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Competition and Inflation – Note by Brazil

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1. Introduction

1. Inflation is the rate at which prices rise in an economy. According to Rossetti (2011, p. 304)²:

“A common analogy for inflation is that of a balloon filled with air. As it fills with air, it becomes larger and larger, although its matter is intrinsically the same”.

2. It is possible to measure the general inflation or the inflation of a specific sector. General inflation includes all economic sectors, factors of production, and goods and services sold in an economy. To express this idea, one needs to create an index that summarises the development of prices in an aggregated manner. This index, however, can be biased depending on how it is constructed.

3. There are different views on inflation.³ Friedmann (1969)⁴, for instance, believes zero inflation is ideal. Summers (1991)⁵, on the other hand, states one should aim for a 2-3% inflation, and S. Fischer (1996)⁶ holds that the ideal is 1-3%.

4. Keynes (1933, p.77)⁷ suggests the following:

¹ This paper was prepared by Ricardo Medeiros de Castro, CADE’s Deputy Chief Economist. It was translated from Portuguese into English by Arianne Mesquita, Ariel Menezes and Bruna Assunção, in-house translators at CADE’s International Unit.

² ROSSETTI, J. Pe LOPES, J.C. **Economia Monetária**. 9. ed., São Paulo: Atlas, 2011.

³ According to Shigenori Shiratsuka, “Friedman’s rule, proposed by Friedman (1969), postulates that (1) efficient resource allocation requires that there be a zero opportunity cost of holding money, i.e., zero nominal interest rates, implying price deflation at the equivalent rate of the real interest rate in absolute terms; and (2) an optimal monetary policy to achieve efficient resource allocation should steadily contract the money supply at a rate sufficient to bring the nominal interest rate down to zero. See Woodford (1990) for a detailed survey into this issue. In contrast, Summers (1991) argues that 2% or 3% inflation is desirable because of (1) the non-negativity constraint of nominal interest rates; (2) downward rigidity in nominal wage rates; and (3) the high possibility of equalising the marginal costs and benefits of inflation at a positive rate of inflation. Furthermore, S. Fischer (1996) emphasizes that it is best to target a rate of inflation in the range of 1–3% by pointing out the effects of upward bias in price indices in addition to the first and second reasons suggested by Summers (1991).” SHIRATSUKA, Shigenori. Is There a Desirable Rate of Inflation? A Theoretical and Empirical Survey MONETARY AND ECONOMIC STUDIES/MAY 2001 <https://www.imes.boj.or.jp/research/papers/english/me19-2-3.pdf>

⁴ Friedman, Milton, *The Optimum Quantity of Money and Other Essays*, Chicago: Aldine, 1969

⁵ Summers, Lawrence, “How Should Long-Term Monetary Policy Be Determined?” *Journal of Money, Credit and Banking*, 23 (3), 1991, pp. 625–631.

⁶ Fischer, Stanley, “Why Are Central Banks Pursuing Long-Run Price Stability?” in “Achieving Price Stability,” a symposium sponsored by the Federal Reserve Bank of Kansas City, 1996.

⁷ The author cites and agrees with Lenin. KEYNES, J. M.. *Essays in Persuasion*. London: MacMillan, 1933
<https://ia801602.us.archive.org/3/items/in.ernet.dli.2015.89977/2015.89977.Essays-In-Persuasion.pdf>

[while] “a continuing process of inflation (...) impoverishes many, it actually enriches some.”

5. Drumond (2011)⁸, in turn, states such recurring price instability may affect economic stability in general, resulting in adverse effects on one’s investment decisions.
6. On the other hand, there are different theories on the causes of inflation.
7. Derived from David Hume’s works and fruitful discussion in the 18th and 19th centuries and popularised by Irving Fisher and Milton Friedman⁹, the orthodox monetary theory is known as the Quantity Theory of Money. Alongside theories such as the Keynesian, new Keynesian, ECLAC, and the Modern Monetary Theory¹⁰, it disputes the causes of inflation. The inflation experienced in Brazil in the 1980s and 1990s helped to illustrate the theory and practice of inertial inflation. It showed that an inflationary trend, without shocks, could include an autoregressive element.
8. This debate, influenced by macroeconomic theories, has a microeconomic interface, which can be analysed considering competition law. As seen below, some argue competition law should be a tool to reduce inflation. Some jurisdictions directly punish players for excessive pricing, which is not the case in Brazil.
9. Independent of the debate on excessive pricing, it is true that fighting the abuse of economic power can have a significant macroeconomic effect on society’s welfare. For instance, CADE estimates the moving average of the benefits accrued from its activities over the past three years (2019–2021) has been BRL 16 billion¹¹.
10. CADE and the Central Bank of Brazil have an ongoing cooperation agreement and can work together when necessary. Besides, during investigations into foreign exchange market cartels, or abusive practices in the bank sector (e.g. behaviour intended to hinder cryptocurrency traders), it is inevitable to discuss issues inherent to money flow.
11. Nevertheless, some academic views challenge the perspective of competition law within this intersection with macroeconomics and inflation control.
12. Some authors suggest that large companies have lower cost pass-through rates, which could influence inflation. According to Sophie Guilloux-Nefussi¹²(2020), large

⁸ DRUMOND, Carlos Eduardo Iwai. **Metas de inflação, crescimento e estabilidade: uma abordagem pós-keynesiana para economia aberta**. 2011. 48f. Master thesis from Universidade Federal do Paraná, Setor de Ciências Sociais Aplicadas,

Programa de Pós-Graduação em Desenvolvimento Econômico. Thesis defence: Curitiba, 17 March 2011. Available at <http://hdl.handle.net/1884/25532>.

⁹ See the documentary: “Right to choose – How to cure inflation?” *Free To Choose 1980 - Vol. 09 How to Cure Inflation - Full Video*. Accessed 26 August 2022. <https://www.youtube.com/watch?v=0uyqBnkPoK0>.

¹⁰ KNAPP, G. F. *The State Theory of Money*. London: **MacMillan**, 1924. LERNER, A. P. *Functional finance and the federal debt*. **Social Research**, v. 10, n. 1, 1943. Kelton, Stephanie (2020), *The Deficit Myth*, John Murray, ISBN 978-1-529-35252-8

¹¹ https://cdn.cade.gov.br/Portal/centrais-de-conteudo/publicacoes/estudos-economicos/documentos-de-trabalho/2022/DOC_001-2022_Mensuracao-dos-beneficios-esperados-da-atuacao-do-Cade-em-2021.pdf

¹² Guilloux-Nefussi, S. (2020). "Globalization, market structure and inflation dynamics," *Journal of International Economics*, Elsevier, vol. 123(C).

enterprises have more elastic markups and pass through fewer cost shocks to prices, in line with Berman et al. (2012)¹³ and Amiti et al. (2015)¹⁴.

13. A second perspective, illustrated by Peter Duersch and Thomas Eife (2019)¹⁵, is that inflation, in reality, hampers collusion and possibly can increase consumer welfare. From this point of view, some level of inflation may be desirable.

14. A third view, however, is that one should consider the purpose or role of competition law, since the traditional assessment based on consumer welfare standard is currently in question on the international scenario. For some researchers, relaxing consumer welfare standard could decrease the level of rivalry in the market, and raise prices in different sectors, potentially creating inflationary pressure.

15. Therefore, this paper will give a brief background on inflation in Brazil, comment on these 3 topics whether competition law can contribute to controlling inflation, discuss the methodology for deflating variables, and provide some final considerations.

2. A History of Inflation in Brazil

16. In Brazil¹⁶, prices rose significantly during the 1980s. In 1981 and 1982, the annual inflation in the country reached 100 per cent. After some frustrating attempts to control inflation (in 1986, 1987 and 1989), inflation in Brazil exceeded an annual rate of four digits, with general inflation of 1,037.6% in 1988. In 1989, the annual inflation rate was 1,782%. In that same year, the month of December had an inflation rate of almost 50%. (MUNHOZ, 1997).¹⁷

¹³ Berman, Nicolas, Philippe Martin, and Thierry Mayer, “How do Different Exporters React to Exchange Rate Changes?,” *The Quarterly Journal of Economics*, 2012, 127 (1), 437–492

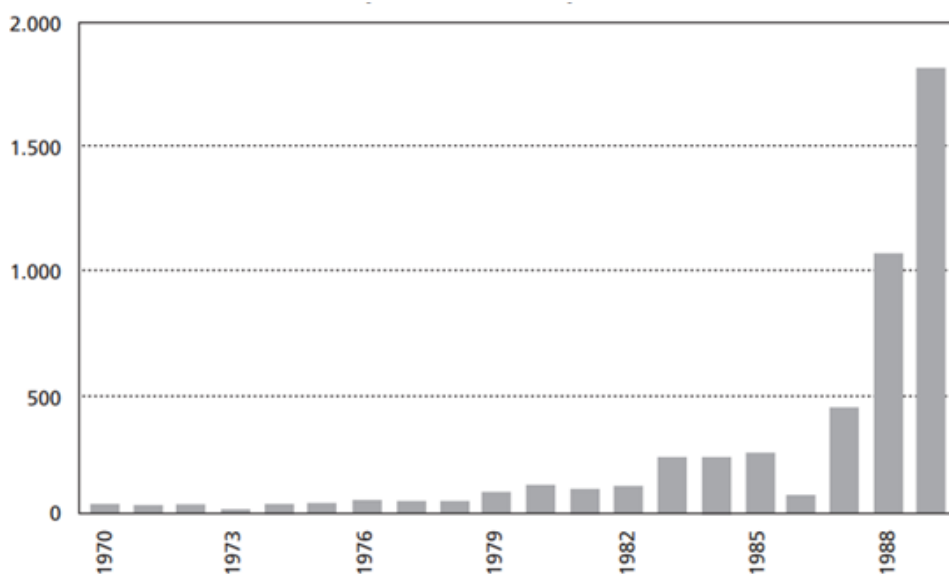
¹⁴ Amiti, Mary, Oleg Itskhoki, and Jozef Konings, “International Shocks and Domestic Prices: How Large Are Strategic Complementarities?,” Technical Report 2015.

¹⁵ P. Duersch and T.A. Eife. Price competition in an inflationary environment. *Journal of Monetary Economics* 104 (2019) 48–66

¹⁶ According to Simone Cuiabano (2016, p.22): “since the Brazilian economy started to have a more industrial face, monopolies have become a rule. In order to encourage private investment, industry protection and market share guarantees were sufficient, so that the entrepreneur received the full return on his investment in a short period of time. Aggravating the system, many entrepreneurs in the country inherit this culture from their ancestors and thus began to develop ideas that the protection of national industry, in addition to protecting jobs, were essential for a developed country. This is where the culture of competition comes in. After all, price fixing arrangements, agreements, partnerships with the competitors, everything seems very normal in a country whose culture is to avoid the confrontation of ideas.(...) The culture of competition has a lot to do for the country and to reduce inflation without having to put the Central Bank in an uncomfortable situation or to demand any personalism in the conduct of monetary policy CUIABANO, Simone Maciel. *Inflação, Juros, o CADE e a Política da Concorrência*. Revista Fecomércio, 3/2016, p.22.

¹⁷ MUNHOZ, D. G. (jan./jun. de 1997). *Inflação brasileira: os ensinamentos desde a crise dos anos 30*. *Rev. Econ. Contemp*, 1, n.1

Figure 1. Brazilian inflation rate (%) from 1970 to 1989



Source: (MUNHOZ, 1997).

17. During the 1980s, Brazil had many economic stabilisation programmes aimed at freezing prices and salaries, such as Cruzado 1, Cruzado 2, Bresser, Verão, Collor 1, and Collor 2. None of them, however, successfully fought inflation; in reality, they caused severe supply crises.¹⁸

18. Nevertheless, Plano Real (Real Plan) controlled inflation in Brazil by de-indexation, creating a non-monetary reference currency (URV) before its respective adoption as the official Brazilian currency, but with a different name: Real. At first, the URV was equalised to the dollar, but it was allowed to fluctuate after a specific period. According to Plano Real, the reference currency would not feel the effects of inertial inflation, which was present in most national contracts, causing such inflationary process.

19. According to Armínio Fraga Neto (2011, p.25)¹⁹

Runaway inflation peaked in the 1980s and early 1990s, nearly reaching hyperinflation more than once. There were many failed attempts at heterodox stabilisation, but only in 1994 did Plano Real finally beat inflation with a combination of monetary austerity (primarily under an exchange rate anchor) and de-indexation (with the remarkable creation of URV currency). The project had massive support from Brazilian society, and the results were outstanding. Nonetheless, a few years later, in 1998, an adverse global scenario and a fragile fiscal policy threatened the exchange rate anchor. Although the government had announced an important fiscal adjustment before the presidential elections, the exchange rate pressure was unbearable. In early 1999, the market forced the Brazilian real to float, increasing inflation expectations. In this context, the country adopted an inflation-targeting system, following the example of countries such as the United Kingdom, Sweden, and New Zealand. The adoption of this new system

¹⁸ <http://m.acervo.estadao.com.br/noticias/acervo,plano-cruzado--30-anos,12104,0.htm>

¹⁹ NETO. Armínio Fraga. Dez Anos de Metas para a Inflação in BACEN, Dez Anos de Metas para a Inflação - 1999-2009. Brasília: Banco Central do Brasil, 2011.

happened simply because the alternatives were undesirable: the return of a fixed or controlled exchange rate (which never lasted long), the creation of a strict currency board (such as that of Argentina), the introduction of monetary goals (notably unstable), or the conduction of an economic policy without a set inflation target.

20. Brazil still adopts the inflation-targeting system. According to the Central Bank²⁰:

Low, stable, and expected inflation brings several benefits to society. The economy can grow more since economic uncertainty is low. People can better plan their futures, and families do not face loss of their real income. To achieve this objective, Brazil has had the inflation-targeting system in force since 1999. The system has been successful in Brazil and many countries that adopted it. Under this system, central banks work to keep inflation in line with pre-established goals. The inflation targets, which are publicly announced, anchor market players' expectations for future inflation, allowing inflation deviations to be corrected over time. In Brazil, the National Monetary Council (CMN) is responsible for defining the targets for inflation, and the Central Bank is to adopt the necessary measures to meet them. The price index employed is the IPCA (the national consumer price index), estimated by the Brazilian Institute of Geography and Statistics (IBGE). The goal indicates the overall inflation in a year. For instance, the goal for 2020 was 4%.²¹

3. Should competition law be employed to control inflation?

21. It is worth assessing whether competition law should be actively “employed” to fight inflation.

22. According to Singer (2022)²², this “shouldn’t be controversial”. In his view, competition law “is about controlling the unlawful exercise of ‘market power,’ which is defined as raising prices above competitive levels and thus generating short-term inflation.” Therefore, competition law would have a role in fighting inflation.

23. Nonetheless, it is worth noting that it is up to the competition authority to interpret the law in specific cases. The outcome of the enforcement of the competition law could have beneficial price effects. On the other hand, the competition authority can act only following what was previously established by law.

24. If the competition law enforcement is beneficial in terms of decreasing inflation, this effect is only an indirect consequence of the legal system design, not the reason why the Brazilian competition authority operates a certain way. The debate gets even more complex as there is considerable popular pressure, in specific crisis, for competition authorities to intervene directly in prices and profits.

3.1. Direct price intervention

25. In analysing price volatility, the OECD precisely mentions this phenomenon in the document “Policy Roundtables Competition and Commodity Price Volatility”²³:

²⁰ <https://www.bcb.gov.br/controleinflacao/metainflacao>

²¹ <https://www.bcb.gov.br/controleinflacao/metainflacao>

²² Singer, H., (2022), February 2022, The American Prospect, “Antitrust Should Be Used to Fight Inflation”, <https://prospect.org/economy/antitrust-should-be-used-to-fight-inflation/>

²³ See <http://www.oecd.org/daf/competition/CompetitionAndCommodityPriceVolatility2012.pdf>.

Lack of competition leads to high prices, but as noted above, high prices do not necessarily signify lack of competition. On the contrary, rapid movements in prices can show competitive markets responding well to changes in supply or demand. Nevertheless, national competition authorities may be requested to investigate particular markets, especially but not only for agricultural products. High agricultural prices can lead to humanitarian crises in poorer countries, where staple foodstuffs can account for up to 80% of the budgets of the poorest households. Even if the high prices seem to reflect global forces, it is not advisable for competition authorities to refuse to become involved. If they do refuse, they may lose credibility and political support. One approach that is open to national competition authorities when faced with high and unstable commodity prices is the comparatively straightforward one of factual studies, namely price monitoring and market studies. (...) Price controls represent a significant intervention in the operation of the market, and should be adopted only in limited circumstances, and with care. High prices signal to consumers that their chosen products are expensive to produce, causing them to seek cheaper alternatives if possible. High prices also signal to producers that they should invest to increase production. These responses by consumers and producers together can help to solve the imbalance that caused prices to spike. If prices are artificially held below the levels that reflect the supply/demand balance, neither consumers nor producers will respond like this, and the imbalances might persist. Competition authorities should warn governments of this”

26. Some competition authorities recognise abusive or excessive prices as autonomous anticompetitive conduct; however, in Brazil, they are not autonomous or per se illegal. In this regard, the Office of the Superintendent General of CADE issued a technical opinion (no. 06/2015) on 11 June 2015, in the Preliminary Inquiry no. 08700.007937/2014-34. The opinion states that excessive prices derive from “cartel practices or other anticompetitive conduct” (Document SEI no. 0071050). The Tribunal of CADE had the same understanding when analysing the Administrative Proceeding no. 08700.000625/2014-08:

“some consumers and government bodies still wrongly believe that excessive prices are independent anticompetitive conduct, i.e. that high-profit margins or significant price rises indicate illegal activity. This view, however, creates market distortions and harms society and the consumer because free prices and quantities tend to maximise allocative efficiency. (...) For the proper functioning of the market, businesses should charge the amount they believe to be most efficient in terms of value for money. Therefore, pricing is only excessive if it stems from antitrust violations, and it works only as an indication that there might be an illegal activity in place. If the illegal activity stops, prices tend to return to normalcy.” (Document SEI No. 0420947)

27. Another discussion is about the acceptable degrees of price volatility. Dumas, Kurshev & Uppal (2005)²⁴ believe excessive volatility is important to the economic literature, especially regarding the financial market:

As Shiller (1981) and LeRoy and Porter (1981) mentioned, it may be that “stock prices move too much to be justified by subsequent changes in dividends”. If

²⁴ Dumas, Bernard; Kurshev, Alexander, Uppal, Raman (2005) What Can Rational Investors Do About Excessive Volatility?. According to <http://www.ucd.ie/t4cms/dumas-kurshev-uppal-2005-03-13.pdf>

excessive compared to the volatility of fundamental indicators, stock price volatility can suggest the financial market is inefficient regarding information.

28. From a theoretical perspective, Friedman (1953)²⁵ argues that, “without constraints on arbitrage, rational investors should sell stocks that are overvalued, or buy those that are undervalued, until prices return to fundamentals” (Ljungqvist & Qian, 2004, p.1)²⁶. On the other hand, DeLong & Shleifer (1990) assert that noise traders can reap high profits from a false risk they create on their own. Thus, volatility does not come from a well-established supply and demand system, but from high-risk speculative movements.

29. This idea is close to the belief of George Soros (2013; 1987)²⁷ that prices do not result from an equilibrium based on an “objective” reality but from a subjective perception that interacts with said objective reality—and this interaction is subject to noise. According to Soros, there are negative feedback loops, which are self-correcting and bring “objective” reality closer to subjective views and expectations, and positive feedback loops, which lead both further apart. Hence, during crises and speculative bubbles, such as the Encilhamento bubble experienced in Brazil in the 1880s, prices disconnect from reality due to unrealistic expectations. However, it is difficult to define what would be the “rightful price” even if one avoids subjective views. Perhaps this uncertainty represents the danger of State interventions through Competition Authorities sanctioning excessive pricing or volatility. Even though regulatory agencies may define price ceilings, they can also be subject to errors. For instance, if price ceilings are too high, they can generate an undesirable tacit collusion; if they are too low, they can cause shortages and reduced investment.

30. CADE, faced with bills to adopt price freezes, has often reminded the Brazilian Congress about similar measures that in the past brought product shortages and failed to control inflation, such as Plano Cruzado. Thus, CADE always recommended caution with bills that proposed price freezes for medicine²⁸, COVID-19 essential medical products²⁹, school tuition fees³⁰, LP gas³¹, funeral-related services³², transport apps³³, school tuition fees³⁴, amongst others.

²⁵ Friedman, M. (1953): *The Case for Flexible Exchange Rates*. In *Essays in Positive Economics*, Chicago University Press

²⁶ Ljungqvist, Alexander; Qian, Wenlan. (2004) How Constraining Are Limits to Arbitrage? <https://w4.stern.nyu.edu/finance/docs/pdfs/Seminars/SSRN-id2356414.pdf>

²⁷ SOROS, G. (1987). *The alchemy of finance*. Hoboken, NJ: Wiley & Sons. SOROS, G. (2013). Fallibility, Reflexivity, and the Human Uncertainty Principle. *Journal of Economic Methodology*, 20(4), 309-329. doi:<http://dx.doi.org/10.1080/1350178X.2013.859415>

²⁸ Technical Opinion 15/2020/DEE/CADE (DOCSEI 0737899)

²⁹ Technical Opinion 16/2020/DEE/CADE (DOCSEI 0738619)

³⁰ Technical Opinion 17/2020/DEE/CADE (DOCSEI 0747070)

³¹ Technical Opinion 19/2020/DEE/CADE (DOCSEI 0748793)

³² Technical Opinion 20/2020/DEE/CADE (DOCSEI 0753472)

³³ Technical Opinion 21/2020/DEE/CADE (DOCSEI 0758464)

³⁴ Technical Opinion 24/2020/DEE/CADE (DOCSEI 0763746)

3.2. The role of competition law in the inflation debate

3.2.1. Debate on cost pass-through rates

31. Sophie Guilloux-Nefussi³⁵ (2020) created a theoretical model to demonstrate there is less sensitivity to cost variations in the presence of large companies (and this sometimes affects inflation). To support her model, she refers to a study by Amiti et al. (2015, p. 22)³⁶ that concluded:

“small firms exhibit nearly complete pass-through of cost shocks ($\psi \approx 1$) (...) At the same time, the large firms behave very differently, exhibiting both incomplete pass-through of cost shocks (around 60%)”.

32. That is, the authors affirm that, unlike large firms, small companies transfer cost shocks almost entirely.

33. In that study, the parameter used in calculating large companies' pass-through of costs shocks (ψ) was 0.599 on average, with a standard error of 0.237. Hence, based on this measurement, one should not reject the hypothesis that the parameter might be 1, considering a 95% confidence interval. This hypothesis could be rejected only if the confidence interval were lower than 90%, although, even in this scenario, it is possible the parameter may be very close to 1 (0.98, for instance).

34. Bulow & Pfleiderer (1983)³⁷, Panzar & Rosse (1987)³⁸, and Farrel & Shapiro (2010)³⁹ are some of the authors who wrote on this topic about cost pass-through rate analysis in the microeconomics literature.

35. In February 2014, the RBB Economics consultancy firm produced a comprehensive study on the subject in its report *“Cost pass-through: theory, measurement, and potential policy implications”*. Prepared for the Office of Fair Trading, the report cites many reasons why cost pass-through rates may assume different values in a market economy.⁴⁰ Many variables can justify the lack of an integral cost pass-through of a product, such as the concavity and curvature of the demand curve and the competition level of the market (or the model used to explain the interaction between consumers and companies).

36. Additionally, there should be a distinction between an abusive situation, in which large companies artificially obtain market power, from a situation where this happens naturally due to economies of scale or scope, reflecting the natural market equilibrium.

³⁵ Guilloux-Nefussi, S. (2020). "Globalization, market structure and inflation dynamics," *Journal of International Economics*, Elsevier, vol. 123(C).

³⁶ Amiti, Mary, Oleg Itskhoki, and Jozef Konings, "International Shocks and Domestic Prices: How Large Are Strategic Complementarities?", Technical Report 2015.

³⁷ BULOW, J., & PFLEIDERER, P. (1983). A Note on the Effect of Cost Changes on Prices. *Journal of Political Economy*, 91(1), 182-185.

³⁸ PANZAR, J., & ROSSE, J. R. (1987). Testing for "Monopoly" Equilibrium. *Journal of Industrial Economics*, 35, 443-456.

³⁹ FARRELL, J., & SHAPIRO, C. (2010). Recapture, Pass-Through, and Market Definition. *Antitrust Law Journal*, 585-604.

⁴⁰ According to "Cost pass-through: theory, measurement and policy implications", accessed 4 June 2018, <https://www.gov.uk/government/publications/cost-pass-through-theory-measurement-and-policy-implications>.

37. In this context, Susan Athey, Kyle Bagwell and Chris Sanchirico (2004) point out:

“Empirical studies by Mills (1927), Means (1935) and Carlton (1986, 1989) conclude that prices are more rigid in concentrated industries, suggesting that collusion is associated with a greater tendency toward price rigidity”.⁴¹

38. Price rigidity in a cartel⁴² is more common than in a competitive scenario. Hence, in theory, it is better to have more price variance in a competitive scenario than price rigidity with high-profit margins. Therefore, in discussing the relationship between inflation and cost pass-through rates, one should consider the level of prices, not just their percentage variation.

3.2.2. Does inflation hamper collusion? The thesis of Peter Duersch and Thomas Eife

39. Peter Duersch and Thomas Eife (2019)⁴³ suggest inflation hinders collusion. This conclusion comes from an experiment carried out inside a laboratory and under controlled conditions, probably focusing on how sellers set their prices according to different scenarios and circumstances. In a real-life situation, nevertheless, firms' behaviour may differ. Moreover, inflation affects not only companies but also consumers. In this regard, Benabou (1988)⁴⁴ observed that it is possible to have different equilibriums in terms of welfare and inflation, and inflation entails search costs. Based on Gertner (1987)⁴⁵, Benabou also mentions consumers can lose their knowledge of price distribution, reinforcing sellers' market power.

⁴¹ ATHEY, S., & BAGWELL, K. (2004). Collusion with Persistent Cost Shocks. *Working Paper. Columbia University, n.8*. ATHEY, S., BAGWELL, K., & SANCHIRICO, C. (April 2004). Collusion and Price Rigidity. *The Review of Economic Studies, 71 (2)*, 317-349. <http://web.mit.edu/athey/www/absrev1f.pdf>

⁴² According to Maarten Dossche Freddy Heylen Dirk Van den Poel. (The Kinked Demand Curve and Price Rigidity: Evidence from Scanner, WORKING PAPER D/2006/7012/74 December 2006 in *Scandinavian Journal of Economics, 2010, vol. 112, 4* (http://wps-feb.ugent.be/Papers/wp_06_429.pdf): “The specification of Kimball preferences has become the most successful way to obtain real price rigidity from the demand side in recent research. In contrast to the traditional Dixit and Stiglitz (1977) approach, Kimball (1995) no longer assumes a constant elasticity of substitution in demand. The price elasticity of demand becomes a function of relative prices. A key concept is the so-called curvature, which measures the relative price elasticity of the price elasticity. When the curvature is positive, Kimball preferences generate a concave or smoothed “kinked” demand curve in a log price/log quantity framework. This may create real price rigidity. Intuitively, assume an increase in aggregate demand which raises a firm’s marginal cost due to higher wages. If the firm were free to change its price, it would raise it. However, if a price above the level of its competitors strongly increases the elasticity of demand for the firm’s product, the firm can lose profits from strong price changes. Inversely, in the case of a fall in marginal cost, if a reduction in the firm’s price strongly reduces the elasticity of demand, the firm can again lose profits from drastic price changes. Price rigidity is a rational choice.

⁴³ P. Duersch and T.A. Eife. Price competition in an inflationary environment. *Journal of Monetary Economics 104* (2019) 48–66

⁴⁴ BENABOU, Roland. Search, Price Setting and Inflation. *Review of Economic Studies · February 1988*

⁴⁵ GERTNER, R (1987), Inflation, and monopoly power in a duopoly model with search (mimeo, University of Chicago)

40. Ball, L., & Romer, D. (2003)⁴⁶ conclude that:

When inflation causes relative prices to vary, it reduces the information about future prices in current prices. We find that this loss of information harms consumers substantially.

41. Liang Wang (2011, p.1 & p.36)⁴⁷, however, has a model that emphasises price dispersion as an effect of inflation:

“Consumers search harder for lower prices when facing greater price dispersion caused by higher inflation. This increased search intensifies market competition and raises welfare. The search behaviour of consumers also creates welfare loss by inducing producers to post inefficiently high prices. Both effects are impacted by the consumers’ real balance (...) A more dispersed price distribution implies less competition in the market, and hence, a bigger search cost and a higher average price level. Therefore, the output and consumption in equilibrium is driven farther away from the efficient level, and the welfare cost of inflation becomes larger.”

42. If inflation can increase price dispersion, it may also increase the incentives described by Roos & Smirnov (2017):⁴⁸

“We develop a theory of optimal collusive intertemporal price dispersion. Dispersion clouds consumer price awareness, encouraging firms to coordinate on dispersed prices. (...)if consumers are imperfectly attentive, it is possible that price dispersion could make collusion easier to sustain”

43. It is naturally difficult to model exactly how inflation could impact the competitive environment, which would require further research.

⁴⁶ Ball, L., & Romer, D. (2003). Inflation and the Informativeness of Prices. *Journal of Money, Credit and Banking*, 35(2), 177–196. <http://www.jstor.org/stable/3649853> (In conventional economic models, however, relative-price variability does not harm consumers. If markets are Walrasian, price variability raises consumer welfare because indirect utility functions are quasi convex in prices (Waugh 1944). Price variability benefits consumers because it creates opportunities for substitution toward low-price goods. A similar result holds for markets in which consumers search across sellers; in this case, price variability benefits consumers by raising the returns to search (Kohn and Shavell 1974). These microeconomic principles help explain economists' difficulties in formalizing the idea that inflation is harmful. This paper presents a model in which inflation-induced price variability reduces consumer welfare. The crucial feature of the model is that prices have a role beyond their allocational role in Walrasian markets. In our model, prices also have an informational role. Specifically, we consider consumers who enter long-term relationships with sellers. In deciding whether to enter a relationship, potential customers use a firm's current price as a signal of the prices it will charge in the future. When inflation causes relative prices to vary, it reduces the information about future prices in current prices. We find that this loss of information harms consumers substantially.)

⁴⁷ Liang Wang, 2011. "Inflation and Welfare with Search and Price Dispersion," Working Papers 201113, the University of Hawaii at Manoa, Department of Economics. See <https://ideas.repec.org/p/hai/wpaper/201113.html>, retrieved on 28 September 2022.

⁴⁸ de Roos, Nicolas and Smirnov, Vladimir, Collusion with Intertemporal Price Dispersion (9 June 2017). Available at SSRN: <https://ssrn.com/abstract=2575947> or <http://dx.doi.org/10.2139/ssrn.2575947>

3.2.3. Reviewing the consumer welfare standards

44. Pierce Jr (2022)⁴⁹ showed concern that some Competition Authorities have tried to replace the consumer welfare standard, which guides competition analysis in several respects, with a list of fair-play rules. Pierce Jr (2022) points out that such interpretative changes could intensify inflation. In this regard, it is difficult to have a decontextualised definition for the abuse of a dominant position that jeopardises consumers, as mentioned in Working Paper 1/2021/DEE/CADE (“The problematic binary approach to the concept of dominance”).⁵⁰

45. Hence, assessing how a paradigm shift can affect competition analysis in practice is paramount, as there is not much debate about this involving microeconomics. However, when this discussion happens in the scope of macroeconomics, it becomes more abstract and even harder to understand its implications. Changes in the application of competition law may bring improvements, but this demands caution to avoid reducing the predictability of CADE’s decisions. As Alexandre Cordeiro and Ana Sofia Signorelli (2020)⁵¹ stated, “the antitrust ‘toolbox’ often fails and needs constant improvements. Nonetheless, it is important to understand that refining a tool is very different from changing its purpose”.

4. Deflating variables

46. Irrespective of whether competition law can or cannot influence inflation, it is unquestionable that inflation needs to be heeded in competition analyses, from the methodological point of view. For instance, to calculate the appropriate parameters for price elasticities of demand and supply, which often guide merger simulation models, one should deflate variables such as the price of the examined products or services. For example, this procedure should be used whenever the analyst is trying to assess the effects of an anticompetitive practice on the price paid by consumers in real terms. To this end, it is helpful to use the country’s general inflation index to assess the real price variation over time.

47. However, there may be many indexes for a country’s inflation, and picking one over the other can affect the competitive analysis. It is also possible that anticompetitive practices in several markets influence the general inflation indexes of a country as a whole. Thus, there might be an endogenous process when someone tries to deflate the nominal value to determine the current and real overprice of a specific anticompetitive practice. Hence, one should be careful with this type of procedure.

5. Conclusion

48. As seen above, there are many topics for discussion about this intersection between Micro and Macroeconomics. The Brazilian experience demonstrates how the direct control of prices can create undesirable price equilibriums from the competition perspective. On

⁴⁹ Pierce Jr, R. J. (2022). The Hill, June 2022, “Abandoning decades of antitrust precedent won’t reduce inflation”, <https://thehill.com/opinion/finance/3522812-abandoning-decades-of-antitrust-precedent-wont-reduce-inflation/>

⁵⁰ See CASTRO, Ricardo Medeiros de. The problematic binary approach to the concept of dominance Working Paper 1/2021/DEE/CADE https://cdn.cade.gov.br/Portal/centrais-de-conteudo/publicacoes/estudos-economicos/documentos-de-trabalho/2021/Documento-de-Trabalho_The-problematic-binary-approach-to-the-concept-of-dominance.pdf

⁵¹ CORDEIRO, Alexandre. SIGNORELLI, Ana Sofia Cardoso Monteiro. Os objetivos do Direito Antitruste: evolução e perspectivas para o pós-Covid-19 <https://www.jota.info/opiniao-e-analise/artigos/os-objetivos-do-direito-antitruste-evolucao-e-perspectivas-para-o-pos-covid-19-01082020>

the other hand, enforcing a Competition Policy certainly increases consumer welfare, creating desirable aggregate effects for society as a whole.