
Labour market monopsony power

Assessment of labour substitutability

Nadine Watson, Paul Armstrong, Joanna Hornik and Bartosz Redlicki¹
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Assessing labour substitutability is essential to understanding the extent of employers' market power. While conceptually similar to assessing substitution in product markets, there are specific characteristics of labour markets that can make the assessment more complex. In this article, Nadine Watson, Paul Armstrong, Joanna Hornik and Bartosz Redlicki explain the challenges in assessing substitutability in labour markets and provide insight into how the set of alternative job titles and workers' actual switching behaviour can be identified.

Introduction

Traditionally, the attention of competition authorities has focused on whether firms have market power as sellers in product markets. Analysing how consumers switch between products of different firms is at the heart of assessing the degree of market power. The less able consumers are to substitute a firm's product for some alternative when faced with a price increase (or a deterioration in quality), the more scope the firm has to profitably raise prices, i.e., the stronger its market power.

Competition authorities are becoming increasingly interested in assessing competition in labour markets.² The key economic question that arises in competition cases related to labour markets is the degree of market power that firms have as buyers of labour. Where employers individually or collectively have a high degree of market power, they might abuse it to the detriment of employees, for example by paying lower wages or limiting the job alternatives of their workers.

One way for employers to increase their market power is by coordinating with their

competitors.³ Indeed, the majority of investigations into labour-related matters by European competition authorities to date have been into anticompetitive agreements between employers, involving no-poach clauses, wage-fixing, and exchanges of sensitive information on salaries.^{4,5} For example, the Portuguese competition authority (Autoridade de Concorrência, "AdC") recently fined football clubs and Portugal's Football League for implementing an anticompetitive no-poach agreement.⁶ Another way in which employers can increase their market power is through a merger or an acquisition, by eliminating an alternative employer on the market. In a recent case, employment-related concerns were explicitly analysed in a European merger assessed by the Dutch competition authority (Autoriteit Consument & Markt, "ACM").⁷

In assessing labour market power, the analysis of switching is key – just as it is when assessing market power in product markets. The difference is that here the focus is on how workers switch between employers. It is therefore crucial to understand *labour substitutability* in the market, i.e., the ability of workers to switch to another employer when faced with a decrease in wages or some other

worsening of their working conditions. Labour substitutability depends on the choices available to workers both in-market (in their chosen profession and/or geographic area) and out-of-market (in potential adjacent professions and geographic areas, including, e.g., remote working).

In this article, we first discuss the conceptual framework for assessing labour substitutability. We then identify specific aspects of labour markets which make it potentially more complex to assess substitutability in labour markets than in product markets. Finally, we discuss practical ways in which labour substitutability can be measured and review two recent European cases in which substitution in labour markets was analysed.

The conceptual framework for assessing labour substitutability

Conceptually, the assessment of substitutability in labour markets mirrors how substitution between competing products is analysed. While in product markets one looks at whether a firm's customers would switch towards rival firms' products when faced with price increases (or quality reductions), in labour markets one looks at whether employees would switch to rival employers following a wage decrease (or a deterioration of other employment conditions).

Generally speaking, the fewer alternative jobs available for a firm's employees, the more market power that firm will have. At the extreme, an employer would be a monopsonist if no other alternatives were available for jobs of a certain type and/or in a certain area. A monopsonist can influence wages by restricting the demand for labour. Less labour implies less output, and thus leads to double harm: lower wages for workers and higher prices for consumers.⁸ Thus, to assess an employer's market power, it is necessary to identify the set of alternative jobs that workers are both willing and able to take. These alternatives depend on the type of position that is available, as well as the geographic location of the job.

In practice, the assessment of labour substitutability consists of two steps:

- a. **Identification of the relevant job substitutes.** The first step is to identify the alternative job options (substitutes) a worker would consider in case of a wage reduction (or a deterioration of other employment conditions).⁹ These alternatives form the relevant job and geographic market, i.e., those alternative jobs that an employee would consider when faced with a wage cut or other deterioration of conditions bearing in mind that employees will only consider particular positions within a particular area. The relevant labour market can differ for different groups or types of workers and/or for different branches and locations of a firm. Overall, the general principles in defining relevant labour markets are analogous to defining relevant product markets.
- b. **Assessment of the degree of substitutability.** The assessment of substitutability, however, does not end with the identification of the set of alternative job options that a worker would consider. The second step is to assess whether these alternative job options are close substitutes. Whether the available job alternatives are close or distant substitutes for an employee can be measured by the proportion of workers captured by the different job alternatives as a result of a wage decrease. This is analogous to the analysis of diversion ratios in product markets, which measure the proportion of sales that would be diverted to substitute products as a result of a price increase. The higher the diversion ratio between jobs, the closer substitutes they are for workers.¹⁰

Ultimately, assessing labour substitutability gives an indication of employers' market power and is useful in assessing how a conduct or a change in the labour market structure will affect workers. For instance, it can help establish whether workers would be harmed by potentially anticompetitive

employer conduct or whether a merger between employers would cause a substantial increase in their market power vis-à-vis workers.

Specific challenges in assessing labour substitutability

Even though the assessment of labour market power is conceptually similar to the assessment of product market power, most labour markets differ from a typical product market in ways that make the practical assessment of substitution more complex.

We discuss below how some of these specific features of labour markets can affect the assessment of substitution in practice.

Assessment of the relevant geographic labour market is necessarily case-specific

Like product markets, labour markets have a geographic dimension. The geographic boundaries of a labour market are determined by the area in which a worker is willing and able to work, in the same way as alternative products available to a consumer are determined by the distance the consumer is willing to travel to buy the rival product.

The willingness of workers to commute long distances or to relocate to another city depends both on job-related factors (e.g., type of labour, industry) and factors unrelated to jobs (e.g., family restrictions).¹¹ So, although labour markets are generally considered geographically more constrained than product markets,¹² the assessment of the relevant geographic labour market is necessarily case-specific. Workers in some professions, for example artists or sportspeople, may be more willing to relocate than others.¹³ Similarly, findings from one geographic area may not generalise to another— a good example is the heterogeneity of the UK's travel to work areas ("TTWAs") which are constructed based on areas within which a substantial majority of employees live and work.¹⁴

By contrast, in many product markets, the findings on the relevant geographic *product* market for one area are often applicable also to other areas, as they are driven primarily by the cost of transportation relative to the price of the product and the product's perishability, neither of which should differ substantially across geographic areas. Because of this, the assessment of labour substitutability and the delimitation of the geographic labour market's boundaries need to be case-specific and account for contemporaneous developments in the industry and in workers' preferences.

Workers care about overall compensation, including benefits, as well as job characteristics

In addition to a job's physical (or virtual) location, what matters when prospective employees look for jobs is the overall compensation as well as a job's characteristics. This means that employers compete not only on wages, but also on non-wage aspects which therefore also need to be accounted for when assessing labour substitutability.^{15,16}

Compensation often includes wages as well as additional benefits, such as health insurance and pension plans. Job characteristics include, among others, duties and responsibilities, working environment, number of hours, work-life balance, and training opportunities.

In addition, workers are likely to evaluate employment alternatives from a long-term perspective meaning that workers may value *current* compensation and job characteristics and expected *future* compensation and job characteristics (i.e., they are mindful of their career opportunities). This may be driven by the additional value workers perceive from having a long-term relationship with their employer due to, for example, specific training or connections with their co-workers. This may generate lock-in effects that need to be taken into account when assessing substitutability. By contrast, many products have short lifespans (e.g., FMCGs) and consumers often evaluate product

alternatives from a shorter-term perspective; however, concerns about lock-in effects also occur in product markets where there are ongoing relationships between customers and suppliers, switching costs for customers, and less frequent or salient decision points (e.g., subscription services or durable goods).

Non-pecuniary benefits of a job are analogous to non-price aspects of products, such as quality. In that sense, some of the techniques applied to assessing product substitution in the event of a decrease in the product's quality, as opposed to a price increase, can be adapted to assess labour substitution. For instance, a small but significant non-transitory decrease of quality ("SSNDQ") test may be used, which focuses on consumer substitution following a decrease in quality.¹⁷ Although the practical application of an SSNDQ test is often difficult, as acknowledged by the European Commission,¹⁸ the economic literature offers some insights into how this could be done – for example, researchers have relied on surveys to investigate different aspects of job quality, such as job insecurity, job autonomy, work intensity, participation in training, skill development, relationships between employers and employees, the quality of the match between worker's skills and the job, and potential adverse effects of work on private life.¹⁹ In cases where such evidence is not available or relevant, SSNDQ can be used as a conceptual framework to discipline the qualitative assessment of substitution.

The importance of matching between workers and employers is a key feature of labour markets

Another key feature of labour markets is the importance of matching between employees and employers.²⁰ In product markets, the consumer cares about the characteristics of the product sold by the seller, whereas the seller in most cases does not care about the characteristics of the buyer.²¹ By contrast, in labour markets, workers care about the characteristics of employers and employers care about the characteristics of workers. This makes efficient matching – ensuring that

both sides find the best fit that is available – particularly important in labour markets.

In labour markets, the importance of matching is a rule rather than an exception: to an extent this is driven by the fact that the two sides in labour markets in most cases enter into a long-term contractual relationship, unlike in many product markets where the interaction between the seller and the buyer can be limited to a single transaction. Even in the case of a short-term relationship between an employer and a worker (e.g., a temporary work contract), the non-pecuniary aspects of the job mean that both the employer and employee are likely to look for a good match, as opposed to simply focussing only on the one-off price paid for the contract. This importance of matching makes analysing labour substitutability more complex – as Naidu et al. (2018) put it, in labour markets, complexity "*runs in both directions rather than in one*".²² It is costly for workers to find and switch jobs (partly also because it takes time and effort for workers to find and meet employers) and it is costly for employers to find and hire new workers. Consequently, there are significant frictions in labour markets. These frictions also reinforce the lasting relationships between employers and workers that we mentioned above.

Taking matching into account is thus almost always unavoidable when assessing labour market substitution.

Labour market dynamics can have an impact on the assessment of labour substitutability

Labour markets are dynamic, that is, they change over time, and this affects how substitutability in labour markets needs to be assessed. For example, evolution of labour markets can also occur as a result of global developments. Globalisation, freedom of movement within the European Union, and more recently the increase in remote working opportunities following the COVID-19 pandemic, have extended the geographic scope of labour markets, at least for some workers/in some occupations, and hence

significantly affected the set of alternative job options of workers. For example, in the UK the percentage of vacancies advertised online offering remote and hybrid working quadrupled from about 4% to 15% in 2020 and increased further in the following years.²³

Evolving working conditions have implications on the alternative jobs available to workers, both geographically, as workers are able to consider employers located in different regions or even countries, and from the perspective of the actual work they do, as workers now have access to jobs and professions that would have previously been inaccessible to them if they were not present within their commuting area. An assessment of substitutability in labour markets should therefore take into account the dynamic nature of labour markets. This implies considering, for example, whether technological innovations are replacing jobs, making some jobs more accessible, or creating new jobs, and whether the relevant geographic market is changing.

The importance of capturing the dynamic aspects of markets is highlighted in the European Commission's new Market Definition Notice which indicates that in some cases a more forward-looking approach may be taken to determining market definition. In these cases, structural market transitions – changes that affect the general dynamic of supply and demand in a market – would need to be taken into account when defining the relevant product and geographic markets, provided there is reliable evidence of such transitions occurring.²⁴

While the new Market Definition Notice focuses on product markets, the same principles apply in labour markets.²⁵ In fact, since labour markets are constantly evolving, they may in fact more often require such a forward-looking approach than product markets which in many cases are more mature and static.²⁶

Measuring substitution in labour markets in practice

Assessing substitution in labour markets is often more challenging than in product markets for the reasons explained above and because:

- a. the hypothetical choice set of employers and the actual options considered by employees cannot be easily observed; and
- b. to date there have only been a few competition cases related to labour market power, and hence the existing case law that could be used to inform the type of evidence or analyses that could be used is limited.

Despite these complications, analysing labour market substitution is not only possible, but in fact also crucial to understanding the effects of potentially problematic conduct in these markets. This has been recognised in the few cases that so far have been considered by European competition authorities. Below we first discuss the various sources of information on job substitutability, and second, we describe two cases in which substitutability was assessed by European competition authorities.

Various sources of data on labour substitutability

The more traditional sources of information from which one could gather information on substitutability of jobs include companies' internal documents and surveys:

- a. **Internal documents** are often used by competition authorities to identify competitive effects. In the context of labour market substitution, these could be, for example, documents that reveal which employers the company considers as potentially attractive for its employees, and hence as competitors in the labour market.²⁷ Internal documents can provide concrete evidence on the substitutability of jobs, for instance if employers keep

records of alternatives revealed by current employees during exit interviews or of other jobs considered by prospective employees when discussed during interviews. However, the quality of such data can vary, it can be fragmented, and it is often anecdotal. It is then important to understand the context in which they were produced and how systematically the information is collected when relying on them to assess labour market substitution.

- b. Information can be obtained by conducting **surveys among workers and employers**. Such surveys could, for example, ask about the sets of alternative job options and/or about propensity to switch jobs as a result of a change in the wage or working conditions. To obtain informative results, a survey needs to be carefully designed to provide respondents with realistic job alternatives that mimic the conditions or choices of an actual job search.
- c. Data is also available from **existing longitudinal surveys** conducted by public bodies, such as the Census Bureau's Longitudinal-Employer Household Dynamics survey in the US²⁸ or the longitudinal Labour Force Survey conducted in EU countries and the UK.²⁹ Such data can allow economists to study actual worker flows between firms as well as to conduct case studies on employment diversion patterns following closures and openings of plants in similar industries.³⁰ For this data to be useful in an antitrust investigation, the data should be as specific as possible to the particular groups of workers, jobs or areas relating to the case at hand.
- d. Information on job searches and substitutability can also be collected from **online sources**. Such data can be collected both from the perspective of workers, e.g., based on their LinkedIn interests or interactions with job-posting websites or recruiters, and from the perspective of employers, for example based on the vacancies posted online by

them and the included requirements with respect to past experience. Data science tools can facilitate collection of such data and their processing to extract insights into how workers switch across jobs, including, for instance, using natural language processing techniques.³¹

Data gathered from online sources can capture dynamic aspects of workers' choice sets by following a worker's search process over time and identifying all the options considered. This data can also provide insights into workers' more general interests and considerations and therefore help in informing what the worker's choice sets are. The main shortcoming of such data is that it may not capture workers' job searches through other methods and therefore may omit the stages of the job search that happen offline or through private communication (e.g., when a worker is contacted by a prospective employer). However, research shows that online data sources, such as job search data or data on vacancies, can be considered to be generally representative of the broader labour markets.³² A well-designed and comprehensive collection of online data could then be used to inform the degree of labour market substitutability, and hence used to assess labour market power for the purpose of antitrust enforcement.

Examples of substitutability assessment in recent European cases

While examples of cases in Europe where labour substitutability has been analysed are few and far between, there are some recent cases that provide insights on how competition authorities assess labour substitutability in their investigations. We discuss two examples below.

Case study 1: No-poach agreements in Portuguese professional football

On 3 May 2022, the AdC fined 31 football clubs and Portugal's Football League for implementing an anticompetitive no-poach agreement. The clubs and the league agreed not to hire players who unilaterally terminated

their employment contracts between 2019 and 2020 due to the COVID-19 pandemic.³³

In its assessment, the AdC extensively considered labour substitutability in its definition of the relevant product market. The AdC defined the relevant market as the market for the recruitment of professional male soccer players.³⁴ The detailed assessment considered:

- a. Substitutability between own-club-trained players and players from other clubs. The factors considered included: the length of training and uncertainty regarding its effectiveness as compared to the relatively fast and low-risk process of transferring a player; the group nature of training against the individualised process of transfer; and specific features of the domestic market where players trained in their own clubs make up only a small share of all players (7.7%) and account for only a small share of time played in the Portuguese league (9.6%).³⁵
- b. Substitutability between the different ways of signing professional soccer players from other clubs, including through permanent transfer, loan transfer, transfer of players on loan to another club, and transferring players without a contract.³⁶ Again, statistical data on shares of players on different contracts and proportion of transfer mode by age group of players were considered, as well as the time horizon for signing new players.³⁷
- c. Substitutability depending on the individual characteristics of the players, including position on the pitch, perceived quality of the player, and the player's age group. Similarly, for each of the possible segmentations, the AdC considered both qualitative aspects and analysis of data on player transfers and player characteristics.³⁸

On the relevant geographic market, the AdC concluded that although the market is experiencing growing internationalisation, there is still a strong and relevant national dimension that was reinforced in the early

stages of the COVID-19 pandemic.³⁹ The AdC's analysis considered, on the one hand, the growing proportion of foreign players in various European leagues and, on the other hand, the strong national dimension in the recruitment of professional footballers. Specifically, the AdC assessed:

- a. the movements of players between clubs, where the majority of players who left the Portuguese league in the 2019 transfer window did so for national clubs;⁴⁰
- b. studies on wage penalty associated with national players that show they tend to receive lower wages than foreign players, because of their strong preference to remain in their country (and thus lower bargaining power vis-à-vis clubs);⁴¹
- c. the proportion of national players in the Portuguese league clubs, which remains high;⁴² and
- d. a number of additional factors, such as (i) asymmetry of information between clubs and players that may be greater for foreign clubs than for domestic clubs; (ii) the risks associated with the move of a professional player to another country in terms of the period of adaptation and personal and cultural aspects; (iii) labour market frictions associated with changing employers and countries, including a wide range of switching costs (monetary as well as psychological); and (iv) specific restrictions introduced during the COVID-19 pandemic that made international transfers more complicated.⁴³

Case study 2: Merger of publishing companies in the Netherlands

In the Sanoma Media/DPG Media merger (2020), the ACM assessed whether the acquisition of a publishing company, Sanoma Media ("Sanoma"), by rival publisher DPG Media ("DPG") would have any significant impact on the bargaining position of freelance journalists.

The ACM's assessment focused on whether the acquisition could lead to the creation of a

strong position (or strong buying power) on the part of the merged entity that would result in a significant deterioration of the bargaining position of freelance journalists. Labour substitutability was at the core of the ACM's analysis, as the authority considered whether the services procured by the parties and their direct competitors (such as Mediahuis) were expressly distinguishable from other services, so as to limit the group of potential employers for freelance journalists.⁴⁴

The merging parties argued that there is no overlap in the titles and publications of DPG and Sanoma and thus the journalistic services they source come from journalists with different areas of expertise. For example, the majority of freelancers employed by DPG cover regional news, while freelancers for Sanoma cover national news. The analysis put forward by the merging parties showed that the number of service providers working for both parties was very small – no more than 10% of all freelancers hired by the parties work for both DPG and Sanoma. Additionally, they argued that post-merger, no more than 10% of the total number of journalists working in the Netherlands would work for DPG.⁴⁵

To verify these claims, the ACM conducted its own analysis of the (combined) buyer shares of the merging parties in the relevant market. When defining the relevant market for journalistic services, the ACM considered that there is a strong overlap between journalistic services, editorial work, and copywriting. The ACM therefore assumed the relevant market for journalistic services to be broader than services provided by independent professionals working on or for the editorial staff of a news organisation engaged in truth-telling and to include all production workers in the information industry. The ACM argued that a journalist can be considered as a professional who collects news facts about recent events of general interest, researches and/or analyses those facts, and publishes about them in a news medium.⁴⁶ The geographic market was considered as national.⁴⁷

On that basis, the ACM calculated the (combined) buyer shares of the merging parties in terms of the number of journalists and editors employed both on standard contracts and as freelancers as well as separate procurement shares with respect to freelance-only procurement. Specifically, the ACM used data from the Dutch Central Bureau of Statistics (Centraal Bureau voor de Statistiek) on the total number of journalists and editors employed on contracts or as freelancers in the Netherlands in 2019, supplemented by information from online sources on the number of freelance journalists.⁴⁸ The ACM then used information from the parties on their use of services of journalists and editors to calculate their combined buyer shares as well as freelancer-only procurement shares. It estimated that the merging parties had a combined buyer share of no more than 20% in 2019, and they would jointly commission between 20% and 40% of *freelance* journalists and editors in the Netherlands.⁴⁹ On that basis, the ACM concluded that post-merger the parties would hold a relatively limited position in the purchase of (freelance) journalistic services and thus the transaction would not significantly impede competition for (freelance) journalistic services.⁵⁰

Conclusion

Concerns over buyer power and monopsony in labour markets have been raised in cases in both the US and Europe, with a number of recently completed and ongoing cases focussing on competition in labour markets.

The key economic questions in these investigations revolve around how to identify the relevant set of alternatives for employees and how to assess the degree of substitutability between jobs. There are many factors that need to be considered when identifying the relevant alternatives and assessing substitutability, including pecuniary and non-pecuniary aspects of jobs, geographic aspects, or employees' propensity to move from one sector to another.

Labour substitutability patterns need to be considered separately from product substitutability, which has typically been the focus of competition investigations, and need to be assessed on a case-specific basis. In addition, when assessing labour substitutability, it is necessary that the tools that are used are adapted to account for the specific features of labour markets (e.g., the importance of matching).

While the relevant case law is still evolving, the economic literature provides insights on what sources of data can be used to assess labour substitutability. These include reviews of companies' internal documents, surveys of workers and employers, and data collected from the internet using data science tools. Recent cases in Portugal and the Netherlands provide some guidance on how competition authorities have so far approached labour market substitutability and what challenges they have faced.

1 Nadine Watson is a Senior Vice President, Paul Armstrong is a Senior Economist, Joanna Hornik is a Senior Economist and Bartosz Redlicki is a Senior Economist at Compass Lexecon. The views expressed in this article are the views of the authors only and do not necessarily represent the views of Compass Lexecon, its management, its subsidiaries, its affiliates, its employees or its clients.

2 See <https://www.compasslexecon.com/insights/publications/monopsony-in-labour-markets-a-new-enforcement-priority-for-competition-authorities>.

3 For a theoretical discussion of how employer cooperation and/or merger may impact labour markets see Perkins, J. and Voudon, B. (2024) The not so-simple interaction between labour and product markets: Applications to competition policy, *The Analysis*, 28 February 2024.

4 The European Commission published a policy brief on “Antitrust in Labour Markets” in May 2024 that focuses on enforcement against restrictive labour agreements, such as wage-fixing and no-poach agreements, see Aresu, A., Erharter, D., and Renner-Loquenz, B. (2024). Antitrust in Labour Markets, Competition policy brief, Issue 2, May 2024, available at: [adb27d8b-3dd8-4202-958d-198cf0740ce3_en \(europa.eu\)](adb27d8b-3dd8-4202-958d-198cf0740ce3_en.europa.eu) (accessed on 8 May 2024).

5 Non-compete clauses represent another potential restriction on competition in labour markets. While these clauses are not agreements between competing firms, workers are typically aware of them, and they can be used by firms to restrict competition and harm workers. In April 2024, the Federal Trade Commission (FTC) in the United States issued a rule banning non-compete clauses (see [FTC Announces Rule Banning Noncompetes | Federal Trade Commission](#), accessed on 27 May 2024). However, a policy brief from the European Commission in May 2024 on antitrust issues in labour markets (see footnote 4 above) states that non-compete clauses are considered less restrictive than no-poach agreements.

6 See Case Study 1 in Section 4.

7 See Case study 2 in Section 4. In its assessment of the impact of the acquisition of publishing company Sanoma Media by rival publisher DPG Media on competition, the ACM considered whether the acquisition would have a significant impact on the bargaining position of freelance journalists. There are other examples of mergers where labour concerns were raised, most recently in the United States, including in the Penguin Random House / Simon & Schuster merger which was blocked in October 2022 following a successful lawsuit by the Department of Justice (DoJ). The DoJ explicitly analysed the adverse effects of the merger on authors. DoJ (2022). Justice Department Obtains Permanent Injunction Blocking Penguin Random House’s Proposed Acquisition of Simon & Schuster. Press release, 31 October, available at: <https://www.justice.gov/opa/pr/justice-department-obtains-permanent-injunction-blocking-penguin-random-house-s-proposed> (accessed on 28 May 2024).

Employment-related concerns were also cited in the recent move by the Federal Trade Commission to block Tapestry’s acquisition of Capri Holdings in April 2024. Federal Trade Commission. (2024). FTC Moves to Block Tapestry’s Acquisition of Capri. Press release, 22 April, available at: <https://www.ftc.gov/news-events/news/press-releases/2024/04/ftc-moves-block-tapestrys-acquisition-capri> (accessed on 28 May 2024).

8 See <https://www.compasslexecon.com/insights/publications/monopsony-in-labour-markets-a-new-enforcement-priority-for-competition-authorities>.

9 Manning, A. (2003). *Monopsony in Motion: Imperfect Competition in Labor Markets*. Princeton University Press: Princeton, N.J.

10 Analogously to product markets, diversion ratios in labour markets are related to both aggregate labour supply elasticity (i.e., the proportion of workers that would switch to substitute jobs, either the same position in a different geographic area or a different position altogether, when faced with a change in wage or other employment conditions) and residual labour supply elasticity (i.e., the sensitivity with which workers react to changes in wages at a particular firm). See Naidu, S., Posner, E.A., and Weyl, G. (2018). Antitrust remedies for labor market power. *Harvard law review*, 132(2), 536-601 (in particular p.557).

11 For example, the UK Office for National Statistics (“ONS”) defines Travel to Work Areas (TTWAs) to approximate self-contained local labour market areas, where the majority of an area’s resident workforce work and where the majority of the workforce live. See ONS (2015), *Commuting to work, Changes to Travel to Work Areas: 2001 to 2011*, 8 December, available at: <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/commutingtoworkchangestotraveltoworkareas/2001to2011> (accessed on 6 February 2024).

12 That labour markets are relatively local is found, e.g., by Manning, A., and Petrongolo, B. (2017). How Local
 Are Labor Markets? Evidence from a Spatial Job Search Model. *American Economic Review*, 107(10): 2877-
 2907.

13 To some extent, this is endogenous, i.e., the wage differences across jobs reflect the varying non-monetary
 characteristics of those jobs and workers are compensated with higher wages for jobs that have undesirable
 attributes (e.g., those in remote locations and requiring frequent relocation). At the same time, people self-
 select into professions with certain features and worker preferences differ across jobs and occupations.

14 For a description of TTWAs, how they are defined, and an indication of the differences between them, see:
 ONS (2015), Commuting to work, Changes to Travel to Work Areas: 2001 to 2011, 8 December, available at:
[https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/c](https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/commutingtoworkchangestotraveltoworkareas/2001to2011)
[ommutingtoworkchangestotraveltoworkareas/2001to2011](https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/commutingtoworkchangestotraveltoworkareas/2001to2011) (accessed on 6 February 2024).

15 For a discussion of economic literature that shows that nonpecuniary aspects of one's job are important for
 workers see, e.g., Cassar, L., and Meier, S. (2018). Nonmonetary Incentives and the Implications of Work as
 a Source of Meaning. *Journal of Economic Perspectives*, 32(3), 215-38.

16 Jobs are not only differentiated across many dimensions but also workers perceive and value these
 dimensions differently, as discussed in Naidu, S., and Posner, E.A. (2022). Labor Monopsony and the Limits
 of the Law. *Journal of Human Resources*, 57(S), S284-S323 (see in particular pp. S290-S292).

17 EC Market Definition Notice, para. 30 and footnote 54. Similarly, the Merger Guidelines of the US Department
 of Justice and the Federal Trade Commission refers to a 'SSNIPT' that captures worsening terms along any
 dimension of competition, including price (SSNIP), but also other terms such as quality, service, etc. (see the
 US Department of Justice and the Federal Trade Commission, "Merger Guidelines", 18 December 2023,
 sections 4.3.A and 4.3.B).

18 The EC Market Definition Notice notes that a quantitative application of the SSNDQ comes with difficulties, in
 particular, in relation to the quantification of quality. This would also apply to labour markets, as quantifying
 non-pecuniary benefits of a job is inherently difficult.

19 Bryson, A., Erhel, C., and Salibekyan, Z. (2019). Perceptions of non-pecuniary job quality using linked
 employer-employee data. *European Journal of Industrial Relations*, 27(2), 113-129. For a comprehensive
 overview of literature on job quality indicators, see Muñoz de Bustillo R., Fernández-Macías, E., Esteve, F.,
 and Antón, J.I. (2011) E pluribus unum? A critical survey of job quality indicators, *Socio-Economic Review*,
 (9)3, 447-475.

20 The importance of matching labour markets is emphasized by, e.g., Naidu et al (2018) (p.554).

21 An example of a product market in which the seller does care about the characteristics of the buyer is the
 insurance market.

22 Naidu, S., Posner, E.A., and Weyl, G. (2018). Antitrust remedies for labor market power. *Harvard law review*,
 132(2), 536-601 (see in particular p.555).

23 UK Competition and Markets Authority (2024). Competition and market power in UK labour markets, CMA
 Microeconomics Unit, Report no.1, para. 6.8.

24 European Commission's Market Definition Notice, para. 21.

25 The European Commission's new Market Definition Notice states that its guidance on defining product markets
 also applies to purchasing markets, though the Notice itself does not explicitly mention labour markets. Since
 firms are purchasing labour as an input to their production process, the principles of the Market Definition
 Notice may be applied to labour market definition. See "Commission Notice on the definition of the relevant
 market for the purposes of Union competition law", European Commission, C/2024/1645, 22 February 2024,
 paragraph 7.

26 An example of a product market that is undergoing structural market transitions is any industry that is
 characterised by fast technological progress, e.g., in the digital sector (European Commission's Market
 Definition Notice, para. 55).

27 See also Florian, P., and Gron, A., "Economist's perspective: US antitrust regulators focus on defining relevant
 labour markets", Americas Antitrust Review 2024, Global Competition Review, 25 August 2023.

28 It is a matched employer-employee dataset built from state unemployment insurance records. It was used in
 economic literature to study labour market concentration e.g., in the paper by Arnold et al. (2021).

29 Data are collected by EU member states. Microdata can be made available for scientific purposes, see
<https://ec.europa.eu/eurostat/web/microdata/european-union-labour-force-survey>. In the UK, it is carried out
 by the ONS, see
[https://www.ons.gov.uk/surveys/informationforhouseholdsandindividuals/householdandindividualsurveys/lab](https://www.ons.gov.uk/surveys/informationforhouseholdsandindividuals/householdandindividualsurveys/labourforcesurvey)
 ourforcesurvey

30 See, e.g., Jofre-Monseny, J., Sánchez-Vidal, M., and Viladecans-Masal, E. (2017). Big plant closures and local
employment. *Journal of Economic Geography*, 18(1), 163-186.

31 For a more general discussion of how natural language processing techniques can be used in competition
cases see Muhamedrahimov, R. (2022). Using Natural Language Processing in competition cases. *The
Analysis*, 22 March.

32 See Faberman, J. and Kudlyak, M. (2016). What does online job search tell us about the labour market.
Economic Perspectives, 40(1), 1-15; Acemoglu, D., Autor, D., Hazell, J., and Restrepo, P. (2021). Artificial
Intelligence and Jobs: Evidence from online vacancies. *Journal of Labor Economics*, 40(S1), S293-S340.

33 Autoridad de Concorrença, AdC issues sanctioning decision for anticompetitive agreement in the labour
market for the first time, Press release, 29 April 2022, available at: [AdC issues sanctioning decision for
anticompetitive agreement in the labor market for the first time | Autoridade da Concorrência \(concorrença.pt\)](#).

34 AdC, Decision PRC/2020/01, para. 371, available (in Portuguese) at: [AdC-PRC_2020_01-Decision-VNC-final-
net.pdf \(concorrença.pt\)](#) (translated to English with DeepL Pro) (henceforth “AdC Decision”).

35 AdC Decision, paras. 373-376.

36 AdC Decision, para. 377.

37 AdC Decision, paras. 378-386.

38 AdC Decision, paras. 387-400.

39 The AdC did not in the end definitively define the geographical dimension of the market, see AdC Decision,
para. 417.

40 Notably, the AdC conducted this assessment based on the data they collected from an online source
(transfermarkt.com), see AdC Decision, para. 406(i) and footnote 397.

41 AdC Decision, para. 406(ii).

42 AdC Decision, para. 406(iii).

43 AdC Decision, paras. 408-411.

44 Autoriteit Consument & Markt (“ACM”), Decision, Approval of merger between DPG Media B.V. and Sanoma
Media B.V., Case ACM/19/038207, 10 April 2020, para. 128. Available (in Dutch) at [DPG Media mag Sanoma
Media overnemen \(concentratiebesluit\) \(acm.nl\)](#) (translated to English with DeepL Pro) (henceforth “ACM
Decision”).

45 The exact share is confidential, see ACM Decision, para. 129.

46 ACM Decision, paras. 135-136.

47 The ACM did not separately analyse the geographic market for procurement of journalistic services. Instead,
it defined the relevant geographic market for distribution of general online news to be national, see ACM
Decision, para. 54. Indeed, the ACM’s analysis of data on journalistic services is limited to the Netherlands,
see ACM Decision, para. 137.

48 ACM Decision, paras. 137-139 and footnotes 94, 97-99.

49 ACM Decision, paras. 137-139.

50 ACM Decision, para. 140.