



UNIVERSITÀ POLITECNICA DELLE MARCHE

FACOLTÀ DI ECONOMIA “GIORGIO FUÀ”

Bachelor's Degree Course in
Digital Economics and Business (DEB)

**Does E-Commerce Keep Prices Down? Amazon Effect and
Inflation.**

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Academic Year 2025/2026

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INTRODUCTION

E-commerce has changed the way people shop and the way firms compete. Because of that, its effect on consumer prices has become an important topic in economics. For much of the twentieth century, retail prices were mainly influenced by factors such as production costs, wages, monetary policy and competition between physical stores. The growth of online platforms like Amazon added a new element to this picture.

Whether e-commerce contributes to lower consumer prices and whether these effects extend to inflation is the central focus of this thesis. Most of the existing research suggests that the answer to both questions is yes. Online retailers offer more choice, lower search costs and greater price transparency than their physical counterparts, and the empirical evidence confirms that online prices tend to be lower than offline prices for comparable goods. Brynjolfsson and Smith (2000) found that internet prices were 9 to 16 percent lower than prices in conventional retail outlets. More recently, Goolsbee and Klenow (2018) estimated that online inflation ran approximately one percentage point below the Consumer Price Index for equivalent product categories between 2014 and 2017.

However, the relationship is not uniform across all sectors and markets. In categories such as consumer electronics, books and household goods, the downward pressure on prices is well established. In groceries, services, and locally provided goods, the effect is much weaker. At the macroeconomic level, there is still debate about whether e-commerce has significantly reduced aggregate inflation, although most evidence suggests that the effect is relatively modest.

Lower prices are only part of the story. The growth of Amazon has also sparked debate about competition in digital markets. While consumers often benefit from lower prices, some researchers argue that the strategies used to achieve those prices may create problems in the long run. Khan (2017), for example, argued that Amazon's aggressive pricing strategy which is supported by profits from other parts of the business may strengthen the company's market position over time. Similar concerns have also attracted the attention of policymakers. One example is the European Union's Digital Markets Act (2022), which was introduced in response to the growing influence of large digital platforms.

Overall, the evidence suggests that e-commerce, and Amazon in particular, has helped reduce consumer prices. At the same time, these benefits are not equally visible across all sectors. They are also becoming more difficult to assess because of issues such as market concentration, algorithmic pricing, and the changing nature of competition in digital markets.

The remainder of the thesis is organized into four chapters. The first chapter introduces the main concepts needed for the analysis, including digital markets, Amazon's business model, and digital price formation. The second chapter focuses on the Amazon effect and reviews evidence on how Amazon has influenced pricing behavior across the retail sector. The third chapter examines the relationship between e-commerce and inflation, drawing on evidence from both the United States and Europe. The fourth chapter considers the limitations of the Amazon effect, including market concentration, algorithmic pricing, and sectors where e-commerce has had a limited impact. The conclusion then returns to the central research question and brings together the main findings of the study.

CHAPTER 1

E-COMMERCE AND DIGITAL MARKETS

1.1 DEFINITION OF E-COMMERCE

E-commerce refers to the buying and selling of goods and services through digital networks, mainly the internet. While it is often associated with large platforms like Amazon or Alibaba, it includes a wide range of activities, from small businesses selling through online marketplaces such as Etsy to large firms managing complex business-to-business transactions through digital systems. In this thesis, the focus is on business-to-consumer (B2C) e-commerce, since it is the part most closely linked to consumer prices and inflation.

The importance of e-commerce is not limited to online purchasing. It has also changed how consumers compare prices and how firms compete with one another. In traditional retail, prices are not always easy to compare, and consumers usually need time and effort to check different stores. The situation is different in online markets, where consumers can quickly compare prices across multiple sellers using digital tools.

As Bakos (1997) explains, when search costs for consumers decrease, competition between sellers becomes stronger. If people can easily compare prices, firms have less power to keep prices above competitive levels, which increases price competition and improves how resources are allocated in the market.

E-commerce has developed quite quickly over time. Even though companies like Amazon started in the mid-1990s, online shopping was still a small part of overall

consumption for many years. It is mainly in the 2010s, and especially after the COVID-19 pandemic in 2020, that e-commerce became a much more important part of everyday consumer behavior. For this reason, the effects of e-commerce on prices and inflation discussed in this thesis are mainly associated with its recent expansion rather than its early stages of development.

1.2 GROWTH OF ONLINE SHOPPING

The growth of online shopping over the past two decades has been one of the most significant changes in consumer markets. In the United States, e-commerce accounted for less than 1% of total retail sales at the beginning of the 2000s. By 2019, that share had grown to around 11%, and during the COVID-19 pandemic in 2020 it jumped past 16% in a single year, a shift that would have normally taken several more years to happen. In Europe, similar trends appeared, with countries like the United Kingdom reaching e-commerce shares above 25% of total retail by 2020. The ECB (2021) documented this acceleration across the euro area, noting that mobility restrictions during the pandemic pushed a large share of consumer spending from physical stores to online platforms.

These growth figures do not capture important differences between sectors. In sectors like consumer electronics, books, and music, online sales became the dominant channel well before the pandemic. In groceries and local services, physical retail stayed strong for much longer. As a result, the pricing effects of e-commerce are not evenly distributed across the economy but are concentrated in sectors where online competition is strongest.

An important effect of e-commerce is that it has changed the behavior of retailers operating in both online and offline markets. A consumer who can check Amazon's

price on their phone while standing in a shop is not making the same kind of purchasing decision as a consumer in 2000. The simple availability of a credible online option puts pressure on offline prices too, a mechanism known as the showrooming effect. This is one of the key ways in which e-commerce affects prices across the broader economy, not just within online retail itself.

1.3 DIGITAL PLATFORMS AND MARKETPLACES

The growth of e-commerce did not just change the way consumers purchase goods; it also transformed the structure of many markets. At the center of this change are digital platforms: intermediaries that connect buyers and sellers in a single digital environment, often without owning the products being exchanged. Unlike traditional retailers, platforms like Amazon Marketplace, eBay, or Alibaba operate on different logic. Their value increases with the number of participants on both sides, more sellers attract more buyers, and more buyers attract more sellers. This self-reinforcing dynamic is known as a network effect, and it gives successful platforms a structural advantage that is very difficult for competitors to challenge.

Platforms influence pricing by concentrating competition within a single digital environment. A consumer browsing Amazon is simultaneously exposed to dozens of sellers offering the same or similar products, often with prices visible side by side. This level of transparency simply did not exist in physical retail. For sellers, the consequences are immediate: a product priced too high loses visibility, while pricing too low risks eroding margins entirely. The OECD (2022) has recognized that this dynamic produces real benefits for consumers, lower search costs, more choice and greater price competition, but also that the same network effects and economies of scale that make

platforms efficient can establish dominant players in ways that reduce competition over time.

Two platform models are particularly relevant to this thesis. The first is the pure marketplace model, where the platform connects independent sellers and buyers and takes commission without selling goods itself. The second is the hybrid model, best represented by Amazon, where the platform acts simultaneously as a marketplace for third-party sellers and as a retailer in its own right. This dual role creates tensions around pricing fairness and competitive balance that will be explored in Chapter 4.

1.4 AMAZON'S BUSINESS MODEL

Amazon's influence on prices is closely linked to its business model, which does not simply rely on selling products at a profit. Amazon's business model is built around what its founder Jeff Bezos called a flywheel: a self-reinforcing cycle in which lower prices attract more customers, more customers attract more third-party sellers, a wider selection attracts even more customers, and the resulting scale allows Amazon to cut costs further and lower prices again. This creates a self-reinforcing process in which growth in one area supports growth in the others.

Several characteristics distinguish Amazon's business model from that of traditional retailers. First, Amazon has historically been willing to operate with very thin profit margins, or even at a loss, in its retail business, while generating profits elsewhere, particularly through Amazon Web Services (AWS) and its advertising division. This cross-subsidization is something conventional retailers simply cannot replicate, since they depend on the products they sell to stay financially viable. Second, Amazon's

investment in logistics, its fulfillment centers, delivery network, and inventory systems, has allowed it to reduce the cost of getting products to consumers in ways that smaller competitors cannot match.

Pricing plays an important role in Amazon's competitive strategy; functioning as a strategic tool rather than just a way to generate revenue. Its algorithms track competitor prices in real time and adjust Amazon's own prices accordingly, sometimes thousands of times a day. The objective is not necessarily to always maintain the lowest price, but to remain competitive in the eyes of consumers. As Lina Khan (2017) argued, this strategy of aggressive short-term pricing, sometimes below cost, helps Amazon build long-run market dominance, which raises a question that runs through this entire thesis: does pricing that benefits consumers today come at a cost to competition tomorrow?

1.5 DIGITAL PRICE FORMATION

The process through which prices are determined differs significantly between online and traditional retail markets. In a physical store, prices are printed on labels and changed infrequently, partly because changing them takes time and effort. These operational barriers, commonly referred to as menu costs, mean that even when market conditions shift, firms often find it easier to leave prices unchanged. The result is price stickiness: a lag between shifts in costs or demand and the prices consumers actually see.

Online retail largely removes these barriers. On digital platforms, prices can be modified almost instantly and at very little cost. This means that the theoretical foundation for price stickiness, the menu cost, effectively disappears in digital

environments. Bakos (1997) identified the reduction in search costs as one of the core economic consequences of electronic markets, arguing that when consumers can compare prices easily, sellers lose the ability to maintain prices above competitive levels. Brynjolfsson and Smith (2000) confirmed this empirically, finding not only that online prices were lower than those in physical stores, but that online retailers also adjusted their prices far more frequently, a direct reflection of the lower cost of doing so.

Digital price formation is also shaped by algorithms. Rather than being reviewed periodically by managers, prices on large platforms are increasingly set by automated systems that respond in real time to competitor pricing, inventory levels, demand patterns and seasonal changes. This continuous adjustment influences not only individual products but also broader pricing dynamics within retail markets.

1.6 PRICE STICKINESS: ONLINE VS OFFLINE

The concept of price stickiness and its digital erosion

Research on e-commerce consistently shows that online prices are less sticky than offline prices. This means they change more often and respond more quickly to shifts in market conditions. Brynjolfsson and Smith (2000) were among the first to show this, finding that online retailers updated their prices far more frequently than physical stores. Cavallo (2017) confirmed this on a larger scale. While online and offline prices for the same products matched roughly 72% of the time across 56 retailers in 10 countries, online prices adjusted more quickly when market conditions changed.

Macroeconomic implications

This has consequences that go beyond individual retailers. Cavallo (2018) argued at the Jackson Hole Economic Symposium that by making prices adjust faster across a large part of the retail sector, the Amazon effect may be changing how monetary policy actually works in practice. Central banks partly rely on price stickiness when using interest rates to influence economic activity. When prices adjust slowly, policy changes have time to work their way through the economy. If e-commerce is eroding that stickiness, the way monetary policy transmits through the economy may be shifting in ways that are only beginning to be understood.

Sectoral variation

This difference between online and offline price adjustment is not the same across all product categories. Consumer electronics and standardized goods show the strongest convergence between online and offline prices, because they are easy to compare and substitute. Groceries, personal services and locally provided goods show much less convergence, partly because they are harder to standardize and partly because local conditions still play a large role in their pricing. This uneven pattern suggests that the impact of e-commerce on prices depends heavily on the characteristics of individual sectors.

CHAPTER 2

THE AMAZON EFFECT ON PRICES

2.1 AMAZON'S SCALE AND MARKET POWER

Amazon has become one of the most influential companies in the global retail sector. By 2023, it accounted for nearly 40% of all e-commerce sales in the United States, and its reach extended well beyond its home market into Europe, Asia and Latin America. Although Amazon benefited from entering online retail early, its growth has also been driven by expansion into areas such as cloud computing and digital advertising.

Several factors contribute to Amazon's market power. The first is its buyer base: with hundreds of millions of active customers globally, Amazon offers third-party sellers access to an audience that no independent retailer can replicate. The second is its logistics infrastructure, which allows it to offer delivery speeds and reliability that set a standard the rest of the industry has had to chase. The third is its data advantage. Amazon has access to purchasing behavior, search patterns and product performance data on a scale that gives it an information advantage over other participants in its marketplace, including third-party sellers.

While the internet generally increases competition by reducing search costs and improving price transparency, large platforms like Amazon also create new forms of market power that did not exist in traditional retail. The same features that make platforms attractive to users, including scale, network effects and access to data, can also make it harder for competitors to challenge them. This tension between the pro-competitive and anti-competitive dimensions of platform scale is central to evaluating

the Amazon effect on prices, and it is a tension that does not resolve neatly in either direction (OECD, 2022).

2.2 DYNAMIC PRICING ALGORITHMS

Amazon relies heavily on dynamic pricing algorithms to adjust prices across its platform based on a wide range of inputs, including competitor prices, demand levels, inventory availability, time of day, and historical purchasing patterns. Amazon's algorithms are estimated to update prices millions of times per day across its product catalogue, a frequency of adjustment that would be extremely difficult to achieve through manual pricing decisions.

The economic logic behind dynamic pricing is straightforward: by adjusting prices in real time, a seller can capture more value from consumers willing to pay more at peak demand, while remaining competitive during slower periods. For consumers, the effects are more ambiguous. On one hand, dynamic pricing can mean lower prices when demand is weak or competition is intense. On the other hand, it can mean higher prices at moments of high demand or reduced competition, and because the adjustments happen continuously and automatically, consumers often cannot determine whether the price they observe reflects normal market competition or an automated pricing response. Ezrachi and Stucke (2016) raised a deeper concern about dynamic pricing in their analysis of algorithmic competition. When multiple sellers in the same market use similar pricing algorithms, those algorithms may, without any explicit coordination between firms, learn to avoid aggressive price competition and instead settle into pricing patterns that resemble collusion. Ezrachi and Stucke described this phenomenon

as tacit algorithmic collusion, a concept that has become an important concern in discussions about automated pricing and competition policy.

2.3 PRICE TRANSPARENCY AND CONSUMER BEHAVIOUR

E-commerce has significantly increased price transparency by making it easier for consumers to compare prices across multiple sellers. In traditional retail, price comparison required physical effort: visiting different stores, making phone calls, or relying on advertising. Online, the same comparison takes seconds and can be automated by price comparison websites, browser extensions, and search engines that aggregate listings from multiple retailers simultaneously.

Bakos (1997) identified this reduction in search costs as one of the fundamental economic consequences of digital markets. When consumers can easily find the best available price, sellers lose the ability to charge above competitive levels simply because buyers do not know better options exist. In theory, this should make markets more efficient by encouraging prices to move closer to competitive levels.

In practice, however, price transparency does not eliminate price differences entirely. Brynjolfsson and Smith (2000) found that even in early online markets, where price comparison was already far easier than in physical retail, significant price dispersion persisted between online sellers offering identical products. There are several reasons why this occurs: consumers do not always choose the lowest price, because price is not the only thing they care about. Brand trust, delivery reliability, return policies, and the user experience of the platform itself all influence purchasing decisions. This means that

sellers with strong reputations, Amazon being the clearest example, can sustain prices above the theoretical minimum without losing customers, even in a transparent market.

2.4 LOGISTICS EFFICIENCY AND COST REDUCTION

Discussions of the Amazon effect often focus on pricing algorithms, but logistics plays an equally important role. Amazon's investment in its fulfillment and delivery infrastructure has been one of the defining features of its competitive strategy, and it has had direct consequences for the prices consumers pay, not through algorithmic adjustment, but through genuine reductions in the cost of moving goods from warehouses to customers.

Amazon's fulfillment network, built over decades of investment, allows it to store inventory closer to consumers, process orders faster, and deliver more reliably than most competitors. The result is a reduction in distribution costs, a cost that, in traditional retail, was embedded in the price of every product through the margins required to support physical store networks. By replacing much of that infrastructure with a more efficient logistics system, Amazon has been able to offer prices that reflect lower underlying costs, not just competitive pressure.

This efficiency also has spillover effects. As Amazon's logistics capabilities have raised consumer expectations around delivery speed and reliability, other retailers have been forced to invest in their own fulfillment infrastructure to remain competitive. This broader improvement in logistics across the retail sector has contributed to lower costs that benefit consumers even when they are not shopping on Amazon directly. The

competitive pressure Amazon exerts through logistics is, in this sense, as important as the competitive pressure it exerts through pricing.

2.5 COMPETITIVE PRESSURE ON TRADITIONAL RETAILERS

Amazon has significantly increased the pressure faced by traditional retailers. The evidence supporting this claim is substantial. Retail chains that were dominant in the pre-Amazon era, Borders, Toys R Us, Sears, and many others, either collapsed or contracted severely as online competition intensified. Those that survived did so largely by adapting their pricing, their logistics, and their digital presence to compete in an environment shaped by Amazon's standards.

Cavallo (2017) provided some of the clearest empirical evidence of this dynamic, showing that large multi-channel retailers, those operating both physical stores and online platforms, increasingly aligned their offline prices with their online ones. This convergence suggests that Amazon's pricing is not just setting the standard for online retail but pulling offline retail prices in the same direction. A physical store that charges significantly more than the online price for the same product risks losing customers who check their phones before completing a purchase, the showrooming effect discussed in Chapter 1.

The competitive pressure Amazon exerts is also felt by smaller online retailers, not just physical stores. Competing directly with Amazon on price is often difficult for sellers that lack comparable scale and resources. While online marketplaces generally lower

barriers to entry, Amazon's dominance means that many sellers compete within its ecosystem rather than against it, raising important questions about market structure and consumer choice.

2.6 EVIDENCE OF LOWER MARKUPS

The question of whether the Amazon effect lowers prices can be examined through empirical evidence: does the presence of Amazon and online competition lead to measurably lower prices and margins across the retail sector? The evidence, taken as a whole, suggests that it does, though with important qualifications.

Cavallo (2018) provided the most direct evidence on this point, showing that retailers in markets with stronger Amazon competition exhibited lower price levels and more frequent price adjustments than those in markets where Amazon's presence was weaker. The paper also documented that the entry of Amazon into new product categories was associated with a reduction in the prices charged by competing retailers, suggesting that the effect operates not just through Amazon's own prices but through the competitive response of other sellers.

Brynjolfsson and Smith (2000) had earlier established that online prices were, on average, 9 to 16 percent lower than prices for the same goods in physical stores, a gap that reflected both lower operating costs and more intense price competition online. More recently, Goolsbee and Klenow (2018) estimated that online inflation ran approximately one percentage point below the Consumer Price Index for comparable categories between 2014 and 2017, suggesting that the downward pressure on prices in

online markets was persistent and measurable at the aggregate level, not just in individual product comparisons.

These findings are consistent with the theoretical predictions of Bakos (1997): when search costs fall and price transparency increases, competitive pressure intensifies and markups compress. The effect is strongest in sectors exposed to intense online competition and weaker where such competition remains limited, a distribution that matters for the inflation analysis.

CHAPTER 3

E-COMMERCE AND INFLATION

3.1 WHAT IS INFLATION?

Inflation is a sustained increase in the general level of prices over time and is commonly measured using indicators like the Consumer Price Index (CPI). Economists traditionally explain inflation through factors such as aggregate demand, production costs, and monetary conditions. This is why most central banks aim to maintain low and stable inflation, typically around 2% per year.

The relationship between e-commerce and inflation differs from traditional explanations of inflation. It does not directly change the money supply or aggregate demand. The impact of e-commerce on inflation is therefore mainly linked to changes in market structure and pricing behavior rather than changes in the money supply.

3.2 TECHNOLOGY AND INFLATION

The idea that technological change can influence inflation is not new, but e-commerce represents a particular kind of technological shift, one that affects the retail sector directly and pervasively. Unlike earlier waves of technology that primarily affected production processes, e-commerce changes how goods are sold, priced, and distributed, making it closely connected to the way consumer prices are determined.

The OECD (2022) has documented how digital technologies more broadly have contributed to productivity gains across many sectors of the economy, and retail is among the sectors where these gains have been most visible. Lower transaction costs, more efficient inventory management, and the automation of pricing decisions all reduce the real cost of operating a retail business. If these effects are large enough, they may contribute to lower inflation across the economy.

However, the relationship between technology and inflation is not always straightforward. Some economists have argued that the productivity gains from digital technology have been concentrated in relatively few large firms, Amazon prominent among them, rather than spread evenly across the economy. If this is the case, the deflationary effects of e-commerce may be similarly concentrated, benefiting consumers primarily in the sectors and product categories where these large firms operate most intensively, while leaving inflation dynamics in other sectors largely unaffected. As the evidence later in this chapter shows, the effects are not evenly distributed across the economy.

3.3 TRANSMISSION MECHANISMS TO AGGREGATE INFLATION

For e-commerce to affect inflation at the aggregate level, its influence on individual prices must somehow translate into the broader price indices that measure inflation across the economy. The literature identifies several ways through which e-commerce may influence inflation, and these help explain the empirical findings discussed later in this chapter.

The first and most direct mechanism is the substitution effect: as consumers shift spending from physical retail to online retail, and online prices are lower on average, the weighted average price level that CPI measures should fall, all else being equal. This mechanism depends on the share of consumer spending that occurs online, the larger that share, the greater its potential impact on the aggregate index.

The second mechanism is competitive spillover, discussed extensively in Chapter 2. As physical retailers adjust their prices in response to online competition, whether through direct price matching or through broader cost-cutting to remain competitive, the prices of goods sold offline are also affected. This means the impact of e-commerce on inflation is not limited to the share of transactions that occur online; it extends to the pricing behaviour of the entire retail sector.

The third mechanism relates to price stickiness, discussed in section 1.6. If e-commerce reduces price stickiness across the economy, making prices adjust more quickly to changes in costs or demand, this changes the dynamics of inflation itself, independent of whether prices go up or down on average. A less sticky price environment responds more quickly to monetary policy and to economic shocks, which has implications for

how inflation behaves over the business cycle, even if it does not change the long-run average level of inflation.

Cavallo (2018) argued that this third mechanism may be particularly important for monetary policy. Unlike the first two channels, its significance does not come from lowering prices directly, but from changing how prices respond to economic conditions.

3.4 EVIDENCE FROM EUROPE

The European evidence on e-commerce and inflation is shaped by a market that, while following similar broad trends to the United States, has its own distinctive characteristics, including generally lower e-commerce penetration in many member states, greater regulatory attention to digital markets, and significant variation between northern and southern European economies.

The ECB (2021) examined the relationship between digitalisation and inflation dynamics across the euro area, finding that the growth of e-commerce contributed to a modest reduction in measured inflation, with internal estimates suggesting an effect in the range of approximately 0.1 percentage points on the annual inflation rate. Although this figure appears small, it still represents a measurable contribution to inflation outcomes. It also supports the idea that the effect of e-commerce on inflation is real, even if its overall impact remains modest.

3.5 EVIDENCE FROM THE UNITED STATES

The United States has been the primary focus of much of the empirical research on e-commerce and inflation, in part because of the availability of detailed price data from large multi-channel retailers and in part because Amazon's dominance is most pronounced in its home market.

Goolsbee and Klenow (2018) provided one of the most influential pieces of evidence in this area, estimating that online inflation ran approximately one percentage point below the CPI for equivalent product categories between 2014 and 2017. This finding suggested that traditional inflation measures may have overstated inflation during this period because online transactions were not fully reflected in the data. This is important because central banks rely on these measures when making monetary policy decisions.

Cavallo (2017) approached the question from a different angle, directly comparing online and offline prices for the same products sold by the same large multi-channel retailers across ten countries, including the United States. The finding that online and offline prices were identical approximately 72% of the time suggests that much of the adjustment may have already taken place. Large retailers have increasingly aligned their offline prices with their online prices, which leaves less room for further convergence to generate additional price reductions.

Overall, the evidence from the United States suggests that e-commerce has contributed to lower prices and lower measured inflation. Much of the adjustment may have occurred during the early expansion of e-commerce, when offline retailers were

adapting to growing online competition. Remaining differences are now concentrated in sectors where online and offline retail operate under different cost structures.

3.6 WHY THE EFFECT MAY BE WEAKENING

While the evidence reviewed in this chapter confirms that e-commerce has exerted downward pressure on inflation, there are reasons to think this effect may not continue indefinitely at the same intensity, or may already be diminishing.

The first reason relates to the convergence discussed in the previous section. If online and offline prices have already converged in sectors where e-commerce is well established, there is naturally less room for further price reductions through this channel. When e-commerce penetration is already high, additional growth is likely to have a smaller effect on prices than it did in the past.

A second factor relates to the broader economic environment in which e-commerce operates. The big post-pandemic inflation spike, driven by supply chain disruptions, energy prices, and fiscal stimulus, had nothing to do with e-commerce. Compared with the inflation seen after the pandemic, the ECB's estimate of around 0.1 percentage points is quite small. The e-commerce effect on inflation hasn't gone away, but its visibility depends heavily on what else is happening in the economy. A modest deflationary force matters more when overall inflation is low than when it's high, and the last few years have not been a low-inflation environment.

There is also a broader issue that this chapter cannot fully answer: whether the competitive conditions that produced these price effects will remain in place as online markets continue to mature. This question is examined in Chapter 4.

CHAPTER 4

LIMITS AND CONTRADICTIONS

4.1 MARKET CONCENTRATION RISKS

The pro-competitive story of e-commerce, lower search costs, greater transparency, more intense price competition, rests on an assumption that is increasingly difficult to take for granted: that online markets remain genuinely competitive, with many sellers competing on relatively equal terms. The evidence on market concentration suggests this assumption is under strain.

By the early 2020s, Amazon's share of US e-commerce sales approached 40%, a level of concentration that would attract significant antitrust scrutiny in almost any other context. Lina Khan (2017) argued that traditional antitrust frameworks focus too heavily on whether dominant firms raise consumer prices. According to Khan, this approach is less effective when applied to platforms like Amazon, which can maintain low prices while still building significant market power through control of key market infrastructure.

The OECD (2022) similarly noted that digital markets exhibit structural features, network effects, economies of scale and scope, and the value of data, that tend to favour the emergence of dominant players, even in markets that started out highly competitive. This creates a potential contradiction within the Amazon effect. The same mechanisms that initially drove prices down through intense competition may, over time, contribute to a market structure with less competition. If competition weakens, the potential for

further price reductions also becomes more limited, and prices could eventually begin to rise.

This is not merely a theoretical concern. In 2023, the Federal Trade Commission filed an antitrust case against Amazon, alleging that the company used pricing algorithms to discourage sellers from offering lower prices on competing platforms. Whether these allegations are ultimately upheld or not, the case highlights how market concentration can influence pricing behaviour even when consumers do not immediately see higher prices. Over time, practices of this kind may weaken the competitive pressure that helps keep prices low.

4.2 LAST-MILE COSTS PASSED TO CONSUMERS

Much of the discussion of e-commerce and prices focuses on the price displayed for a product itself, but this is only part of the cost a consumer ultimately bears. Delivery costs are an important part of online retail, particularly what logistics providers refer to as the "last mile", the final stage of a product's journey from a distribution center to the consumer's door. Although consumers often focus on the listed product price, delivery can represent a significant share of the total cost.

Last-mile delivery is, by some estimates, the most expensive part of the entire logistics chain, accounting for a disproportionate share of total delivery costs relative to the distance covered. For many years, large platforms absorbed much of this cost as part of a strategy to encourage online shopping, offering free or heavily subsidized shipping

that did not reflect its true cost. This subsidization contributed to the perception that online shopping was straightforwardly cheaper than offline alternatives.

However, these costs have not disappeared. Instead, they have increasingly been shifted to consumers in different ways. Subscription services such as Amazon Prime effectively bundle delivery costs into an annual fee, shifting the cost from a per-transaction basis to a fixed cost that consumers pay regardless of how much they actually use the service. For infrequent shoppers, this can mean the effective cost of using the platform is higher than the displayed product prices suggest. Additionally, as online retail has matured, some platforms have begun introducing delivery fees for orders below certain thresholds, partially reversing the earlier subsidization. As a result, comparing product prices alone may not give a complete picture of the cost of online shopping. Delivery charges and subscription fees can reduce some of the savings consumers appear to gain from lower online prices.

4.3 ALGORITHMIC PRICING AND COLLUSION CONCERNS

The dynamic pricing algorithms discussed in section 2.2 raise a concern that goes beyond individual firm behavior: the possibility that widespread use of similar algorithms across an industry could lead to outcomes that resemble collusion, without any explicit agreement between competing firms.

Ezrachi and Stucke (2016) describe several ways this could happen. In the simplest case, firms use pricing algorithms that are designed to avoid price wars, for example by matching competitor prices rather than undercutting them.

In other cases, machine learning systems trained to maximise profit may independently learn that aggressive price competition reduces overall profits. Over time, they adjust their behaviour and settle into patterns that resemble coordination, even though no firm explicitly intended or agreed to this outcome.

This concern has moved from academic discussion to active regulatory attention. The 2023 FTC case against Amazon brought this issue into regulatory focus. It alleged that Amazon used a pricing algorithm known internally as Project Nessie to identify situations where competitors had not yet lowered their prices and to raise Amazon's own prices accordingly, reversing the usual logic of price matching.

Amazon has stated that the project was discontinued. However, its existence shows that algorithmic pricing can be used in more than one direction. The same systems that respond quickly to competition can also, in some cases, be used to maintain higher prices.

The OECD (2022) notes that detecting algorithmic collusion is difficult for competition authorities. In many cases, there is no communication or explicit agreement between firms, which makes traditional antitrust tools less effective.

This highlights a limitation of the pro-competitive story of e-commerce. The same technology that increases price competition can also produce forms of coordination that are difficult to detect and regulate using existing legal frameworks.

4.4 HIDDEN COSTS (PRIME, SUBSCRIPTIONS, FEES)

Beyond delivery costs, the broader e-commerce ecosystem has developed a range of additional charges and subscription structures that complicate any simple comparison between online and offline prices. Amazon Prime, now used by a majority of US households, bundles delivery, streaming content, and other services into a single annual subscription that has increased substantially in price since its launch.

From an economic perspective, subscription models such as Prime create a more complex pricing structure than simple price comparisons suggest. The effective cost of a purchase depends not only on the displayed product price, but also on subscription costs and the value consumers receive from bundled services.

Behavioral factors may also play a role. Once consumers have paid for Prime, they may be more likely to continue shopping on Amazon, even when lower prices are available elsewhere, because they want to make use of a service they have already paid for.

Beyond subscriptions, sellers on Amazon's marketplace face a variety of costs, including referral fees, fulfilment fees, and advertising expenses needed to maintain product visibility. These charges can account for a substantial share of the final price paid by consumers.

Many of these costs are ultimately passed on through higher listed prices. As a result, part of what consumers pay reflects not only the cost of producing and delivering a product, but also the cost of accessing Amazon's platform and customer base.

This raises an important question: how much of the final price reflects the product itself, and how much reflects the platform through which it is sold? The answer has implications for assessing how competitive platform prices really are.

4.5 SECTOR GAPS: WHERE IT DOESN'T WORK

The evidence throughout this thesis has consistently pointed to one conclusion: the Amazon effect is real, but it is not evenly distributed across the economy. This final section brings together the sectoral patterns discussed in earlier chapters to outline where the pro-competitive, anti-inflationary effects of e-commerce are weakest, and why.

Groceries represent perhaps the clearest example. Despite significant growth in online grocery shopping, particularly after the pandemic, the sector retains characteristics that limit the Amazon effect. Many products are perishable and require specialized logistics that differ from those used for standardized goods. Local market conditions and regional supply chains also continue to play an important role in pricing. In addition, consumer shopping habits for groceries have proven more resistant to change than habits associated with products such as books or electronics.

Services represent an even clearer limitation. A haircut, a medical consultation, or a home repair cannot be purchased on Amazon in the same way as a physical product. These activities depend on physical location and human labour, making them far less susceptible to the forms of digital competition that have transformed retail goods.

Housing costs, one of the largest components of household spending and of inflation measures, are entirely outside the scope of e-commerce's influence. No platform, however dominant, changes the fundamental dynamics of housing supply and demand, which are shaped by land availability, construction costs, interest rates, and local regulation.

Taken together, these sector gaps explain why the macroeconomic effects of e-commerce on inflation, while real, remain modest, estimated at around 0.1 percentage points annually by the ECB (2021). E-commerce operates intensely within a subset of the economy, but that subset, however important, is not the whole economy. This is the central nuance that any answer to the question "does e-commerce keep prices down?" must recognise: yes, within its domain, but that domain has clear limits, and those limits matter when assessing what e-commerce can realistically do for inflation in the future.

CONCLUSION

The objective of this thesis was to examine whether e-commerce contributes to lower consumer prices and whether this effect influences inflation. The evidence presented throughout this thesis shows that e-commerce has contributed to lower prices in several sectors of the economy.

The case for e-commerce lowering prices is strong. Reduced search costs, greater price transparency, and the sheer scale of platforms like Amazon have all contributed to measurable downward pressure on consumer prices, not just for goods bought online, but increasingly for goods sold in physical stores too, through the showrooming effect

and the broader convergence of online and offline pricing documented by Cavallo (2017, 2018). The theoretical foundations laid out by Bakos (1997) and Brynjolfsson and Smith (2000) hold up well empirically: when consumers can compare prices easily, sellers lose much of their ability to charge above competitive levels.

At the macroeconomic level, the effect is smaller than many people assume. The ECB (2021) estimate of around 0.1 percentage points per year is real but modest. In any given year, this effect is easily swamped by other forces, as the post-pandemic inflation period made clear.

However, the relationship becomes more complex when considering the issues examined in Chapter 4. The same scale that lets Amazon push prices down also gives it the kind of market power that Lina Khan (2017) and others have flagged as a genuine competition problem. Algorithmic pricing, which helps prices respond quickly to market conditions, also opens the door to the kind of tacit coordination Ezrachi and Stucke (2016) described, something regulators are now actively investigating, as the FTC case against Amazon shows. And the sectors where e-commerce barely operates, services, housing, much of groceries, are large enough that no amount of competition in electronics or books is going to move the overall inflation number very much.

Based on the evidence presented in this study, it can be concluded that e-commerce has contributed to lower prices in several sectors of the economy but "keeping prices down" and "fighting inflation" are not quite the same thing once you zoom out to the whole economy. The Amazon effect is real, but it has a ceiling, set partly by what e-commerce can't reach (services, housing) and partly by what e-commerce itself becomes over time,

as markets that started out highly competitive consolidate around a small number of dominant players.

For policymakers, this suggests two things working at the same time. On one hand, there's value in protecting the conditions that made e-commerce competitive in the first place, low search costs, transparency, low barriers for new sellers. On the other hand, the EU's Digital Markets Act (2022) and similar efforts reflect a recognition that these conditions don't maintain themselves automatically, especially once a market has a dominant player with the kind of cross-subsidization advantages Amazon has.

A natural next step for research would be to look at what happens as e-commerce penetration gets even higher in markets that are currently behind the US and UK, whether the same pattern of fast initial gains followed by diminishing effects holds elsewhere, or whether different regulatory environments produce a different trajectory. Although these questions fall beyond the scope of this thesis, they provide a useful direction for future research.

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