

Call for Research Proposals

Competition and Market Power in Latin America and the Caribbean

A Research Network Project

RG-K1198

I. Motivation and Background

There is widespread empirical evidence of increasing market concentration and corporate market power across the globe, with sales-weighted markups rising from 1.1 to 1.8 since 1980 (IMF, 2019; De Loecker and Eeckhout, 2021). These upward trends have been accompanied by drops in investment rates and productivity growth (Covarrubias, Gutiérrez and Philippon, 2019), entry rates and business dynamism (Decker, Haltiwanger, Jarmin, and Miranda, 2016; Akcigit and Ates, 2019), and the labor share of income (De Loecker, Eeckhout, and Unger, 2020; Barkai, 2020). These trends have likewise been accompanied by an increase in inequality (Eslava, Melendez, and Urdaneta, 2021).

These observations have sparked both widespread concern and a renewed interest among academics and policymakers regarding market power, its causes, and consequences. Although most studies have primarily examined the U.S. economy, the substantial implications of market power for economic growth have raised growing concern about the adverse effects of reduced competition in Latin America and the Caribbean (LAC). In fact, the region's existing diagnosis appears to be more severe than in advanced economies, with significantly higher market concentration and markups, alongside a substantially lower labor share of aggregate income (i.e., De Gregorio, 1992). Furthermore, in Latin America and Caribbean countries, not only are average markups potentially high, but economic rents also tend to be concentrated among fewer shareholders, resulting in greater business ownership concentration in the region compared to the rest of the world (Eslava, Melendez, and Urdaneta, 2021).

Policymakers have been exploring various policies to mitigate a perceived rise in output and labor market power, but the difficulty in measuring market power has complicated the policy debate. To assess the degree of competition in an industry or a specific market, economic research has focused on several variables, including the degree of concentration of market shares, profit rates, oligopoly markups in final and intermediate goods, oligopsony markdowns in labor and materials, and the degree of market churning or "Schumpeterian turbulence" typically measured by entry/exit rates. Although each of these measures contains useful information, none provides a perfect indicator on its own.

In contrast, an advantage of concentration as an empirical tool for studying market power is that it requires data only on revenues or employment and thus is often relatively easy to compute. The corresponding disadvantage, as pointed out by Philippon (2019), is that "concentration is a bit like cholesterol; there is a good kind and a bad kind." Good or efficient concentration is characterized by tougher price competition, intangible investment, and increasing productivity by leader firms, while

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bad concentration is characterized by higher markups, increasing barriers to entry, lower innovation, and sluggish productivity growth. Covarrubias, Gutierrez and Philippon (2019) find evidence of good concentration in U.S. industries during the 1990s and bad concentration after 2000. So, to understand the effects of market concentration on competition and welfare outcomes, classic concentration ratios, such as the market share of the largest firms and Herfindahl-Hirschman Indices (HHI), must be complemented with measures of profits rates, markups, markdowns, entry/exit rates, and intangible capital.

Measuring markups and markdowns in imperfectly competitive environments poses a significant challenge because key components, such as goods' marginal cost (which is below the market price) and the marginal contribution of workers to a company's revenues (which exceeds their wages), are not directly observable in the data.¹ There are two prominent methods of revealing markups, the *demand* approach and the *production* approach. The *demand* approach, pioneered by Berry (1994), relies on the first-order conditions linking marginal revenue to marginal cost under particular conduct assumptions. Once a demand curve has been estimated, the ratio of price to marginal cost can be inferred. The *production* approach, developed by De Loecker and Warzynski (2012), reveals markups from the firms' cost minimization problem; refraining from making conduct assumptions, it instead requires observing revenues and expenditures for each available input at the firm level and estimated production function parameters.² Therefore, which approach(es) can be implemented depends on the features of the available datasets.

Furthermore, imperfectly competitive labor markets and product markets have often been studied independently. The primary focus in most studies has been on estimating markups, mainly due to the challenges involved in assessing residual labor supply elasticities at the firm level, which are crucial for estimating labor markdowns (Tortarolo and Zerate, 2018). Adopting a more comprehensive approach to analyze the extent of market power exerted by firms in both product and labor markets can be instrumental in achieving a better understanding of the market power issues in the region.

Finally, in order to establish a connection between markups and market power, exploring firm-level measures of profitability becomes essential. This is because positive and increasing markups do not necessarily indicate an increase in market power if, for instance, fixed costs of operations and innovation are also rising over time.

¹ An exception is Burstein, Cravino and Rojas (2023).

² De Loecker and Scott (2016) directly compare markup estimates from the two approaches and found that, for a broad set of assumptions and specifications, both approaches provide similar and plausible markup estimates in most cases.

II. Objectives

The main objective of this research network project is to diagnose the competitive environment in the LAC region across output, input and labor markets, and across a broad range of economic sectors, including banking and credit. Since the project intends to draw cross-country comparisons and policy recommendations, the studies should focus on the measurement of concentration and market power by following one or more of the methods discussed above, which have become standard in the literature in recent years. While taking into account the heterogeneity of the data available in each country and the nature of the sector(s) under analysis, the studies will be able to measure concentration and market power in one or more markets and using one or more “gold standard” methodologies.

With the distribution of markups at hand, we seek to analyze their evolution at the aggregate level, as well as their “within firm” and “between firms” components. Moreover, we are interested in examining whether the trend of aggregate markups at the national level differs from that observed at the local level (e.g., Rossi-Hansberg, Sarter and Trachter, 2021; Autor, Patterson and Van Reenen, 2023; Anderson Rebelo and Wong, 2023).

Finally, this project seeks to contribute to the debate on the factors driving the increase in concentration and markups. Autor, Dorn, Katz, Patterson, and Van Reenen (2020) have suggested that that technological changes and globalization might lead to rising product market concentration as industries become increasingly dominated by “superstar firms” that exhibit relatively high markups and lower labor share than the rest of the economy. Thus, aggregate (share-weighted) markups can rise even in an increasingly competitive environment. Another mechanism involves imported inputs, where firms might raise markups when failing to pass on cost reductions due to lower input tariffs, as shown by De Loecker et al. (2016). The significant wave of cross-border mergers and acquisitions (M&A) during this period could play a role as well, as large multinational corporations gain the ability and incentive to raise markups after acquiring previously competing entities. The government, playing a dual role as both a regulator and a significant buyer in the economy, can also have an impact on higher concentration and market power. This research network’s objective is to investigate these and other mechanisms that contribute to the rise in concentration and markups.

The evidence collected by the selected research projects answering this call for research proposals will be used in the 2025 flagship report of the Inter-American Development Bank (IDB or the Bank hereafter), which will tackle a set of first-order questions on productivity and competition that are central to both the Bank’s operations and to the design of policies in the region. The main questions that guide this research network project are the following: i) how large and widespread is concentration in LAC, and ii) how are productivity and growth affected by lack of competition in the region? While concentration and markups in the United States have received considerable attention, the evidence on market concentration and market power, and their effects on productivity, consumer

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welfare and workers' well-being, have been very limited for LAC. This project thus aims to shed light on the dynamics of market power in the region and its potential implications for economic performance.

III. Guidelines

This Research Network project will fund studies that i) provide estimates of concentration, markups and market power using micro-level datasets; ii) estimate the impact of market power; and iii) shed light on the main factors explaining the observed trends in concentration. We plan to commission approximately 7 to 10 studies, the exact number depending on the quality of the proposals received and the available budget. We will give priority to studies that use country-specific datasets such as firm-level, employer-employee, or business-to-business transactions datasets. Across all studies, we will prioritize those that use, to the extent possible, rigorous econometric techniques and are based on solid theoretical models.

In particular, the project aims to:

1. Explain in detail the data used, their strengths and weaknesses, and how they compare with other existing datasets in the country in question.
2. Calculate measures of concentration in the markets where suitable data are available: output, input, credit, and/or labor markets.
3. Estimate markups and/or markdowns with one of the highlighted methods according to the type of data available.
4. Quantify the impact of concentration on different outcomes in different countries, with particular emphasis on firm productivity, inequality, and consumer prices.
5. Identify underlying causes of market power and evaluate potential policy recommendations.

Note that we will require for each team a set of descriptive statistics and empirical facts (to be determined) to allow us to have a clear picture of the competition landscape in the LAC region.

The first three points described above should be the main focus of the research projects. In the next sections we provide further details.

Measures of Concentration

Market concentration measures the extent to which market shares are concentrated among a small number of firms. A variety of different measures or indices have been proposed as measures of market concentration based on market shares, but the two most widely used are the concentration ratio (i.e., CR4 and CR8), and the Herfindahl-Hirschman index (HHI). Conveniently, the HHI can be decomposed into two factors: i) the variance of the size distribution of firms, and ii) the number of operating firms. Intuitively, when the number of firms is constant, the variance of the firm size distribution determines

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the magnitude of market concentration. Likewise, if all firms are of a similar size, the presence of a hundred firms mean a far less concentrated environment than a market with only few enterprises.

Measuring market concentration presents several challenges, and the specific issues vary depending on the dataset used in the analysis. The primary challenge involves defining "what is a market." In economic census or firm-level databases, like Compustat and Orbis, markets are often defined based on standard industry classifications meant to capture similarities between firms. However, these industrial classifications may not always reflect well-defined economic markets, as pointed out by Berry et al. (2019). This issue is illustrated by the 3-digit NAICS industry "Leather products," which includes sub-industries like handbags, footwear, and leather tanning. Handbags and footwear are complementary products, while leather tanning serves as an input to the other two. Defining a firm with a high share of aggregate production in leather products as having market power in a particular consumer market may not be accurate (Grullon et al., 2019).

Another issue with census-type datasets is that they report the revenue associated with firms' output within the country. Consequently, a firm's revenue includes exports to other markets and excludes imports. This poses a problem because sales to other countries will not directly impact output prices in the market, and imports supplied by foreign firms can increase competition. Thus, census data do not precisely measure sales in the market under consideration but rather the revenue from the output produced in that market. These concerns can be partially addressed by obtaining a higher level of sectoral disaggregation or by using data at the brand or product level.

Estimating Markups in the Output and Labor Markets

There are two prominent methods of revealing markups, the *demand* approach and the *production* approach. The *demand* approach relies on a fully specified model of consumer choice to derive a demand system that can be estimated using data on market shares, prices, and product attributes. Given the estimated own and cross-price elasticities across the goods considered, markups can be recovered from first-order conditions after specifying a model of competition (Berry et al., 1995; Berry et al., 2004). The *production* approach relies on data on input and output levels and requires that producers choose variable input levels to minimize costs.

When implementing the demand approach, researchers must specify the way in which firms in the market compete (e.g., static Nash Bertrand). The notion of market equilibrium, together with estimates of demand elasticities, allows one to infer marginal costs and, therefore, markups. To estimate demand elasticities, researchers typically specify a model of consumer heterogeneity that restricts the pattern of cross-price elasticities to some extent, and instrumental variables are needed for unbiased estimation of demand elasticities, given the potential correlation between prices and demand shocks (De Loecker and Scott, 2016). To implement the production approach, researchers

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must specify a variable input. Given estimated production function parameters, the conditions for cost-minimization with respect to the variable input allow researchers to compute the marginal cost of production and, therefore, markups. Estimating the production function requires an assumed functional form for the production technology and identifying assumptions to avoid bias from the potential correlation between productivity shocks and variable input levels.

A huge benefit of this *production* approach is that researchers can distinguish labor market power from market power in output markets. In other words, markdowns are not confounded by price-cost markups. The restriction is that researchers need to observe revenues and expenditure for each available input at the micro level. While datasets like this are scarce, some censuses include these data for firms in manufacturing sectors (Yeh, Hersbein, and Macaluso, 2022)

Differences in the available datasets will guide which approach(es) can be implemented. For example, having data on firm-level input use is critical for the production function approach. Inferring markups from demand-side methods is common practice, since those are well-suited to a wide range of datasets. While the industrial organization literature mainly uses random coefficient logit demand, the nested Constant Elasticity of Substitution (CES) demand has advantages of high tractability and low data requirements, which allows to replicate the analysis in multiple countries of the region, a critical issue for the forthcoming IDB flagship report (e.g., Atkeson and Burstein, 2008; Gaubert and Itskhoki, 2018; Burstein et al., 2019; and Hottman et al., 2016, among others).³

Research proposals for this project should both approaches whenever possible, and authors should discuss clearly and in detail the data used, as well as how those methodologies were implemented. We plan to closely interact with the selected research teams in order to achieve a common methodology that, to the extent possible, allows us to obtain comparable statistics/results across teams.

IV. Selection Criteria

Research institutions only may present proposals regarding the issues discussed above. The final number of proposals accepted will depend on the quality and the proposed budget of the proposals received. As noted above, the proposed budgets will be evaluated considering the scope of the work proposed.

³ The multiple nested CES model imposes stronger restrictions on substitution elasticities than the random coefficients methods preferred in a large part of the IO literature. However, Head and Mayer (2019) show that a CES model can do a good job of approximating aggregate outcomes of rich substitution models in counterfactual simulations.

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Proposals should include a detailed background section and literature review, data description including an assessment of data availability, and a detailed description of the methodology to be used. Note that the bibliography section of this call for proposals lists some potentially relevant references. The proposals should not exceed 5 pages in length (not including references).

Final papers will be considered for dissemination as IDB working papers or technical notes depending on the approach followed and the nature of the methodology and analysis performed. Authors have the option to submit the manuscript for publication to the journal of their choice prior to written authorization from the Bank, but they must mention that the paper was financed with the support of the Latin America and the Caribbean Research Network of the Inter-American Development Bank. All raw data and properly documented programming code (i.e., do files) that produced results should be submitted with the final draft. The project coordinators may explore the possibility of having the papers published in an academic journal, in which case they would be subject to a system of standard peer review. Otherwise, authors will have the option to publish in an academic journal (again, provided they acknowledge the Bank's technical and financial contribution). Proposals may include suggestions for further dissemination of the final version of the paper.

IV. Proposal Submission

Interested **research institutions** should submit a proposal no later than **October 13, 2023** using the [Web Submission Form](#). Please note that there are two options within the submission form: one for institutions and another for teams of individual researchers. Please make sure to choose the "institutions" option. If unable to submit by this means, please send an email to red@iadb.org.

The following information will be required for submitting your proposal:

- The proposal with all the technical aspects involved in the development of the study, based on the description in this call for proposals.
- A budget indicating the time and resources that will be used within the context of the research work plan. The budget is requested as a separate file and should not be included in the proposal. The budget proposed should disaggregate items financed by the IDB contribution and those financed by the research institution or other sources. The budget should distinguish among amounts assigned to professional honoraria, "overhead" and other major categories of research expenditures.
- The name and curricula vitae (two pages maximum) of the technical coordinator and other researchers involved. The research team should demonstrate its ability to meet the objectives of the project, including relevant experience. Please note that subsequent substitutions for researchers originally specified in the proposal may be made with prior approval from the

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project coordinators, but the technical coordinator should lead the entire project until its full completion.

Institutions submitting proposals must provide the name and contact information of the legal representative, with authority to sign contracts with the IDB, if selected to conduct the study.

Proposing research institutions should be registered as Research Network members (contact Elton Mancilla at res@iadb.org) and should be based in the Latin America and Caribbean region. Note that U.S. and European institutions do not qualify as members of the Latin American and Caribbean Research Network. However, researchers from the United States and Europe can participate in research teams from proposing institutions, and such collaboration is encouraged.

Note: All proposals and research papers should be submitted in **English**.

VI. Coordination and Schedule

The project will be administered by the Research Department (RES) of the IDB. The coordinating team consists of Vanessa Alviarez, Matías Busso, Rodrigo Heresi and Cezar Santos (RES/RES). Jan De Loecker (KU Leuven) will be the external advisor for the research project.

The tentative schedule of activities is as follows:

- **October 13, 2023:** Due date for **receiving proposals**.
- **October 20, 2023:** Announcement of **selected research proposals**.
- **November 30, 2023:** Due date for receiving a **progress report** of the research paper to the IDB. (This report should include a preliminary literature review, methodology, basic facts, and a plan of the results.)
- **December 12, 2023:** **First virtual discussion seminar** of the project via Zoom to discuss and refine the selected proposals and methodology to be used in the research paper.
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- **April 15, 2023:** Due date for receiving a **first draft** of research papers and delivery to the IDB of complementary support documents utilized in the research paper.
- **April, 2024:** **Second virtual discussion seminar** of the project via Zoom to discuss the first draft of the research papers. Date to be determined.
- **August 16, 2024:** Due date for receiving a **final version** of research papers, and delivery to the IDB of any further versions of the datasets utilized in the research paper. Research papers must follow the **IDB Manual of Style** for working papers. Studies that are of good quality at this stage will be considered for publication in the IDB Working Papers series.

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VI. Financial Aspects

The IDB will contribute up to **US\$25,000** (or the equivalent in local currency) for each study, depending on the scope of the work proposed. We would only reach the upper bound of the per-proposal budget in exceptional cases that demonstrate a significant contribution to the knowledge about the topics of interest in the region of interest. The payment schedule is as follows:

- **25 percent** within 30 calendar days upon the date of the last signature of the letter of agreement between the IDB and the institution.
- **25 percent** within 30 calendar days upon receiving and approval by the IDB of the progress report.
- **30 percent** within 30 calendar days upon receiving and approval by the IDB of the first draft of the research paper.
- **20 percent** within 30 calendar days upon receiving and approval by the IDB of the final research paper and delivery to the IDB of the databases and code utilized in the study.

VII. References

Afrouzi, H., Drenik, A. Kim, R. (2023) Concentration, Market Power, and Misallocation: The Role of Endogenous Customer Acquisition. Working Paper.

Amodio, F., Medina, P., Morlacco, M., (2022) Labor Market Power, Self-Employment, and Development. Working Paper

Akcigit, U., Ates, S. (2021). Ten Facts on Declining Business Dynamism and Lessons from Endogenous Growth Theory. *American Economic Journal: Macroeconomics*. (Vol. 13, No. 1, pp. 257-98). (pp. 257-98)

Atkeson, A., Burstein, A. (2008) Pricing-to-Market, Trade Costs, and International Relative Prices. *American Economic Review*. Vol. 98, No. 5, pp. 1998-2031.

Autor, D., Dorn, D., Katz, L. F., Patterson, C., and Reenen, J. V. (2020). The fall of the labor share and the rise of superstar firms. *Quarterly Journal of Economics*, 135(2).

Autor, D., Patterson, C., and Reenen, J. V. (2023). Local and National Concentration Trends in Jobs and Sales: The Role of Structural Transformation. Working Paper.

Battiati, C., Jona-Lasinio, C., Marvasi, E., Sopranzetti, S. (2021) Market power and productivity trends in the European economies. A macroeconomic perspective. Working Paper.

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Berry, S. T. (1994). Estimating Discrete-Choice Models of Product Differentiation. *RAND Journal of Economics*, 25(2):242–262.

Berry, S., Gaynor, M., Scott, F. (2019) Do Increasing Markups Matter? Lessons from Empirical Industrial Organization. *Journal of Economic Perspectives*. Vol. 33, No. 3, (pp. 44-68)

Berry, S., J. Levinsohn, and A. Pakes (2004). Differentiated products demand systems from a combination of micro and macro data: The new car market. *The Journal of Political Economy* 112(1), 68–105.

Burstein, A. Carvalho, V. Grassi, B. (2020) Bottom-Up Markups Fluctuations. Working paper

Burstein, A., Cravino, J., Rojas, M. (2023) Markup Dispersion Across Buyers. Working Paper.

Busso, M., and Galiani, S. (2019). The Causal Effect of Competition on Prices and Quality: Evidence from a Field Experiment. In *American Economic Journal: Applied Economics* (Vol. 11, Issue 1, pp. 33–56).

Covarrubias, M., Gutiérrez, G., Philippon, T. (2019). From Good to Bad Concentration? U.S. Industries over the past 30 years. Working Paper

Decker, A., Haltiwanger, J., Jarmin, R., Miranda, J. (2016) Declining Business Dynamism: What We Know and the Way Forward. *American Economic Review*. (Vol. 106, No. 5, pp. 203–07).

De Gregorio, J. (1992) Economic Growth in Latin America. *Journal of Development Economics*. (Vol. 39, pp. 59-84).

De Loecker, J., and Eeckhout, J. (2021). Global Market Power. Working Paper.

De Loecker, J., Eeckhout, J., and Mongey, S. (2021). Quantifying Market Power and Business Dynamism in the Macroeconomy. Working Paper.

De Loecker, J., Eeckhout, J., and Unger, G. (2020). The Rise of Market Power and the Macroeconomic Implications. *Quarterly Journal of Economics*, 135 (2).

De Loecker and Scott, P. (2022) Markup Estimation using Production and Demand Data. An Application to the US Brewing Industry. Working Paper

De Loecker, J. and F. Warzynski (2012). Markups and firm-level export status. *American Economic Review* 102(6), 2437–2471.

Eslava, M., Melendez, M., Urdaneta, N. (2021). Market Concentration, Market Fragmentation, and Inequality in Latin America. UNDP LAC, Working paper series.

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Ganapati, S. (2021). Growing oligopolies, prices, output, and productivity. *American Economic Journal: Microeconomics*.

Gaubert, C., Itskhoki, O. (2021). Granular Comparative Advantage. *Journal of Political Economy*, vol 129(3), pp 871-939.

Grullon, G., Larkin, Y., Michaely, R. (2019) Are US Industries Becoming More Concentrated? *Review of Finance*, Volume 23, Issue 4, pp 697–743

Hsieh, C., and Rossi-Hansberg, E. (2020). The Industrial Revolution in Services. University of Chicago, Working Paper.

Hottman, C., Redding, S., Weinstein, D. (2016). Quantifying the Sources of Firm Heterogeneity. *Quarterly Journal of Economics*.

Kroft, K., Luo, Y., Mogstad, M., Setzler, B. (2023) Imperfect Competition and Rents in Labor and Product Markets: The Case of the Construction Industry. Working Paper.

Philippon, T. (2019). The Economics and Politics of Market Concentration. Working Paper.

Rebelo, S., Wong, A., Anderson, E. (2023). Markup across Space and Time. Working Paper.

Rossi-Hansberg, E., Sarte, P., Trachter, N. (2020). Diverging Trends in National and Local Concentration. *NBER Macroeconomics Annual*, Vol 35.

Tortarolo, D., Zerate, R. (2018). Measuring Imperfect Competition in Product and Labor Markets. An Empirical Analysis using Firm-level Production Data. Working paper.

Yeh, C., Hersbein, B., and Macaluso, C. (2022). Monopsony in the U.S. Labor Market. *American Economic Review*, 112(7), pp. 2099-2138.