COMMENTS ON
COMPETITION POLICY AND LABOUR MARKETS

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December 10 2021
Revised February 4 2022

SUMMARY : Traditionally, labour concerns have not been top-of-mind when considering competition policy, but the current approach to wage-fixing, anti-poaching, and anti-mobility agreements between firms has been one of the main reasons behind recent Parliamentary attention to competition policy and labour markets. Key stakeholders in academic and policy circles have called for more robust enforcement regarding monopsony / oligopsony power in labour markets, when assessing mergers and acquisitions for example, as well as regarding market power in labour representation (unions) and certification as entry barriers in labour markets. The objective here is to identify the numerous challenges and pitfalls in assessing the level of competition on labour markets, both supply and demand, and in addressing remedies if necessary.

This report was commissioned by Innovation, Science and Economic Development Canada. The opinions expressed herein are those of the author and do not necessarily reflect those of the Government of Canada.

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Introduction: The concepts of value, prices, wages and competition

Assigning a value to a good, a service, an investment, an hour of work, a competency, a public good or asset, or a durable creation such as a sculpture, a song or a sound recording, is one of the most important issues in economics, but also in arts, sociology, philosophy, psychology and many other fields of humanities and social sciences. The notions of total, average, and marginal value, as they were developed in the second half of the 19th century, are crucial and vital to understanding not only economic but also human and social phenomena. Those notions remain today at the top of the most misunderstood factors of human behaviour and interactions, in particular when the compensation of work and the value of life and individual human beings are at stake.

On more than one counts, economists are the scientists of value, including the value of labour, the value of capital (human, intellectual, physical, financial), the value of natural resources and the environment (space, air, water), businesses, infrastructures, health, education, life, etc.

It is useful to discuss these notions of value as an introduction to anti-competitive actions and strategies on labour markets.

Fair and equitable value (prices, wages)

A fair and equitable price (wage) is a competitive price—a price that respects the interests of suppliers or producers, whether of labour, skills, human capital, intermediate goods and services, or of physical, financial, or intellectual capital, and those of demanders, buyers, users, or employers of these goods and services—in a setting in which both suppliers and demanders are choosing to act as free and willing sellers and free and willing buyers.

The best guarantee that suppliers of goods, services, capital, materials and labour will be adequately and fairly compensated lies in the competition between the demanders of those goods, services, capital, materials and labour. And the best guarantee that demanders will pay an appropriate price for goods, services, capital, materials and labour lies in the competition between suppliers, including of labour services. Thus, a competitive price (wage) is fundamentally equivalent to a fair and equitable price, because it respects the freely expressed interests of both suppliers and demanders.

In a competitive equilibrium, the price of a product, good, or service is equal to its marginal opportunity cost, i.e. the net value that could be generated if the amount in question were reassigned to the best available and accessible alternative activity, be it consumption, leisure, or production of different goods and services. It is also equal to its marginal cost of production, which incorporates the net value of every kind of resource used to produce it. Thus, the competitive equilibrium price is simultaneously fair and equitable for both the supplier / seller and the demander / buyer.

The net value of the goods and services I supply or sell is determined by my fellow citizens, who freely assess the contribution my products or the product of my labour represent for them in terms of utility, wellbeing, or potential, and by the opportunity cost or value of the resources—whether labour or other—embedded in my products. The difference is the net value I can earn from producing and selling an additional unit (marginal value) of goods or services, including labour. For the last unit sold this marginal value will be zero, but for all previous (infra-marginal) units, it will normally be positive and for all additional units, which by construction are not produced, it would be negative. In the long run, profits, economic not accounting, will converge to zero because of competition, free entry and exit.

In this situation, competitive prices, which measure the marginal value of the goods and services I produce, and by implication my own compensation, would only increase if I can generate goods and services of greater value to my fellow citizens.

There is nothing more stressful and demoralizing than finding out or being told that one's work and efforts are not producing anything of net value or of interest to one's fellow citizens and are therefore worthless as a mean of exchange (markets). Similarly, that one's work and efforts produce nothing that is comparable or better than the offerings of one's fellow citizens. Valueless on markets does not mean valueless in itself. Many activities may have social or personal value even if they ae valueless on markets, that is, in transactions.

However, this can also provide me with an incentive to change my portfolio of skills and the basket of goods and services I produce or contribute to produce. Indeed, as a consumer or buyer I am sending this type of message every time I refrain from buying a product, good, or service offered by a fellow citizen, individual or organisation, business or other.

Moreover, in all fairness, I cannot force my fellow citizens to compensate my skills and finance my operations if these skills and operations do not create anything of positive net value to them. Therefore, competitive markets, or alternative institutions or mechanisms that emulate competitive markets, are essential to eliciting the socially fair and equitable value of things, factors and products, goods and services, including labour.

The basics of business organization and entrepreneurship

Firms are go-between actors with citizens as customers on one side and citizens as providers of labour on the other. Hence firms interact with citizens in two different ways. In a sense, firms are two-sided platforms putting two sets of citizens in contact: one group of citizens, the customers, pays the platform-firm and the other group, the workers, are paid by the platform-firm. How much is paid to the platform-firm and why by the first group (the customers) and how much is paid by the platform-firm and why to the second group (the workers)?

The firm can be understood as an institution, process, or transformative mechanism that harnesses different factors of production (labour, materials, natural resources, technology, borrowed capital, and equity) to the generation of goods and services useful to its customers, whether businesses or consumers, so that the total value of its products is greater than, or at least not less than, the total cost of all the factors used, when they are paid for or compensated at the value of their best alternative use. When this is the case, business is a true wellspring of net value and wealth. How can we be sure? By means of competition and exchanges freely entered into (willing buyer / willing seller).

Consider four types of private firm: the capitalist enterprise, the cooperative enterprise, the workers' enterprise, and the ideaistic enterprise. Residual decision-making power accrues to, or is vested in, the stakeholders who are paid last (unless specified otherwise by contract): financial capital (capitalist enterprise), cooperators' capital (cooperative enterprise), human capital (workers' enterprise) or intellectual capital (ideaistic enterprise). The four types of firm are abstract and generic. In the real world, businesses can combine parts of one type with parts of another.

The capitalist enterprise compensates all other factors before the return to equity is generated, which is paid last from the residual value—the total value of production minus total cost of priority factors. This residual value is generally uncertain. It may be positive or negative and vary over time, but must on average be equivalent to the expected value of this equity in its best possible alternative use. More generally, identification or calculation of the compensation paid to all factors and the value of their best alternative uses should account for the risk incurred.

The cooperative enterprise will generally distribute the total value of its product across all partnering cooperators according to a more egalitarian, but not necessarily totally egalitarian, rule, so that the compensation to all partnering cooperators is uncertain or risky and variable over time. However, this compensation must, on average, correspond to the expected value of each factor in its comparable best alternative usage. More generally, identification or calculation of the compensation paid to all factors and the value of their best alternative uses should account for the risk incurred.

The workers' enterprise pays all other factors before labour. Paid last, labour is remunerated from the residual value—the total value of production minus total cost of priority factors, including suppliers of intermediate goods and services and borrowed capital (the workers' enterprise is, by assumption, 100 per cent financed by borrowing at market conditions). This residual value is generally unknown and uncertain. It may be positive or negative and vary over time, but must on average be equivalent to the expected value of labour in its comparable best possible alternative use. More generally, identification or calculation of the compensation paid to all factors and the value of their best alternative uses should account for the risk incurred.

The ideaistic enterprise pays all other factors before the ideaists (the owners of the business' underlying idea or the intellectual property IP rights). Paid last, these IP rights are remunerated from the residual value—the total value of production minus total cost of priority factors, including suppliers of intermediate goods and services, including labour, and borrowed capital (the ideaistic enterprise is, by assumption, 100 per cent financed by borrowing at market conditions). This residual value is generally unknown or uncertain. It may be positive or negative and vary over time, but must on average be equivalent to the expected value of the idea or the intellectual property (or the efforts that went into creating the intellectual property) in their comparable best possible alternative use. More generally, identification or calculation of the compensation paid to all factors and the value of their best alternative uses should account for the risk incurred.

Furthermore, how can we be sure that businesses generate net social value and create wealth? By subjecting them to competition! Notwithstanding the best intentions of their managers and owners, intense competition will cause efficient companies to prosper and inefficient ones to fail. Competitive markets for factors of production, including labour, and for end products (goods and services) promote the appropriate accounting of value, ensuring that businesses pay their factors at the rate of their best alternative usage and bring to market goods and services of value to their customers, whether consumers or businesses.

The situation is different for government-owned enterprises, which is general are protected from competitive alternatives by law of decrees. Legal constraints may apply in the supply of products and services when consumers cannot freely choose between providers or in the factors of production when sellers, including labour providers, are not allow to offer their products and services to other demanders. The possibility of legal constraint may and will most of the time prevent proper competitive prices and wages to emerge. This type of firm is in a class by itself. We will come back to it later.

When all factors of production are, directly or indirectly (meaning that fringe benefits and other contract terms are considered), compensated at their competitive value and all final products are sold, directly or indirectly (meaning that prices, warranties, and other contract terms are considered) at competitive prices, then firms that are competing with each other (including innovative new entrants) will be forced to <u>either</u> use the optimal mix of factors correctly compensated at their best alternative value (opportunity cost) to produce an appropriate set of final products generating net social value and creating wealth, <u>or</u> shut down or file for bankruptcy.

This is how we should understand Friedman's famous assertion to the effect that the social responsibility of firms is to maximize profits. Profit maximization is a measure of efficiency in serving all stakeholders. Competition makes it impossible for a firm in a competitive situation and surrounded by competitive markets to exploit its workers, gouge its suppliers, and / or cheat its customers. It does not allow the business to generate excess profits over a sustained period of time or, by extension, to allow those with residual decision-making authority to earn compensation in excess of their best alternative value. That is true for all types of firms discussed above.

Properly defined, measured, and regulated, competition is the cornerstone of this general model of socio-economic organization. It allows all types of firm to co-exist in different markets but force all firms to abide by the economic rule of zero-expected-profit or compensation.

The confusion between the different concepts of value found in traditional economic reporting is matched only by the even more widespread confusion about the concept of profit pursuit.

The error here lies in the confusion between accounting profit and economic profit. Accounting profit is the difference between revenues and the costs of all priority factors (the list differs according to the type of firm considered), including interest charges on debt but excluding the costs of "equity" capital, that is the compensation of the stakeholder entity being paid last. Economic profit is the difference between revenues and all costs, including interest charges on debt AND the costs (opportunity costs) of "equity" capital.

These two notions of profit coincide when a company is financed 100 per cent by debt—which is generally the case in the non-capitalist sector namely the cooperative enterprise sector, the workers' enterprise sector and the IP ideaist sector—provided all firm are subject to the same tax regime as capitalist companies.

There is one main reason underlying this difference between accounting and economics. It is more difficult to measure the cost of equity capital than the cost of debt. The latter is relatively easy to observe because it essentially corresponds to the interests paid by the firm on its borrowings. The former, on the other hand, is measured as the expected competitive return on invested capital and therefore depends on the systematic risk of the investment. Although economists can measure this risk (there are several models for this) and, by extension, the expected return to shareholders, the fact remains that this value is more subject to manipulation.

Providers of capital, whether in the form of debt or "equity", will normally receive a competitive level of compensation based on the systematic risk level of the investment, which is generally lower for debt than for equity (except where the business or organization is 100 per cent debt financed). Competitive pressures, in particular free entry and exit in the sector, will almost certainly ensure that no excess profits or rents, on behalf of the stakeholder entity being paid last, will be earned on a sustainable basis.

If the company belongs to the government sector and is, accordingly, financed by taxes and / or government-backed debt (and therefore by taxpayers), it must be able to pay appropriate, fair, and equitable—to wit, competitive—compensation to all its factors of production: labour, capital, and others.

If this is not the case, employees will opt to leave if possible for other businesses where their ability to contribute value is either greater or at least better recognized, while the capital used will be transferred to other enterprises, government-owned or not, or possibly used to lower taxes.

In a system of competitive markets, the level of economic profit, sometimes referred to as economic rent, is expected to hover around zero. On average, the economic profits of companies in a competitive environment are zero. Thus, the claim that profit-seeking firms would produce at higher prices or pay lower wages than government and non-capitalist enterprises because of the profit constraint is wrong—persistent, but wrong.

In fact, the presence of profit-seeking firms in a competitive market will lead to lower prices and higher wages because of their incentive to pursue and attain high levels of efficiency and effectiveness compared to competing firms of all types, including government-owned firms. Government sector firms and organizations should typically operate with a goal of zero economic profit, allowing them to compensate all factors of production used, including government capital, at a level equal to the opportunity cost or value of foregone activities.

Businesses and organizations in the competitive economy will typically have their profits driven to zero by the intensity of competitive pressures despite their efforts to beat the market, that is, to achieve a return on capital that exceeds the competitive level. But time needs time. If competitive pressures are working properly, beating the market will be a transitory phenomenon even as it is a prime motivator for competitive-sector managers and owners and a key source of improvements in efficiency and effectiveness.

Competition plays a central and crucial role in this development.

The cornerstone: the intensity of competition

Human behaviour is largely driven by two underlying fears: the fear of uncertainty, insecurity, and risk, and the fear of competition.

An important social goal is to harness the natural fear of competition and that of uncertainty and risk to foster efficiency and effectiveness, sustained growth, and improved welfare. Similarly, denying or misunderstanding the role of competition and incorrectly assessing the importance of uncertainty, insecurity, and risk are the two most important roadblocks hindering in particular a renewal of social-democratic societies.

These two fears evoke efforts to cut them off at the root: to transfer the risks we face onto others and to reduce or eliminate competition by whatever means possible. As to the former, a proliferation of financial and insurance markets has gone a long way toward satisfying this demand, while antitrust policies are at the forefront of daily battles to suppress competition.

All economic systems or models seek to address these fears at their roots. Both fears can be powerful forces of stagnation and negative growth, but they can also be potent engines of growth in universal wellbeing, as suggested by the following quote: *"In life, it would be kind of boring if there was no risk. On the other hand, if there's too much risk, too much uncertainty, too much chaos, we can't handle it either. We simultaneously want order and disorder, simultaneously want risk and quiescence*" (Myron Scholes, 1997 Nobel laureate in economic science, *The Wall Street Journal,* March 5, 2007).

Misunderstanding the role of competition and the nature of uncertainty and risk can lead to years of suboptimal growth and even systematic waste in the development and allocation of human, natural, and technological resources. Hence the need to address the role of competition in ensuring the emergence of competitive prices and wages throughout the economy.

In all countries, antitrust authorities within competition bureaus provide oversight to counter any illegal attempts to stifle competition by fostering an environment conducive to the development of healthy competition. Nevertheless, competition is generally recognized as good for those both upstream (vendors and suppliers) and downstream (clients), but not for oneself.

In all countries, institutions that provide various forms of risk transfer mechanisms, such as insurance and financial markets, are viewed with suspicion, despite the fact that they allow the reduction, exchange, and transfer of risks by making it possible to measure and price them—again, for the good of the population. But what could be better than having others pay the cost of managing and transferring or eliminating risk?

Similarly, antitrust laws and authorities are regularly viewed with suspicion as they force individual firms and their owners to abide by rules and regulations to prevent them from capturing abnormal profits through anti-competitive practices, either on labour markets, by depressing the compensation of labour providers below its competitive level, or on goods and services markets, by increasing their prices above their competitive levels.

However, public figures regularly lead the way in attacking and attempting to subvert the development of competition and in undermining the efficient management, sharing, and transfer of risk, especially as this relates to policies governing the production and distribution of public and social goods and services, generally under the control of government sector firms.

Given the central role played by competition and financial and insurance markets in the creation and development of a true social democracy and a capitalism “for the people”, we must first address some misunderstandings regarding competition, particularly, but not only, with regard to financial and insurance markets (seen by many as the source of all our problems), and also more broadly. Let us examine some of the underlying reasoning.

Competition produces efficiency, growth, and, as a consequence, wellbeing. All too often this proposition is the target of ill-conceived and biased attacks. A typical criticism might be: “Competition is not the way to build a strong community. If you are your neighbour’s rival, there will be a winner and a loser. We don’t want any losers.”

In reality, the absence of competition produces only losers, aside from the enlightened functionaries in centralized bureaucracies who think they know better than the citizens themselves what’s good for them and the monopolists / monopsonists who enrich themselves unduly on the backs of their clients and suppliers, including workers.

A properly regulated intensity of competition that is open and transparent floats all boats and creates a win-win society in which markets and solidarity are reconciled for the benefit of all. Modern history leaves little doubt as to the relevance and truth of this assertion. Competition has been a central factor of human and social development, across sectors and throughout the ages.

Competition is the foundation on which more effective and efficient means of producing private as well as public and social goods and services will, or should, be built in the future. This is in everyone’s interest, both as end consumers of those goods and services and as providers of critical factors, including labour, for he production and distribution of those goods and services.

In the absence of a competitive production and distribution system, mounting economic pressures attributable to both the globalization of markets and the internationalization of cultures will lead to a reduction, contraction, or even abandonment of government programs one way or another—perhaps not officially, but certainly in practice with lower-quality goods and services characterized by less choice, greater uncertainty, and a loss of reliability. This won't be because we cannot afford them, but rather because these goods and services are being produced less efficiently and effectively, when sheltered from competition. With repercussions on labour markets in terms of lower real wages and benefits and lower quality and quantity employment opportunities.

Competition law and labour markets

Some analysts state that the Canadian *Competition Act* inherently does not protect Canadian workers sufficiently from corporate abuses, and examine to what extent the country's competition policy is lagging behind other jurisdictions on this issue.

The *Competition Act*, enforced by the Competition Bureau, aims to prevent any business practices to compromise competition in the market, typically in the areas of mergers and acquisitions, abuses of dominance, and collusive agreements. There is no reason why the Competition Act would neglect any market, including labour markets.

It is worthwhile to start with a discussion of methodologies to ascertain the anti-competitive practices and uses of market power.

According to Shaban and Qarri (2021),[1] the main deficiency of Canada's competition policy would lie in the fact that it primarily gives priority to economic efficiency above the other purpose statements of the Act. In the U.S. in contrast, such a view is progressively being questioned in favour of a more comprehensive approach to include corporate power on labour markets and enhance the protection of workers against anti-competitive actions.

Some of the reforms considered both at the federal and local levels would specifically address competition issues in labour markets, as is the case with the *21st Century Anti-Trust Act*. This bill, introduced by the NY State Senate in June 2021, suggests an amendment to the State's antitrust laws to include prohibitions on corporate abuse of dominance, limitations to restrictions imposed on workers, restrictions on non-compete agreements between employers, as well as a requirement to examine antitrust effects on labour markets in mergers and acquisitions.

The authors' claim is that although there is room for changes from the Competition Bureau, it appears that not only does the Canadian competition policy fail to address the issues related to

[1] Shaban, R. and Qarri, A. (2021). The case for improving Canada's *Competition Act* to protect workers. CCPA

anti-competitive conduct in labour markets and the protection of workers, but is even detrimental to them.

Monopsony power in Canadian labour markets is little documented, and the Competition Bureau has for now not legally addressed this issue. Though, some research conducted in the U.S. showed that market concentration had negative impacts on the workers' wages and benefits, and that it might explain the gap between productivity growth and real wages increases.

Certain competition authorities abroad are increasingly pursuing investigations of employers' anticompetitive practices in labour markets, especially the Department of Justice's (DOJ) Antitrust Division in the U.S., the European Commission, the Brazil competition authority (CADE), and the Turkish Competition Authority (TCA). Areas of investigation include collusion in labour markets (wage fixing, information exchange on compensation), and anti-competitive employment terms (no-poach agreements).

Regarding such practices, the authors claim that the Competition Bureau is not legally well-equipped to prevent business anti-competitive behaviour in labour markets. In contrast, several agreements based on exchange of employee information were investigated by the DOJ in the U.S. in the high-tech industry, and by the TCA in the trucking industry.

In the field of mergers and acquisition, there is an opportunity for the Canadian competition policy to focus on the impact of mergers on labour markets and workers, based on the information provided by market participants with the assistance of unions, and block any transaction posing a risk of diminishing or preventing competition in labour markets. Merger reviews would be used to determine whether the deal negatively affects wages and employment quality. Indeed, the "efficiencies defense", a provision of the *Competition Act*, still allows for anti-competitive mergers to occur, if the deal creates sufficient cost savings for businesses.

Consequently, the authors advocate for a reform of Canada's competition law involving a removal of the efficiencies defence provision in merger reviews, a reinstatement of the word "purchase" in section 45 of the Competition Act, the possibility for the Bureau to obtain sensitive business information to conduct market studies and identify anti-competitive behaviours, and a refocus of the purpose statement of the *Competition Act* to take workers welfare into account.

The OECD issued an extensive report[2] in 2020 discussing the determinants and effects of employer monopsony power in labour markets, as well as the theoretical and practical challenges for competition authorities to address it.

The report starts with definitions and findings based on a review of literature. Monopsony arises when firms have the ability to pay their workers below competitive levels and/or worsen employment terms and conditions, including a reduction in employment. As a whole, employer market power is favoured by existing frictions on labour markets (frictions due for instance to ignorance, heterogeneous preferences, and mobility costs), which make it hard for a worker to move to another job as a response to weakened wage and employment conditions.

The report mentions that studies conducted in the U.S. show that local labour markets are characterized by high levels of concentration. Higher concentration of firms may increase employers' market power, which raises the risks induced by mergers on labour. Firms may also resort to collusive practices, such as wage-fixing and no-poach agreements, to increase their power on labour markets. At the same time, declining unionization rates may have contributed to a reduction of the countervailing power of the workforce.

So far, with regard to labour markets, competition authorities have primarily investigated cases involving hard-core cartels, such as wage-fixing and no-poach agreements, while they appear to have conducted much fewer examinations of the effects of mergers or abuses of market power in labour markets. In the U.S., competition authorities intend to scrutinize the effects of mergers on labour more systematically.

Competition authorities in many jurisdictions have exempted the unions' collective bargaining activities pertaining to workers' employment terms and conditions from the application of competition law, in order to protect the social objectives pursued by these organizations. This interpretation has been confirmed by Courts in Europe, and explicitly expressed by law in the U.S. (Section 6 of the Clayton Act[3]) and in Canada (Section 4 of Competition Act).

An employer enjoys monopsony power when it has the ability to set wages below the competitive level and change working terms and conditions without losing too many employees, a situation which can also arise outside isolated labour input markets.

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[2] OECD (2020). Competition in labour markets. https://www.oecd.org/competition/competition-in-labour-markets-2020.pdf

[3] "*nothing contained in the antitrust laws shall be construed to forbid the existence and operation of labor […] organizations […] or restrain individual members of such organizations from lawfully carrying out the legitimate objects thereof; nor shall such organizations, or the members thereof, be held or construed to be illegal combinations or conspiracies in restraint of trade, under the antitrust laws*"

Evidence of labour market monopsony is usually shown by the level of labour supply elasticity. Studies focusing on specific job markets in Europe, the U.S., Canada, and Australia generally showed low elasticity estimates. Numerous factors may explain these findings: non-compete agreements used in some jurisdictions, the employees' sensitivity to non-wage job characteristics, costs of searching and moving (geographic constraints and risk aversion to moving), low bargaining power in negotiations. According to the literature, these tend to affect low-wage workers particularly.

A monopsony situation can create economic inefficiency. A monopsonist employer will resort to real wage reductions as a means of decreasing its average costs of labour, and may lose some workers doing so. The impact of this on the workforce depends on labour supply elasticity, as well as the ability of the employer to wage discriminate, i.e. applying different levels of remuneration according to workers. A negative consequence resulting from leaving workers is also that inefficiencies in production and employment can be expected: if the employer has market power in the downstream market, it has the ability to increase the selling price for consumers from the diminished quantity of output given the reduction in labour. If it operates within a competitive downstream market, there is no price increase but the reduced cost of wages is not passed on to consumers as the monopsonist might not be able to meet the additional demand associated with the lower price. When the employer can wage discriminate, the welfare of workers is negatively affected. However, the report mentions that it may be difficult for an employer to apply it on a large scale.

The question to address is to determine to what extent the negative effect of monopsony power should be a concern for competition law, as it may be limited at a competitive downstream market level. The answer depends on the interpretation of the "consumer welfare standard": a restrictive interpretation of this criterion implies that competition enforcers will address monopsonist conduct or abuses only if these have an impact on the product market (i.e. the welfare of final consumers). Some authors suggest that the application of this standard be extended to encompass workers as well when investigating monopsony conduct or assessing the effect of mergers in the labour market. Others recommend that the consumer welfare standard be simply abandoned and that the goal of competition law be instead "the preservation of competitive market structures", a standard which would also consider the protection of suppliers and workers.

In any case, competition authorities appear to have the necessary leeway to apply competition law to labour monopsony and to be more active to tackle abuses in labour markets such as wage-fixing, no-poaching agreements, and other collusive practices. Furthermore, the protection of workers' rights could also be a criterion as a public interest consideration to be included in merger reviews.

Monopsony power can arise from various factors, which can be distinguished between those related to the labour market and those involving abusive practices by employers. Labour market sources of monopsony include concentration, which tends to limit opportunities for workers to move to another job in response to a real wage cut, and "frictions" reducing incentives or possibilities to change job, such as matching friction between the employer and the employee, search and switching costs, and regulations restricting labour mobility.

The literature shows that competition authorities have so far been much less active in labour markets than in product markets. Different reasons are: competition laws tend to have a primary focus on product markets and consumer welfare, labour markets are generally assumed to be competitive, specific legal tools already exist to protect workers, and challenges related to private enforcement actions against employers. Nevertheless, there is a trend showing a growing interest by competitive authorities to tackle anticompetitive infringements arising in labour markets in several jurisdictions.

In this regard, the US Department of Justice (DOJ) have started to take action against no-poach and wage-fixing agreements, notably in cases involving high-tech companies. Other collusion cases were also investigated in the U.S. and Europe (U.K., Italy, France, the Netherlands) in specific industries, including nurses and fashion models. Furthermore, the « US Antitrust Guidance for Human Resource Professionals » considers wage-fixing or no-poaching agreements with no ancillary reasons as *per se* illegal. However, there are some jurisdictions where no-poaching agreements may be allowed under limited circumstances. This is the case in the EU, when such agreements are directly related to a merger approval and appear to be strictly necessary for the transaction to occur, for instance with regards to employee know-how and competencies.

Competition authorities in the U.S, Japan and Hong Kong investigated cases and issued guidelines on exchange of information on employee salaries and conditions among competitors.

The issue of no-poaching clauses in franchising agreements in the U.S. fast-food industry, preventing a franchisee to hire employees from another one, has also been raised, the question being whether these covenants should be considered as vertical in nature, and as such be justified by pro-competitive reasons, or as horizontal agreements. While the DOJ stated that no-poaching covenants in franchising agreements were mostly vertical in recent fast food franchise cases[4], it specified that they should be treated as illegal horizontal agreements whenever they are concluded by independent franchisees belonging to the same chain, or by franchisees which

[4] Joseph Stigar v. Dough, Inc. et al., Myrriah Richmond and Raymond Rogers v. Bergey Pullman, Inc. et al., and Ashlie Harris v. CJ Star, llc et al.

are part of different chains and competing for employees, or by franchisor and franchisee competing for employees within the same geographic labour market.

Non-compete covenants preventing an employee from working for the employer's competitors, usually for a specific time period or geographic area, appear to be particularly widespread. These covenants can be justified from a competition perspective, with regard to the protection of know-how, training and trade secrets. While they are explicitly unenforceable in some countries like Mexico or some U.S. states, such agreements are allowed in several other jurisdictions, especially in Europe (including France, Germany, Italy, the Netherlands and the UK) provided the covenants are reasonably limited in terms of duration, geographic scope, and activity covered. However, such covenants can be used by employers as a means to reduce the mobility of workers and acquire monopsony power in certain markets, and some suggest the banning of such clauses for low-income employees given that protection of trade secrets or know-how cannot be sustained in these instances.

In their merger control activities, competition authorities have so far not devoted much attention to the effects of mergers restraining competition in labour markets. This lack of scrutiny may indeed have induced companies to carry out anticompetitive mergers in an attempt to reduce wage competition, while not resorting to the collusive practices achieving the same goal. That's why there are calls for competition authorities to control mergers with the same scrutiny on the demand side of labour markets as they do in product markets.

Anticompetitive abuses can also take the form of predatory hiring, whereby an employer typically paying wages below the market would raise remuneration above the marginal revenue product as a means to evict new firms competing in the labour input market. Other potential forms include non-compete provisions and covenants restraining workers' mobility, provisions preventing workers from disclosing information on remuneration and working conditions, wrongly treating employees as self-employed, and clauses prohibiting workers from bringing class and collective legal action.

Finally, the intermediation power of certain digital platforms along with the fact that workers' collective bargaining exemptions have not been extended by competition law to self-employed individuals working on those platforms, can generate monopsony situations. There have been calls for those qualifying as self-employed platform workers to be entitled to these collective bargaining rights as well in order to counteract monopsony power held by platforms.

However, considering exemptions for specific categories of self-employed workers in certain industries may also raise concerns from the competition law viewpoint, and market analysis would have to be carried out to determine whether these exemptions are justified by the need to counter the exercise of monopsony power. Therefore, competition authorities may prefer here to use their advocacy role by putting forward measures that address information asymmetries and make it easier for self-employed workers to move from one platform to another.

Manning (2020)[5] proposes a review of literature providing supporting evidence that employers hold and exercise significant monopsony power in labour markets. He claims that although the idea of labour markets being almost perfectly competitive is still shared among economists, the author states that the opposite may in fact be the case.

The importance of monopsony power of employers is in most studies assessed through the wage elasticity of the labour supply to individual firms, while the overall estimate of wage elasticity of labour supply is less commonly used. Monopsony power of employers can be modeled according to two modelling strategies:

- Modern or "dynamic" monopsony models, based on the assumption of frictions in the labour market making it difficult for workers to find and change jobs. This model considers the elasticity of labour supply to the firm as a function of the wage elasticity of the recruitment rate less the wage elasticity of the quit rate. Most studies in the literature tend to focus on only one of the above two measures to assess monopsony power (in this regard, the author notes that the work done on the elasticity of the quit function appear to have been primarily carried out by observational studies, whereas the elasticity of the recruitment function has been more subject to experiments). In any case, all these studies tend to suggest significant monopsony power held by firms in labour markets.

- New classical or "static" monopsony model, which assumes that the wage elasticity of labor supply to an individual firm also depends on the workers tastes for the amenities provided by firms.

Labour markets concentration ratios derived from the Herfindahl-Hirschman Index have been applied by several studies to labour markets, either to measure employer concentration based on firms' share of employment or share of vacancies. Labour markets can be defined by industry or by occupation.

The problem with this approach is that markets are divided into large discrete segments, implicitly assuming no workers' mobility across them. Besides, choosing between vacancy or

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[5] Manning, A. (2020). Monopsony in labor markets: A review. *Industrial and Labor Relations Review*. https://doi.org/10.1177/0019793920922499

employment-based concentration ratios can lead to different results; the decision often depends on the data available, and it is not clear which one should be preferred.

A solution that combines the assumptions implied by the two modelling strategies is to consider that workers choose among the firms currently in their preference set, but that set is narrower than the entire set of firms in the market as search frictions are involved. Furthermore, an additional component capturing the probability of success in jobs applications should also be incorporated in monopsony models.

The literature reveals that the importance of monopsony power has been established in specific labour markets like professional sport and academia in the U.S., whereas it appears to be less the case at the overall market level. Not surprisingly.

Studying monopsony can help understand several labour markets issues. It has appeared particularly relevant when applied to explain the impact of minimum wage and gender pay gap. The idea of a potential relevance of monopsony is emerging for other areas such as immigration, competition policy with anti-trust concerns in labour markets, and interpretation of earnings modelling in matched employer-employee data sets to explain patterns and trends in wage inequality and labour share of national income. But in such cases, properly defining the relevant market for anti-competitive behaviour by firms is a major hurdle. The challenge is similar to consider, in goods and services markets, the overall market power of a firm selling thousands of products rather than the market power for specific products or lines of close substitute products.

Tools outside the competition law framework can be applied to address some of the sources of monopsony power on labour markets, such as policies to reduce labour market frictions, or policies to enhance the bargaining power of workers in labour markets. Such policies could reduce the probability of emergence of market (monopsony) power on labour markets by increasing the wage elasticity of labour supply.

Nevertheless, the following studies, if properly conducted, could inform public policy officials of the danger of monopsony power.

- Labour market studies could help assess the causes and effects of monopsony power, and enable public policy and competition authorities to issue guidelines and recommendations to better protect workers.

- Rigorous studies on past merger transactions could help assess their impact on labour markets.

- Guidelines like the US Antitrust Guidance for Human Resource Professionals issued in 2016 may be elaborated for HR professionals to help them detect and prevent anticompetitive practices affecting human resources.

Naidu et al. (2018)[6] claim that employers enjoy significant market power in many labor markets in the U.S. Although conduct restraining competition whether in labour or product markets are formally considered illegal by antitrust laws, the authors observe that antitrust authorities have done relatively little to address anticompetitive practices in labour markets and propose a judicial response against the implicated employers.

They claim that a lack of sufficiently elaborated methods to evaluate labour market power from an antitrust perspective may be the cause of the weak regulatory concern and scrutiny shown by competition authorities over this issue. Since neither legal doctrine nor economic theory can stand to justify a lesser consideration of labour market from antitrust scrutiny compared to product markets, the authors suggest the Department of Justice (DOJ) and the Federal Trade Commission (FTC) to consider the market power of employers on labour markets and hence workers' welfare with more attention. In particular, tools usually employed for regulatory and economic analysis to evaluate the effects of mergers in product markets can be adapted to account for power in the labour markets.

Power in labour markets is a topic that has been studied for long by economists and other scholars. British economist Joan Robinson was in 1933 the first to use the term of "monopsony", which she associated to the problem of employer dominance she identified in non-competitive labour markets. In such a context, workers were "exploited" in Marx's sense in that they earned a wage only sufficient to avoid starvation and could not sell their labor to other employers at a higher income because of a lack of competition. The overall outcomes for workers were high unemployment, a steady gap between their salary and their productivity, poor working standards, and employer domination over them.

With the rise of unions standing for improving working conditions in the late nineteenth century, the U.S. government passed laws to ensure protections for workers against abuses from employers, such as low salaries, excessive hours and unsafe workplaces. At the same time, concerns raised by the domination of a small number of large trusts on markets led to the adoption of antitrust regulation, beginning with the Sherman Antitrust Act of 1890.

Although antitrust law formally applies to both product and labour market, it turns out that in practice, competition authorities mostly focused on product markets and rather ignored

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[6] Naidu, S., Posner, E.A. and Weyl, E.G. (2018). Antitrust Remedies for Labor Market Power. *Harvard Law Review*, *132*(537). https://chicagounbound.uchicago.edu/journal_articles/9875/

employer power and anticompetitive behaviour in labour markets for more than a century. Two parallel traditions were then formed, with on the one hand antitrust law addressing market power in product markets, and on the other hand labour and employment law dealing with power in labour markets.

This dichotomy in law was subsequently reflected in economics with the development of the fields of industrial organization and labour economics, and may explain the emergence of the assumption among economists of labour markets being perfectly competitive. However, the apparent rising power of employers on labour markets in conjunction with the decline of unions reveals that this assumption needs to be reconsidered.

For Naidu et al., the three primary barriers to competition in markets refer to “market concentration”, “product differentiation” and “search frictions”. Academic literature in economics shows that while market concentration is typically central in product markets scrutiny, labour market analysis has put primarily emphasis on the problem of search frictions.

Manning’s leading theoretical and empirical work on the model of “dynamic monopsony” provides a broad range of evidence supporting the prevalence of search frictions in labour markets. This model assumes that it takes time and efforts for workers to find another job so that employers, knowing about these important search costs, may be incited to reduce wages, benefits or specific amenities on the workplace, or fail to raise compensation despite the employees’ contributions.

Amenities offered on a workplace can be related to the concept of product differentiation for workers. These amenities also contribute to search frictions as they bring an additional difficulty for workers to compare firms.

It appears that product differentiation is more significant in labor than they are in product markets, which hence tends to make labour markets much narrower than product markets. Concentration of labour markets appears to be the least considered factor of labour market power.

A key difference between product and labour markets is that in the latter, the agreement of a transaction is subject to the idiosyncratic preferences of both sides of the market, namely the worker and the employer. Indeed, on one side, employers are looking for workers that have the necessary technical and personal skills to match the firm’s culture and needs. On the other side, employees search for employers offering a workplace and working conditions that correspond to their needs and preferences.

Matching frictions, as well as the geographic constraints for workers, explain and strengthen the typically long-term and local nature of employment relationships in labour markets compared to most purchases in product markets. In these circumstances, low-skill workers tend to be particularly vulnerable to monopsony compared with high-skill workers as they may have more limited access to transportation, well-located housing, childcare facilities, and have to rely more on local and informal networks, all of these factors making job changes more difficult for them.

Analysis of monopsony in labour markets can be conceptually related to the study of monopolies in the product markets. In product markets, a monopolistic firm raises its price above the competitive price (or marginal cost price) and determines an optimal production level, at which the value of the lost sales resulting from the price increase equals the higher profits on the units sold at the increased price. The difference between the monopoly optimal price and the competitive price represents the monopolistic firm's markup and provides an indication of market power.

In labour markets, a monopsonist employer considers the fact that attracting an additional worker will require him to raise wages for the current workers as well, and thus will face an increase of its overall labor costs. By decreasing wages of the existing workers below their marginal revenue product (i.e. the additional revenue they can generate), the employer will face some employee departures but will also lower its overall labour costs. In this trade-off, the monopsonist finds the optimal level of wages below the marginal revenue product and thus establishes a "markdown".

Monopolist power on product markets has a redistributive effect toward the firm and produces two main outcomes: first, consumers must pay a higher price for products, which enhances the monopolist's profit. A "deadweight loss" is then created as some consumer are not willing to buy at the higher price. By analogy, monopsony power on labour markets has a redistributive effect toward the employer and generates two effects: first, the lower labour costs induced by decreased wages benefit the employer, then it creates a deadweight waste as some workers, willing to work at the competitive wage level, are left out by the employer who prefers to install a lower wage and lower employment.

For Naidu et al., monopsony power produces socially negative outcomes as well.

- First, monopsony can induce employment misallocations inasmuch as employers do not enjoy the same degree of labour market power. A worker being more productive but getting a low remuneration at an employer with high labour market power might prefer another employer with more limited power, at which he would receive a higher wage but would be less productive.

- Employers may cut benefits instead of wages to take advantage of workers who cannot leave easily.
- Monopsony also drives up prices for consumers as the overall marginal cost for the firm of hiring an additional worker is passed on to the consumer at higher prices.
- The markdown on wages resulting from monopsony has a detrimental impact on the amount of taxes paid by workers to governments.

Evidence of labour market concentration

Over the last few decades, empirical research made by economists on monopsony revealed accumulating evidence that labor markets, particularly those with low-skill workers, were monopsonistic. The stronger bargaining power gained by employers in the labour market may be explained by the many consolidations that are taking place in several industries, for instance within the hospital and airline sectors.

Card and Krueger's (1994)[7] work enabled the theory of monopsony to gain more recognition. These authors, who studied how employment within the NJ fast-food restaurant sector responded to the government raise of the minimum wage rate, found no indication suggesting that this increase had the effect of reducing employment. These findings suggested that these workers were paid below their marginal product so that employers could absorb the higher wage rate, contradicting the traditional assumption of perfectly competitive labour markets. Other studies showed results consistent with these findings, for example those of Dube, Naidu & Reich (2007)[8], and Dube, Lester & Reich (2016)[9].

Most studies assessed monopsony power through the magnitude of the firm (or residual) labour supply elasticity, including the works of Manning (2001)[10], Webber (2015; 2016)[11], and Dube et al. (2018)[12]. Despite their methodological difficulties and data limitations, the findings of these

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[7] David Card & Alan B. Krueger, Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania, 84, American Economic Review 772 (1994).

[8] Arindrajit Dube, Suresh Naidu & Michael Reich, *The Economic Effects of a Citywide Minimum Wage*, 60, Industrial and Labor Relation Review, 522-543 (2007).

[9] Arindrajit Dube, T. William Lester & Michael Reich, *Minimum Wage Shocks, Employment Flows, and Labor Market Frictions*, 34, Journal of Labor Economics. (2016).

[10] Alan Manning, *A generalised model of monopsony* (2001)

[11] Douglas A. Webber, *Firm Market Power and the Earnings Distribution*, 35 Labor Economics.123-134 (2015), Douglas A. Webber, *Firm-Level Monopsony and the Gender Pay Gap*, 55 Industrial Relations. 323-345 (2016)

[12] Arindrajit Dube, Jeff Jacobs, Suresh Naidu & Siddharth Suri, *Monopsony in Online Labor Markets* (National Bureau of Economic Research, Working Paper No. 24416, 2018), http://www.nber.org/papers/w24416 .

studies overall suggest that residual labour market elasticities are very low, typically ranging from 1 to 5 throughout the economy and from 1 to 3 for low-skilled labour.

Antitrust laws in the U.S. explicitly prohibit firms from establishing monopolies and cartels, and from engaging in other actions that harm the competitiveness of markets. The statutes make no distinction between sell-side and buy-side (labour markets) anticompetitive behaviour. An exception is provided by section 6 of the Clayton Act, which specifies that labour unions, a form of labour cartel in the economic sense, are exempted from antitrust law. Considering the fact that buy-side and sell-side anticompetitive behaviour generate similar types of harms, the courts recognized that antitrust laws were also applicable on the labour market side. However, antitrust litigation in labour markets have been rather rare so far, and mostly addressed cases involving cartel-like arrangements among rival employers in specific settings like sports leagues. In these instances, employees challenged fixed-wage agreements and other arrangements harming labour competition among them. Other cases were investigated involving coordinating salaries for doctors and nurses within the hospitals industry. According to Naidu et al., no merger has been challenged by either the DOJ or the FTC on the grounds of its potential anticompetitive effects on labour markets.

With the revelation in 2010 of no-poaching agreements, involving major high-tech firms including Apple and Google, and preventing them from hiring each other's employees, the DOJ and the FTC started in recent years to pay greater attention to the issues related to noncompete arrangements and labour market concentration. Guidelines were also issued by the regulators to inform the firms' human resources departments about the illegality of agreements preventing from hiring competitors' employees[13]. In 2016, the DOJ announced that criminal investigations were launched against firms suspected of entering such agreements.

As for class actions, the complexity and the expensiveness of the procedure represent serious barriers for workers to bring cases against employers who violate antitrust law in the labour market, even if the social outcomes of the anticompetitive infringements might be significant. However, worker class actions have started to be more successful in recent years, but these cases were brought mostly by professionals or specialists rather than low-wage workers.

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[13] U.S. Department of Justice & Federal Trade Commission. (2016). Antitrust guidance for human resource professionals

Mergers and labour markets

The methodologies, metrics and standards used by regulators to scrutinize the effects of mergers on product markets can be extended to the labour market context. For the early stages of mergers, two approaches are suggested.

Market definition and concentration (MDC) is an approach involving three steps, namely the definition of the relevant labour market, calculation of the market concentration level prior to the merger, and estimation of the potential increase in market concentration following the merger.

Downward wage pressure (DWP) is an alternative approach proposed by analogy to the Upward Pricing Pressure (UPP) to analyse labour market power. This concept focuses on the tendency of workers to leave a merging firm as a response to a wage decrease for the other merging entity rather than joining other firms or exiting the labour market. The DWP metrics is calculated as the product of the markdown, defined as the percentage by which the wage declines below the worker's marginal revenue product, and the diversion ratio, the fraction of employees leaving a merging firm following a wage decrease for the other merging company, instead of joining other employers within their labour market.

The two approaches should be seen as simple metrics providing guidance to competition authorities in considering whether a further scrutiny of the merger is required.

Then, following the approach taken in product markets for later-stage merger analysis, a "merger simulation", based on structural econometric models and accounting for labour market factors such as the difficulties of searching jobs or the amenities specific to a particular workplace, could be considered to make predictions on the effects of merger in the labour markets. However, adequately modeling competition in labour markets requires sophistication and can be challenging due to the two-sided preference heterogeneity in such markets.

More qualitative factors also considered in product markets to determine whether a merger is justified can be looked at to see to what extent they would apply to the labour market context, including the following.

Efficiency gains of mergers, or benefits brought by a merger despite its anticompetitive effect. First, these efficiencies can be related to economies of scale or network effects justifying the transaction to proceed. Referring to the "consumer welfare standard" applied in the product markets, the authors suggest that the benefits of mergers on the labour market side be regarded in relation to a "worker welfare standard". Here, a merger would be allowed to proceed only if the losses to workers are not fully absorbed by the employer, but are offset by gains elsewhere in the economy. Second, mergers can create efficiencies arising from complementarities in the production or consumption of the products of the merging firms. Third, "viability efficiencies" refer to the likelihood of a merging entity to go bankrupt or become an unviable competitor without the merger.

Product repositioning and entry into the market. Product repositioning refers to the fact that a merger between two firms may bring changes to the nonprice characteristics of their products, leading other competitors in the market to reposition their products following the merger. Similar considerations may apply to labour markets when a merger leads the other companies to reposition their jobs. "Firm entry" refers to a theory suggesting that anticompetitive mergers tend to encourage a new competitor to come into the market to exploit the profit opportunities left by the merging firms. However, this argument has little validity for labour markets due to their extensive frictions.

The exercise of market power on labour markets: employers and unions

Covenants not to compete

Non-compete agreements may require an employee not to join a competing firm when leaving or being dismissed from its current employer. Restrictions typically apply to a defined industry, a geographic area and a limited period. Despite their effect of lessening competition, the common law considers that such covenants may be legitimate when they specifically intend to protect the employer's interests, such as trade secrets and on-the-job training investments.

However, there have been growing suspicion in recent years over the fact that such non-compete covenants might not be used for legitimate reasons, but instead serve as a means for employers to eliminate competition and exploit their labour market power, particularly on low-skill workers. At a broader level, the extensive use of non-compete covenants may also increase labour market concentration to the extent that other firms, which could also offer better wages and working conditions, would be deterred from entering the labour market.

According to Naidu et al., the traditional common law approach regarding non-compete clauses seems to overlook these effects, as the court is not required to focus on market power. Yet, antitrust law has the necessary conceptual resources to address this problem with antitrust rather than common law analysis. Specifically, non-compete covenants could be scrutinized based on the approach taken to investigate exclusive dealing arrangements on the product markets.

Mobility and certification

As mentioned before, employer market power is favoured by existing frictions on labour markets (frictions due for instance to ignorance, heterogeneous preferences, and mobility costs), which make it hard for a worker to move to another job as a response to weakened sub-competitive wage and employment conditions.

Regulations of mobility in numerous industries are impediments to productivity gains and hence wage growth and increases in living standards. The construction industry in Québec, and most probably elsewhere, as well as interprovincial mobility of goods, services and labour, are illustrative examples of poorly defined regulation of interregional mobility. Moreover, collective agreements in the institutional and commercial and industrial construction sectors go against the grain of the results and messages of a wide range of academic research in economics and the evolution of public policies around the world. These public policies are partly based on these research results and aim rather to facilitate mobility in order to promote productivity gains and hence wage growth and increases in living standards.

Quebec regulations limiting the mobility of construction workers come from a particular situation resulting from the inter-union conflicts of the 1960s and 1970s, and recessions that took place in the early 1980s and early 1990s with losses in gross domestic product and jobs, in particular, in the construction industry. The socio-economic situation in Quebec has changed a lot since then and these regulations appear today as a relic of another age.

In addition, these regulations, supported by both employer associations and labour unions, are now an impediment on regional development and it is difficult to find any justification whatsoever, given the current economic dynamics. At the heart of this mismanagement, we find regulations which are sometimes, even too often, destructive of wealth rather than the opposite. Among these regulations that hamper regional economic development, we find that on workers' mobility in the construction industry. While this regulation may have had beneficial effects during the era of major inter-union conflicts in the industry, today it has perverse effects on efficiency and economic growth.

Regional development, including the development of construction projects in the regions, can be better served by opening up both provinces and regions to competition and mobility, which should be encouraged rather than restricted. Such an opening would likely allow a better allocation of resources, labor and capital, a better match between supply and demand in the construction labor market, faster penetration of best practices across Canada, better skills development, greater productivity gains, better cost control, all translating into gains in individual and collective well-being.

The current economic and social situation in Canada appears favorable to such openness to more competition and more mobility, as well as to better targeted and less intrusive regulation for the benefit of workers and citizens.

Besides eliminating the above restrictions to mobility as well as similar restrictions in sectors other than construction, which are detrimental to workers and citizens, governments should consider abolishing regulations on certification for professionals who are not in direct contact with the (uneducated) public. Those certification rules one finds in medicine, engineering, law, industrial relations, and numerous other fields are constraints on competition intensity and therefore favour the market power of firms on labour markets.

Collusion, wage-fixing, and labour information exchange

Collusion between firms coordinating to fix salaries and to exchange wage information have been recognized by courts and regulators as a violation of antitrust laws. Cases involving no-poaching agreements, particularly in the high-tech sector, were examined by the US DOJ. Investigations were also carried out within the fast-food industry, for cases involving large franchisors (e.g. McDonald’s) which prohibited franchisees from hiring each other’s workers.

Other anticompetitive practices on product markets, including predatory pricing, vertical foreclosure, and most favored consumer clause, represent fields for which parallels could conceptually be made to explore how they would apply in the labour market context, both on the demand side and the supply side.

Indeed, competition issues are present when a union controls the supply of labour in a given industry, for a given competency, or in a given region. Similarly, competition issues are present when a firm or group of firms can exert market power in setting wages and working conditions.

The market power of labour unions

Although the literature is not so abundant on employers’ monopsony power, it is even less so on labour unions’ market power. But in many ways, unions may distort competitive forces on labour markets, especially when they exert their power at sectoral, industrial or national levels. Insofar as the intensity of competition is a major if not the major factor of economic growth and gains in productivity and social wellbeing, competition authorities should show an interest in such market power.

The most promising areas of antitrust interventions

To conclude this section on Competition law and labour markets, it seems that the most promising areas of antitrust authorities in labour markets, in Canada and elsewhere, are four-fold:

- First, the non-compete agreements, which prevent an employee from working for the employer's competitors, usually for a specific time period or geographic area, reduce the mobility of workers and therefore decrease artificially the low elasticity of labour supply estimates, thereby potentially favouring anti-competitive monopsonistic behaviour. However, as mentioned previously, these covenants can be justified to protect a firm's know-how, training investments, and trade secrets. A crucial factor is that these covenants be reasonably limited in terms of duration, geographic scope, and activity covered. Proposals to ban such clauses for low-skill employees, given that protection of trade secrets or know-how cannot be argued convincingly in this case, have been made. The problem of non-compete agreements is even more troublesome when such agreements are put in place through regional of sectoral negotiations between employers and labour unions.

- Second, the no-poaching agreements, which prohibit firms from soliciting or hiring the employees of other firms, are considered by the « US Antitrust Guidance for Human Resource Professionals » as per se illegal if no ancillary reasons are brought forth. However, there are some jurisdictions where no-poaching agreements may be allowed under limited circumstances. As mentioned above, no-poaching agreements involving major high-tech firms have recently been under investigation by the U.S. DOJ and FTC.

- Third, the wage-fixing agreements, which firms resort to increase their power on labour markets, appear to fall quite clearly under the purpose of the Competition act and scrutiny of antitrust authorities. As for no-poaching agreements, wage-fixing agreements are considered by the « US Antitrust Guidance for Human Resource Professionals » as per se illegal.

- Fourth, the anti-mobility agreements, which make it harder for a worker to move to another job as a response to weakened wage and employment conditions, thereby favouring the exercise of market power by employers (and sometimes the exercise of market power by labour unions), are exacerbating other existing frictions on labour markets (frictions due for instance to ignorance, heterogeneous preferences, and mobility risks). In some circumstances, such mobility restrictions may be justified to protect a firm's know-how, training investments, and trade secrets. In such cases, reasonable limits to mobility should be explicitly justified and contained in time, geography, and relevant businesses. The problem of anti-mobility agreements is even more troublesome when such agreements are put in place through sectoral, regional or national negotiations between employers and labour unions.

Applying Competition law more generally to labour markets faces important challenges and pitfalls discussed in the next section.

The challenges and pitfalls of applying competition law in labour markets

The main challenges and pitfalls in looking at labour markets through the lens of competition law and policy are four-fold:

- First, to consider technological changes that may modify the productivity and the necessity or usefulness of some types of jobs (creative destruction). The role and impact of technological changes must be properly assessed and the role and impact of creative destruction must be considered. Not all jobs must be protected and not any level of employment must be defended. Economic growth as well as increases in living standards depend directly on jobs being destroyed and replaced by more productive jobs.

- Second, to assess the appropriate price or wage to work with namely salary or global compensation. The notion of wage must clearly be the all-inclusive compensation including insurance and security plans, pension plans, on-the-job training expenses and investments, expected dynamics of wage or compensation growth (short term vs long term), and fringe benefits such as paid holidays and vacations. In comparing wages paid by a firm or a group of firms (potential cartel) in reference to a benchmark market, in a difference-in-differences analysis, one must make sure that the wages to be compared correspond to all-inclusive compensation levels. Otherwise, the comparison would be faulty. Similarly, in before-after studies as compensation packages may have evolved over time. In numerous comparative studies of labour compensation, such caveat is not properly followed.

- Third, to define the "product market" through a *hypothetical monopsonist test* applied to a specific labour type or competency in a specific regional area, rather than to a large set of labour types. It is also important in defining the market itself that the fluidity of labour competencies be properly assessed. When characterizing labour markets in order to define and separate markets into discrete segments on the basis of cross elasticities, one must make sure that there is no significant workers' mobility across them. Besides, choosing between vacancy or employment-based concentration ratios can lead to different results; the decision often depends on the data available, and it is not clear which one should be preferred.

- Fourth, to assess the implicit and explicit protection ensured by trade unions and other forms of worker representation present in the firm. One must make sure to take into account the role of trade unions and other forms of worker representation in the firm as countervailing forces to the firm's labour market or oligopsony power. Besides, one must also take into account the labour recruiting firms in the business sector and market area considered. The role of recruiting firms is often to facilitate transition between markets, thereby counteracting the low market-level cross elasticities that may have been estimated without proper attention given to specific transition factors.

Let us consider each of the above challenges and pitfalls.

Creative destruction and job creation

Creative destruction is one of the most important mechanisms for growth and wealth creation. It is the process underlying the constant turnover of job losses and job creation—the latter typically in more promising sectors or more productive firms.

J.A. Schumpeter (1942), *Capitalism, Socialism and Democracy* (original 1942; New York : Harper 1975) writes (page 82) : "The opening up of new markets, foreign or domestic, and the organizational development from the craft shop and factory to such concerns as U.S. Steel illustrate the same process of industrial mutation–if I may use that biological term–that incessantly revolutionizes the economic structure *from within*, incessantly destroying the old one, incessantly creating a new one. This process of Creative Destruction is the essential fact about capitalism. It is what capitalism consists in and what every capitalist concern has got to live in … Every piece of business strategy acquires its true significance only against the background of that process and within the situation created by it. It must be seen in its role in the perennial gale of creative destruction ; it cannot be understood irrespective of it or, in fact, on the hypothesis that there is a perennial lull … The first thing to go is the traditional conception of the *modus operandi* of competition. Economists are at long last emerging from the stage in which price competition was all they saw. As soon as quality competition and sales effort are admitted into the sacred precincts of theory, the price variable is ousted from its dominant position. However, it is still competition within a rigid pattern of invariant conditions, methods of production and forms of industrial organization in particular, that practically monopolizes attention. But in capitalist reality as distinguished from its textbook picture, it is not that kind of competition which counts but the competition from the new commodity, the new technology, the new source of supply, the new type of organization (the largest-scale unit of control for instance)–competition which commands a decisive cost or quality advantage and which strikes not at the margins of the profits and the outputs of the existing firms but at their foundations and their very lives. This kind of competition is as much more effective than the other as a bombardment is in comparison with forcing a door, and so much more important that it becomes a matter of comparative indifference whether competition in the ordinary sense functions more or less promptly ; the powerful lever that in the long run expands output and brings down prices is in any case made of other stuff."

To the extent that the stimulus packages launched by various governments are primarily aimed at preserving existing jobs, they can seriously harm social welfare by preventing the adjustments brought about by creative destruction in the commercial and industrial fabric of economies.

This process of creative destruction manifests itself through four different channels: the number of jobs, the number of establishments, the distribution of establishment size, and the increase or decrease in employment in all sizes of business. We will here focus on the number of jobs.

Data on employment dynamics in the United States[14] show that over the 106 quarters from 1992.III to 2019.IV, private sector establishments created a net average of 583.5 thousand jobs per quarter during periods of net job gains (87 quarters) and lost a net average of 689.1 thousand jobs per quarter during periods of net job losses (19 quarters). In gross terms, these establishments created an average of 7.895 million jobs per quarter over the 106 quarters from 1992.III to 2019.IV, of which approximately 79.8 per cent in existing establishments and 20.2 per cent in new ones, and lost an average of 7.540 million jobs per quarter, of which approximately 80.4 per cent in existing establishments and 19.6 per cent due to closures.[15]

Looking at successive periods of job gains and job losses, we observe that during the period 1992.III to 2000.IV (prior to the job recession - defined as a period of quarterly net job losses - of

[14] No such data are available in Canada, at least in a user-friendly format. Statistic Canada data are presented on a net, not gross, basis. It may be possible to construct such a data set from data on business entry & closure (https://www.statcan.gc.ca/en/statistical-programs/document/5228_D1_V1), business dynamics (https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=3310016401) and labour force survey (https://www150.statcan.gc.ca/n1/daily-quotidien/211203/dq211203a-eng.htm), but the scope of the current paper did not allow attempting to do it.

[15] Bureau of Labor Statistics, Business Employment Dynamics, Series Report -20141231152723 and Series Report -20141231152955 – First Quarter 2021, released in November 2021 : "The Business Employment Dynamics data measure employment changes at the establishment or firm level … *Establishments* are used in the tabulation of the BED statistics by industry and *firms* are used in the tabulation of the BED size class statistics.Because of the difference in the unit of analysis, total gross job gains and gross job losses by size class are lower than total gross job gains and gross job losses by industry, as some establishment gains and losses within a firm are offset during the aggregation process. However, the total net changes in employment are the same for not seasonally adjusted data and are similar for seasonally adjusted data."

2001-2003, 30 quarters), a net job created was the result of 12.4 jobs created and 11.4 jobs lost. During the job recession (10 quarters), the sum of quarterly net job losses reached 3.842 million, each being on average the result of 21.3 lost jobs and 20.3 created jobs. During the quarterly net job expansion period from 2003.III to 2007.IV (18 quarters), a net job created resulted from 18.9 jobs created and 17.9 jobs lost. The 2008.I to 2010.I quarterly net job recession (9 quarters) saw job gains per quarter reach 6.668 million while job losses reached 7.696 million, for a net per quarter loss of 1.028 million jobs. During the quarterly net job expansion of 2010.II to the end of 2019 (39 quarters), U.S. private sector establishments created on average of 542 000 net jobs per quarter, with an average of 7.298 million jobs created and 6.756 million jobs lost per quarter.

Overall, during the 87 quarters of net job gains, one net job gain was the result of 13.8 jobs created and 12.8 jobs lost, while during the 19 quarters of net job losses, one net job lost was the result of 10.5 jobs created and 11.5 jobs lost.

It can be seen from Table 1 that the difference between the pre-recession and recession (2008.I – 2010.I) periods is mainly a result of fewer jobs created (1.051 million fewer jobs created per quarter and 0.386 million more jobs lost per quarter). In contrast, the difference between the recession period and the post-recession period (2010.II – 2019.IV) is the result of fewer jobs lost per quarter by close to one million (0.940 million) and 0.629 million more jobs created.

Thus, despite a significant net number of job lost per quarter during the nine quarters of the recession 2008.I - 2010.I, the gross number of jobs created by the U.S. economy was large (6.7 million jobs per quarter) in most, if not all, industries. Although the gross number of jobs created per quarter was 421.0 thousand lower during the post-recession period than during the immediate pre-recession period, the net number of jobs created was higher by 133.0 thousand jobs.

Table 1: U.S. gross and net job creation 1992-2021 (seasonally adjusted)

Period	gains/qtr	losses/qtr	net/qtr	gains/net	losses/net
	(in thousands)				
1992.III - 2000.IV (30 qtr	8,928	8,208	720	12.4	11.4
2001.I - 2003.II (10 qtr)	7,808	8,192	(384)	20.3	21.3
2003.III - 2007.IV (18 qtr	7,719	7,310	409	18.9	17.9
2008.I - 2010.I (9 qtr)	6,668	7,696	(1,028)	6.5	7.5
2010.II - 2019.IV (39 qtr)	7,298	6,756	542	13.5	12.5
2020.I - 2020.II (2 qtr)	6,394	14,135	(7,742)	0.8	1.8
2020.III - 2021.I (3 qtr)	9,281	6,695	2,586	3.6	2.6

So we see that the process of job gains and losses is complex and involves large movements of jobs throughout the economy. This is creative destruction at work. It is worth questioning just how disruptive government interventions might be to this process, in particular the often expressed desire to protect jobs during recessions. As a rule of thumb, these policies are poorly adapted to the complexity of job creation and loss.

This is food for thought for the application of Competition Law and Policy to labour markets, in particular for the impact of mergers and acquisitions on job markets. As mentioned above, data on employment dynamics in the United States show that over the 106 quarters from 1992.III to 2019.IV, approximately 79.8 per cent of jobs created were in existing establishments and 20.2 per cent in new ones, and approximately 80.4 per cent of jobs lost were in existing establishments and 19.6 per cent in closing ones.

Job losses may be as important as job gains to the process of job growth over time. Too much tampering with this process of creative destruction may backfire and lead to lower job growth.

Wage vs global compensation

In the discussion above about the notion of value, there is a gross value and a net value. The difference between the two is the collateral cost to be incurred to use a product, a good, a service, an hour of work, a competency, an equipment. Hence the relevant value is net of those collateral costs if any. In deciding to use a factor, an intermediate good, an equipment, or an hour of work, a citizen of a firm will assess the net marginal value product of the factor in generating valuable goods and services to oneself or one' customers, that is, not only the price of the factor (hourly wage) but also the associated using or hiring costs.

Similarly, in deciding to switch to a different user of my labour services, I will assess the net compensation differential I am likely to obtain as compared to my current situation. This net compensation differential takes into account not only the wage/salary differential but also collateral costs and benefits such as the fringe benefits differential, the cost of switching (searching costs, displacement or moving costs, learning costs, among others) as well as the risks a switch may represent. The expected movement of labour across firms and markets will be smaller [larger] the higher and more significant the collateral costs [benefits] are on the buyer (firm) side and the seller (worker) side.

As we will see, this distinction between gross value and net value is very important in the context of oligopsony/monopsony and oligopoly/monopoly on labour markets. There are numerous misconceptions in the literature regarding the proper distinction between gross and net value. When assessing the intensity of competition on labour markets and in wage determination in particular, it is crucial to consider global compensation, that is wage/salary plus other benefits, in analyses comparing two periods, for instance before and/or after an alleged anti-competitive action, as well as in analyses comparing two regional or industrial markets/sectors (benchmark).

The definition of a relevant job market

Analytical tools for merger assessment in labour markets include market definition, market power assessment, and evaluation of merger efficiencies. One of the most difficult challenges pertains to the definition of the relevant market. Most of the time, market power analyses on labour markets ae done or expressed at the level of the whole firm, not at the level of a specific job description or competency.

Hence, the analysis would deal with for instance university professors as a whole versus universities as a whole, rather than with economists as university professors and universities. University economists may represent the supply side of a labour market, contrary to university professors as a whole. Similarly, for commercial or industrial sectors. One may consider a cartel agreement between grocery stores to fix wages and working conditions of say butchers, a well defined labour market, but considering the possibility of a cartel agreement between grocery stores and supermarkets to fix the wages and working conditions of their entire and very diverse workforce is much less credible.

- To define the market, the *hypothetical monopolist test* used in product markets could serve as a basis to adapt a conceptual framework for a *hypothetical monopsony test*, wherein the level of responsiveness of workers to a small but significant real wage decrease in the hypothetical monopsonist's firm would be assessed. Market definition can also be done considering geographic and time components, as well as studying workers' preferences influencing their decision to take on or change jobs.

- To assess market power, the Herfindahl-Hirschman Index (HHI) could be applied to labour markets, whereby workforce concentration would be computed as the sum of the squares of the individual market share of all the employers.

- Analysing the efficiencies of mergers in labour markets raises the question of the breadth of interpretation that should be given to the consumer welfare standard (see above).

These three standard analytical tools proposed for merger analysis could also be applied to the context of abuses of monopsony power. Besides, as suggested in the OECD (2020) Report, based on Marinescu and Posner (2018),[16] the adoption of legal rebuttable presumptions could facilitate action against unilateral monopsonistic practices by employers: in such an instance, an employer would be presumed to hold significant market power when controlling workforce or posting job vacancies above a pre-determined market share threshold within a specific labour input market.

Unions and labour representation

One way to avoid the oligopsony costs of firms' market power in labour markets is to ensure proper labour representation in firms, thereby reducing the a priori need for antitrust authorities to intervene in labour relation contexts. Unionization is not the only model that allows workers to be represented. Non-union forms of representation have been proposed and implemented as substitute for unionism.

Non-union employee representation can be defined as one or more employees acting in an agency function for other employees in dealings with management over issues of mutual concern, including the terms and conditions under which people work. Selected workers' representatives meet with managers, usually in committee-type structures in which communication and exchange of thoughts is fostered.

Because of heightened competition, skill-intensive production systems and greater employee expectations of involvement, the traditional "command-and-control" system has given way to more decentralized decision-making schemes and enhanced employee participation. By creating channels through which employees can have their voices heard, employers are able to ensure productivity and employee satisfaction in the workplace while decreasing the incentives to unionization.

Work councils are very popular in Europe. Japanese companies have also innovated in this sector by adopting several different forms of non-union employee representation. More recently, Central and Eastern European countries that have recently adopted market economies have also brought additional diversity into industrial relations systems. Non-union employee representation is a far more diverse and complex institution than the stereotypical "company union."

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[16] Marinescu, I. and E. A. Posner (2018), "A Proposal to Enhance Antitrust Protection against Labor Market Monopsony", Roosevelt Institute Working Paper, http://rooseveltinstitute.org/proposal-enhance-antitrust-protection-against-labor-market-monopsony/.

The diversity of non-union forms of employee representation can be partly explained by the fact that non-union forms of employee representation have no complex body of statutory rules, agency regulations or procedures for court rulings, in contrast to unions.

The second and more positive perspective is to consider non-union forms of employee representation as means to unify the interests of both employees and employers. Proponents of this method of regarding non-union employee representation believe that, in contrast to unions that generally foster a confrontational relationship between management and employees, non-union employee representation encourages cooperation and the pursuit of common interests.

Non-union employee representation offers a venue for promoting employee involvement and empowerment while providing a forum to build outcomes providing mutual gain. Indeed, for non-union forms of employee representation and unions both to flourish, it is necessary for policy-makers to adopt a legislative framework that promotes the optimal mix of the two forms of voice. And since this type of legislation is unlikely to be adopted in the short or even medium term, the future of non-union employee representation in North America remains uncertain.

Even though there are limits to the immediate large-scale implementation of such non-union employee representation schemes, they should remain a very important area of research in both academic and policy-making circles. Some studies are showing that non-union representation is a positive way of ensuring that employees have the freedom to choose whatever form of representation they desire in order to achieve a greater voice in the workplace.

Estimating damages from anti-competitive (cartel) practices

The cartel effective duration

Unless they recognize the cleverness of cartel members, antitrust authorities may end up underestimating the cartel impact. It is therefore important to distinguish between the legal collusion period as defined in an indictment and the relevant period for purposes of estimating the effect of the collusion. This relevant period is the period during which coordination between the parties had or could have an influence on wages or prices. The collusion may have started before or may have continued beyond the legal period. If the analysis is performed on the wrong period, economic experts may find insignificant cartel wage suppression despite the overwhelming evidence that a cartel of employers operated during the alleged period.

This problem is well known. The American Bar Association (ABA 2014) econometric textbook explicitly warns analysts about the common mistake of simply taking the legal period as the relevant period for estimating cartel damages. The ABA summarizes the distinction to be made between the legal or alleged period and the relevant period as follows:

> “When assessing damages using a before-during or a before-during-after approach, the beginning and end points of the damages period must be identified. However, the beginning and the end of the damages period alleged in many cases may not accurately reflect the actual beginning or end of the alleged unlawful conduct. For example, in price-fixing [wage-fixing] class action cases, the plaintiff’s attorneys often choose the beginning and end dates for the ‘class period’ before discovery is undertaken. Moreover, the beginning or end of the effects of the alleged unlawful conduct may not coincide with the beginning or end of the conduct itself. The effects might occur later, end earlier, or last longer than the conduct. Experts should rely on the evidence developed in discovery, market facts, and the analysis of liability experts when determining the relevant starting and ending dates for calculating damages.”

The following two product market cartel cases provide striking empirical examples of the difference between the legal or alleged period of collusion as indicated in prosecution documents and the relevant period of collusion for damages evaluation. Similar pitfalls are clearly and similarly relevant, mutatis mutandis, in estimating the impact of collusive behaviour by employers on labour markets.

Example 1. The retail gasoline cartel in Québec

The Competition Bureau investigated retail gasoline markets in Sherbrooke, Thetford Mines, Victoriaville and Magog and obtained proof of collusion through wiretaps over the period spanning from early 2004 to mid-2006. Criminal prosecution for the price-fixing conspiracy were launched in 2008.[17]

Retail gasoline prices in the cities of Sherbrooke, Thetford Mines, Victoriaville, Saint-Hyacinthe, and Montréal for the period 1993-2006 were collected for all individual retail stations on a quarterly basis in the first four cities and a bi-monthly basis in Montréal. Although the dates on which prices are observed vary from city to city, prices for a given city are collected on the same day over a short time span (at most a few hours) every quarter or every two months.[18]

The data show that for the first three cities the volatility (standard error) of prices across retailers dropped significantly in early 2001 and remained low and stable afterwards. In contrast, the price volatility observed in Saint-Hyacinthe and Montréal did not drop during the

[17] The period during which the cartel was operative was before the 2010 amendment to the Competition Act that made naked cartels per se criminal. Before 2010, cartel activities were illegal only if they generated an undue lessening of competition. It was therefore necessary for the Government to prove that the cartel led to an undue lessening of competition.

[18] See Marcel Boyer (2021), “The Retail Gasoline Price-Fixing Cartel in Québec” (revised Oct 2021), CIRANO 2021s-06 https://cirano.qc.ca/files/publications/2021s-06.pdf

period and in fact increased continuously with price increases, as one would expect in a normal competitive market.

A sharp reduction in price volatility across sellers can be considered a marker revealing cartel behavior. Available data on price volatility between retailers suggested a relevant period of cartel operation between January 2001 and June 2006, while the indictment filed by the Public Prosecution Service of Canada had defined a legal period from January 2004 to June 2006.

The statistical tests on differences between the variances and the averages are significant.[19] Those results suggest the presence of a price fixing collusion starting in early 2001 in the first three cities namely Sherbrooke, Thetford Mines, and Victoriaville.[20] As a result, in estimating the effect of the cartel on prices, the data from January 2001 to December 2003 (3 years of data), even if outside the legal or alleged period of collusion as mentioned in the indictment, could not be considered as a period free of collusion. In order to avoid falling into a Type II analytical error, i.e., discharging as not guilty a harmful cartel, three years of data prior to the legal period were dropped from the econometric analysis.

Example 2. Fixing passenger fuel surcharges (PFS)

British Airways (BA) and Virgin Atlantic Airways (VA) were involved in a conspiracy related to the fixing of passenger fuel surcharge (PFS) in the mid-2000s.

The UK Office of Fair Trading (OFT 2012) investigated this conspiracy and found that: “[VA and BA] infringed Article 101 and/or the Chapter I prohibition by participating between August 2004 and January 2006 (the 'Relevant Period') in an agreement and/or concerted practice by which they coordinated their pricing in relation to their respective passenger fuel surcharges for long-haul flights ('PFS') through the exchange of pricing and other commercially sensitive information regarding the PFS, with the object of preventing, restricting or distorting competition (the 'Infringement')” (par. 3). This is a peculiar case. Why would BA and VA find it advantageous to

[19] The price variation level between retailers has gone from an average level of 1.02 CPL before 2001 to 0.44 CPL after 2001, which represents a decrease in the price dispersion of more than 50%. This decrease in the dispersion over time also saw an important stabilization, since the standard deviation variance went from 0.69 to 0.09 during the same period. The average price dispersion level between retailers was 1.98 CPL between 1993 and 2000, whereas that same average reached 2.79 CPL between 2001 and 2006, a statistically significant difference. The variation of this dispersion over time has however remained stable, only varying between 0.91 and 0.89, which is a non-significant difference.

[20] In his 2015 Superior Court decision for one of the trials in this case (R. c. Pétroles Global Inc., Cour Supérieure - Chambre criminelle et pénale, 450-73-000633-085 (002), 15 avril 2015), Justice Tôth writes (free translation): "[61] Professor Boyer observed from 2001 a price dynamic in the target markets that contrasted with the reference markets and which could not be explained by local conditions. The collusion was the most plausible explanation, confirmed by the Competition Bureau's investigations and searches. [62] The evidence at trial, particularly the testimony of Pierre Bourassa [one of the defendants], demonstrated that Professor Boyer was right. The collusion began at that time."

coordinate their decisions on the fuel surcharge, which accounts for less than 10% of the ticket prices, but not on the final ticket prices?

BA and VA are facing competition from several other carriers not part of the conspiracy. Moreover, according to the OFT inquiry, managers at BA and VA were aware that their strategy was at risk of being discovered by the competition authorities and, as a result, could lead to antitrust actions in the United Kingdom, Canada, and the United States, among others, and likely penalties (fines and class actions), exclusions, disbarment, and prison sentences. Clearly, the competence and analytical capacity of BA and VA executives who conceived this conspiracy on fuel surcharge and who implemented it despite the risks incurred must not be underestimated.

Where is the value or the profitability of this strategy? A possible answer to this question is that there was a "relevant market" in which BA and VA had some market power, making a coordination strategy to fix PFS jointly beneficial despite the risks involved. Indeed, BA and VA were or might have been the main competitors and dominant suppliers in a particular non-negligible market, which is the most plausible "relevant market" in this case: The British citizens and organizations showing a preference for travelling on their national airlines. Those British citizens and organizations would most likely perceive a fuel surcharge imposed and announced in a coordinated way to all travelers as the result of a market phenomenon outside the control of their preferred national carriers. Uncoordinated announcements, possibly heavily covered in the British press, could have given rise to unfavorable reactions and reduced allegiance of their British customers for BA and VA.

In this conspiracy case, VA was a successful leniency applicant and benefited from total immunity, while BA admitted participating in the cartel in exchange for a reduction in penalties from the original fine of £121.5 million to a final £58.5 million. The fine was based on a “conservative approach to market definition which is favorable to the Parties”, namely the markets where VA and BA overlap, which is a subset of affected markets. The OFT claims that the fine “will be sufficient in this case to meet the twin objectives of the OFT's policy on financial penalties: (i) to impose penalties which reflect the seriousness of the infringement; and (ii) to ensure that the threat of penalties will deter undertakings from engaging in anti-competitive practices.” More importantly, the OFT states that: “Managing the tone of media coverage of the PFS was clearly very important for both Parties throughout the Relevant Period.” Clearly, VA and BA must have perceived the potential gains from the strategy to be greater than the potential losses in other markets where the market power of VA and BA is less important or non-existent.

The OFT describes the positions of the two cartelists as follows (passim). From BA's perspective, the PFS mechanism was particularly problematic because negative stories in the UK media were more likely to focus on BA than on other airlines; For VA the media and consumers’ reaction to its PFS action was a significant business concern as its reputation as the *“the customers'* *champion and underdog"* was at stake. The advantages of such a concerted strategy were twofold: a reduction in uncertainty regarding the competitor's actions and reactions (BA and VA) and "a less hostile reaction in the media than would be the case if they were to risk announcing an increase that may not be followed by the other Party." Both advantages were expected to generate profits for the airlines.

One should not underestimate the sophisticated reasoning of BA's strategists, once the cartel was exposed. In that vein, one cannot but consider unlikely that BA would adjust its prices to competitive levels immediately after the raiding of its offices by investigators of the Office of Fair Trading (OFT) in June 2006. Two factors suggest that this was not the case. First, the fuel surcharge was increased in April 2006 to a level that remained unchanged until January 2007. Second, Boyer (2017) has found that it is only from November 2006, not from June 2006, that ticket prices fell and became more volatile and the co-movement of prices and fuel costs became less direct and stable. This indicates that the relevant period of collusion insofar as the impact of the conspiracy on ticket prices is concerned may have extended until November 2006, that is, five months after the OFT's raid at BA offices (June 2006) and three quarters after the end of the legal or alleged conspiracy period (February 2006). Whether this is the appropriate period or not is in good part an empirical question but a significant one in estimating cartel damages.[21]

The before-and-after (diff-in-diff) method and the yardstick method

In the before-and-after method, one estimates the overcharge as the difference between the sample averages of wages/prices observed during and outside the periods covered by the cartel episode. In the "with-and-without/yardstick" method, one compares the average wage that prevailed on the cartelized market with the average wage on a yardstick market that operated under competitive conditions during the same period. However, these other methods have their own estimation risk.

Besides the fact that the period covered by the cartel is difficult to identify with precision, the before-and-after method (or the diff-in-diff method) is not robust to shifts in technologies, value chains and networks, and shifts in market conditions that naturally change wages in a competitive environment. Moreover, a cartel may start or end by a wage war that pushes wages above their competitive levels.[22] As to the with-and-without/yardstick method, it must take into

[21] An econometric model developed in Boyer (2017) to explain the evolution of London-Montréal ticket prices between August 2004 and December 2012, using all available data potentially impacting ticket prices (with an R^2 of 94.9%), indicates that the price increase specifically due to the collusive factor reputedly operating from August 2004 to November 2006 is of the order 11.2% of BA ticket prices. The trial has yet to take place in this matter.

[22] In the context of product markets, Connor (2010) warns that *"Shifts in buyer preferences, appearance or the disappearance of substitutes, or changes in the cost of production of the cartelized product during the affected period can cause overstatement or understatement of the overcharge."* This lack of robustness is also pointed out by Finkelstein and Levenback (1983): *"[...] This estimate, however, meets the immediate objection that it is likely to*

account that the drop in wages caused by the employer cartel can cause a supply shift toward nearby (yardstick) labour markets. Similarly, neighboring firms that are not participating in the collusion may tend to follow the cartel wage (the so-called "umbrella effect").

Given the complexity of the estimation of the but-for wage, simplistic suppression calculation methods will often be biased. Carefully specified econometric models are needed to handle the complexity of the real world and mitigate any estimation bias. Econometric methods could be used to simulate an oligopsonistic competition, predict an index of market power, or estimate demand and supply functions that account for dynamic strategic interaction among firms and workers.

A reference formula in lieu of damage estimation (product markets)

Given the hurdles identified above, the estimation of a cartel impact could be tedious and costly if antitrust authorities had to conduct detailed investigations on a case-by-case basis. Antitrust authorities therefore need a reference interval that can be used in cases where the exact evaluation of the wage suppression is overly costly. Unfortunately, the number of credibly documented cases remains too low and a meta-analysis of those cases is still not available. Nevertheless, it may be instructive to consider the methodologies that were developed for product markets as a potential research plan must be designed for what should or could be done on labour markets.

Antitrust authorities are well aware of this matter in product markets. The USSG prescribe a base fine of 10% of the affected volume of commerce for a firm that is convicted of cartel activity, plus another 10% for the harms "inflicted upon consumers who are unable or for other reasons do not buy the product at the higher price." This yields a recommended fine of 20% of affected sales, subject to further adjustments for aggravating and mitigating factors. The total cartel fines generally range from 15% to 80% of affected sales in the U.S.

Similar rules apply in Europe as well as in other jurisdictions. The European Commission sets the base fine in the range of 0% to 30% of affected commerce. To this base fine, 15% to 25% may be added as a dissuasive measure. However, the total fine must be kept under 10% of the worldwide group turnover in the financial year preceding the decision.

Certain academic researchers have questioned whether the fines implied by these guidelines are too high or too low. For instance, Cohen and Scheffman (1989) argue that an increase of 1%

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be incorrect because changes in factors affecting price other than the conspiracy would have produced changes in competitive prices if there had been competition during the conspiracy period." More recently, Boyer, Lasserre and Moreaux (2012) show that over the dynamic development of an industry, episodes of tacit collusion investments and prices may follow episodes of more intensely competitive investments and prices and vice versa, raising doubts on the validity of the "before and after" method.

of a price above its competitive level will likely result in a reduction of sales of more than 1%. Based on this, they concluded with respect to the USSG that "*at least in price-fixing cases involving a large volume of commerce, ten percent is almost certainly too high.*" More recently, Adler and Laing (1997, 1999) and Denger (2003) also judge that fines imposed to cartels in the U.S. are "*astronomical*" or "*excessive*."

Connor and Lande (2008) examine a large number of overcharge estimates available in previous studies and conclude that: *"the current Sentencing Commission presumption that cartels overcharge on average by 10% is much too low"*. Indeed, they find an average overcharge in the range of 31% to 49% and a median in the range of 22% to 25%. Connor (2010, 2014) reaches similar conclusions by using an extended sample of overcharge estimates.[23]

Connor and Bolotova (2006) conduct a meta-analysis of overcharge estimates in order to check whether they are sensitive to bias factors such as the estimation method or the publication source. They find that the overcharge estimates are indeed biased, but the bias factors do not explain much of the R^2. However, Boyer and Kotchoni (2015) point out that some characteristics of the overcharge estimates have been ignored by Connor and Bolotova. First, the overcharge data consists of estimates previously published by different experts and researchers. Therefore, they are potentially subject to model errors, estimation errors, and sample selection. Second, the sample contains a few number of influential observations that distort the descriptive statistics. For instance, roughly 1% of overcharge estimates are larger than 400%. When the 5% largest observations are left out, the sample average drops from 49% to 32%. These outliers must be treated carefully when using OLS regressions. A bias-correction methodology developed by Boyer and Kotchoni (2015) that appropriately deal with the previous data problems is reviewed in more detail below.

In criticizing the Canadian Competition Bureau, Kearney (2009) endorses the view of Connor and Lande (2008) by writing that "*[t]he assumption of an average overcharge of 10 percent also has been put into question by economic survey evidence which suggests that the median long-run overcharge is much greater than 10 percent.*"

Combe and Monnier (2011, 2013) analyze 64 European cartels and conclude that the fines imposed against cartels by the European Commission are too low. However, Allain, Boyer, and Ponssard (2011) using a dynamic rather than static model of cartel stability to reassess those results find that fines imposed by the European Commission in these 64 cartels are on average above the deterrence level.

[23] Some authors have shown that fines based on sales encourage cartels to set higher prices while fines based on overcharges would encourage lower prices. See among others Bageri, Katsoulacos and Spagnolo (2013) and Katsoulakos, Motchenkova and Ulph (2015).

Boyer and Kotchoni (2015) re-assess the study of Connor and Bolotova (2006) using an extended version of their database. This database contains some 1,119 overcharge estimates as well as several variables that describe the cartel episode (*e.g.*, duration, scope, geography, etc.). The database also includes variables that describe facts that are posterior to the cartel episode (*e.g.* estimation method or publication source). While the first group of variables is likely related to the true overcharge, the latter group clearly does not, but may capture potential estimation biases.

Boyer and Kotchoni (2015) employ a more appropriate econometric methodology that involves a trimming of the dataset in a first stage to remove unrealistically large estimates, and so-called influential observations,[24] and a Heckit (Heckman, 1979) regression analysis in a second stage to control for the potential truncation bias.

They find mean and median bias-corrected overcharge estimates of 16.7% and 16.2% for the subsample of effective cartels (with strictly positive overcharge estimates), and of 15.5% and 16.0% for the whole sample. These representative bias-corrected overcharge values are significantly lower than the corresponding mean and median of the raw overcharge estimates data. Building on those results, Allain et al. (2015), considering a more recent database at the firm level, conclude that the majority of firm-level fines imposed by the European Commission over the period 2005-2012 are above the deterrence level.

Comments

We presented and discussed challenges and pitfalls faced by public policymakers and antitrust authorities in their fight against naked cartels through the determination of financial fines, namely the sometimes conflicting objectives of restitution and deterrence, the identification of the relevant cartel duration, the characterization and estimation of but-for prices and typical cartel overcharges, the assessment of the probability of detection and conviction, and the proper modeling of cartel dynamics.

Both the harm caused by cartels – or the illicit profits gained – and the probability of detection pose significant measurement problems and are sources of challenges and pitfalls. In fact, a 2017 ICN report[25] also recognizes that

[24] Based on the Kullback-Leibler divergence between two distributions (see Kullback and Leibler, 1951), which tells how dissimilar those distributions are. The probability of an overcharge estimate being larger than some value θ conditional on variables that describe the cartel episode and the same probability conditional on both those variables and variables that are posterior to the episode are quite close for $\theta \in [0\%, 65\%]$ but diverge sharply for $\theta > 65\%$. The divergence analysis thereby suggests that the presence of biases is an important problem for estimated overcharges above 65%.

[25] International Competition Network - Cartels Working Group, *Setting of fines for cartels in ICN jurisdictions* (2017).

"The link between the theory of optimal fines for deterrence, and actual methodologies used to set fines is often tenuous, partly because the statistical information needed to set fines at an economically optimal level (amount of excess profit gained, likelihood of detection) is very difficult to obtain."

We showed that the bias-corrected estimation of cartel overcharges and the modeling of cartel dynamics have significant impacts and lessons on the level of deterrent fines. Those developments bring theoretical and empirical support to the administrative rules used by European and American antitrust authorities, among others, in determining cartel fines.[26]

Specific Investments, on-the-job training, and productivity growth

Cormier et al. (2019)[27] observed a weaker than expected wage growth in advanced economies since the last financial crisis, compared with previous recovery periods. They examine a set of likely factors which could explain the weakness of wage growth in addition to the standard determinants (i.e. unemployment rate, core inflation, and trend labour productivity) of the wage Phillips curve analysis. Among these "residual" drivers potentially impairing wage growth, the authors refer to cyclical underemployment with a focus on involuntary part-time (IPT) and marginally-attached (discouraged) workers, changing inflation dynamics, unionization rates, population aging, labour market reforms, migration, trade liberalization, technological change, and, more interestingly here, monopsony power.

Based on a review of literature and an analysis of the residuals of wage Phillips curve regressions, the authors investigate the contribution of these factors to wage growth. Their model uses quarterly labour market data of 14 advanced economies between 1981 and 2017, including the U.S., Canada, Australia, the UK, and leading European countries. Estimates are provided both at the country and panel levels.

The study shows the following results, among others. Inflation dynamics contributed to weaken wage growth in Europe, as core inflation and inflation expectations were low. Unionization rate has a significant positive impact on wage growth and therefore, declining union membership over the past 30 years may have led to slow wage growth in the long term. An aging workforce

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[26]An additional and important factor is the efficiency of antitrust authorities and courts in avoiding Type I (convicting a law-abiding party) and Type II (releasing a guilty party) errors. The higher this efficiency is, the larger the deterrence effect of a given level of fining punishment will be. See Boyer and Porrini (2008) who analyze the related effect of court efficiency in avoiding Type I and Type II errors in determining the level of firms' liability in industrial or environmental accidents.

[27] Cormier, A.-K., Francis, M., Hess, K. and Poulin-Bellisle, G. (2019). Drivers of weak wage growth in advanced economies. Bank of Canada, Staff Analytical Note 2019-3. https://www.bankofcanada.ca/wp-content/uploads/2019/01/san2019-3.pdf

as well as a higher share of young workers in the labour force tend to have a positive impact on wage growth. Labour market reforms implemented especially in Europe, allowing firms to make adjustments on wages and lay-offs more easily, might be an explanation for the post-crisis weakness observed in wage growth.

According to the authors, it is unlikely that trade liberalization over the past 25 years contributed to the recent weakness in wage growth. The role of technological change as well as the impact of immigration on wages appears more ambiguous. The literature suggests an increase of monopsony power in labour markets, meaning weaker worker bargaining power. Rising practices to restrict worker job mobility (in addition to non-compete and no-poaching terms in large firms) were observed especially in the U.S., which contributed to reduce wage growth in the country. Higher employer concentration seen in advanced economies might also be an explanation for lower wage growth.

The last three results are of particular importance in the context of labour markets. But all results are pertaining to macro phenomena rather than to specific job markets.

In assessing the role of the rising practices tending to restrict worker job mobility such as non-compete and no-poaching, one must consider if firms engage in specific training programmes whose benefits are lost if the workers who benefited from them leave the firm for a direct competitor where the acquired competencies and be profitably used. There is a free riding problem that may advantage the competitor who has no such investment in training programme. Unless some form of restricted mobility is designed and enforced, a free mobility policy designed to increase competition intensity may backfire into lower on-the-job training investments, reduced productivity, and lower wages.

In a speech before the Economic Club of Indiana in 2016, Jerome H. Powell, who at the time was a member of the Board of Governors of the Federal Reserve System, claimed that “productivity has been increasing at a dismal pace, compared with virtually any period in the postwar era.” He offered an explanation to the effect that a portion of the productivity slowdown is undoubtedly due to low levels of investment by businesses. These low levels of investments by business are, in his words, due to the fact that “the financial crisis and the Great Recession left firms with excess capacity, reducing incentives to invest.” Therefore, looking forward, he mentioned that “if businesses expect slower growth to continue, that will also hold down investment.” Powell went on saying that “the other important factor is the decline in what economists call total factor productivity, or TFP, which is the part of productivity that is not explained by capital investment or increases in the skills of the labor force. TFP is thought to be mainly a function of technological innovation and efficiency gains.”

Powell offered the following policy statements to cure this languishing productivity outlook: "We need policies that support productivity growth, business hiring and investment, labor force participation, and the development of skills. We need effective fiscal and regulatory policies that inspire public confidence. Increased spending on public infrastructure may raise private-sector productivity over time, particularly with the growth of the stock of public infrastructure near an all-time low. Greater support for public and private research and development, and policies that improve product and labor market dynamism may also be fruitful."

Powell makes no comment on potential problems of insufficient competitive intensity on labour markets and do not see this as a problem or as a factor explaining the low productivity growth in the US and abroad. And low productivity growth implies low wage growth. It is important to keep that in mind if the Competition Bureau is to eventually develop an interest in labour market competitive status.

Conclusion: The central role of competition

The model of competitive markets may derail if it is poorly framed and left to run itself. Competition is beneficial and generates efficiency and effectiveness, growth and wellbeing, This effective competition will be resisted by all who benefit financially, economically, or politically from its deficiencies or abuses, whether of the fly-by-night or crony capitalist variety or ill-informed would-be defenders of the public good who long for command-and-control, or consumers happy to take advantage of a bargain at the wrong price (free, for example) even if this bargain will ultimately harm their wellbeing and that of their fellow citizens.

The true source of wealth and wellbeing for all is not the low prices / high wages but the right prices/wages, i.e. prices and wages that send the right signals of scarcity to workers, consumers, buyers, sellers, and producers. These prices and wages are competitive prices and wages, and so they are bounded or set by competition or by mechanisms that emulate competition.

In the next paragraphs, let us concentrate on prices, to ease the presentation.

Antitrust authorities should place more emphasis, and have more resources at hand, for maintaining competition in the medium and long term by limiting the scope of legal justifications for mergers and acquisitions on the basis of potential but mostly unproven efficiency gains or assumed economies of scale.[28]

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[28] This is well illustrated in Canada by the case of *Tervita* (Tervita Corp. v. Canada Commissioner of Competition 2015 SCC 3). The Supreme Court of Canada ruled that the merger could proceed because the Commissioner had not provided a quantitative measure of its impact on competition. https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/14603/index.do. In so doing the Supreme Court substantially increased the importance of economic

Two examples of policies, chosen from among many, will suffice to illustrate this policy. To concretely recognize the presumption of the benefits of developing and fostering competition in the medium and long term rather than on short-term efficiency gains,

- There should be a reasoned prohibition of requirements for professional licensing and certification by professional bodies where individuals are not in direct contact with the generally uninformed or poorly informed public;

- There should be a reasoned defense and application of relevant total-cost sharing rules rather than avoidable-cost sharing ones, in cases relating to predatory pricing practices, and, mutatis mutandis, in cases relating to predatory hiring on labour markets in order to focus on maintaining competition.

A fundamental reform program to ensure competitive labour markets could require or at least benefit from an encompassing New competition-prone Economic Compact (NEC). This credible reform program stresses a reaffirmation of the specific respective roles of the public sector and the competitive sector, the latter including the for-profit as well as not-for-profit private business sub-sectors. The program stresses as well the development of competitive pricing and markets as well as a sound regulatory framework that is both incentivizing and constraining.[29]

A New competition-prone Economic Compact (NEC) in five points

In this New competition-prone Economic Compact (NEC), the right signals are thus sent to business and NGO entities to allow them to pursue their for-profit or not-for-profit mission by producing goods and services that are useful to customers, to provide their employees with total compensation that is competitively aligned with the value of the best alternative use of their labour services, and to compensate their suppliers of both intermediary goods and services as well as their suppliers of financial capital at a level that is competitively aligned with the value of the best alternative use of the goods provided and services rendered and of the financing provided and invested by these suppliers.

The term supplier is here used broadly, to include providers of labour, providers of environmental and social goods and services, and providers of financial capital (in the form of either loans or equity) as needed by businesses to produce the goods and services they offer

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analysis—specifically quantitative economic analysis—in the evaluation of mergers, but at the same time it reduced the presumption of a beneficial maintenance of competition. For a more detailed examination of this case, see Marcel Boyer, Thomas Ross, and Ralph Winter (2017), "The rise of economics in competition policy: A Canadian perspective," *Canadian Journal of Economics* 50(5), 50th Anniversary Issue, December 2017, 1489–1524.

[29] Adapted from M. Boyer, "Beyond ESG: Reforming Capitalism and Social-democracy," *Annals of Corporate Governance* Vol. 6, No. 2-3, pp 90–226. http://dx.doi.org/10.1561/109.00000033; WP version CIRANO 2021s-03 (revised August 30 2021) https://cirano.qc.ca/files/publications/2021s-03.pdf

customers. A sufficiently intensive competitive environment will drive economic profits (but not accounting profits)—defined as the expected difference between revenues and all costs, including the appropriately measured costs of borrowing and equity—to zero.

Moreover, a separation of business from politics is an important component of NEC.[30] Robust competition will ensure the emergence of efficient companies and the disappearance of inefficient ones. Competitive markets for factors of production and for end products (labour, goods and services) foster an accurate accounting of value, ensuing that businesses pay their factors at the rate of their best alternative usage and bring to markets goods and services of value to final clients, consumers and businesses. When all factors of production including labour are, directly or indirectly, compensated at their competitive value and all final products are sold, directly or indirectly, at competitive prices, firms, in competition with each other, including innovative new entrants, will be forced to either use the optimal mix of factors correctly compensated at their best alternative value (opportunity cost) to produce an appropriate set of final products generating net social value and creating wealth, or go bankrupt. Companies have no business being involved with politics, especially not if they are seeking anticompetitive advantages.

More generally, the role of CEOs is to lead businesses, not society or government. And the role of social or political leaders is not to run businesses. To each his own profession and the cows, goats, and more, will be fine.

The following five policy recommendations would foster the emergence of NEC.

1.A Develop and implement ESG-type public policy programs aimed at promoting / developing / maintaining competitive prices and markets by encouraging companies to express in their mission statement their reluctance / opposition to do business with firms that pursue anti-competitive practices in labour markets, factor markets, or product and service markets.

To the extent that effective competition, competition-emulating institutions and regulations, and competitive wages and prices (including carbon levies and "taxes" and their equivalents in other areas) are important to fostering incentives, innovation, productivity gains, and social welfare improvements, an ESG-like requirement for companies in the NEC is that they refrain from actively transacting and collaborating with companies that profit from their anti-

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[30] See Luigi Zingales, *A Capitalism for the People – Recapturing the Lost Genius of American Prosperity*, Basic Books 2012; Vivek Ramaswamy, "The Stakeholders vs. the People," *Wall Street Journal*, February 12, 2020; and also Raghuram G. Rajan (2019), *The Third Pillar: How Markets and the State Leave the Community Behind,* Penguin Press.

competitive conduct. This is because the all-inclusive wages paid for labour as well as the prices of products, goods, and services bought and sold by the latter companies do not represent a credible signal of their value or scarcity.

One of the ambitions of the NEC should be procurement and investment policies that penalize wage and price manipulations. In this vein, it would be of interest to develop a wage and price manipulation index by industry, sector, region, and even country. Wage and price manipulations, whether originating from the private sector or the government sector, are irreconcilable with the NEC.

The true economic ethic is first and foremost an ethic of efficiency and effectiveness based on competitive wages and prices.

1.B Develop and implement ESG-type public policy programs aimed at promoting non-union types of labour representation and participation in companies and encouraging companies to express in their mission statement their willingness to give workers an ear and a voice defining medium and long term business strategies including mergers and acquisitions projects that may affect labour services hired by the firm.

I discussed above labour representation in firms. The traditional union-based representation is more conflictual than necessary and efficient. A presence of labour at different tables within the firm may prove to be a better proper way to make sure that the firm is not induced to use its market power in any on labour markets to develop anti-competitive actions or practices.

2. Entrench in competition law and policy a predisposition to foster the development and protection of competition, to shield competitors and new entrants against potential anti-competitive practices of established businesses, to strengthen legal constraints (competition law) on restrictive trade practices (refusal to deal, predatory pricing and hiring, price fixing and wage fixing, tie-in sales, abuse of dominance and market power, etc.), so as to allow creative destruction to play its role.

Philippe Aghion and his collaborators[31] make a convincing case that creative destruction is a fundamental factor of innovation, growth, and social wellbeing. In this respect, quarterly data from the U.S. Bureau of Labor Statistics, discussed above, reveal to what extent net job creation is the result of a complicated interaction of gross job gains and gross job losses. In the table I presented above, we observe that a net job created during the period 1992.III to 2008.I (62 quarters) represented an average of 19.4 jobs created and 18.4 jobs lost in private sector

[31] Philippe Aghion, Céline Antonin, Simon Bunel, *The Power of Creative Destruction: Economic Upheaval and the Wealth of Nations*, Harvard University Press, 2021.

establishments, while each net job created in the immediate post recession period from 2010.II to 2013.IV (15 quarters) was the result of an average of 11.9 jobs created and 10.9 jobs lost. During the more recent period from 2014.I to 2019.IV (24 quarters), each net job created was the result of 14.3 jobs created and 13.3 jobs lost. The process of job gains and job losses is complex and involves large shifts of employment throughout the economy. This is illustrative of creative destruction at work.

This creative destruction processes can be undermined by two public policies: the use by competition or antitrust authorities of the concept of avoidable cost to determine whether a firm has engaged in abusive or illegal predatory pricing, and the use public funds to provide direct and indirect subsidies to businesses to either improve their competitiveness, shield them from competitors, or support part of their investment costs.

As to the first policy, the NEC approach would be to replace the avoidable cost criterion,[32] which is easy to spin and the definition of which is a perennial source of conflicts,[33] with a simpler total cost sharing formula among the firm's products, a sharing formula that is more amenable to competition: Each product of a company, each good or service or node in a network (airline, for example) would be assigned a share of the total coast, set at the lowest amount that will yield a total of 100 per cent when they are all summed. This change would, admittedly, reduce the efficiency of resource allocation in the short term in favour of a more robust competition in the long run.[34]

With regard to the second policy, the NEC approach would be to auction off individual government assistance programs, transferring the responsibility for providing the subsidy, loan, loan guarantee, or equity injection to a private local or international financial consortium. In exchange for a premium paid by the government to the winning consortium, the latter would

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[32] According to the avoidable cost criteria (Baumol), a price is predatory if it does not allow a company to cover the costs that it would avoid if it did not supply the good or service in question. See Lina Kahn (2017), "Amazon's Antitrust Paradox," *The Yale Law Journal* 126(3), 710-805. Khan, who at 32 became Chairperson of the FTC, analyses, in her highly influential article, Amazon's growth strategy in terms of predatory pricing and common carrier responsibility regulation. See also Marcel Boyer, Thomas W. Ross, Ralph A. Winter, "The rise of economics in competition policy: A Canadian perspective", *Canadian Journal of Economics* 50(5), 50th Anniversary Issue, December 2017, 1489-1524.

[33] https://www.theglobeandmail.com/report-on-business/rivals-agree-competition-laws-flawed/article18420014/; https://www.theglobeandmail.com/report-on-business/air-canada-charged-with-predatory-pricing/article1178833/; https://www.stikeman.com/fr-ca/savoir/droit-canadien-concurrence/canadian-ruling-on-avoidable-cost-test-diverges-dramatically-from-us-approach

[34] See Marcel Boyer (2017), "Challenges and Pitfalls in Competition Policy Implementation," Joint State of the Art Lecture (Canadian Economics Association, Atlantic Canada Economics Association, CIRANO, Phelps Centre for the Study of Government and Business, and Rotman Institute for International Business)**, St. Francis Xavier University, Antigonish, NS, June 4, 2017.** https ://www.youtube.com/watch ?v=u9LUdeYe4dQ&t=1560s at 1:10:25.

assume responsibility for the disbursements and benefit from repayments as stipulated by the terms of the government assistance program.[35]

The main reason for auctioning off these government assistance programs is to nip in the bud the ubiquitous risk of crony capitalism or collusion, at the expense of not only the intensity of competition itself, but also of workers, citizens, taxpayers, and business—regardless of how lofty the intentions voiced by the government and the various stakeholders. This is transparency at the service of competition.

3. When analyzing proposed mergers and acquisitions, opt for a relative weight ratio greater than one for the relative impacts of reduced competition and efficiency gains; for example, a ratio of 2 to 1 or even 3 to 1.

In their contribution to the 50th anniversary edition of the *Canadian Journal of Economics*, Boyer, Ross and Winter (2017)[36] claim that:

> "Provisions to protect Canadians from anticompetitive mergers have been part of Canadian competition law since the passage of the first Combines Investigation Act in 1910, which replaced an earlier law that had focused solely on price-fixing and related practices. Canadian merger law, however, was almost nonexistent until the passage of the Competition Act in 1986… Under the Canadian standard, consumers can be harmed by the loss of competition attributable to the merger and yet the merger may be allowed if the gains in efficiency "will be greater than, and will offset" the effects flowing from the loss of competition… Perhaps the most notable of all merger cases under the new law was the Superior Propane (2003) case. In defending this merger, the efficiency exemption was invoked by the merging parties and the Tribunal had to address directly the welfare standard to be applied. Despite new arguments from the Commissioner that the appropriate standard is not the total welfare standard, the Tribunal initially took the view that the total welfare standard was exactly the right basis on which to trade off harms to competition and efficiencies … "

Balancing the potential harm caused to consumers, workers, or to competition itself by a merger or acquisition against potential efficiency gains from economies of scale, scope, network and the like is certainly a very difficult task. Among the challenges to be dealt with, the fact that

[35] Marcel Boyer (2017 above, note 28) https://www.youtube.com/watch?v=u9LUdeYe4dQ&t=1560s at 1:15:40. Also see Boyer (2020), "A Pervasive Economic Fallacy in Assessing the Cost of Public Funds," *Canadian Public Policy* (forthcoming); the WP version - CIRANO 2020s-63, December 2020. http://cirano.qc.ca/files/publications/2020s-63.pdf.

[36] Marcel Boyer, Thomas W. Ross, Ralph A. Winter, "The rise of economics in competition policy: A Canadian perspective", *Canadian Journal of Economics* 50(5), 50th Anniversary Issue, December 2017, 1489–1524.

the analysis is of “potential,” not yet realized, impacts must surely be one of the most difficult. Another challenge is determining what criteria to use for “balancing” the impacts, requiring the weighting of impact measures of varying quality.

In taking an unequivocal position in support of competition in the medium and long term, the NEC prescribes relative weights of 2 to 1 for the reduction of competition versus effectiveness and efficiency gains, by whatever means the impacts are measured. This would favour labour providers more effectively and efficiently than introducing actions and policies to artificially protect workers.

4. Clearly define the core competencies of the governmental/public and competitive/private sectors in order to promote competition in the public and social goods and services (PSGS) sector.

Traditional “social democracy” programs are subject to intense scrutiny today. Criticism is anchored in the widespread perception that a combination of efficient administrations and efficient markets is required to ensure maximum growth and to optimize overall wellbeing.

We need something new—a revitalized social-political-economic philosophy – together with an efficient set of policies designed to produce, distribute, and deliver an appropriate array of PSGS: A model in which goals and objectives are clearly defined; in which the ways and means are chosen on the basis of their relative effectiveness and efficiency; in which political and economic rights and freedoms, including the right to challenge and replace existing suppliers of PSGS, are reaffirmed; and in which transparent competitive processes – the ultimate embodiment of equality of opportunity – innovation, and motivation, are encouraged.

This new model is the NEC. It has an ambitious goal that may even seem a little utopian. It is not! The NEC model is based on a logically consistent framework with concrete political implications and applications. The necessary foundations, tools, and instruments are already in place. However, a thorough revamping of governments’ activities and priorities is necessary: This paradigm shift is slow in materializing. The NEC model opens the door to this change.

If the ways and means used are inefficient (in that they do not achieve the intended results) or ineffective (in that they do not achieve these results at the lowest possible social cost), then it is possible to produce, distribute, and supply more PSGS and thus increase wellbeing. The concept of competition comes into play to ensure a realistic and rational delivery of the promises of social democracy.

As the name indicates, the government sector answers directly to the government. In the NEC, the main responsibilities of this sector are first, to identify citizens’ needs for PSGS, both in terms of quantity and quality; second, to determine the characteristics of PSGS; third, to arbitrate, as required, between different baskets of PSGS and between different coalitions of citizens according to available resources; and fourth, to manage contracts and partnerships for the production, distribution, and delivery of the chosen basket of PSGS. These functions of identification, design, arbitrage, and choice in terms of the baskets of PSGS are closely linked and are brought about through the process of democratic elections.

The role of the competitive sector is to produce, distribute, and supply PSGS—as well as private goods and services, of course—in the most efficient way possible, using the best available technologies, human resources, and organizational structures and framed by well-defined incentive-compatible contracts with the government sector.

5. Develop efficient incentive mechanisms and institutions, including direct and transparent income and wealth support policies, to help individuals, workers, as well as firms and organizations to better adapt to changes caused by creative destruction, while avoiding the development of a culture of dependence among individuals, workers, and businesses / organizations.

A significant source of opposition to socio-economic change, even when this change appears desirable, is the absence of mechanisms or institutions to help individuals and businesses cover the direct costs they incur when adapting to the changes. The following three factors are equally important for social wellbeing: first, flexibility in adapting to altered conditions and the willingness to take on new challenges created by exogenous and endogenous changes in a volatile socio-economic environment; second, the education sector's capacity to meet the needs of industry and society, including labour, in terms of assorted skills and competencies; third, the scale and effectiveness of R&D investments in generating new ideas and useful products and services.

Hence, adaptability in a volatile environment must be a characteristic of all sectors producing and distributing private as well as PSGS. Flexibility counters inertia, which can be triggered by the fear of change. Unless people understand the reasons for change and are given tools to manage it, they will resist any change in the economic and political arenas. Therefore, the level of social receptiveness to change will depend on the existence of institutions (tools and means; organizations and markets) allowing individuals, workers, companies, and the various levels of government to efficiently manage the risks and opportunities represented by volatility in their socio-economic environment. A proper set of institutions and instruments for managing the risk of change is a prerequisite for a flexible society, that is, for a society in which innovation, both technological and organizational, thrives, favouring productivity gains and workers' ability to justify higher real wages.

It is normal and expected that, in any efficient society, a certain number of individuals will end up making decisions that prove, *ex post*, to have disastrous and socially undesirable, even unacceptable, outcomes.

Similarly, it is normal and expected that some workers may incur significant personal costs of otherwise beneficial mergers and acquisitions. If those beneficial mergers and acquisitions create disruptions directly affecting workers, it is socially efficient to address those costs and disruptions through different forms of compensation to be in part covered out of the benefits of the merger and acquisition considered.

Moreover, a government-run income and wealth support program is not only unavoidable, but also essential to growth and overall social wellbeing. Such government programs must be efficiently designed and implemented. In lieu of the paternalistic control and manipulation of prices/wages that have often been the preferred policy in the past, the NEC model advocates implementing direct and transparent policies of income and wealth support with strong incentives for the beneficiaries to exit them. Moreover, it is desirable that those income and wealth support mechanisms not only be integrated, direct, efficient, and incentivizing, but also administered by a single government authority in order to increase governmental accountability in this field.[37]

A NEC policy for the displaced and disrupted, the needy, the unlucky, and the poor must be as compassionate as possible, but for the wellbeing of the beneficiaries themselves it must be designed to prevent developing dependence. A properly designed income and wealth support program can be compassionate without creating dependence. It is imperative that beneficiaries, be they individuals, companies, or industries, be properly incentivized to leave government income and wealth-support programmes as quickly, successfully, and efficiently as possible, allowing better and more generous programmes to be designed and implemented.

[37] There are obvious links between income and wealth support policies and optimal taxation. The theory of optimal taxation studies the design and implementation of a tax system that minimizes the distortions caused by taxation while achieving desired levels of redistribution and revenue. See Florian Scheuer and Ivan Werning (2016), "Mirrlees meets Diamond-Mirrlees", NBER Working Paper 22076, for a relatively general discussion of optimal taxation.