance of Pooled Procurement

- What is Pooled Procurement?

- Pool of buyers: jointly procure for goods/services
- Common feature: selected supplier(s) provides goods/services at a unique price to all pool members.

- Pooled Procurement around the World

- Europe: Framework Agreements in Europe - EC Directive 18/2004
 - Bandiera et al. (2009): Consip with Italian public bodies
22 % of total procurement
- U.S.: Bulk Procurement for acquisition of pharmaceuticals
 - NCL (2010): Multi-state bulk buying pools: NMPI, TOP, SSDC, ...
- Other countries: Brazil, Peru, Chile, India, New Zealand
 - Mucha (2010), Huff-Roussell et al.(1996), Tordoff et al. (2005), ...

The Relevance of Pooled Procurement

- What is Pooled Procurement?

- Pool of buyers: jointly procure for goods/services
- Common feature: selected supplier(s) provides goods/services at a unique price to all pool members.

- Pooled Procurement around the World

- Europe: Framework Agreements in Europe - EC Directive 18/2004
 - Bandiera et al. (2009): Consip with Italian public bodies
22 % of total procurement
- U.S.: Bulk Procurement for acquisition of pharmaceuticals
 - NCL (2010): Multi-state bulk buying pools: NMPI, TOP, SSDC, ...
- Other countries: Brazil, Peru, Chile, India, New Zealand
 - Mucha (2010), Huff-Roussell et al.(1996), Tordoff et al. (2005), ...

- **Demand Aggregation Effect**: Reduction in acquisition prices
 - increasing in bargaining power
 - suppliers can achieve economies of scale/scope (logistic or production).
- **Credit Risk Effect**: Increase in acquisition prices for reputable buyers
 - Buyers have different financial capabilities in paying suppliers.
 - A **low credit risk** buyer may have its price paid increased when it is joined by **high credit risk** buyers in the pool.

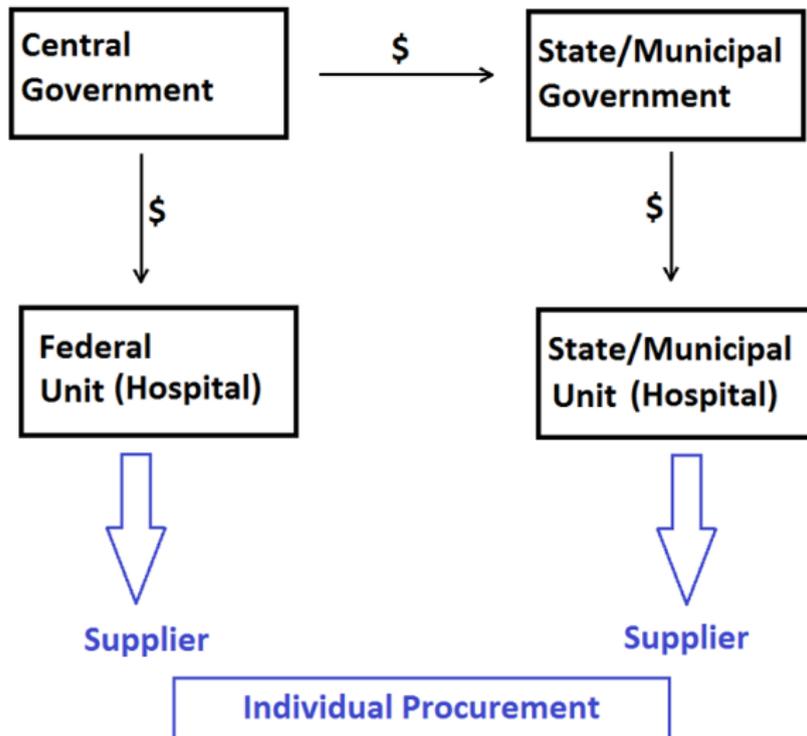
- Empirical Analysis: Effect of Pooled Procurement on Acquisition Prices
 - ① Demand Aggregation: price reduction effect
 - ② Credit Risk: price increase effect for good buyers
- Data:
 - Decentralized procurement contracts of Brazilian public bodies
 - Public purchases of pharmaceuticals and medical supplies
 - Procurement: Pooled and Individual

- Empirical Analysis: Effect of Pooled Procurement on Acquisition Prices
 - ① Demand Aggregation: price reduction effect
 - ② Credit Risk: price increase effect for good buyers
- Data:
 - Decentralized procurement contracts of Brazilian public bodies
 - Public purchases of pharmaceuticals and medical supplies
 - Procurement: Pooled and Individual

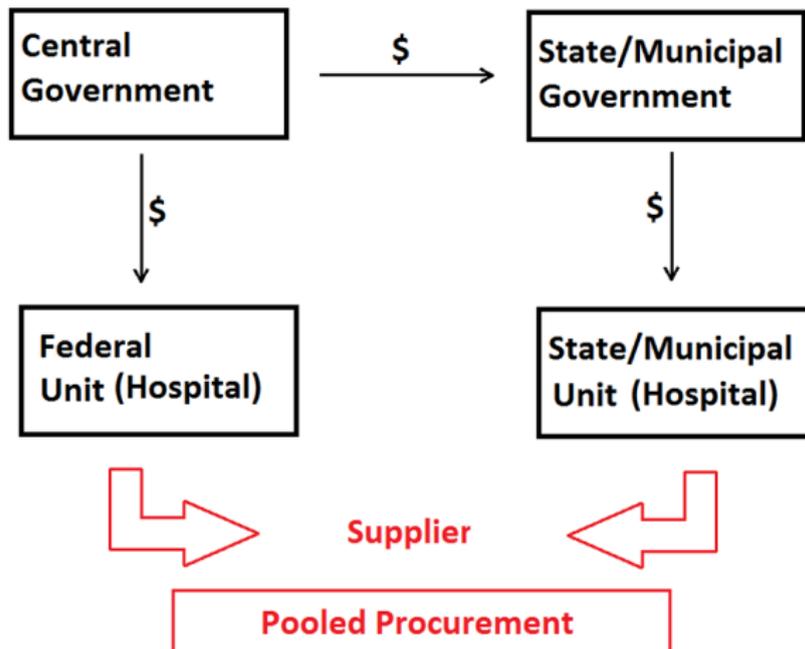
- Standard/Individual Procurement:
 - Law nº 8.666/93
 - most of public acquisitions rely on competitive bidding
 - 5 types: from open electronic auction to invited bidders
 - others: direct purchases (low value, patents) and exceptions (emergency)
- Pooled Procurement: Price Registration System
 - any group of public buyers (federal, state, municipal) can organize a PP
 - managing participant and non-managing participants
 - all acquisitions **must** rely on competitive bidding
 - open electronic auction, standard and hybrid competitive bidding
 - selected supplier: goods/services at uniform prices for all members
 - buyers' additional demand: new selection no needed for 12 months

- Standard/Individual Procurement:
 - Law nº 8.666/93
 - most of public acquisitions rely on competitive bidding
 - 5 types: from open electronic auction to invited bidders
 - others: direct purchases (low value, patents) and exceptions (emergency)
- Pooled Procurement: Price Registration System
 - any group of public buyers (federal, state, municipal) can organize a PP
 - managing participant and non-managing participants
 - all acquisitions **must** rely on competitive bidding
 - open electronic auction, standard and hybrid competitive bidding
 - selected supplier: goods/services at uniform prices for all members
 - buyers' additional demand: new selection no needed for 12 months

Decentralized Procurement System in Brazil



Decentralized Procurement System in Brazil



Buyers Heterogeneity and Credit Risk in Brazil

- Payment to Suppliers: occurs after delivery of products/services
- Delay Payment: big issue in public procurement in Brazil
 - Suppliers frequently complain that public bodies do not pay for goods and services according to the contracts
- Heterogeneity in Credit Risk:
 - bodies are different concerning financial capabilities, budget, and reputation in paying suppliers
- Measuring Credit Risk:
 - State and municipal units: higher credit risk than federal ones
 - States are different with respect to liquidity and solvency
 - Some public bodies are located in areas with limited contract enforceability (Doing Business Brazil)

Buyers Heterogeneity and Credit Risk in Brazil

- Payment to Suppliers: occurs after delivery of products/services
- Delay Payment: big issue in public procurement in Brazil
 - Suppliers frequently complain that public bodies do not pay for goods and services according to the contracts
- Heterogeneity in Credit Risk:
 - bodies are different concerning financial capabilities, budget, and reputation in paying suppliers
- Measuring Credit Risk:
 - State and municipal units: higher credit risk than federal ones
 - States are different with respect to liquidity and solvency
 - Some public bodies are located in areas with limited contract enforceability (Doing Business Brazil)

Buyers Heterogeneity and Credit Risk in Brazil

- Payment to Suppliers: occurs after delivery of products/services
- Delay Payment: big issue in public procurement in Brazil
 - Suppliers frequently complain that public bodies do not pay for goods and services according to the contracts
- Heterogeneity in Credit Risk:
 - bodies are different concerning financial capabilities, budget, and reputation in paying suppliers
- Measuring Credit Risk:
 - State and municipal units: higher credit risk than federal ones
 - States are different with respect to liquidity and solvency
 - Some public bodies are located in areas with limited contract enforceability (Doing Business Brazil)

Buyers Heterogeneity and Credit Risk in Brazil

- Payment to Suppliers: occurs after delivery of products/services
- Delay Payment: big issue in public procurement in Brazil
 - Suppliers frequently complain that public bodies do not pay for goods and services according to the contracts
- Heterogeneity in Credit Risk:
 - bodies are different concerning financial capabilities, budget, and reputation in paying suppliers
- Measuring Credit Risk:
 - State and municipal units: higher credit risk than federal ones
 - States are different with respect to liquidity and solvency
 - Some public bodies are located in areas with limited contract enforceability (Doing Business Brazil)

- Source: ComprasNet
 - All public federal bodies procurement transactions.
- Our Data: Pharmaceuticals and medical supplies
 - all products are fully described, standardized and codified
 - 95,403 procurement transactions: 2004-2009
 - 5,248 different products: panel data
 - awarding procedure: only PP's procedure
 - the same product is purchased by the same public body, year, by PP or individual procurement
- Buyers: public bodies (agencies and units)
 - pooled (federal, state and municipal bodies) and individual procurement (federal bodies).

- Source: ComprasNet
 - All public federal bodies procurement transactions.
- Our Data: Pharmaceuticals and medical supplies
 - all products are fully described, standardized and codified
 - 95,403 procurement transactions: 2004-2009
 - 5,248 different products: panel data
 - awarding procedure: only PP's procedure
 - the same product is purchased by the same public body, year, by PP or individual procurement
- Buyers: public bodies (agencies and units)
 - pooled (federal, state and municipal bodies) and individual procurement (federal bodies).

- Source: ComprasNet
 - All public federal bodies procurement transactions.
- Our Data: Pharmaceuticals and medical supplies
 - all products are fully described, standardized and codified
 - 95,403 procurement transactions: 2004-2009
 - 5,248 different products: panel data
 - awarding procedure: only PP's procedure
 - the same product is purchased by the same public body, year, by PP or individual procurement
- Buyers: public bodies (agencies and units)
 - pooled (federal, state and municipal bodies) and individual procurement (federal bodies).

- Preliminary Findings:

- Lower unit prices in pooled procurement: up to 15 percent
- Good buyers joined by Bad ones pay higher prices in pooled procurement:
it may off set the aggregation effect gains
- Limits for pooled procurement!!!
pooling buyers does not always reduces unit price paid

- Policy Consideration:

- mechanism to pool similar buyers is needed
- supplier's price discrimination in a pool may lead to more pooled procurements: potential "lemon effect".

- Preliminary Findings:

- Lower unit prices in pooled procurement: up to 15 percent
- Good buyers joined by Bad ones pay higher prices in pooled procurement:
it may off set the aggregation effect gains
- Limits for pooled procurement!!!
pooling buyers does not always reduces unit price paid

- Policy Consideration:

- mechanism to pool similar buyers is needed
- supplier's price discrimination in a pool may lead to more pooled procurements: potential "lemon effect".

Calling for a supplier of active substance:

A manner to procure for pharmaceuticals

Evidence from Sao Paulo State's Procurement Contracts

Generic Drug Program and Public Expenditure

Arvate, Barbosa and Gambardella (2012)

- Regulation: Pharmaceuticals are *standardized* in Brazil
 - All drugs (branded and non branded) must provide description of the **active substance**
 - Production and commercialization are subject to the approval of the Ministry of Health
 - Generics Law in 1999: companies are legally allowed to produce generic drugs that are *perfect* copies of patented drugs
 - Each pharmaceutical company gives a commercial name for its product

- Competitive bidding: good procedure to acquire standardized goods.
 - more competition → reduction in price paid.
- *Why not rely on competitive bidding and call for suppliers of active substance?*
- Potential sources of competition:
 - intra-brand competition: among dealers
 - inter-brand competition: among drug producers
 - generics versus branded drugs

- Empirical Analysis: Effect of Calling for Active Substance and Impact of the Generics on Acquisition Prices
 - Generic versus Branded: Has the introduction of generics reduced procurement costs?
- Data:
 - Procurement contracts of Sao Paulo State in Brazil
 - All public purchases of pharmaceuticals: 2008-2012
 - Classification: generic versus branded drugs
 - Awarding procedures: open auction
- Preliminary Empirical Findings:
 - Price paid for Generics: similar to Branded drugs' ones.
 - Presence of suppliers of generic drugs in a tendering reduces unit price of (generic and branded) drugs - *competition pressure effect*

- Empirical Analysis: Effect of Calling for Active Substance and Impact of the Generics on Acquisition Prices
 - Generic versus Branded: Has the introduction of generics reduced procurement costs?
- Data:
 - Procurement contracts of Sao Paulo State in Brazil
 - All public purchases of pharmaceuticals: 2008-2012
 - Classification: generic versus branded drugs
 - Awarding procedures: open auction
- Preliminary Empirical Findings:
 - Price paid for Generics: similar to Branded drugs' ones.
 - Presence of suppliers of generic drugs in a tendering reduces unit price of (generic and branded) drugs - *competition pressure effect*

- Empirical Analysis: Effect of Calling for Active Substance and Impact of the Generics on Acquisition Prices
 - Generic versus Branded: Has the introduction of generics reduced procurement costs?
- Data:
 - Procurement contracts of Sao Paulo State in Brazil
 - All public purchases of pharmaceuticals: 2008-2012
 - Classification: generic versus branded drugs
 - Awarding procedures: open auction
- Preliminary Empirical Findings:
 - Price paid for Generics: similar to Branded drugs' ones.
 - Presence of suppliers of generic drugs in a tendering reduces unit price of (generic and branded) drugs - *competition pressure effect*

Thank you !!!!

Klenio Barbosa

Sao Paulo School of Economics

Getulio Vargas Foundation

klenio.barbosa@fgv.br