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# Innovation by Design: Impact and Effectiveness of Public Support for Business Innovation

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# Innovation by Design: Impact and Effectiveness of Public Support for Business Innovation

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## ABSTRACT

As the 21<sup>st</sup> century unfolds, there is a growing recognition that the competitive global landscape is altering the context within which government support for innovation programs should be assessed. This monograph explores a number of conceptual and policy design issues relevant for the adoption of innovation policies. It reviews some of the conceptual frameworks used in leading industrial economies, as well as some countries that have experienced more rapid innovation-based (RIB) economic development. The monograph examines the program models that exist for the design and implementation of government support of business innovation at different jurisdictional levels. It places this examination within the context of two broad approaches found in the literature, the traditional neoclassical approach and more recent evolutionary approaches.

The monograph explores the existing evidence on the impact of a range of policy instruments, drawing upon several recent reviews of both the academic and more policy-oriented literature. It situates this review in the context of a discussion of

the shift in focus from research to technology development to innovation-based policies over the course of the postwar period. It asks what value the “policy mixes” approach adds to our understanding of the design and implementation of government programs for the support of business innovation. Finally, it addresses the question of how the introduction of innovation programs within a federal system complicates the evaluation of their impact and creates a need for greater policy alignment. In this respect, it asks what value the multilevel governance perspective, developed initially in the EU, but adopted in other countries, contributes to our understanding of how the effectiveness of policies is supported or constrained by the behaviour of other actors within a multilevel governance system.

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## Introduction

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As the 21st century unfolds, there is a growing recognition that the competitive global landscape is altering the context within which government support for innovation programs should be assessed. The primary justification for this area of public policy is the widespread recognition of the link between innovation and productivity growth and its impact on future income levels. Technological advance, broadly construed, is the most important source of productivity growth; but recent evidence suggests that those advances are concentrated among the leading firms in more technologically innovative sectors, while both lagging firms and sectors that experience a lower rate of productivity growth tend to reduce average productivity levels across the entire economy (Andrews *et al.*, 2015). This problem is compounded ever further in those countries that lag behind the leaders in generating a sufficient number of these firms, thus failing to move up what the World Bank has labelled “the capabilities escalator” (Cirera and Maloney, 2017).

These trends in the changing dynamics of innovation in the 21st century accentuate the need for a clearer understanding of what the current state of research tells us about the design, implementation and

effectiveness of public sector policy to support business innovation. In recognition of this need, the Government of Canada asked the Treasury Board Secretariat (the department responsible for managing public expenditures for the government) to undertake a horizontal review of ninety business innovation and clean tech programs in 2017. In the words of the federal budget, “The Government will initiate a horizontal review of all federal innovation and clean technology programs across all departments, as federal innovation programs are dispersed. . . . the horizontal review will look to simplify programming and better align resources to improve the effectiveness of innovation programs” (Canada, 2017). As part of the review, the Treasury Board Secretariat commissioned a series of academic reports to highlight key insights from both the academic and policy-oriented literature to inform the review. This monograph, one of the commission reports, explores a number of conceptual and policy design issues that are relevant for a better understanding of what the current literature tells us about the underlying rationale for, and the range of, policy instruments available to inform the design and implementation of public sector policies and programs to support business innovation. The monograph reviews some of the relevant conceptual frameworks used in leading industrial economies, as well as some that have experienced more rapid innovation-based economic development. It introduces recent thinking in the academic and policy literature on the nature of these design issues and summarizes the insights and findings of recent reviews that have been undertaken on program impacts. Although undertaken for the Treasury Board’s Horizontal Review, it is intended to be broadly applicable for other countries as a high-level overview of the current state of the literature on these issues.

The monograph addresses several critical issues. First, it examines the conceptual and program models that exist for the design and implementation of government support of business innovation at different jurisdictional levels — from the national to the regional. It places this examination within the context of two broad approaches found in the literature, the traditional neoclassical approach to innovation policy and more recent evolutionary approaches. It explores the different policy approaches adopted in both leading economies, as well as several that

have adopted a rapid innovation-based (RIB) approach to innovation policy and examines the relative merits of the respective approaches used by various governments.

The monograph examines the existing evidence on the impact of a range of policy instruments, drawing on several recent reviews of both the academic and more policy-oriented literature. It also introduces the concept of the “policy mix” for innovation that was introduced 10 years ago in policy reviews undertaken for the European Union and OECD. It examines what value the “policy mixes” approach adds to our understanding of the design and implementation of government programs for the support of business innovation. Finally, it addresses the question of how the introduction of innovation programs within a multi-jurisdictional, or federal, system complicates the evaluation of their impact and creates a need for greater policy alignment. In this respect, it asks what value the concept of multilevel governance, developed initially in the European Union, but adopted and widely applied in the scholarly literature to Canada and other countries, contributes to our understanding of how the effectiveness of policies is supported or constrained by the behavior of other actors within a federal or multilevel system of government.

## Author Biography

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**Dr. David A. Wolfe** is Professor of Political Science at the University of Toronto Mississauga and Co-Director of the Innovation Policy Lab at the Munk School of Global Affairs and Public Policy. From 2009 to 2014 he was the Royal Bank Chair in Public and Economic Policy at the University of Toronto. In 2018, he served as the Inaugural Director of the new Master of Urban Innovation degree in the Institute for Management and Innovation at UTM. From 1998 to 2011 he was the Director of the Innovation Systems Research Network and in that capacity was the Principal Investigator on two Major Collaborative Research Initiatives funded by the Social Sciences and Humanities Research Council. He is currently leading a six-year SSHRC-funded Partnership Grant on *Creating Digital Opportunity for Canada* that commenced in 2014. He has been a Research Associate for the Canadian Institute for Advanced Research and is the editor or co-editor of ten books and numerous scholarly articles. He recently served as a member of the Council of Canadian Academies Expert Panel on *Competing in the Global Innovation Economy*, released in 2018.