2021

Behavioral Public Finance and Budgeting: New Approaches to Old Questions?

Salvador Espnosa

Kenneth A. Kriz

Juita-Elena (Wie) Yusuf

BEHAVIORAL PUBLIC FINANCE AND BUDGETING: NEW APPROACHES TO OLD QUESTIONS?

Salvador Espinosa
School of Public Affairs
San Diego State University

Kenneth A. Kriz
Department of Public Administration
University of Illinois-Springfield

Juita-Elena (Wie) Yusuf
School of Public Service
Old Dominion University

1. INTRODUCTION

The growing interest in the use of behavioral insights in the study of public administration and policy is contributing to the emergence of behavioral public administration (James et al., 2017). This subfield focuses on the "analysis of public administration from the micro-level perspective of individual behavior" (Grimmelikhuijsen et al., 2017, p. 45). For some scholars, this approach offers interesting opportunities to further the study of perceptions, attitudes, and behaviors of citizens, public sector staff, or public managers (Tummers, et al., 2016). The combination of behavioral theory and experimental approaches can improve the standing of the field of public administration as a design science which informs policy and practice (James, Jilke and Van Ryzin, 2017).

The use of behavioral insights has also been gaining momentum in the public policy field, particularly as literature on what has come to be known as "nudging" continues expanding and the application of non-regulatory and regulatory policy approaches (Oliver, 2013) has gained traction (Halpern and Sanders, 2016), for example in environmental policy (Byerly et al., 2018; Moseley and Stoker, 2013; Alpizar et al., 2020).

The foundations of this line of work build upon the seminal work by Kahneman and Tversky (1979), the extensive work by Thaler (1991), as well as an influential book by Thaler and Sunstein (2008). Behavioral public policy, however, is broader than the nudging literature, and focuses on policy interventions that draw direct

Public Finance and Management ISSN 1523-9721
Volume 20, Number 1, pp 1-10
2021

inspiration and design from behavioral research and the psychology of influence (Galizzi, 2014, de Jonge et al., 2018). Recent research on how public policies can give rise to changes in citizens' behaviors recognizes a wide range of policy instruments through which behavioral change can be affected (Tummers, 2019).

The behavioral approach has also permeated economics and public economics. Behavioral economics and behavioral public economics recognize deviations from the assumptions that underpin the standard neoclassical approach offer a "starting point for a more realistic view on how individuals make choices" (Alm and Sheffrin, 2016, p. 6). Behavioral economics and behavioral public economics have also included a move to integrate experimental research both in the laboratory and in the field.

In light of these developments, and the evident interest in the contribution of disciplines such as psychology, neuroscience, cognitive science, or behavioral economics, to public administration and public policy, it is inevitable to ask what this entails for public finance and budgeting.

A good starting point for reflection is the edited book on behavioral public finance that McCaffery and Slemrod published in 2006 (McCaffery and Slemrod, 2006). These scholars define this subfield as an intersection between behavioral economics and public finance, arguing that "[t]o the extent that behavioral economics rests on empirically verifiable (and verified) understandings about how real people think, choose, decide, and act in real life settings, public finance models that aim for real-world relevance ought to take behavioral insights into account" (p. 4).

We have reached the point where public finance and budgeting scholars should acknowledge this key point, as many of the empirical work conducted in our field for decades have taken mechanistically rational models of decision-making as a given. But as mounting evidence has shown, individuals are emotional actors whose decisions can be influenced by contextual cues, social norms, or mental models (World Bank, 2015). People are also bounded in their ability to consistently consider and respond to all of the features of complex choices. Issues such as mental accounting, which allows people to economize on time and thinking costs, and to deal with self-control problems (Thaler, 1999), certainty effects, where people have a tendency to attribute more weight to certain outcomes than to probable outcomes (Kahneman and Tversky, 1979), or choice deferral, the tendency to be put off from making choices when additional alternatives are added to the choice set (Tversky and Shafir, 1992), can induce decision-making processes that deviate from the theoretical expectations of models based on rationality (Congdon, Kling and

Mullainathan, 2011). Given these issues and departures from mechanistically rational models that have tended to underpin understanding of decision making in the public finance and budgeting realm, the question posed by McCaffrey and Slemrod (2006) remains pertinent and relevant for discourse in our field: What implications do citizen heuristics and biases have for important public finance (and budgeting) questions? Furthermore, given the nascency of behavioral thinking in public finance and budgeting, we extend this question to ask more broadly: What implications does a focus on individuals - citizens, taxpayers, public managers, and others - have for answering questions central to our field?

The aim of this symposium is to encourage reflection on the extent to which the use of behavioral insights can help address the questions and puzzles with which public finance and budgeting scholars have been grappling with. From the start of research into public budgeting in the early 20th century, there has been an implicit behavioral focus. Consider the early work of Willoughby on a national budget system. He wrote, "It is hardly necessary to point out that *the popular will cannot be intelligently formulated nor expressed* unless the public has adequate means for knowing currently how governmental affairs have been conducted in the past, what are present conditions, and what program for work in the future is under consideration." (Willoughby, 1918, p. 57 [emphasis added]). Notice how he frames the problem as the formulation and expression of the popular will. Therefore, the budget is not merely a technical document, but a means of communication with the public in an attempt to inform changes in understanding of the budget situation and to influence the popular will.

Public administration research, and by extension public finance and budgeting research, is deliberately intended to develop innovations in management and policy that enhance the efficient, effective, and equitable provision of public goods and services. To us, this implies a role for research on behavioral public administration, public finance, and public budgeting. Understanding how individuals process information, make decisions, form preferences, and take actions should inevitably lead to better governance. To take only one example, researchers for years have sought to understand who responds favorably to referendum questions on taxation, spending, municipal debt, and other fiscal policy related issues. However, only recently have researchers broken from traditional institutional/demographic/socio-economic studies to ones based on the information that voters receive related to the referenda issue (see for example, Brunner, Robbins, and Simonsen (2018); O'Connell & Yusuf (2011)). Approaches like this can help further the study of the role of information, not only as a signaling mechanism, but as an element whose effectiveness depends upon the ways in which individuals receive and process such information.

The use of behavioral insights to inform scholarly discussions in our discipline puts the individual back at the center stage of scholarly debates. This, as we see it, opens up a range of possibilities for the advancement of knowledge about public finance and budgeting, as it can supplement the contributions of scholars interested in empirical studies relying on aggregated data by providing more nuanced understanding of phenomenon at the micro level.

The increased interest in the use of behavioral sciences entails that we envision ***the individual*** as the primary unit of analysis: the individual as a voter, as a taxpayer, or as a public manager. And as we do this, it will also be necessary to rethink some of the foundational assumptions about the individual and individual decision making that the public finance and budgeting literature has made. For example, the behavioral lens prompts us to consider whether mechanistic rationality should still be the norm when explaining individual decision-making.

The goal of this symposium issue of *Public Finance and Management* is then to open up and encourage a conversation about relevant puzzles driving scholarly work in public finance and budgeting, and the extent to which the use of behavioral theories, approaches, and methodologies can contribute to advancing knowledge in our field. The editorial team for this symposium selected six articles to attain this goal. Through these articles, we also seek to illustrate the possibilities for answering public finance and budgeting questions using a behavioral lens and beyond.

2. REVIEW ARTICLE AND THEORETICAL ARGUMENTS

The symposium starts with a useful review of the literature on what **Mohr and Kearney** refer to as Behavioral-Experimental Public Budgeting and Financial Management. This article is a good reference point to trace the evolution of this particular area of study and situate recent efforts to address queries using behavioral and experimental approaches. The authors elaborate two arguments throughout their review. The first claim is that contrary to what some may expect, much of the foundational budgeting research can be considered behavioral. The second claim is that several areas within public budgeting research have been conducting experiments for a long time. They pose the following questions: (1) What areas of public budgeting and financial management have been using experimental designs? (2) What literature in other fields of study can be related to public budgeting and financial management research? and (3) What can one learn from such approaches that may help guide the still nascent behavioral-experimental public budgeting and financial management field?

They establish that Herbert Simon's (1947) book on administrative behavior is a seminal piece in the development of this area of study. But as Mohr and Kearney correctly point out, the contributions of Nobel laureates Daniel Kahneman, Amos Tversky, and Richard Thaler have encouraged a renewed interest in behavioral and experimental research.

Kahneman and Tversky's Prospect Theory (1979) has been particularly influential in the development of behavioral public finance, for reasons that are explained in the article by **Hlouskova and Tsigaris**. A central tenet in behavioral public finance is taxpayers' behavior, which traditionally, has been modeled based on an expected utility framework that assumes, among other things, that individuals are rational and risk averse. Prospect Theory questions the pertinence of such assumptions. Hlouskova and Tsigaris contribute to the symposium with a theoretical article assessing how capital income taxation influences certain types of investors (e.g., loss averse ones), in situations where full loss offset provisions exist (i.e., when investors reduce their tax obligations by writing off operating losses against past or future profits). They test their results against the effects predicted with the expected utility framework and find that expected utility is not a good explanation of investor behavior, as they establish reference levels with respect to their endowment income - a core element of Prospect Theory.

Fennimore and McCue push our thinking further beyond behavioral public finance and the application of psychological theories and experimental methods research towards a neuroscientific approach to understand how decisions within the public budgeting and financial management realm are made physiologically. Using the example of Prospect Theory, they note that its application within a behavioral public finance framework provides a descriptive understanding of human motivation underpinning decisions but has limited utility for explaining why and how decisions are made. To extend our knowledge, they argue that neuroscientific methods and a neuro-finance lens can help us understand how brain functioning explains why we make certain decisions. Quoting Desmoulins-Lebeault et al., the authors argue that this approach can help "reconcile classic and behavioral finance by showing that emotions are critical to rational decision-making, in spite of also being part of the origin of biases" (2018, p. 93). Fennimore and McCue also make an important connection between the behavioral and neuroscientific approaches to public finance research.

Specifically, they apply a neuroscientific perspective to understand how public financial managers approach risk. They propose and describe a risk-tolerance model that connects risk tolerance levels and approaches to risk of emotional states, reinforcers that activate or inhibit future behaviors, and organizational or employment culture. They use this model to explain how some financial managers

are neurobiologically inclined to be risk-averse because of motivations rooted in the fear of disrupting the status quo or avoiding punishment. In contrast, other public financial managers are neurobiologically inclined towards risk-seeking behaviors, motivated by hope for rewards or despite frustrations of not being rewarded. This model also recognizes that risk taking behavior is mediated by social and organizational influences and is neurobiologically motivated by learned behaviors. Risk-taking behavior is learned based on cultural antecedents and reinforced by the organizational environment, and over time government financial managers' risk tolerance becomes 'hardwired' neurologically.

3. EMPIRICAL ANALYSES AND APPLICATIONS OF BEHAVIORAL APPROACHES

The symposium then considers three empirical papers that demonstrate the application of behavioral approaches to fiscal policy and financial management issues. The first paper, by **Nguyen-Hoang and Yinger**, examines the interaction between tax salience and public program framing. They analyze responses to the New York state's School Tax Relief (STAR) program on the demand for school quality, taking advantage of differences in administration of the STAR program during different periods. Using models that capture expenditure-based and performance-based demand as well as cost-efficiency, they find that framing the program in terms of income leads to increased demand for quality. Further, they find that increased salience (measured by increasing dollar amounts of benefits from the program) along with framing (in terms of income) had a greater impact on school demand versus framing alone. This speaks to how framing and salience can work together to change the demand for school quality. Finally, Nguyen-Hoang and Yinger examine the impact of the federal No Child Left Behind (NCLB) act on the demand for expenditures on quality education in the reading and math areas compared to other unspecified performance areas. They find (1) an increase in the price elasticity of demand for reading and math, (2) a decrease in the price elasticity for other performance areas, and (3) no income effects. This suggests that framing was the important factor in driving increased demand for school quality in the wake of NCLB.

In the Prospect Theory framework, there are two stages of decision making, editing information and evaluation of the edited information. Framing effects occur in the editing phase of decision making. Status quo effects are one particular type of editing, and results in status quo bias. This is where individuals tend to put too much weight on past choices, absent specific evidence that they can improve their situation by making new choices. **Dzigbede** examines this effect in municipal bond

underwriting choices. Using a model of optimal underwriter choice, he finds that issuers repeat their issuer choice more often than can be expected from rational assessment of costs and benefits of issuance. Using simulation methods, he then calculates the cost of this bias for issuers. The cost of this bias is rather substantial, suggesting that there is room for Pareto improving "nudges" to help issuers make better decisions.

In the final paper in the symposium, **Jones, Greer, and Reitano** analyze the presence of anchoring bias (another editing bias in the Tversky and Kahneman theory) when school district performance ratings are published. Using data on school bond referenda in Texas, they find that voters do anchor their information on past performance ratings published by the Texas Education Agency, unless that rating is downgraded. Their results are robust to selection bias induced by non-random choices of school districts to issue debt. These results are important not only for understanding the role of performance information on voter perception but also for school district management of the bond issuance process.

4. CONCLUSION

As we developed the call for papers for this *Public Finance and Management* symposium issue, our hope was that we would be able to compile a series of articles that would highlight the promise of the behavioral approach to public finance and budgeting research and encourage consideration of how the application of behavioral theories and methodologies can further advance knowledge in our field. Through a combination of a review article, two articles that offer theoretical framing for understanding individual decision making as investors/taxpayers and public financial managers, and three articles that empirically examine how biases influence individuals' perceptions and actions, we feel that we have succeeded in doing so. The ultimate goal of this symposium is to encourage reflection on and conversation about the use of behavioral public finance and budgeting to answer questions and puzzles we continue to grapple with in our field. Putting the individual back at the center of our study of public finance and budgeting issues, opens up a range of interesting questions and methodologies for understanding micro-level phenomenon that revolve around the individual as a voter, a resident, an investor, a recipient of services, a taxpayer, or as a public manager.

We invite readers to reflect on each of the topics included in this symposium and think about ways to expand on a promising subfield of public administration. The opportunities to develop further understanding of many of the questions that remain unanswered in public finance and budgeting calls for research approaches that are willing to address issues with new analytical lenses. We are confident that

the use of behavior-informed approaches is promising and encourage scholars to continue the conversation.

REFERENCES

Alm, J., and S.M. Sheffrin (2016) "Using Behavioral Economics in Public Economics", *Public Finance Review*, 45(1):4-9. doi: 10.1177/1091142116661411

Alpizar, F., F. Carlsson, G. Lanza, G., B. Carney, R.C. Daniels, M. Jaime, T. Ho, Z. Nie, C. Salazar, B. Tibesigwa and S. Wahdera (2020). "A Framework for Selecting and Designing Policies to Reduce Marine Plastic Pollution in Developing Countries", *Environmental Science and Policy*, 109:25-35. doi: 10.1016/j.envsci.2020.04.007

Brunner, E.J., M.D. Robbins and B. Simonsen (2018) "Information, Tax Salience, and Support for School Bond Referenda." *Public Budgeting and Finance,* 38(4): 52-73.

Byerly, H., A. Balmford, A., P.J. Ferraro, C. Hammond Wagner, E. Palchak, S. Polasky, T.H. Ricketts, A.J. Schwartz and B. Fisher (2018) "Nudging Pro-environmental Behavior: Evidence and Opportunities", *Frontiers in Ecology and the Environment*, 16(3):159-168.

Congdon, W.J., J.R. Kling and S. Mullainathan (2011) *Policy and Choice: Public Finance through the Lens of Behavioral Economics,* Washington, DC: Brookings Institution Press.

de Jonge, P., M. Zeelenberg and P.W.J. Verlegh (2018) "Putting the Public Back in Behavioral Public Policy", *Behavioural Public Policy*, 2(2):218-226. doi: 10.1017/bpp.2018.23

Desmoulins-Lebeault, F., J.-F. Gajewski and L. Meunier (2018) "What Can We Learn from Neurofinance?" *Finance*, 39(2):93-148. doi: 10.3917/fina.392.0093

Galizzi, M. M. (2014) "What is Really Behavioral in Behavioral Health Policy? And Does it Work?" *Applied Economic Perspectives and Policy*, 36(1):25-60.

Grimmelikhuijsen, S., S. Jilke, A.L. Olsen and L. Tummers (2017) "Behavioral Public Administration: Combining Insights from Public Administration and Psychology", *Public Administration Review*, 77(1): 45-56. doi: 10.1111/puar.12609

Halpern, D., and M. Sanders (2016) "Nudging by Government: Progress, Impact, and Lessons Learned", *Behavioral Science and Policy*, 2(2):52-65.

James, O., S.R. Jilke and G.G. Van Ryzin (2017) "Behavioural and Experimental Public Administration: Emerging Contributions and New Directions", *Public Administration*, 95(4):865-873. doi: 10.1111/padm.12363

Kahneman, D. and I. Tversky (1979) "Prospect Theory: An Analysis of Decision Under Risk", *Econometrica*, 47:263-292.

McCaffery, E.J. and J. Slemrod (2006) *Behavioral Public Finance*, New York: Russell Sage Foundation.

Moseley, A., and G. Stoker (2013) "Nudging Citizens? Prospects and Pitfalls Confronting a New Heuristic", *Resources, Conservation and Recycling*, 79:4-10. doi: 10.1016/j.resconrec.2013.04.008

O'Connell, L. and J.-E. Yusuf (2011) "An Information Model to Present Proposals to Increase Taxes: Two Examples in the Context of American Values", *International Journal of Public Administration*, 34(3):180-189.

OECD (2017). *Behavioral Insights and Public Policy: Lessons from Around the World*, Paris: OECD.

Simon, H. (1947) *Administrative Behavior: A Study of Decision-making Processes in Administrative Organization*, New York: The Free Press.

Thaler, R.H. (1991) *Quasi Rational Economics*, New York: Russell Sage Foundation.

Thaler, R.H. (1999) "Mental Accounting Matters", *Journal of Behavioral Decision Making*, 12(3):183-206.

Thaler, R.H. and C.R. Sunstein (2008) *Nudge: Improving Decisions about Health, Wealth, and Happiness,* New Haven: Yale University Press.

Tummers, L.G., A.L. Olsen, S. Jilke and S.G. Grimmelikhuijsen (2016) "Introduction to the Virtual Issue on Behavioral Public Administration", *Journal of Public Administration Research and Theory,* 1-3.

Tummers, L. (2019) "Public Policy and Behavior Change", *Public Administration Review*, 79(6):925-930. doi: 10.1111/puar.13109

Tversky, A., and E. Shafir (1992) "Choice Under Conflict: The Dynamics of Deferred Decision", *Psychological Science*, 3(6):358-361. doi: 10.1111/j.1467-9280.1992.tb00047.x

Willoughby, W. (1918) "The Budget as an Instrument of Political Reform", *Proceedings of the Academy of Political Science in the City of New York*, 8(1):56-63.

World Bank (2015) *World Development Report 2015: Mind, Society, and Behavior*, Washington, DC: International Bank for Reconstruction and Development and World Bank.