Selected comments from assessment of PhD thesis (full examiners reports provided upon request)

General overview of the thesis:

The Theory of Unbundled and Non-territorial Governance is a theoretical monograph that uses a variety of theoretical approaches to arrive at a unified conclusion about potential efficiency gains from a variety of jurisdictional reforms, with a particular focus on non-territorial jurisdictional solutions such as those that have been made possible by internet-enabled technologies. The main theoretical approaches presented in this thesis include the Coase theorem and related transaction cost economics, the model of internal exit by Buchanan and Faith, and extensions of spontaneous order theory that build on ideas first introduced by Hayek and Polanyi.

Governments provide bundles of public goods and services (as well as private good and services) to their citizens (for example: defence, law and order and roads as well as education, health and pure transfers), funded from the tax revenue they collect. Bundling means that the entire suite of what is on offer must be accepted – citizens cannot usually pick and choose to enjoy different services from a range of jurisdictions. In addition, such goods and services are usually provided on a territorial basis: a citizen of geographical jurisdiction A cannot access and enjoy the services provided to citizens in geographical jurisdiction B. Indeed, citizenship is often *defined* in terms of the bundle of government-provided goods and services that a person located in a particular geographic jurisdiction may access. Many of these goods and services are often best characterised as local, excludable public goods which are subject to some degree of congestion or rivalry; that is, they are club goods. Exclusion is achieved by establishing territorial borders within a particular geographic area.

This thesis examines the related concepts of unbundling of public good provision and non-territorial governance. The basic idea is that there may be some government-provided goods which have traditionally been bundled and provided on a purely territorial basis, but which, due to changes in technology or other factors, may be able to be unbundled and provided on a non-territorial basis.

Chapter 1 introduces the case for non-territorial unbundling. Chapter 2 provides a literature review and an overview of historical and contemporary cases, tracing the history of these ideas in economic and political thought. Chapter 3 establishes a "political-jurisdictional Coase theorem", which extends Coase's (1960) result to encompass invariance and efficiency with respect to the allocation rights in political systems in a world with low transaction costs. Chapter 4 presents a framework describing the tradeoff between inefficient markets, politics, and jurisdictions, and applies it to the problem of jurisdictional design. The chapter introduces the political-jurisdictional possibilities frontier (PJPF) to illustrate the space of property-authority allocations and a political-jurisdictional transformation frontier (PJTF) to illustrate movements about property-authority allocations. Chapter 5 presents a model of partial internal exit, and attempts to capture the dynamics of fiscal competition between incumbent and potential governments in a non-territorial unbundled system. Chapter 6 examines the idea of Hayekian "spontaneous order" and applies this to jurisdictions.

Contribution of the thesis to the field of study:

The theoretical literature on jurisdictional change has for the most part been limited to studies of how constitutional unanimity may pave the way for desirable subsequent voting rules (a prominent theme in the constitutional political economy program initiated by James Buchanan), spatial models of inter-jurisdictional competition as first theorized by Charles Tiebout and later developed by numerous spatial economists, and Hayekian contributions that posit that jurisdictions and cultures with rules that support the spontaneous order of the market expand at the expense of less productive entities, whether through migration of people, conquest or imitation. **MacDonald goes beyond these earlier contributions by using three distinct theoretical frameworks that ultimately lead to very similar conclusions.**

He extends the Coase theorem to deal with three different types of transaction costs: market transaction costs (as in the original Coase theorem), political transaction costs (given jurisdictional boundaries), and jurisdictional transaction costs (re-bordering of jurisdictions by moving people, moving borders, or by non-spatial internal exit). He shows that in the absence of transaction costs, an efficient outcome can be achieved in three different ways:

market internalization of externalities, political post-legislation side payments, and efficiency-improving jurisdictional change. He calls this combined model the "political-jurisdictional Coase theorem," which amounts to **a substantial theoretical contribution to transaction cost economics** that paves the way to a fascinating exposition of "political-jurisdictional possibility frontiers" and "political-jurisdictional transformation frontiers."

A particularly interesting example of how this sort of theory may find practical application is given by Figure 4.4 (page 157). It shows how efficiency losses due to transaction costs reflect an inefficient allocation of property rights in the economic, political and/or jurisdictional dimensions, that is to say that a society with such losses can be represented as a point that is not on the possibility frontier. The objective is then to restructure the institutions of society (and the attendant "division of labor" between markets, intra-jurisdictional politics, and jurisdictional domains) so as to reach the frontier. However—and this is in my view a particularly valuable insight—different societies (nations, regions etc.) have different such frontiers. Factors that do not reflect property rights in any of the three spheres (ownership in markets, political voice, or jurisdictional membership) have an impact on what is achievable by institutional means. Examples of extra-institutional factors include norms of behavior and agglomeration economies. Thus, in MacDonald's example, an inefficient institutional mixture in a developed nation such as Australia may still be superior to a position on the possibility frontier in an underdeveloped nation such as Somalia. **This theoretical framework thus opens up opportunities for a richer understanding of the development trajectories and development challenges of different societies around the world.**

In the "theory of non-territorial internal exit," MacDonald uses a game-theoretic approach to determine equilibria in exit behavior. The basic set up and assumptions of the Buchanan and Faith (1987) model of internal exit are used in the formulation of extended form games, shedding light on "non-territorial secession" as well as "cryptosecession."

The extended form gives rise to numerous possible normal-form games and MacDonald has made a selection of eight subgames in normal form. A number of these games give non-unique equilibrium outcomes, with the mutually optimal equilibrium being unstable. This is an interesting game-theoretic dilemma. It points to further research into ways of reaching optimal equilibria by means of repeated games that increase the level of mutual trust among the players. MacDonald is obviously skilled enough to explore these issues.

The final chapter of the thesis is perhaps the most original of the three major theoretical contributions contained within this thesis. While Hayek mostly developed a framework for understanding the market as a spontaneous order (Polanyi did the same for science), more recent contributions have extended spontaneous-order reasoning to politics (Gus diZerega as well as Richard Wagner) and jurisdictions (David Emanuel Andersson). However, these later contributions are limited by taking jurisdictional borders as given, with migration of people or capital being the only ways of achieving a better fit between preferences for public goods and the jurisdiction-specific mix on offer. As MacDonald correctly points out, there are in fact three ways of changing the mapping from jurisdictions to individuals: moving people, moving borders or exiting internally to non-territorial jurisdictions. And he also explicitly considers a problem that should be obvious but is in fact almost always overlooked. I'm referring to the fact that people's locational choices reflect three principal considerations: the policy-tax mix on offer, economic opportunities (including the beneficial effects of agglomeration economies), and social opportunities (e.g. being close to family and friends). In particular, there is an inherent tension between people's policy preferences (which are best served by a homogeneous jurisdiction with similar people) and people's ideal economic location (which ideally contains a diverse population since diversity is conducive to creativity and innovation). Thus, to the extent possible, non-territorial jurisdictional exit is often preferable (more efficient) than voting with one's feet.

In some of the other chapters, MacDonald offers illustrative examples of non-territorial internal exit, such as internet-enabled digital currencies and extra-territorial enforcements mechanisms. But it is also noteworthy that there are non-territorial jurisdictions in conventional nation states such as Belgium and Switzerland. For example, citizens of Brussels can choose whether to belong to the French-speaking or Dutch-speaking community, which offer competing tax-funded education systems.

In my view, **this multi-dimensional approach to jurisdictional choice** (redrawing borders; voting with one's feet, and creation of non-territorial jurisdictions) **has the potential to set the stage for a new research program in political economy.** MacDonald makes a distinction between territorial public goods (e.g. roads) and non-territorial ones (e.g. virtual money), and this is indeed desirable in the context of a PhD thesis. But there are in fact a whole range of goods that are neither purely territorial nor purely non-territorial; they may also occupy an intermediate position between (non-rival and non-excludable) public and (rival and excludable) private goods. For example, schools are less territorial than roads or national defense, but spatial accessibility is still a non-negligible dimension of classroom instruction. Likewise, education is neither a pure private nor a pure public good; education contributes both to the human capital that is traded in labor markets as well as to the knowledge externalities that benefit people in general. In addition, there is a whole range of solutions to problems that are conventionally labeled "political": from national funding and production over local government funding coupled with private procurement and production all the way to profit-seeking private firms serving spatially dispersed individuals. In other words, **it is possible to build on the theoretical contributions of this thesis in order to extent the theory to all sorts of hybrid solutions as well as to use it as a theoretical basis for empirical analyses.**

Expert theoretical understanding and technical skills:

In the thesis, Trent MacDonald demonstrates **a deep and thorough understanding of four theoretical traditions in economics.** First, he exhibits the ability to work within the research program known as the **new institutional economics** by building on the work of Coase and extending the use of transaction cost reasoning to new domains. Second, he exhibits a similar level of sophistication in his reflections on the contributions of scholars within **"Virginia public choice" and the related field of constitutional political economy.** Prominent contributors to these related schools of thought include James Buchanan, Gordon Tullock, and Richard Wagner. Third, MacDonald also exhibits competence in using **game-theoretic approaches to microeconomic problems,** which shows that he is also able to contribute to debates in mainstream economics. The fourth and final way in which the candidate exhibits expert understanding is in his thorough and nuanced treatment of recent contributions to **spontaneous-order theory, which synthesize and extend the contributions of non-mainstream Austrian and evolutionary economists.**

As regards technical skills, it should be noted that the thesis demonstrates a high level of competence in the use of diagrammatic expositions, matrix algebra, and the mathematics of game theory. In my judgment, it is fair to say that Trent MacDonald **demonstrates a broader range of in-depth knowledge than is normal among PhD candidates at top universities around the world.**

Critical thinking and originality of the thesis:

One way to describe MacDonald's use of critical thinking to generate original knowledge is to note that throughout the thesis he **makes use of novel combinations of ideas from a diverse set of economists.** Indeed, he often starts with an idea such as the Coase theorem, and then comes up with novel ways of extending this idea by using partial insights by various other economists, some of whom do not build on or even refer to the basic idea that sets the stage for the overall argument. However, what impressed me the most was the **ability to take ideas from research programs that are rather distant from one another and yet weave a sort of tapestry of ideas that nevertheless are mutually consistent and reinforce one another.** For example, transaction cost arguments and arguments about systemic feedback in spontaneous orders are usually not encountered in the same place, yet—whether intentionally or not—MacDonald demonstrates that Hayekian arguments are enriched by transaction-cost reasoning and vice versa. While there are admittedly economists who span the Austrian and new institutional research programs, **it is rare to see extended arguments from both schools of thought within the same theoretical contribution.**

Limitations of the thesis and extensions:

My main comment for the author for future work in this area would be to think about the fact that governments typically have a comparative advantage in (and a monopoly in the use of) violence. Indeed, many authors *define* the state as an entity which has a comparative advantage in the application and use of violence. Hence competition between governments, states and jurisdictions may not always have the same benevolent implications as we have with competition between private actors. For example, in a world of non-territorial unbundling, if some individuals decide to switch jurisdictions from A to B, this would presumably benefit state B and cause a loss to state A. In the Tiebout setup, this may induce State A to compete peacefully with State B, replicating what B is doing or doing something that is even more attractive in order to regain "customers". But another option might be for A to threaten to invade B. What does this possibility of interjurisdictional conflict imply for the main results of the thesis? Are they robust to this possibility, or do they break down? And under what conditions? This would be a very interesting extension to the author's work.