Concurrent Sourcing in Public Services: Theory, Evidence and Avenues for Future Research

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Introduction

What is the best governance mode (i.e., hierarchy or the market) to provide public services? The choices of governance modes have been scrutinized by scholars in public management and public administration over the last several decades (Kettl, 1993; Savas, 2000; Sclar, 2000). The question of the governance mode of public service provision is typically treated in either-or terms, namely, 'making' or 'buying', and favoring one governance mode over another usually depends on the characteristics of the transaction (Williamson, 1975). Recent research in management (Bradach and Eccles, 1989; Parmigiani, 2007; Mols, 2010b; Gulati et al., 2013; Heide et al. 2014, Krzeminska et al. 2013) and in public administration (Hefetz et al., 2014; Miranda and Lerner, 1995; Porcher, 2016; Warner and Hefetz, 2008) has begun to explore the possibility of organizations combining different governance modes to increase knowledge and performance. The strategy consisting of splitting the total volume being sourced across multiple modes is termed concurrent sourcing (Parmigiani, 2007).[1]

The analysis of concurrent sourcing does not differ from the analysis of make-or-buy decisions, which has been largely studied in public administration (Hefetz and Warner, 2012; Levin and Tadelis, 2010). Governments' choices to contract out the provision of public services can be explained by five different theoretical frameworks: transaction cost economics (Williamson, 1975), the resource-based view (Barney, 1991; Penrose, 1959; Wernerfelt, 1984), the agency

[1] The literature also refers to the combination of difference governance modes to source an input as dual sourcing (Adelman, 1949), partial integration (Porter, 1980), tapered integration (Azoulay, 2004) or plural sourcing (Gulati et al., 2013).

theory (Jensen and Meckling, 1976; Fama, 1980; Eisenhardt, 1985), complementarities (Milgrom and Roberts, 1990; Milgrom and Roberts, 1995) between sourcing modes and constraints in production. Transaction cost economics stipulate that the governance structure of a given transaction is a function of the relative costs of transacting in markets and organizing procurement within the government (Brown and Potoski, 2003b; Hefetz and Warner, 2012; Sclar, 2000). The resource-based view of the firm insists on government capabilities as a key factor explaining the decision to use the market rather than hierarchy (Brown and Potoski, 2003a; Levin and Tadelis, 2010). Agency theory (Fama, 1980) focuses on monitoring bilateral relations between the buyer (the agent) and the supplier (the principal). As in transaction cost economics, mitigating information asymmetry is key to decreasing opportunism and inciting the agent to perform in the desired way. Finally, complementarity effects between sourcing modes refer to a situation in which the performance consequences of a choice depend on other choices (Milgrom and Roberts, 1990; Milgrom and Roberts, 1995). In public service provision, complementarity refers to the condition in which the marginal benefit of procuring a good or a service depends on the level of in-house sourcing, and vice versa (Gulati et al. 2013).

Another question is how concurrent sourcing can impact performance. While research in public administration has shown why concurrent sourcing is adopted, less is known about its performance outcomes (Miranda and Lerner, 1995; Hefetz and Warner, 2012; Porcher, 2016). Concurrent sourcing can increase the buyer's monitoring power, provide relevant measurement benchmarks and decrease opportunism (Heide et al. 2014; Mols, 2017) by breaking information asymmetry. It might also undermine the effects of relational norms between governments and private suppliers due to a threat of backward integration (Porter, 1980; Heide et al. 2014), and give insurance to public administrations to deal with private suppliers (Adelman, 1949; Hefetz et

al. 2004; Porcher, 2016). Because concurrent sourcing in public services supposedly improves monitoring by governments, it enhances transactional performance (Ouchi, 1979). Mols (2010a) summarizes the different expected impacts of concurrent sourcing on performance. However, a thin literature provides empirical tests of how concurrent sourcing might affect performance (Porcher, 2016).

Research on concurrent sourcing opens new avenues for research in the organization of the provision of public services. As Krzeminska et al. (2013) and Heide et al. (2014) note, few research outputs focus on different concurrent sourcing forms, i.e., concurrent sourcing with multiple organizations or concurrent sourcing with more than 2 governance forms, e.g., making, buying and using hybrid forms at the same time.

The remainder of the chapter is structured as follows. The first part presents theories that have been used to explain concurrent sourcing. The second part reviews some of the most important empirical results in the literature on public management and public administration. The third part introduces avenues for future research.

1. Theory and Evidence from the Literature

Transaction Cost Economics

In transaction cost economics, the governance mode of a given transaction is chosen via a comparison of the bureaucratic costs of the hierarchy (in-house production) with the use of the market (external suppliers) for the production of the input. Both governance modes have advantages. The market offers powerful incentives, no administrative control and is efficient for autonomous adaptation (Williamson, 1991). Hierarchy is efficient for cooperative adaptation and provides opportunities for administrative control but offers low-powered incentives. Because of

bounded rationality and opportunism (Williamson, 1985), the key problem to be solved to find the right governance mode is determining when the transaction costs of using the market are larger than those of using hierarchy.

According to Williamson (1996), asset specificity is the main driver of transaction costs. Asset specificity means that an asset's value is reduced substantially if a complementary asset that is contracted for is unable to be secured. The general result from the literature is that hierarchy is likely to dominate temporary contracting when either of two agents in a relationship makes relationship-specific investments (Klein et al. 1978; Williamson, 1979). If a buyer makes investments in assets that are dedicated to a relationship with a particular seller, then there is a scope for opportunistic behavior in short-term contracts. By the same token, it would be costly and difficult for the buyer to replace the supplier if the contract were to be suddenly terminated.

Public services are not characterized by the same level of transaction costs. Brown and Potoski (2005) survey public managers' perceptions of asset specificity for 64 public services. Their findings show that asset specificity is high for services such as electricity utility management, the operation of airports, the operation and management of hospitals, sewage collection and treatment and water treatment. In contrast, vehicle towing and storage, secretarial services and buildings and ground maintenance have low asset specificity. Levin and Tadelis (2010) build an index of contracting difficulties for public services based on three dimensions. They ask public managers to rank 30 public services on the difficulty of measuring and monitoring the provision of quality, how routine or unpredictable the requirements of the service are and the difficulty in replacing contractors due to specificity or lack of competition. They find that the most difficult services to contract out are crime prevention/patrol, inspection/code enforcement and

drug/alcohol treatment programs. In contrast, utility meter reading, vehicle storage and street/parking lot cleaning are easy services to contract out.

Transaction cost economics is a powerful theoretical framework for studying make-or-buy decisions. Nevertheless, dual forms, such as concurrent sourcing, have either been excluded from its analytical framework or have been considered to be hybrids (Williamson, 1991), i.e., a governance mode *combining* the characteristics of hierarchy and the market rather than using *two different governance modes* at the same time. Parmigiani (2007, p. 289) argues that 'moderately asset-specific goods will be concurrently sourced'. Authors who have considered governance modes to be continuous, including Dutta et al. (1995) and Heide (2003), conclude that the risk of holdups can be deterred by increasing internal production. Internal production is thus a safeguard used to decrease the level of transaction costs.

The Resource-Based View

The resource-based view suggests that organizations with different capabilities (what they do well) and resources (what they have) have different production costs. Indeed, organizations may seek to expand or acquire other firms to leverage their internal capabilities or exploit superior management capabilities (Penrose, 1959; Wernerfelt, 1984). According to the resource-based view, organizations develop certain capabilities or know-how that is embodied by managers and employees or in organizational routines. Capabilities are costly to grow internally and difficult to transfer in a market. As a result, organizations tend to directly perform activities in which they have superior capabilities. Jacobides and Hitt (2005) distinguish between productive capabilities, i.e., productive efficiency, and capabilities of governance, i.e., the creation of value by linking hierarchy and the market.

Governments with productive capabilities can produce at lower costs (or higher quality) than when they use suppliers will use hierarchy and even supply goods for other governments whose capabilities do not allow them to produce at lower cost. Regarding transaction costs, the literature on capabilities has often considered governance modes as corner solutions (Parmigiani, 2007).

Capabilities of governance are often understudied, but they validate the use of concurrent sourcing. Indeed, organizations can be adept at performing functions because of history and might gradually use concurrent sourcing when they enter or quit any given activities. We interpret capabilities in governance more broadly as capabilities to manage different sourcing modes. An important capability in government contracting is the ability to write and administer contracts (Brown and Potoski, 2003a; van Slyke, 2003). Familiarity and experience in contracting can lower the costs of using contracts for any given service because governments might be able to better anticipate possible future contingencies that may affect the contractual relationship. Governments with capabilities of designing contracts will be better equipped to adequately safeguard against the contractual hazards that can emerge (Mayer and Salomon, 2006). In his study of concurrent sourcing in water public services, Porcher (2016) finds that municipalities with prior experience in designing and operating complex and incomplete contracts may find such contracts less costly to write, be more skilled at enforcing their requirements and be more accustomed to *ex post* adaptation. These contracting capabilities have a substantial and significant effect on concurrent sourcing, which appears to be a means of decreasing costs when there are gains for trade.

Agency theory

Agency theory (Jensen and Meckling, 1976) is a widely used theoretical framework to explain the relationship between two parties, the principal and the agent. The former must determine an efficient contract for governing the relationship with the agent, and the latter is assumed to be opportunistic and difficult to monitor. Because of information asymmetry regarding the motivations of the agent, the principal must find mechanisms to reveal this information or to design incentives to align the interests of the agent with his own interests.

An important problem in sourcing decisions is information availability. Buyers might have access to some information, but using concurrent sourcing gives them much greater know-how. The buyer might know whether poor service quality is due to genuine service provision problems or to supplier cheating. Heide (2003) believes that concurrent sourcing is particularly useful for addressing information asymmetry, especially in situations with large measurement difficulties. The principal can thus obtain some information on the production process before choosing and negotiating with suppliers to avoid adverse selection and can control the performance of the supplier in a more efficient manner to avoid moral hazards, e.g., because it becomes easier to design incentives (Holmstrom and Milgrom, 1994). Concurrent sourcing is thus a way to not only address adverse selection and moral hazards but also provide buyers with performance benchmarks.

Monitoring is also more effective in a concurrent sourcing context because of the potential for volume substitution. The principal can credibly penalize opportunism by shifting externally sourced services in-house. Concurrent sourcing can thus play a disciplinary role (Ouchi, 1979). Heide et al. (2014) argue that monitoring is more effective within concurrent sourcing than within outsourcing because the buyer will be more legitimate at enforcing contracts. The buyer's "corrective suggestions" will be more accepted by the supplier. Legitimacy is an important

feature of monitoring because monitoring can offend a party's sense of autonomy and thus may trigger reactance behaviors by the monitored party (Ghoshal and Moran, 1996). This type of reaction is illustrated in a study by Halaby (1986), who describes how engagement in reactance behaviors when a governance practice is at odds with legitimacy beliefs can decrease the value of a relationship. Halaby (1986) calls 'authority costs' the costs that result when the supplier behaves in a manner that increases costs for the buyer, e.g., by cheating on quality.

Complementarities

Another factor influencing concurrent sourcing is the degree of homogeneity between transactions. More homogeneous transactions decrease the costs of internal control of similar transactions and make concurrent sourcing more likely. Milgrom and Roberts (1990) define complementarities as the marginal value of one variable depending on the value of another variable. In the context of public services, complementarities refer to the systemic gains linked to increased competition between sourcing modes. Concurrent sourcing, by creating implicit or even explicit competition between hierarchy and the market, gives stronger incentives to both internal and external producers of public services. In the strategy literature, Porter (1980) argues that concurrent sourcing gives the firm the ability to threaten backward integration to their suppliers. In the context of governments' services, governments might use concurrent sourcing not only to threaten backward integration to external suppliers, e.g., private firms, but also to provide a credible threat to its internal unit to avoid poor internal performance.

Complementarities can also create value by means of collaboration between internal and external suppliers to create valuable knowledge for the government and its suppliers (Bradach and Eccles, 1989). Knowledge sharing between internal and external suppliers can be used to generate

improvements in processes and enhance efficiency. Knowledge complementarities are particularly stronger in novel production technologies (Puranam et al. 2011), where much remains to be learned about the production process. In governments, knowledge sharing might be even more important because value appropriation is not the key focus (Poulsen and Hansen, 2016); rather, the focus is on value creation for the stakeholders.

Constraints on production

There are multiple constraints on production, such as scale or scope economics, volume uncertainty or technological uncertainty. In standard neoclassical economics, constraints on production are often seen as scale or scope economies, which might dictate the use of concurrent sourcing. Scale economies decrease the average cost per unit of the same good or service. Organizations with scale economies will produce at lower costs than external suppliers. Scope economics reduce the costs of producing two different goods because of the simultaneous use of shared inputs. With respect to concurrent sourcing, scope economies could be the result of using two different governance modes of production because they mobilize shared inputs, e.g., capabilities in production, or create complementarities.

Volume uncertainty makes it impossible to accurately predict demand and thus to plan production. Harrigan (1984) suggests that using concurrent sourcing can be a good strategy when demand is uncertain. For example, an organization with little internal capacity has a clear interest in using external suppliers. By using concurrent sourcing, organizations can also strategically control external forces, i.e., reduce dependence on and risk from suppliers and increase flexibility in production.

Porcher (2016) sees concurrent sourcing as a form of insurance to face volume uncertainty. He argues that in water markets, as in many commercial transactions, supply markets are relatively thin due to specific investments or capabilities required to manage contracts; thus, local governments have few potential external suppliers. This situation leads to the trade-off between specific investments required for the concurrent sourcing of a good and capabilities to negotiate with limited suppliers that are approximated with the model of concurrent sourcing. Such a result is connected to the findings of Hefetz et al. (2014), who show that concurrent sourcing in public services is more frequent when local governments want to reduce risks.

Technological uncertainty refers to situations in which it is difficult to identify which potential technology will be valuable and where there is a lack of capabilities in the organization to develop these technologies internally. Concurrent sourcing can be a means of decreasing the impact of technological uncertainty on performance.

2. Empirical evidence on concurrent sourcing in public administration

Measuring concurrent sourcing at the government level

Concurrent sourcing is measured in various ways, depending on the characteristics of the studied public services. Many studies examine contexts in which there are multiple public services. Brown and Potoski (2003) combined the ICMA dataset "Profile of Local Government Service Delivery Choices" with additional data from the 1997 U.S. Census of Government and a famous survey on asset specificity and measurability conducted by the authors to study sourcing decisions in US local governments. The ICMA survey asked a stratified random sample of municipal and county governments a battery of questions about which of sixty-four local services

they provided and their service production mechanisms. The response rate for the survey was just over 30%; 1,586 municipal and county governments responded in 1997. The authors distinguish among the following approaches: in-house provision; contracting out to private firms; joint contracting, which refers both to public and private provision and complete externalization to several vendors; contracting out to nonprofits; and contracting with other governments. The unit of observation is a public service. Brown and Potoski (2003) find that services that are more difficult to measure will be more often produced with joint contracting because they endow cities with the capacity to assess the relative quality and performance of a supplier. The limitation of the study is that the authors use dummy variables as the dependent variables and do not have a continuum of the level of concurrent sourcing.

Miranda and Lerner (1995) first noted the importance of "mixed delivery" when analyzing ICMA data from 1982. They argued that mixed delivery could be efficient as a form of benchmarking with the private sector and as a means to promote bureaucratic competition in-house. Building on this work, Warner and Hefetz (2008) use the term "mixed delivery" to reflect the continuing position of the public sector in the delivery process. Mixed delivery refers to the use of both direct public delivery and complete contracting out. The results from the ICMA dataset in 1992, 1997 and 2002 show an increasing use of mixed delivery by local governments (the ratio grows from 18% in 1992 to 24% in 2002). Concurrent sourcing is computed as the ratio of the number of services provided by mixed delivery to the total number of services provided. The authors interpret this trend as the will of public managers to integrate markets with public delivery and give greater attention to citizens' satisfaction in the service delivery process.

Using the 2007 results of the ICMA survey, Hefetz et al. (2014) investigate plural sourcing in a multiservice setting. The authors complemented the ICMA survey with a survey of 164 city

managers asking about their assessment of the following characteristics for each of the 67 services measured by the survey: level of competition in the market, asset specificity of the service, contract management difficulty, and citizen interest in the process of service delivery. An important detail here is that the authors define concurrent sourcing as a form of mixed delivery and distinguish between mixed delivery with for-profit firms and mixed intergovernmental delivery. The authors use a two-step model in which they first explain the sourcing mode and then the selection of the partner (public or private). They find that mixed contracting is more common with for-profit agents and contracting out fully is more common in contracts with other governments. When contracting with for-profit partners, mixed delivery helps reduce risk, promote market complementarities, and ensure attention to citizen interests, e.g., high levels of asset specificity or great management difficulties will result in higher levels of concurrent sourcing. One of the limitations of the study by Hefetz et al. (2014) is that they use a measure of concurrent sourcing at the local government level rather than at the service level, and they use a binary item with multiple repeats as a dependent variable, which is constructed as the ratio between the response level (number of times the alternative was chosen) over the number of trials (the number of services provided via contracts).

Beuve and Le Squeren (2016) studied the contracting decisions of 156 French municipalities of more than 10,000 inhabitants for seven public services (childhood care, collective catering, parking lots, street lighting, waste collection, water distribution and water treatment). Their dependent variable was the percentage of public services provided in-house. Their paper links this dependent variable, which theoretically ranges from 0 (all public services contracted out) to 1 (all public services managed in-house), with measures of ideology, asset specificity and citizens' sensitivity. The two latter indicators were measured via a survey sent to public managers in each

city. Their results show that past ideological factors have a strong impact on governance modes in the long run. The authors argue that the management of public services is path-dependent, i.e., strongly connected to choices made by previous officials. Their paper shows that governance choices realized 30 years ago have a strong impact on the configuration of public services procurement at the local level. They explain this lasting effect as the result of past ideology, which has a stronger ability to explain the make-or-buy decisions today than does the ideology of the current elected governor.

Measuring concurrent sourcing at the service level

Most studies examine concurrent sourcing at the government level and interpret concurrent sourcing as the degree to which the delivery of overall public services is "mixed", i.e., shared between direct provision and the use of third parties to deliver them. Few studies have investigated concurrent sourcing for a given service.

Porcher (2016) studies the decision to use concurrent sourcing and its impact on performance in French water public services. Concurrent sourcing is measured at the municipal level as the ratio of water imported from another city to water imported plus water in-house production. Porcher (2016) follows Parmigiani (2007) and considers governance modes to be continuous: concurrent sourcing, measured as the share of the production that is outsourced to an external supplier, can range from 0 (hierarchy) to 1 (pure market). Porcher (2016) combines transaction costs with capabilities and shows that capabilities mitigate the impact of transaction costs, i.e., governments with similar transaction costs tend to use more concurrent sourcing when contracting capabilities are more important. Contracting the capabilities of municipalities is an important driver of concurrent sourcing: municipalities with prior experience in designing and operating complex

and incomplete contracts may find such contracts less costly to write, be more skilled at enforcing their requirements and be more accustomed to *ex post* adaptation. However, because transaction costs differ from one municipality to another, contracting experience will have a declining effect when holdup risks are more important. The same effect is observed for production capabilities. Production capabilities foster internal production and hierarchy rather than external sourcing via the market. The effect is stronger when transaction costs decrease. Overall, concurrent sourcing can significantly result from both transaction costs and capabilities.

Lesqueren (2016) studies concurrent sourcing in the management of parking lots in a set of 97 municipalities in 2010. Lesqueren (2016) builds a first set of propositions explaining concurrent sourcing and particularly insists on political motives. She uses a multinomial logit model to compare three distinct alternatives: total internal provision, complete externalization, and concurrent sourcing. The results indicate that the likelihood of using concurrent sourcing increases with the level of fiscal stress of local governments. The author interprets the result as a strategic choice, i.e., concurrent sourcing is used to improve the financial accounts of the local government.

Concurrent sourcing and performance

The empirical results of Miranda and Lerner (1995) showed a negative relationship between the percentage of mixed delivery and expenditures. Their results clearly questioned the use of contracting out because they found no significant correlation between the percentage of complete contracts and expenditures. If mixed contracting enhances efficiency, then it is a false dichotomy to choose between markets and government, and it would be better to ask how both markets and governments might be used to improve performance. However, the authors study the impact of

concurrent sourcing on expenditures rather than examining indicators of performance at the service level. Lesqueren (2016) follows Miranda and Lerner (1995) in their use of performance indicators that are at the government level rather than at the service level. The author does not study the impact of concurrent sourcing on performance but rather how performance can impact the level of concurrent sourcing. She interprets the negative relationship between concurrent sourcing and the level of fiscal stress of governments as an indication of the willingness of governments to decrease costs. The main limit of the investigations of Miranda and Lerner (1995) and Lesqueren (2016) is that they do not use performance indicators at the service level.

Porcher (2016) specifically relates concurrent sourcing and the performance of public services. Performance is measured in various ways (water quality, price, network performance). The author shows that concurrent sourcing has a significant positive impact on quality performance but results in price premiums, potentially because external procurement demands capabilities to negotiate contracts and to mitigate *ex post* hazards. Such a result is connected to Hefetz et al. (2014), who show that concurrent sourcing in public services is more frequent when local governments want to reduce risks. Porcher (2016) shows that higher quality standards under concurrent sourcing can result from higher market complementarity, improved performance from personnel who would fear competition from the other sourcing units or higher monitoring resources from local governments used to concurrently source. This research sheds light on the cost of this insurance premium highlighted in Hefetz et al. (2014). The final reason is that in water markets, as in many commercial transactions, supply markets are relatively thin due to specific investments or capabilities required to manage contracts; thus, local governments have few potential external suppliers. This issue leads to a trade-off between specific investments required for the concurrent sourcing of a good and the ability to negotiate with limited suppliers

that is approximated with the model of concurrent sourcing. Higher-quality standards under concurrent sourcing can result from higher market complementarity, improved performance from personnel who would fear competition from other sourcing units or higher monitoring resources from local governments used to concurrently source.

3. Avenues for future research in public administration

Measures of capabilities, transaction costs and complementarities

An important issue in concurrent sourcing – and more broadly in the literature on outsourcing – is the measure of not only capabilities and transaction costs but also information asymmetries, complementarities or constraints. Two of the most studied theoretical backgrounds, the resource-based view and transaction costs, are often not well approximated. Capabilities are often measured as resources (financial or human). Managerial skills, know-how or other information are more difficult to measure and remain largely unobservable in the abovementioned empirical studies. Transaction costs are often measured via a proxy of asset specificity (e.g., via surveys of public managers on complexity or the amount of fixed assets invested) or complexity (e.g., via words searched in contracts) but are rarely measured as an incidence of disputes. The latter could be used as an outcome to study whether concurrent sourcing, or more broadly, governance choices, has an impact on the level of transaction costs. By the same token, good measures of capabilities could be used to quantify the impact of concurrent sourcing on capabilities. Using multiple years is a good way to measure the evolution of transaction costs and capabilities.

Measuring complementarities would require to compare some measures of costs in governments using concurrent sourcing and either hierarchy or the market. The design of such a research item requires good counterfactuals. A major concern is that the choice of concurrent sourcing may not

be random, and that differences between governments could be correlated with differences of performance (Porcher, 2012). As the counterfactuals are never observed, researchers could use non-experimental methods that mimic them under reasonable conditions. As for capabilities and transaction costs, complementarities are better measured using time series data.

Considering multiple combinations of sourcing modes

Concurrent sourcing is often defined as the combination of two sourcing modes, namely, in-house production and externalization to another (often private) organization. Other combinations are possible, such as make-and-ally or buy-and-ally. Veugelers and Cassiman (1999) found that among innovative Belgian firms using concurrent sourcing, 33% engaged in make-and-buy, 12% in make-and-ally, and 55% in all three modes. Krzeminska et al. (2013) identify alternative combinations of governance modes such as buy-and-ally and make-and-ally. They find that buy-and-ally has subsequent advantages, such as accessing knowledge, sharing investments, and preserving flexibility, as well as drawbacks, such as diminished incentives for alliance partners. Indeed, in this case, benchmarking is not as effective in make-and-buy because there is a lack of internal knowledge of input characteristics. Buy-and-ally is used when technological volatility is important but assets are not very specific. For example, public administration might use the services of private firms and ally with other governments to share information. Such research would deserve more attention in the scope of multi-level governance.

Another form identified by Krzeminska et al. (2013) is make-and-ally, which allows benchmarking with lower incentives than make-and-buy allows. Moreover, access to external knowledge is enhanced. However, flexibility is lower and requires internal investment in obsolescing assets and bureaucracy. Make-and-ally is particularly interesting when more significant learning is required, e.g., when technological volatility is important and the specificity

of assets is high. Such a combination could be used for the development of artificial intelligence in identity checking.

How much should governments use concurrent sourcing?

The question is then the extent to which a government should use concurrent sourcing to gain knowledge or to have sufficient incentives to control both external and internal suppliers. The situation can be complicated because both external and internal suppliers rarely have the same cost per unit to produce the same good, meaning that concurrent sourcing comes at a higher cost than choosing the most efficient supplier. Concurrent sourcing is considered a costly safeguard, especially in public services where money is scarce.

However, the shape of the impact of concurrent sourcing on performance remains to be discussed. Studies commented in Section 2 are interested in the potential linear impact of concurrent sourcing on performance. Future studies could focus on the nature of the relationship: concurrent sourcing could have an inverted-U shape, i.e. governments using pure concurrent sourcing would tend to over-perform, or a U-shape impact on performance, i.e. concurrent sourcing would be beneficial when it is close to market or hierarchy. There are interesting conjectures to be discussed on the relationship between the degree of concurrent sourcing and public services' performance.

The extent to which governments should use concurrent sourcing depends on the sector, the institutional settings and the performance of private firms. More sectoral studies are required to extend our knowledge of the impact of concurrent sourcing on performance and to understand the determinants of the use of concurrent sourcing.

References

Adelman, M. (1949). The Large Firm and Its Suppliers. *Review of Economics and Statistics*, 31:113–118.

Azoulay, P. (2004). Capturing Knowledge Within and Across Firms Boundaries: Evidence from Clinical Development. *The American Economic Review*, 94(5):1591– 1612.

Barney, J. B. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1):99–120.

Beuve, J. and Le Squeren, Z. (2016). When does ideology matter? An empirical analysis of French municipalities' make-or-buy choices. *EPPP Working paper 2016-05.*

Bradach, J.L. and Eccles, R.G. (1989). Price, authority, and trust: From ideal types to plural forms. *Annual Review of Sociology*, 15(1): 97-118.

Brown, T. L. and Potoski, M. (2003a). Contract Management Capacity in Municipal and County Governments. *Public Administration Review*, 63(2):136–147.

Brown, T. L. and Potoski, M. (2003b). Managing Contract Performance: A Transaction Costs Approach. *Journal of Policy Analysis and Management*, 22(2):275–297.

Brown, T. L. and Potoski, M. (2003c). Transaction Costs and Institutional Explanations for Government Service Production Decision. *Journal of Public Administration Research and Theory*, 13(4):441–468.

Brown, T. L. and Potoski, M. (2005). Transaction Costs and Contracting - The Practitioner Perspective. *Public Performance and Management Review*, 28(3):326– 351.

Coase, R. H. (1937). The Nature of the Firm. *Economica*, 4:386–405.

Eisenhardt, K.M. (1985). Organizational and Economic Approaches. *Management Science*, 31(2): 134-149.

Fama, E. (1980). Agency problems and the theory of the firm. *The Journal of Political Economy*, 88(2): 288-307.

Ghoshal S. and Moran, P. (1996). Bad for practice: A critique of the transaction cost theory. *The Academy of Management Review*, 21(1): 13-47.

Gulati, R., Puranam, P., and Bhattacharya, S. (2013). How Much to Make and How Much to Buy: An Analysis of Optimal Plural Sourcing Strategies. *Strategic Management Journal*, 34(190):1145-1161.

Halaby, C.N. (1986). Worker attachment and workplace authority, *American Sociological Review*, 51(5): 634-649.

Heide, J.B. (2003). Plural governance in industrial purchasing. *Journal of Marketing*, 67(4): 18-29.

Heide, J.B., Kumar, A. and Wathne, K.H. (2014). Concurrent sourcing, governance mechanisms, and performance outcomes in industrial value chains. *Strategic Management Journal*, 35(8): 1164-1185.

Hefetz, A. and Warner, M. E. (2008). Managing markets for public service: The role of mixed public-private delivery of city services. *Public Administration Review*, 68(1):155–166.

Hefetz, A. and Warner, M. E. (2012). Contracting or Public Delivery? the Importance of Service, Market, and Management Characteristics. *Journal of Public Administration Research and Theory*, 22(2):289–317.

Hefetz, A., Warner, M. E., and Vigoda-Gadot, E. (2014). Concurrent Sourcing in the Public Sector: a Strategy to Manage Contracting Risk. *International Public Management Journal*, 17(3):365–386.

Jacobides, M. and Winter, S. G. (2005). The Co-Evolution of Capabilities and Transaction Costs: Explaining the Institutional Structure of Production. *Strategic Management Journal*, 26(2):395–414.

Jensen, M.C. and Mecking, W.H. (1976). Theory of the firm: Managerial Behavior, agency costs and owernship structure. *Journal of Financial Economics*, 3(4): 305-360.

Kettl, D. (1993). *Sharing Power: Public Governance and Private Markets*. Brookings Institution, Washington.

Klein, B., Crawford, R. G., and Alchian, A. A. (1978). Vertical Integration, Appropriable Rents and the Competitive Contracting Process. *Journal of Law and Economics*, 21(2):297–326.

Krzeminska, A., Hoetker, G. and Mellewigt, T. (2013). Reconceptualizing plural sourcing. *Strategic Management Journal*, 34(13): 1614-1627.

Le Squeren, Z. (2016). *Politics and Public Administration: The influence of electoral motives and ideology on the management of local public services*. Phd Dissertation, Université Paris Panthéon-Sorbonne, Paris.

Levin, J. D. and Tadelis, S. (2010). Contracting for Government Services: Theory and Evidence from US Cities. *Journal of Industrial Economics*, 58(3):507–541.

Mayer, K. and Salomon, R. (2006). Capabilities, Contractual Hazards, and Governance: Integrating Resource-Based and Transaction Cost Perspectives. *Academy of Management Journal*, 49(5):942–959.

Mols, N.P. (2010a). How Does Concurrent Sourcing Affect Performance? Journal of Business and Industrial Marketing, 25(7): 525-534.

Mols, N.P. (2010b). Economic Explanations for Concurrent Sourcing, Journal of Purchasing and Supply Management, 16: 61-69.

Mols, N.P. (2017). Concurrent Sourcing and Supplier Opportunism. International Journal of Procurement Management, 10(1): 89-105.

Milgrom, P. and Roberts, J. (1990). The Economics of Modern Manufacturing: Technology, Strategy and Organization. *The American Economic Review*, 80(3):511–528.

Miranda, R. and Lerner, A. (1995). Bureaucracy, Organizational Redundancy, and the Privatization of Public Services. *Public Administration Review*, 55(2):193–200.

Ouchi, W.G. (1979). A conceptual framework for the design of organizational control mechanisms. *Management Science,* 25(9): 833-848.

Parmigiani, A. (2007). Why Do Firms Make and Buy? An Investigation of Concurrent Sourcing. *Strategic Management Journal*, 28:285–311.

Penrose, E. (1959). *The Theory of the Growth of the Firm*. Wiley, New York.

Porcher, S. (2012). Do Markets Reduce Prices? *EPPP Working Paper 2012-07*.

Porcher, S. (2016). Neither Market Nor Hierarchy: Concurrent Sourcing in Water Public Services. *Journal of Public Administration Research and Theory*, 26(4): 800-812.

Porter, M. (1980). *Competitive Strategy*. Free Press, New York.

Poulsen, S.M. and Hansen, J.R. (2016). Contracting to improve public service provision: A typology for concurrent sourcing strategies. *Journal of Strategic Contracting and Negotiation*, 2016, 2(3): 187-205.

Savas, E. (2000). *Privatization: the Key to Better Government*. Chatham House, Chatham, NJ.

Sclar, E. D. (2000). *You Don't Always Get What You Pay for: The Economics of Privatization*. Cornell University Press, Ithaca, NY.

van Slyke, D. M. (2003). The Mythology of Privatization in Contracting for Social Services. *Public Administration Review*, 63(3):296–315.

Veugelers and Cassiman (1999). Make and buy in innovation strategies: evidence from Belgian manufacturing firms, *Research Policy*, 28(1): 63-80.

Wernerfelt, B. (1984). A Resource-Based View of the Firm. *Strategic Management Journal*, 5(52):171–180.

Williamson, O. E. (1975). *Markets and Hierarchies, Analysis and Antitrust Implications: A Study in the Economics of Internal Organization*. Free Press, New York.

Williamson, O. E. (1991). Comparative economic organization: The analysis of discrete structural alternatives. *Administrative science quarterly*, 36(2):269–296.

Williamson, O. E. (1996). *The Mechanics of Governance*. Oxford University Press, New York.