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Journal of Special Jurisdictions
1(1) (2020)

Letter from the Publisher

Joseph McKinney,

Startup Societies Foundation

The special jurisdiction space has matured dramatically since Special Economic Zones spurred its formalized reemergence in the latter half of the 20th century. Experiments from Puerto Rico, Ireland, and later China catapulted innovative jurisdictions from outliers to common practice, now operating in 75% of countries worldwide.

The breadth, depth, and ambition of special jurisdictions has grown in parallel to their numbers. Special jurisdictions now offer more than simple tax and tariff relief, common in first generation Special Economic Zones. Some contemporary projects provide new regulations and even alternative legal systems. Others push innovations outside economic policies, such as ecology, politics, and social relations. New stakeholders are emerging to support the space, including government officials, think tanks, researchers, entrepreneurs, NGOS, and financiers.

Despite the field's rising importance, for the last 15 years, there has not been a peer reviewed academic institution to study it. The Flagstaff Institute of the World Economic Zone Association was the last such attempt, but it stopped publishing in 2005. This absence leaves a gaping hole in the space, making it difficult for government officials, academics, and local stakeholders to understand this booming phenomenon. As an industry, Special Jurisdictions also lack a critical, objective lens to keep initiatives accountable and tied to established best practices.

To satisfy these needs, the Institute for Competitive Governance, the research arm of the Startup Societies Foundation, decided to establish this Journal. We hope that the Journal of Special Jurisdictions will provide the necessary rigor and insight to understand one of the biggest movements in the 21st century.

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Journal of Special Jurisdictions

1(1) (2020)

Letter from the Editor

Nathalie Mezza-Garcia, Managing Editor, JSJ

University of Warwick

I am pleased to announce the publication of the first issue of the Journal of Special Jurisdictions. The editorial team has been looking forward to this moment for the last few months. We would like to thank our amazing reviewers and authors for making it a reality. We hope that our readers appreciate this issue as much as we enjoyed putting it together.

This special issue's topic is non-territorial governance. We sought papers that explored the relationship between non-territorial forms of governance, such as blockchain, the internet and distributed communities, and special jurisdictions, including Special Economic Zones and other forms of Startup Societies. We decided to put these two "hot topics" together based on their individual potential to transform, improve upon or, at least, facilitate governance as we know it today.

Our aim was attracting papers that pushed the boundaries of knowledge in the fields of governance, economics, political science and law. Indeed, we received papers that explore how and why conditions particular to special jurisdictions allow for easier implementation of innovative, non-territorial forms of governance. However, we also received papers that discuss the potential of non-territorial forms of governance to structure special jurisdictions. Our authors successfully walked the fine line between academic rigor and presenting new, non-mainstream governance ideas by recognizing some of their limitations.

For this issue, we have selected four papers. One is a case study, and three are exploratory works. This issue discusses papers discussing non-territorial forms of governance, such as ULEX, cryptodemocracy (futarchy, quadratic voting and epistocracy), and blockchain-based governance. It also includes works about forms of governance that have a different relation to the territory, such as zone-based governance and seasteading. The case study we include focuses on one key example of a special jurisdiction, the Shenzhen Special

Economic Zone. These papers discuss bold, yet feasible, forms of governance. Some already exist. Others are yet to be tried. Still, the selected papers embody today's *crème de la crème* of potential non-territorial governance, Startup Societies and next-generation Special Economic Zones.

Our first paper is by Professor Tom W. Bell. Bell's paper explores an open-source legal system, ULEX, based on the Restatements of Common Law, and other established private sources of law. Bell proposes ULEX as a sound mechanism for communities spread across the globe to solve disputes among its members. The second paper is by Carl Hooks and Sebastian Reil. Hooks and Reil test different hypothesises behind Shenzhen's success, and use their findings to explore how lessons from this successful Special Economic Zone translate to non-territorial forms of governance. The paper is based on the author's six day field trip to Shenzhen. The third paper, by Patri Friedman and Brad Taylor discusses forms of governance based on zones, floating communities on the ocean and blockchain, which, by allowing entrepreneurial entry to the governance industry, could potentially break existing entry barriers. Lastly, our fourth paper, by Darcy Allen and Aaron Lane looks, at cryprodemocracy. This is a blockchain-based system which extends the voting capabilities of contemporary democratic systems. The authors recognize the limitations of current one-person-one-vote democracies and look at zones as potential test beds for cryptodemocratic systems such as futarchy, quadratic voting and epistocracy.

As Managing Editor of the Journal of Special Jurisdictions, it is my pleasure to officially launch this academic project by the Institute of Competitive Governance, the research arm of the Startup Societies Foundation. I am assured that these four papers will inspire our readers to think about the possibilities, limitations and challenges of non-territorial forms of governance in, and as, special jurisdictions.

With the publication of this issue, we also release the call for papers for the two next issues of our journal. One will be focused on the role of special jurisdictions in a post-COVID-19 world. The other one will be dedicated to the Honduras' ZEDEs. We welcome publications that address any topic in connection with these issues.

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Ulex: Open Source Law for Non-Territorial Governance

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Abstract

Communities that stretch across international borders struggle to resolve their members' disputes. It is not a trifling problem. Distributed protocols such as Ethereum, EOS, and Dash host hundreds of billions of dollars in assets and handle transactions worth millions daily. Their members likely number in the tens of millions, scattered in unknown locations across the globe. Even the most successful of these communities have fractured over questions of how to interpret, apply, and amend their rules. The resulting "governance by hardfork" has generated skepticism about all things crypto –from currencies, to economics, to governments. Distributed protocols need a comprehensive, trustworthy, independent set of rules for resolving disputes. Ulex, an open source legal system, offers a solution. Its substantive and procedural rules can resolve the disputes of communities stretching across international borders. Its flag-free rules, drawn from tested and trusted private and non-governmental sources, define a wide range of legal claims and the procedures to follow in resolving them. This paper explains how Ulex can upgrade the governance of distributed protocol communities, describes current efforts on that front, and paints an attractive future of open source, non-territorial law.

Keywords: non-territorial governance, Ulex, open source, blockchain, distributed protocol, private law.

Resumen

Las comunidades que se extienden a través de las fronteras internacionales luchan por resolver disputas entre sus miembros. Esto no es un problema insignificante. Los protocolos distribuidos

como Ethereum, EOS y Dash alojan cientos de miles de millones de dólares en activos y manejan transacciones por valor de millones diarios. Sus miembros probablemente ascienden a decenas de millones, dispersos en lugares desconocidos en todo el mundo. Incluso las más exitosas de estas comunidades se han fracturado por preguntas sobre cómo interpretar, aplicar y modificar sus reglas. La resultante "gobernanza de hardfork" ha generado escepticismo sobre todas las cosas criptográficas, desde las monedas, hasta la economía y los gobiernos. Los protocolos distribuidos necesitan un conjunto de reglas integrales, confiables e independientes para resolver disputas. Ulex, un sistema legal de código abierto, ofrece una solución. Sus reglas sustantivas y de procedimiento pueden resolver las disputas de comunidades que se extienden a través de las fronteras internacionales. Sus reglas sin bandera, extraídas de fuentes privadas y no gubernamentales probadas y confiables, definen una amplia gama de reclamos legales y procedimientos a seguir para resolverlos. Este artículo explica cómo Ulex puede mejorar la gobernanza de las comunidades de protocolo distribuido, describe los esfuerzos actuales en este campo y pinta un futuro atractivo de código abierto y leyes no territoriales.

Palabras clave: gobernanza no territorial, Ulex, sistema legal de código abierto, blockchain, protocolo distribuido, ley privada.

1. INTRODUCTION: DISTRIBUTED GOVERNANCE NEEDS NON-TERRITORIAL LAW

As human society has evolved from clans to kingdoms to nation states, its communities have grown larger and less tangible. Our first and most concrete bonds remain those forged by birth. Wider family relations include distant kin. Kingdoms connect strangers through laws abstract enough to fit into code, but real enough to kill. Maine's (1861) influential account of how contract relations tend to supplant status ones in developing societies represents a signal example of the more general phenomenon: Human society tends toward dematerialization, in that it moves from the immediate and physical to the remote and intangible.

The dematerializing of society has not stopped with nation states. Granted, it seemed for a long while as if the international system set up in the Treaty of Westphalia would keep the world's largest communities more or less within their defined boundaries, functionally and physically. People talked, traded, and traveled internationally of course, but most people lived in one place, under one law, most of the time. In its ideal form, this system gave nation states unchallenged authority within solid, controlled borders. It offered a comfortingly simple view of the world to those who, like Fukuyama (1992), would have history stop. Unconcerned with what sages of statecraft proclaim, however, non-territorial communities have started drawing outside the lines of traditional political institutions.

The Internet opened cross-border communications to the masses, allowing casual personal conversations to stretch across the globe. Non-territorial talk has flourished. Mere talk has little need for law, though. Only after Bitcoin raised the stakes by turning talk, in the form of binary computer code, into money did distributed protocol communities find themselves sorely needing effective ways to resolve inter-member disputes. Though commentators have recognized the problem, solutions remain elusive (Yocom-Piatt, 2015).

Bitcoin itself provides too little infrastructure to support dispute resolution services. However, it inspired more sophisticated protocols, such as EOS, Decred, and Dash, designed to support voting, delegation, funds disbursement, and other administrative functions (Smith + Crown Intelligence, 2019); But only very

recently, and still very imperfectly, have these non-territorial communities begun to address the challenge of resolving disputes between their users, who log on from points scattered across the globe, identified only by alphanumeric pseudonyms.

The largest of these non-territorial communities handles transactions worth tens of billions of dollars daily and holds assets worth hundreds of billions (CoinMarketCap, 2019). Though an exact census remains impossible, it likely runs to millions. Despite having so much at stake, though, these new networks have stumbled at governance. Even the most successful has suffered hacking attacks, emergency hard forks, and the influence of personal politics (Buterin, 2017 & 2018). This disappointing performance has discouraged investment and engendered broad skepticism about all things crypto-, especially crypto-governance (Daian, P., Kell, T., Miers, I., & Juels, A., 2018).

Though less noted than high profile failures like stolen funds or insider influence, distributed protocols communities suffer a more fundamental and widespread problem: they have no reliable way to resolve disputes between members. Wanting that social good leads to all manner of social ills. Beyond specifying the purely technical standards, most protocols do not even try to document the rules for how members should treat each other to avoid conflict and, when conflict inevitably erupts, how to resolve it.

Consider Bitcoin. It has suffered a number of existential conflicts in its relatively short history. In no case were these resolved by public deliberation in the community's governing institutions. Bitcoin has no such institutions. Nor did the contesting parties seek guidance from objective and qualified third party arbitrators. The Bitcoin protocol does not itself include rules for resolving user disputes, and those fighting over Bitcoin's fate never expected that any territorial sovereign's courts would settle their conflicts. How could a territorial court understand their world? And how could it enforce its ham-fisted decisions? Happily, for Bitcoiners, it could not.

Instead, Bitcoin has relied on extra-protocol manipulation by influential stakeholders to quell community unrest (Buterin, 2013) or, when that has failed to forge the peace, splitting the community into separate and incompatible parts via a hardfork (Bitcoin Exchange Guide, 2017).

Not all protocols ignore the need to provide a way to resolve their members'

disputes, but none appear to have satisfied it. The creators of the EOS network in particular made a great show of creating a Community Arbitration Forum bound to resolve member conflicts according to the rules set forth in the EOS Constitution. The result? Utter failure. Despite its attempt to bind users to substantive rules and a forum for resolving disputes, the EOS Constitution had no such effect because it was never presented to prospective users in the form of a mandatory "click-through" agreement. Without a binding contract with and between users, EOS has no just or practical way to give its supposed laws effect. With it, EOS's rules would be enforceable like any other agreement to resolve disputes under private arbitration.

Perhaps that was all for the better, given that the EOS Constitution's threadbare invocation of "this Constitution and the Maxims of Equity" (EOSIO Core Arbitration Forum, 2018, Art. X) offers nothing close to the level of detail required to handle transactions worth billions of dollars and involving millions of users. Procedurally, the EOSIO Core Arbitration Forum never operated as planned, instead relying on unprofessional and *ad hoc* action (Floyd, 2018). The EOS community subsequently abandoned the EOSIO Core Arbitration Forum and Constitution for the EOS User Agreement (EOS New York, 2019). Curiously for a supposed agreement, however, the document claims that the network's "functions, enforced by code, do not require the consent of Users" (Art. III). It offers nothing by way of substantive rules or a means for resolving members' disputes.

The Decred network likewise offers a self-proclaimed "Constitution" (Decred, 2019) that fails to deliver. Though it defines a few technical details, the document punts to the "Decred network's consensus" for rules to govern users. It says nothing about dispute resolution. Despite its grand name, therefore, Decred's "Constitution" does not provide its members with the rules necessary to avoid and defuse conflict.

Why have distributed protocols fallen so short of providing the rule of law? Despite the fact that they both work with code, the categories of programmer and lawyer seldom overlap. The programmers responsible for creating distributed protocols evidently know quite a bit about how to write rules for data but very little about how to write rules for humans. Lawyers could doubtless do better at the latter coding job, but few lawyers know much about distributed protocols.

Still less will most lawyers, accustomed by training and vocation to think of law as the sovereign command, perceive that distributed protocol communities need an entirely different approach. Non-territorial, open-source, opt-in governments need legal systems with the same features.

Legal systems designed by state officials to provide top-down control within bounded territories do not offer a very good fit for communities distributed across national boundaries, governed by the undirected choice of independent nodes in an ever-changing network. Non-territorial governance needs non-territorial law. This paper explains why and how Ulex, the open source legal system, can fill that need. It begins with a summary description, with special emphasis on the features that suit it for non-territorial communities. The section then describes ongoing volunteer efforts to put Ulex into public use.

2. CURRENT EFFORTS TO IMPLEMENT ULEX: THE OPEN SOURCE LEGAL SYSTEM

As befits a legal system modeled on open source software, complete with call-outs to legacy code, Ulex has a startup-style name. The word *Ulex* comes from the combination of the letter *U* with the Latin word for law, *lex*. The *U* stands not for *universal* or *uniform,* but instead from a somewhat silly pun: "You put the *u* in *Ulex*." With regard to its name no less its underlying philosophy, therefore, Ulex follows the lead of Unix, GNU, and Linux, the names of which also originated in wordplay, as Tozzi (n.d.) recalls.

Ulex relies entirely on volunteers for its growth and support. It owns nothing; sells nothing. No for-profit or government firm funds or directs Ulex. Its friends evidently act from other motives. Perhaps they thrill in helping to launch an idea that might change the world, and for the better.

Like a flock of birds or a pod of dolphins, Ulex volunteers gather in different places and in different forms at different times. It began as an idea by the author of this paper, then took form in written words (Bell, 2018, p. 185). Thus set free, Ulex quickly found friends. The Startup Societies Foundation won a 5,000 Euro grant from the European Resource Bank to promote Ulex's development, which it leveraged into more funds via an Indiegogo fundraiser (DeMorro n.d.). Those funds went to public education about Ulex through the Institute for Competitive Governance, a Foundation

research project, including support of the present publication.[1] (Id.)

Ulex, as the legal equivalent of an open source software project, has settled in at the Ulex Open Source Repository on Github, the most popular venue for open source coding projects (ulex-opensource, 2019). There, a small volunteer corps keeps the legal code updated and looks for new installs. Since they stand to get little more than glory for their efforts, it seems only fair to give them public credit. The members of the Github Ulex Open Source Repository include: Bradley Hook, Christian Saucier, joestartupsocieties (Joseph McKinney), David McFadzean, the author, and Wil Bown. (ulex-opensource, 2019, People). May their efforts benefit many and inspire more than a few.

The following subsection begins with a description of some recent actions of the Ulex volunteer corps. The overall impetus: make it easy for parties engaged in online contracting to choose Ulex for their agreements. After that account from the front in the market penetration campaign, the subsection will offer some working legal code: model clauses to put into contracts to make sure that Ulex works as intended. The plugin will deliver Ulex to non-territorial communities; the model clauses will ensure that Ulex installs and runs smoothly.

3. ULEX PLUGIN

The Ulex repository offers a variety of public resources. It provides version 1.1 complete with links and a lovely picture of Ulex's flowering mascot, *Ulex europaeus*, commonly known as *gorse*. (ulex-opensource, 2017). It offers a forum to air questions about amending Ulex, such as to create a new version 1.1.a. (ulex-opensource, 2019, Ulex issue #5). And most notably for present purposes, it offers the Lexinomicon game.

The Lexinomicon game is not about moving pieces around a board or shooting computer-generated zombies. It instead provides a simple, robust structure for incentivizing distributed members of a community to contribute to a defined project, one usually chosen, as here, to contribute to the community's common good. Specifically, the Lexinomicon game will allow the volunteer corps to bring other *paid* minds to bear on the question of how to encourage Ulex's growth, by posing challenges and offering monetary rewards for those who satisfy them.

So far, the game remains a mere scrimmage. If all goes as planned, it should

[1] The author was not offered, did not receive, and would not accept those funds, to which he instead contributed.

see its first use to develop the Ulex plugin. First, though, the volunteers must define the specifications that free-lancers must satisfy to win Lexinomicon's rewards. The development team has nearly finished that task, making it as far as a draft a wireframe interface (ulex-opensource, 2019, Lexinomicon issue #28). Once having thereby defined the requirements for winning, the team can sit back and see what Lexinomicon's bait attracts. Ideally, it will result in plugins by which users of popular distributed protocols and services can apply the legal system to their transactions, both when they make agreements and when they break them.

The Ulex plugin could not simply make it easy for parties to invoke Ulex, using choice of law and forum clauses like those described below. It could potentially 3also give them access to a network of legal services. No less than in territorial communities, the structure provided by law of non-territorial communities should eventually come to support a rich web of interconnected services. Lawyers specializing in Ulex will upload their practices, drafting contracts, creating corporations, and litigating in the new legal system. Disputes will give rise to adjudication services, which will support a bevy of Ulex judges-for-hire. Publishers will collect opinions. Commentators will pick them apart. Like ocean life congregating around a tapped-out oil rig, this ecosystem of services will make Ulex more convenient and resilient.

To nourish that kind of growth, the Ulex plugin will support identities, credentials, and trust ratings. These features will help users evaluate counterparties using the network. Low-trust communities seldom thrive; trust-rich ones enjoy lower transaction costs. With these add-ons, Ulex could help ensure the survival and growth of its fledgling effort.

Provided that network effects kick in and Ulex begins to see wide use, users can enjoy safe, convenient, and cheap transactions among themselves, encouraging the growth of peaceful and prosperous communities. It all has to start with just one or a few specific applications, though. The following paragraphs focus on a few of the most likely candidates.

EOS, Decred, and other distributed protocol communities. These could in theory adopt Ulex wholesale or piecemeal, at a level each individual user accepts when transacting through the protocol or in finer grained agreements, built at the entrance to proprietary side-channels. Whether practice

can do likewise remains as yet untested. As related above, no distributed protocol of note has yet succeeded in both conditioning access to agreement to specific terms of use and creating non-territorial mechanisms for adjudicating community disputes. EOS tried hardest and came closest - an encouraging result. Perhaps having an Ulex plugin available could encourage another, more successful effort.

Kleros. Kleros offers an open source online dispute resolution protocol that uses the blockchain and crowdsourcing to adjudicate disputes (Kleros.io, 2019). Contesting parties choose the number of jurors and the specialized court from which jurors will be drawn to decide their dispute. Kleros directs the parties' query to a panel of jurors randomly selected from among those who have agreed to adjudicate disputes in anticipation of receiving arbitration fees by the parties. Jurors vote on which party should win the dispute. Those who vote with the consensus of all jurors win the amounts staked by the losing jurors (Lesaege, Ast, & George, 2019). Kleros thus far has seen only test use (George, 2018).

Somewhat surprisingly for a self-proclaimed system of adjudication, Kleros says next to nothing about the choice of law. It neither set a default for all disputes nor sets forth guidelines for specialized courts to follow when it comes to deciding whether to respect the parties' choice of law, if they make one, and if not, what law to apply to their dispute. The closest it comes to addressing the crucial topic appears in its projected plan to let jurors of each specialized court set "guidelines about how to arbitrate disputes" that function like "the laws in traditional justice systems" to "determine which party should win a dispute." (Lesaege, Ast, & George, 2019, p. 10). While that leaves open the possibility that informed jurors will in each case choose a body of law adequate to solve a wide range of disputes efficiently, without showing a bias to any particular territory, it does nothing to guarantee or even encourage that outcome. Ulex could solve this limitation by ensuring that specialized courts use its rules to decide when to adopt contesting parties' chosen law, if any - a safeguard to prevent them from, say, choosing trial by combat. A platform such as Kleros, thus, could significatively benefit from choosing a Ulex for all of its cases.

OpenBazaar, an open source project, has developed a protocol enabling e-commerce sales through a decentralized online market. It operates on a peer-to-peer

basis, with no central point of control, and offers transactions to take place without intermediaries, fees, or legal restrictions. Open Bazaar's creators may have taken their aversion to the law too far, though. Like Kleros, it fails to provide adequately for parties to choose the law applicable to their dealings.

The Terms of Service for using the market's software interface specifies only that "OpenBazaar users must adhere to the laws in their own legal jurisdiction" (OpenBazaar2 n.d.). That leaves the law governing sales contract ambiguous when buyers and sellers are not in the same jurisdiction. The clause was evidently written not to govern transactions but to exonerate OpenBazaar and other users from any one users' violation of local criminal laws. The use of OpenBazaar to sell illegal drugs, infringing works, and other contraband demonstrates that concern for criminal liability is not paranoid. But a term admonishing users to obey their local laws cannot substitute for a choice of law clause.

OpenBazaar deals with conflicts arising between buyers and sellers by providing an option for them to choose a third party "moderator" to settle disputes (OpenBazaar, n.d.). At no point does the interface require any party to choose the applicable law; each moderator gets to set his or her own terms. Open Bazaar offers the policy statements of three moderators as examples for others to follow (Id. at para. 6). None of these examples includes a choice of law provision, though moderators more aware of this lacuna could fill it by specifying the body of law they will apply to disputes under their consideration. That, too, would provide an apt place to invoke the rules of Ulex. Indeed, the Terms of Service would do better to specify Ulex or some other suitably open source legal system as the applicable default unless users choose otherwise.

4. MODEL CONTRACT CLAUSES WITHIN ULEX

Territorial sovereigns presume that their law controls everything in their jurisdiction. By default, if you live in a country, its laws apply to you. Ulex, in contrast, can apply to a dispute only by the consent of all parties. It rules no territory and does not presume to force itself on anyone. How do parties express their consent to Ulex? Through contracts.

New users come to Ulex through contract. The open source plugin described above will help members of non-territorial communities to easily choose Ulex as the

law to govern their agreements. Contracting parties can opt into Ulex by more conventional means, of course; Ulex has already seen use by parties who, while using solely electronic rather than paper forms, have used relatively conventional choice of law clauses to make Ulex operative for their agreement. In any event, those contracts will need to use particular bits of legal code to make Ulex operate as planned.

This section offers three model clauses for implementing Ulex. These clauses cover choice of law, choice of forum, and forfeiture of rights and remedies. The first two will sound familiar to any attorney, as equivalent clauses appear routinely in commercial contracts. The last clause might sound familiar to estates and trusts lawyers as something like a will's *no contest* clause. Others might find it reminiscent of open source licenses, which incentivize those using the materials to keep them in the open source environment rather than stealing them away to a closed one. Violate that license and you lose the right to use the open sourced works. This is similarly the case with the model Ulex clause.

Strictly speaking, Parties who want to invoke Ulex by contract need only add two clauses to their agreement: one designating the choice of law clause and another designating the choice of forum. The former designates the law chosen by the parties to control any disputes arising under or related under the contact. A choice of forum clause specifies the method or institution chosen to decide those disputes. Both clauses appear routinely in contracts of all types and receive respectful treatment even in courts that, by enforcing the clauses, effectively lose control over the dispute. Happily, Ulex can rely on fairly standard choice of law and choice of forum clauses.

Most choice of law clauses say little more than that the chosen law will govern any disputes arising under the contract. Lawyers often add a bit of verbiage to ensure the clause reaches as widely as possible. It would not do to have the chosen law apply only in the event of formal litigation, after all, when the parties also want it to apply to negotiations, mediations, or other relatively informal dispute resolution processes. The model clause offered below thus includes similarly broadening terms:

> **Model Ulex Choice of Law Clause:** Ulex governs exclusively any claim or question arising under or related to this Contract. The Parties

> represent and warrant that their choice gives them substantial connections to Ulex, that they have a reasonable basis for choosing that law, and that no other authority has a materially greater interest in the application of its law to the Contract.

In contrast to the first sentence of that model clause, the second sentence is not commonly seen in other contracts. Because most choice of law clauses name the law of a sovereign in which at least one party resides or does business, they have no need to emphasize the suitability of applying the law that the parties choose. Unlike a territorial sovereign, Ulex has the advantage that it does not presume to rule anyone. Parties invoking Ulex thus might want to play it safe and spell out exactly why others should respect their choice of law.

The second sentence of the model clause does this by referencing the parties' connections to Ulex, reasons for choosing it, and the absence of any more applicable law. Why those items? They come from Ulex itself. Specifically, the clarifying sentence invokes the standards for determining when a court should apply the law contractually chosen by the parties as set forth in § 187(2) of the Restatement of Conflict of Laws, Second (1971), made part of Ulex 1.1 at Rule 2.4.1. That rule defers to the parties' chosen law unless it has "no substantial relationship to the parties or the transaction" and unless "application of the law of the chosen state would be contrary to a fundamental policy of a state which has a materially greater" claim to govern it (ulex-opensource, 2017).

The model Ulex choice of forum clause does what any such clause should: designate which institution will have the power to issue binding legal decisions about claims or questions arising under the contract. Contracts that choose the courts of a territorial sovereign have it relatively easy: they need only say "U.S. Central District of California, Southern Division" or the like. Or they might cite a prominent private arbitration firm local to one of the parties. Ulex, having not so much a place as a vector, has to take a bit more care to anchor itself to a working institution.

The model clause of course defers in the first instance to the parties' choice of Forum, and invites them to fill in the blank. In actual practice, the clause can most of the time end there. The parties will agree to some reasonable Forum, such as a private arbitration service located half-way between them in a neutral country, or perhaps soon an online Forum where litigants can choose

neutral experts to decide their disputes under Ulex law. But for now, the model clause plays it safe by offering a long list of Fora and backup Fora:

> **Model Ulex Choice of Forum Clause:** Any claim or question arising under or related to this Contract shall be resolved in a Forum hereby designated by the Parties to the agreement: [insert name of chosen forum]; else a Forum designated by separate contract of the Parties with each other or a third party; else a Forum provided by the Ulex Foundation; else the most recent Forum to decide a Ulex claim or question, else JAMS in Orange County, California.

If the Parties do not choose a Forum outright, the model choice of forum clause fills in for them. The list of backup options begins by referencing the Parties' other agreements, whether between them or with some third party. What kind of third party? Most notably, one like a distributed protocol or similar platform that establishes choice of forum agreements with each of its users. For example, a later version of EOS might actually bind all users and through which they chose a Forum. This model clause would then make that choice operative.

The next fallback? A Forum provided by the Ulex Foundation. No such Forum yet exists; the putative Foundation exists as little more than a Bitcoin address in the author's care. The model clause prepares the way for what might be the model forum — a self-sustaining open source Forum by and for Ulex users. Until that judicial dream comes to fruition, this sub-clause will affect Parties little more than a speed bump.

The next sub-clause also prepares for a hypothetical Forum — one already experienced in Ulex matters. No candidate institution appears as yet to qualify, though presumably one soon will. In the meantime, the list of alternative fora concludes with a real space private arbitration service as good as any and better than most: JAMS. It is not cheap, and losers pay legal costs in Ulex, so only a very rare and important dispute would make it this far through the model choice of forum clause, to the bitter end.

The model Ulex forfeiture clause engages in the same sort of legal judo routinely used by estates lawyers, who use *no-contest* clauses to protect wills and trusts from wasteful litigation brought by greedy beneficiaries disgruntled with their windfalls (Legal Information Institute, n.d.). Though

the wording of the Ulex forfeiture clause comes from that context, the inspiration comes from the use of copyright licensing to protect open source software from getting swallowed up by those drinking from its fount of code. Open source software defends itself by attaching license-in-kind requirements to derivative versions of works in its ecosystem. Ulex faces a similar problem; the model forfeiture clause offers a similar solution.

Ulex cannot survive if Parties cannot trust it to generate predictable answers to important questions such as: What law applies to this dispute? Who will decide it? If one Party takes those kinds of questions to a forum other than the one agreed to in the Contract, and defined in the choice of forum clause, both the other Party and Ulex users generally would unjustly suffer harm. The defecting ex-Party would make remaining Ulex users less confident of how their own disputes might come out. The wrongful act would cast a shadow on the entire Ulex ecosystem, to the loss of all those keeping their promises.

The model forfeiture clause brings matters back into balance by making a Party tempted to do extra damage face the prospect of suffering extra costs. The clause works by making those who defy their agreed choice of forum lose all rights and remedies under the Contract. That discourages defection in the first place. Parties who nonetheless defect to other fora run a predominating risk of being denied relief. Even an unapproved forum would have to admit, upon reading the forfeiture clause, that the complaining Party cannot logically prevail by making any claims under the disavowed Contract. They would get only a shrug and a bill. Those dismal prospects will again deter defection. The result: the Contract grows stronger to the benefit of both Parties and Ulex users everywhere.

> **Model Ulex Forfeiture Clause.** Any party that raises a claim or question arising under or related to this Contract in a forum other than one complying to its Choice of Forum clause thereby forfeits all rights and remedies under this Contract.

What about Parties who defy the choice of law clause by trying to have an unqualified forum apply other law to the Contract dispute? That, too, arguably inflicts negative externalities on third party users of Ulex. Perhaps. But the present model clause already does as much as any contract

properly can; contract law (including the contract law embodied in Ulex Rule 2.3) does not allow punitive damages. Furthermore, Ulex's first iterations would not want to summarily reject good rules from other legal systems; far from it. Punishing Parties for arguing for the application of foreign influences would raise irresolvable boundary questions and subvert Ulex's international and open aspirations.

Contracting parties need only include the first two model clauses to give Ulex effect in their relations. The forfeiture clause strengthens that choice by encouraging the Parties to stick to their promises, increasing the predictability of adjudications of the Contract, and by protecting the Ulex network from loss of goodwill. Best practices thus suggest using all three.

Those borrowing these clauses might benefit from customization in particular cases. Parties might in particular want to specify which version of Ulex they choose, given that it has already reached version 1.1 and more will doubtless follow. The Model Clauses come with no warranty and nothing here constitutes legal advice, so it might be best to consult an attorney when adapting the model clauses in especially complicated or high-stakes cases. Because Ulex incorporates the most popular and well-known contract law, as set forth in the Second Restatement, competent attorneys should find it relatively easy to deal with.

5. ULEX AND THE NEEDS OF NON-TERRITORIAL COMMUNITIES

Ulex originated to serve special jurisdictions rather than non-territorial governments (Bell, 2018)[2]. As it turns out, though, both kinds of communities need world class rules from flag-free sources. In the case of special jurisdictions in low and middle income countries, importing laws *en toto* from a foreign sovereign risks inflaming locals. It would also tie the special jurisdiction's legal development to that of a distant, different, and presumably uncaring sovereign. That cannot make for good policy.

Why not create a special jurisdiction's laws completely from scratch? Because discerning investors and residents would balk at the prospect. Lawyers, like wine connoisseurs, tend to disdain innovation. Innovation means change; change means risk. Guiding clients through red tape labyrinths can generate billable hours, granted, but no honest lawyer wants work just for work's sake.

[2] Just before this paper went to press, the Próspera ZEDE in Roatan, Honduras launched with a Ulex built into its Common Law Code.

Has human behavior changed so much over that the law's ancient wisdom needs updating? Not likely. New laws tend either to get something fundamental wrong, or to make wrong something that should remain legal.

So if a special jurisdiction cannot use foreign law, and does not want to use new law, what can it do? It could get its law from private and non-governmental organizations such as the Uniform Law Commission, International Institute for the Unification of Law, and American Law Institute. That is what Ulex does, copying select, tested and trusted rule sets from those and other flag-free sources, adding a handful of bespoke provisions, and combining them in a unifying framework to create a comprehensive legal system. Ulex thus provides a third and less controversial option for special jurisdictions than importing rules from a foreign sovereign or creating an untried legal system out of whole cloth.

The same features that suit it for special jurisdictions also suit it for non-territorial communities. These, too, must avoid tying themselves to any particular sovereign power. In this case, though, it is less to avoid inflaming locals than it is to abstain from favoring any particular subset of members. Like special jurisdictions, non-territorial communities should avoid trying to recreate the law from scratch. They have tried that, already, to disastrous effect.

Ulex might work well for both special jurisdictions and non-territorial communities because its inspiration comes from a completely non-political source: the history of computer science. Early computers ran much as governments do today: Developers wrote a unique operating system for each machine. The first operating system written to run across computing platforms, Unix, appeared in 1970. Over the following few decades, the spread of personal computers drove competition between computer operating systems, encouraging the development of proprietary options, like Microsoft Windows and Apple's OS X, as well as non-proprietary options like GNU/Linux.

Only recently has governance advanced to a point that computer science reached in the era of shag carpets. A few innovative countries have begun experimenting with installing new legal operating systems—specifically, common law rules and procedures—on their territories. We now stand on the cusp of a Cambrian age in governing services. The

advent of special jurisdictions, distributed protocols networks, and other startup communities stands to bring something like the PC revolution to governance, encouraging unprecedented levels of competition and innovation. Just as GNU/Linux freed computer operating systems for public use and adaptation, so too could systems such as Ulex give the public open source legal systems. Both special jurisdictions and non-territorial communities could benefit.

Special jurisdictions running Ulex might bring prosperity to regions plagued with bad government. Similarly, non-territorial communities might find in Ulex a comprehensive and unbiased source of rules that have been proven by long use to encourage human cooperation and flourishing. An entirely new kind of social organization would arise. Competition from these open source communities might even drive traditional, territorial sovereigns to borrow some innovations from Ulex.

6. CONCLUSION: FUTURE LAW FOR NON-TERRITORIAL COMMUNITIES

This paper has explored ways in which new non-territorial governments need new non-territorial law and explored Ulex as a potential solution. The discussion included a review of current efforts to make Ulex more available to non-territorial communities in the form of an open source application plugin and three model clauses to make sure that, once uploaded to users' agreements, Ulex functions as planned. To conclude the paper, this section looks forward.

Suppose that the Ulex plugin program described above comes to fruition and contracts invoking the legal system spread throughout distributed protocol networks. That could drive the growth of an entire ecosystem of interconnected services: lawyers drafting contracts and litigating disputes; judges deciding cases and publishing opinions; commentators describing systemic trends and local practices; teachers and students creating new generations of Ulex users; and coders building the law into the very structure of online life. Though not directed by any single mind, the community could grow and adapt to continue providing the rules humans need to thrive together.

While this sounds pretty appealing, it arguably understates the potential benefits of Ulex's use and spread, however. Too few people appreciate the subtle power of the rule of law. Like health, it becomes most noticeable in its absence. And yet, like

health, the rule of law holds great value. As the World Bank has carefully documented, the rule of law represents the single largest source of human wealth (2006, pp. 26, 96). Ulex could help non-territorial opt-in governments offer users something better than the legislative and judicial services of territorial sovereigns. It can help these new communities enjoy a kind of social vitality and resilience unknown among the earthly nations.

Taleb (2007) convincingly argues that humans tend to underestimate how bad *black swan* events can get. This paper argued up instead of down, claiming that humans also tend to underestimate how good *gold swan* events can get (2018, pp. 236-37). The same theory drives both hypotheses: by evolution and experience, humans have developed cost/benefit calculations that do pretty well with routine events but that break down at the tails of the event distribution. At those extremes, too few events occur to stimulate or test suitable cognitive tools. It would have done dinosaurs no good to develop behaviors suitable for reacting to massive meteor strikes.

Humans, too, show little appreciation of the probability-adjusted cost of a massive meteor strike. Most people fear ghosts more than they fear the world disappearing in an inferno of heavenly fire. Such black swan events seem not to register, somehow, to most people.

The same theory directed in the positive direction suggests that we run some risk of underappreciating the benefits of upgrading the rule of law. Most of us have known little more than the dinosaur-grade legal systems of terrestrial sovereigns. These operate with brutal efficiency or well-intentioned confusion in the best of cases. Those examples do not equip us to fully understand non-territorial governments and open source legal systems. Add to the cognitive load struggling to appreciate the gentle power of the rule of law. And, lastly, try to fit old cost/benefit models to this new, unprecedented, extreme improvement in governance. How *could* we predict the upsides accurately?

Ulex could also play a role on the black swan side of the event probability distribution. Suppose the nation state system experienced an existential crisis akin to the fall of the Han Dynasty or the Western Roman Empire. That would render extinct, or much reduce and change, the legal systems that now claim the highest authority over adjudicating disputes arising in their territories (which, in the final accounting,

cover all of the earth and appreciable amounts of its seas). It would not likely render humans extinct, though; we would continue in new kinds of communities. Here, too —perhaps here, *especially* — the rule of law will remain, like health, a crucial but intangible object of desire. If no dynasty, empire, or nation state imposes order, it must arise from below, from the harmonized interactions of many people, across many communities, living very different lives even as they agree on a few simple rules.

You can imagine blacker swans —an *actual* massive meteor strike, for instance — but beyond some limits even the rule of law cannot save humanity. Nature and/or god(s) have the final word in the contest of life versus death. Short of that ultimate appellate action, though, humans will need rules for coordinating their behaviors when they gather in large communities, where strangers often interact, and where wrongful behavior could harm innocent humans and valuable assets. That could describe a territorial city or a non-territorial distributed protocol community. All need ways to avoid and resolve disputes.

Ulex seems to have all the swans covered. It might help initiate a gold one or help recover after a black one. And if the world just keeps rolling along its graceful drunken way, as everybody very rationally supposes it will, Ulex will come along on that ride too.

History has already carried us up to non-territorial communities. These host millions of members and assets worth hundreds of billions. They need law and will have to get it somehow.

If the efforts described here play out as planned, these new communities will find in Ulex the law they sorely want. It only provides the catalyst, of course; the actual institution-building remains the job of each community. This paper has provided model clauses to stimulate the growth of the Ulex ecosystem and given reason to use them. Friends and fate must take it from here.

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Understanding the Shenzhen Miracle: A Field Study of Urban and Economic Development in Shenzhen SEZ

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Abstract

This paper explores why and how Shenzhen has become, by far, China's most successful Special Economic Zone (SEZ). Our qualitative research methods included an extensive literature review and 15 in-depth interviews conducted during a six-day field study in Shenzhen in 2018. We identified underlying drivers of the Shenzhen SEZ's rapid urban agglomeration and economic growth by testing three different hypotheses for Shenzhen's success vis-à-vis China's other first generation SEZs. Our research confirmed the importance of Shenzhen's geographical proximity to Hong Kong and the city's superior institutional environment as key factors for the relative success of its SEZ.

Keywords: Shenzhen; China; Special Economic Zones; urban development

Resumen

Este artículo explora por qué y cómo Shenzhen se ha convertido, de lejos, en la Zona Económica Especial (ZEE) más exitosa de China. Nuestros métodos de investigación cualitativa incluyeron una revisión extensa de la literatura y 15 entrevistas realizadas durante un estudio de campo de seis días en Shenzhen en 2018. Aquí identificamos algunas de las razones principales que explican la rápida aglomeración urbana y el crecimiento económico de la ZEE de Shenzhen y exploramos tres hipótesis diferentes detrás de su éxito de Shenzhen, en comparación con otras ZEE de primera generación en China. Nuestra investigación confirmó la importancia de la

proximidad geográfica de Shenzhen a Hong Kong y el entorno institucional superior de la ciudad como factores clave para el relativo éxito de su Zona Económica Especial.

Palabras clave: Shenzhen; China; Zona económica Especial, desarrollo urbano.

1. INTRODUCTION

In 1979, on the eve of China's[3] Reform and Opening Up (Gǎigé kāifàng) Policy, the area that would become modern Shenzhen was an inconspicuous Chinese fishing town of 30,000 residents nestled in the southeastern coast of Guangdong Province. After China's central government established a Special Economic Zone (SEZ) in Shenzhen Municipality in May 1980, the city grew at an astonishing rate (Yeung, Lee, and Kee, 2009). In the decades since, Shenzhen has blossomed into a mega-city of about 12.5 million residents. The city's increasingly service-based economy is a powerhouse in insurance, real estate, and IT; it hosts brand name Chinese companies such as Huawei, ZTE, Tencent, Vanke, and Ping'an insurance (Herlevi, 2017). In 2018, its municipal GDP surpassed USD 338 billion (RMB 2.2 trillion) – larger than the economies of Hong Kong or Singapore (He, 2018). Shenzhen's rise shattered both Chinese and international records for economic and urban growth (Yeung, Lee, and Kee, 2009). Almost as impressive is the fact that Shenzhen has not experienced crippling housing shortages, failures to provide basic infrastructure, or "any other typical symptom of mega-city urban blight" despite the massive scale and "space-time compression" of its urban development (O'Donnell, Wong, and Bach 2017, pp. 65-66). The undeniable success of Shenzhen in many aspects has made the city a pivotal case study for both domestic and international audiences, (Herlevi, 2017) begging the question: *Why and how did Shenzhen become China's most successful SEZ?*

This paper uncovers and analyzes the causes of rapid urban agglomeration and economic development in the Shenzhen SEZ, which encompasses the entire city as of 2010 (previously, the SEZ only included four of the city's ten districts). Through localized policy experimentation and economic liberalization, SEZs have played an important role in China's development following the start of Reform and Opening Up in 1979 (Zeng, 2011). China's first four SEZs in the cities of Shenzhen, Zhuhai, Shantou, and Xiamen (i.e. "first generation SEZs") rose from similar, humble economic origins. Yet the economic success story of the Shenzhen SEZ has been so exceptional that it merits special attention. Shenzhen's population, GDP, and economic output now

[3] Throughout, "China" is used synonymously with the People's Republic of China (PRC).

place it alongside Beijing, Shanghai, and Guangzhou in the "first tier" of Chinese cities (Yeung, Lee, and Kee, 2009). Multiple explanations exist for why Shenzhen became China's most successful SEZ. While much attention has been paid to economic incentives and market forces in SEZs, including foreign direct investment (FDI), this paper focuses on the important role played by Shenzhen's municipal government. Did Shenzhen simply implement more effective or creative policies than other Chinese cities with SEZs?

This paper begins by providing a concise review of the most relevant SEZ literature. This is followed by the research design and methodology, and the description and analysis of key findings. The paper then presents lessons for non-territorial governance, and concludes with why and how the Shenzhen SEZ succeeded where others failed or experienced mixed results.

2. LITERATURE REVIEW

There is no clear or consensus definition of SEZs. The term is often used to describe a whole range of economic-geographical phenomena on a spectrum ranging from simple industrial parks to fenced-in zones with different legal systems from the rest of their countries – for instance, the Dubai International Financial Center (DIFC) is a highly autonomous zone with different laws than the rest of the United Arab Emirates. The basal definition of a SEZ refers to a geographically defined area within which a different set of rules applies. On the aforementioned spectrum, the Shenzhen SEZ falls closer towards the DIFC, as it is a city-sized SEZ encompassing all of Shenzhen's municipal districts (see e.g. O'Donnell 2013) that enjoys an unusually high degree of autonomy from China's central government.

Today there are more than 4,000 SEZs worldwide (Bell, 2016). More countries have some type of SEZ framework than those that do not (The Economist 2015). The SEZ types within a single country can also vary greatly. China alone had either five, 222, 1,355, or 1,577 economic development zones by 2006, depending on the level of analysis, and maintains nine distinct SEZ programs (Herlevi, 2017). One might expect that SEZ proliferation would indicate strong performance and replicability across different national, political, and economic contexts. In reality, most SEZs are

considered failures. Only a few have become famous for their allegedly miraculous development (The Economist 2015). Shenzhen is often the prime example of a "successful" SEZ and has provided an influential inspiration for academic discussions on issues of economic development and urbanization (see e.g. Lutter, Moser, Bell, and Prichett 2018)

Even though SEZs have become a common phenomenon, they have received little attention in the mainstream development economics literature. Little is understood about the great variance in outcomes of different SEZs and SEZs programs, especially why most SEZs perform below expectations. There are a number of studies that try to identify the success factors of SEZs. The most important of these are the major studies conducted by the World Bank (FIAS 2008; Farole and Akinci 2011; World Bank 2017). Commonly found reasons for failure include institutional issues, poor administration, and inadequate infrastructure in SEZs. Generally, bigger zones and zones that host industries in line with countries' comparative advantages fare better. The choice of location also matters. Political considerations are the main reason for misplaced zone policies and hence zone failure (see e.g. Moberg 2015).

The literature on the Shenzhen SEZ is somewhat more limited. Wang (2013) remains the most comprehensive empirical study of Chinese SEZs with a significant section on Shenzhen. He finds SEZs increase Foreign Direct Investment (FDI) and do not crowd out domestic investment. Zones established earlier were also more successful than zones that were established later. Meanwhile, Tao et al. (2016) review the success factors of Shenzhen in order to provide recommendations to African countries. They also provide data that shows the success story of Shenzhen compared to the other early SEZs in China. UN-Habitat (2019) provides an updated account of Shenzhen's development from an urbanism perspective.

Zai (1999) looks at the nexus of FDI and migration in Shenzhen, but his paper is now outdated. Moberg (2015, 2017) lays out a model of the political economy of SEZs. In the field of law and economics there is Bell (2016, 2018) which focuses on the legal institutions governing SEZs. Romer (2010) proposed the idea of "charter cities." This idea is based on the experience of Hong

Kong; As a colonial trading port, Hong Kong was equipped with "good institutions" that facilitated the city's rapid development. Romer also argues such success stories can be replicated by transplanting "good institutions" that have been proven to work in developed countries to city-sized areas in developing countries. In order for such an experiment to be voluntary and feasible, a target area should be (nearly) unpopulated. Romer has failed to convince country leaders to establish such charter cities. But the Dubai International Financial Center (DIFC) is an example that actually fulfills many of these criteria. For the establishment of the DIFC, Dubai declared a piece of land to be governed by English law instead of UAE law and imported foreign judges for the DFIC court. By importing a trusted legal system, DFIC was able to become the region's leading financial center within a short period of time (Strong and Himber 2009).

Finally, institutional economics can provide general insights into SEZs. However, the application of frameworks from this literature to SEZs remains understudied. Institutional economics is usually presumed to have started with North (1991) and the most important recent culmination of institutional/political economy is Acemoglu and Robinson (2013). Simply put, they argue that "good institutions" are the root cause of prosperity.

This paper contributes to the literature in the following ways: First, it tests different hypotheses for Shenzhen's rapid urban agglomeration and economic growth using an empirical field study. Second, it provides valuable lessons for policymakers trying to replicate the success of the Shenzhen SEZ. Third, it integrates analysis of the Shenzhen SEZ more deeply into the emerging field of non-territorial governance.

3. RESEARCH DESIGN AND METHODOLOGY

To reiterate our guiding research question: *Why and how did Shenzhen become China's most successful SEZ?* Based on theoretical considerations in the literature and common arguments from development economics, institutional economics, and economic geography, we derived the following three hypotheses for Shenzhen's miraculous development:

1. *Proximity to Hong Kong is the primary reason why Shenzhen*

became more successful than SEZs with a less advantageous location. This hypothesis is essentially a "geography matters" story for the Shenzhen SEZ's development. It is important to note Shenzhen could have benefitted from Hong Kong's geographic proximity in several interconnected but nevertheless distinct ways:

a) Logistics and trade opportunities.
b) Access to capital (FDI, portfolio investment, and trade financing). Herlevi (2017) even speculates that it is not clear whether Shenzhen would have had the operating capital to begin construction and initial phases of development without Hong Kong, a global financial center, right next door.
c) Access to qualified labor.
d) Access to advanced business services, especially those required for export of manufactured goods. In the early years of the Shenzhen SEZ, "advanced business services" could have included "common Hong Kong business practices such as joint ventures, shareholding ownership, stock exchanging, public bidding for engineering projects, piece-work incentives, paid use of land, and open job recruitment" that were brought to the city and practiced openly for the first time in the People's Republic of China (O'Donnell, Wong, and Bach, 75).

At the time of our field study (explained on the next page), we did not distinguish between or separate benefits a) through d). Doing so may have made our methods more precise and our findings more granular. Ultimately, we tried to connect all four benefits in our understanding of why geography mattered to the Shenzhen SEZ. Namely, we expected that Hong Kong's nearby port offered an easy export location for Shenzhen-based factories. Entrepreneurs in Hong

Kong could also have easily relocated production to Shenzhen, facilitating labor, capital, and investment spillovers.

2. *The Shenzhen SEZ has more attractive policies and incentives for businesses.* This hypothesis is an "institutions matters" story, i.e. uniquely better policies implemented by Shenzhen's municipal government helped the SEZ attract domestic and foreign investment, as well as labor and other factors of production.
3. *Shenzhen's early success in attracting firms, labor, and investment led to path dependency, due to cluster effects and increasing returns.* This could explain why other SEZs have not been able to match Shenzhen in terms of urban agglomeration or economic growth over the years, despite implementing smart policies of their own.

Our research design consisted of a semi-structured interview methodology and visits to relevant institutions in Shenzhen, including research centers and public museums, during a six-day field study trip to the city (March 31 to April 5, 2018). Our questionnaire included three questions to collect basic information about each interviewee[4] and five questions to collect information related to our three hypotheses[5]. Collectively, the questions aimed to understand the motivations of workers and entrepreneurs, as well as businesses, for locating in Shenzhen. Both urbanization and spatially defined economic development can be seen in terms of the coordination of worker's location choices and firm's location choices; these choices are subject to institutional and policy factors that shape the whole urbanization process (see also New Economic Geography à la Krugman 1979, 1980, 1991a, 1991b). When necessary, we deviated from the questionnaire and asked follow-up questions in order to keep conversations flowing and dig for answers. We promised to anonymize interviewees' names, professional titles, and other personal information – only identifying them by their place of work, which we deemed to be necessary to record in order to allow them to speak their minds freely and to protect their identities in case sensitive or confidential information was divulged.

[4] e.g. their place of work; see questions 1-3 in Appendix
[5] e.g. "Did the presence of firms, labor, or investment opportunities draw you or your company to Shenzhen?" relates directly to Hypothesis 3; see questions 4-8 in Appendix

The main limitations of our field study included restricted time, funding, labor force (e.g. not enough people to administer surveys widely), local connections, and access to interviewees in the public sector, especially government officials with direct knowledge of policymaking in the SEZ. These limitations resulted in:

a) A small interview sample size (n = 15) that lacked Chinese municipal policymakers – although Chinese officials are notoriously difficult to access for foreign researchers such as ourselves – and lacked foreign investors as well.
b) Some may say, lack of quantitative methods.
c) No comparative analysis, as we were unable to visit and conduct similar research in Zhuhai, Shantou, or Xiamen, i.e. China's other first generation SEZs.

The next section explains our findings. While we do not believe the findings lack validity or significance due to the limitations above, a small interview sample size is an important qualifier. As we express in the conclusion, future research on the Shenzhen SEZ should make use of larger interview sample sizes, systematic surveys, comparative case studies, and other methods to reinforce, challenge, or expand upon our research efforts and findings.

We interviewed 15 people in Shenzhen: eight working professionals, four researchers, two service workers, and one government official. Interviewees were employed in private, public, and third sector organizations, including the China Center for SEZ Research (CCSEZR), Tencent, Xinfeng Investment Management, and the Shenzhen Government Tax Bureau. We re-evaluated our hypotheses by analyzing interview responses.

4. FINDINGS

A. Hypothesis findings

Hypothesis 1

Across the board, interviews and site visits supported Hypothesis 1: given the importance of Hong Kong as a source of FDI, financial resources, and technology spillovers during the 1980s and 1990s,

geographic proximity was a major advantage for Shenzhen over other SEZs. Shenzhen's factories could easily and cheaply export goods via Hong Kong. One interviewee, a business developer at Tencent, stated during a dinner:[6]

> *"Proximity to Hong Kong is a privilege for Shenzhen… We can enjoy convenient services from Hong Kong, such as buying goods more conveniently and cheaply. Also, proximity brings Hong Kong more opportunities nowadays, instead of Shenzhen. Cooperation in investment banking is an example."*

Several other interviewees added how Hong Kong's influence on Shenzhen's urban development and economy has diminished since the 1990s. Nowadays, Shenzhen is a destination for investment from Hong Kong, other Chinese cities, and foreign countries. Labor and capital spillovers flow from Shenzhen to Hong Kong, not just the other way around.

While Hypothesis 1 correctly predicted the importance of proximity to Hong Kong, we did not expect to hear about a second geographic advantage that blessed Shenzhen: the large size of the SEZ interacted with Chinese migrant labor to jumpstart local industry and commerce. Interviews with researchers at the CCSEZR emphasized that the Shenzhen SEZ originally contained the four "inner districts" out of ten administrative districts in the municipality. In July 2010, the SEZ expanded to include the six "outer districts," growing to almost five times its former size and matching the city's total land area in the process (CGTN 2018). Ample unsettled land made the SEZ large enough to accommodate millions of new migrants from across Guangdong as well as other Chinese provinces. The flows of migrant labor to Shenzhen since 1980 have formed a younger, more diverse Chinese urban society without established elites or tight kinship ties – or the corruption that can accompany either of them.

Hypothesis 2

Our field research also supported Hypothesis 2. All of our interviewees who operate businesses in Shenzhen shared the subjective view that Shenzhen has a superior business environment as well as an impartial, effective municipal government.

[6] All interview quotes were captured and transcribed verbatim using audio recordings (with interviewees' consent) or the authors' handwritten notes.

These are major reasons why firms locate in Shenzhen instead of other parts of China. For example, we asked one interviewee – an entrepreneur running a tea company in Shenzhen – what motivated him to set up his business there and not in his hometown of Shantou, a city that was granted SEZ status in 1981, one year after Shenzhen. The major reason he gave us was the integrity and pro-business mindset of the local government, which makes it easy for newcomers to do business in the city. He stated, *"Not only the economy, but also the political management of the [SEZ] area is important. The policy atmosphere is relatively open, fair, and transparent. It gives my company the same opportunities as the big players."* Essentially, impartial and efficient local government provides a level playing field and entrepreneurial advantage not found in many other parts of the country.

Unlike other Chinese cities, Shenzhen's policies also make it easier for young, talented Chinese citizens to apply for urban residence permits (hùkǒu) and become fully integrated into the city's workforce. This is an important example of the superior regulations and policies in the Shenzhen SEZ. The hùkǒu system can be imagined as an internal passport system in order to control the movement of the mainland Chinese population. The current system was founded in 1958 and ties Chinese citizens to their places of birth. It effectively restricts the flow of rural-born citizens to urban areas where they can find more productive work. With a need for domestic migrant labor to fuel its growing economy, Shenzhen was able to exempt itself from the hùkǒu system's rigidity and became the first SEZ to slowly erode it. At first, exemptions gave Shenzhen a unique advantage in attracting workers and entrepreneurs from other parts of China. But as more SEZs were established, Shenzhen had to compete with other cities for talent. To keep its competitive edge, Shenzhen's government began offering financial incentives to work in the city, targeting both Chinese citizens as well as foreigners who fulfill certain education criteria (Du 2020).

Several interviewees mentioned hùkǒu-based incentives and their continued importance to Shenzhen's success. According to our Tencent interviewee, new university graduates can apply for local Shenzhen hùkǒu as soon as they move to the city. Specifically, early career professionals – defined as those who

graduated from college at least two years prior to moving to Shenzhen – receive government permission to apply for a Shenzhen hùkǒu after paying for just one year of social insurance. This policy is more lenient than those of Beijing or Shanghai, where hùkǒu restrictions cap and control the municipal population. Interviews at the CCSEZR further explained how Shenzhen has been able to implement such a unique policy. The city's SEZ has always possessed an unusually high degree of local autonomy from the central government. This allows for best uses of local knowledge and policy experimentation, followed by policy adjustment. One interviewee, a marketing manager at Gudsen Ltd., hinted at this when she said, *"[Living in] Shenzhen encourages innovation and entrepreneurship. It has received policy support from the municipal government, which will give preferential policies to some startup companies."*

A favorable business environment and "good institutions" are the proximate factors that influence firms to locate in Shenzhen. The good business and institutional environments also seem to not solely depend on the city's SEZ status, given that Zhuhai, Shantou, and Xiamen were also granted this status between 1980-81 but did not develop and urbanize nearly as fast. Thus, the more interesting question to understand the relative success of the Shenzhen SEZ is *why* it was able to develop superior institutions. This is also the major question for other countries and local authorities governing SEZs who wish to learn from Shenzhen's experience. If building good institutions was easy, then the issues of development would already be solved. In Shenzhen's case, the SEZ may have benefitted from a "first mover effect." Shenzhen becoming one of the first Chinese SEZs was advantageous because it had no other domestic models to follow. Lack of precedent could have granted Shenzhen's leaders freedom to experiment, fail, and revise policies where necessary (Herlevi 2017). Having discussed proximate factors, we now discuss the root causes driving the Shenzhen SEZ's development and consequent urbanization.

The Shenzhen SEZ is unusual compared to other SEZs in China, and around the world, in several respects. First, as mentioned before, the Shenzhen SEZ is geographically large. It measured 396 km^2 prior to its expansion in July 2010 and 1,953 km^2 post-expansion (Xinhua 2010). Second, the SEZ's land was nearly unsettled pre-May

1980. The area was only home to a few farming and fishing villages; it had even begun to depopulate due to its proximity to Hong Kong, which made it easy for people to flee across Shenzhen Bay (Shekou Museum 2018). Upon the establishment of the Shenzhen SEZ in May 1980, the zone had fewer than 30,000 workers. But the zone's large size combined with its low population density laid the foundations for a rapidly populating modern city as well as a new form of Chinese society based on intra- and interprovincial migrants. In the SEZ, society became based on individuality rather than pre-existing kinship ties. This made it easier to set up modern institutions through transplantation or leapfrogging. Cowen (2016) has referred to such societies, which also tend to enjoy rapid economic growth, as "startup nations."

Other places with established populations, including China's other SEZs, lack the advantages of a startup nation. Their institutions have to evolve gradually and endogenously. Corruption and nepotism are also more likely to arise in kinship-based societies, where government officials unevenly favor certain individuals. In all, Shenzhen possessed the foundations to become an immigrant city, one that is more open and accepting of multiculturalism and new ideas. For example, an interviewee from northern China stated she could only live in Shenzhen, and not any other city in southern China, since it has a welcoming and tolerant culture. Critically, this culture helps Shenzhen to attract the best and brightest from across the country. University educated and technically skilled migrant workers are especially important for the city's high-tech industry.

Third, the Shenzhen SEZ has always been blessed with a high degree of autonomy from both the central government and the Guangdong provincial government. Greater autonomy allows for decisions to be made based on local knowledge and for policy experimentation to take place on a rapid, iterative basis. The aforementioned hùkǒu-based incentives for workers are examples of smart policies that can arise from this local autonomy. In contrast, other SEZs around the world, and the latter waves of economic and trade zones established in China are often centrally administered. O'Donnell, Wong, and Bach (2017) stress this in their recent book, *Learning from Shenzhen*. Their conclusion stresses Shenzhen's autonomy from central planning and policy, local policy experimentation, and

aforementioned "startup nation" social dynamics as key reasons for its exceptionalism:

> By being the locus for... experiments, Shenzhen became essential to post-Mao structural change and all that followed, including new understandings of society and the goals of political life. In other words, in contrast to early free trade zones elsewhere, the Shenzhen Special Economic Zone became the prime example of how zones can afford the possibility for far-reaching social transformations by being as much a spatial solution to a political problem as it is an economic innovation (O'Donnell et. al, p. 251, 2017).

At the same time, the Shenzhen SEZ has received rather limited funding from China's central government. Deng Xiaoping is supposed to have said the following about the establishment of the Shenzhen SEZ: *"We can designate an area, call it a Special Zone.[...] The central government has no money; we can give policies, but you will have to do the work"* (Shekou Museum 2018). In other words, Shenzhen was set apart from the beginning by non-reliance on central government funds and the need to generate its own. This contrasts with one major reason why SEZ programs face resistance in many countries: the draining of public funds and the distortions arising from it. Financial self-reliance, while potentially difficult, remains a major lesson from the Shenzhen SEZ.

Bertaud (2018) illustrates the laissez-faire regulations of Shenzhen with the example of the "handshake villages." As Shenzhen continued growing over the years, the city started to encompass previously rural villages. Village lots still belonged to farmers and fishermen who, in order to earn additional income, built up their houses to rent out rooms and apartments to migrant workers. In order to maximize the ratio of floor space to land area, these houses were built very close to each other (hence the term "handshake villages"). In other cities in China and in most cities around the world, local housing regulations would prohibit these densely packed houses. But in Shenzhen, a liberal attitude towards housing regulations made the development of handshake villages possible. In turn, this allowed local farmers to participate in Shenzhen's economic upswing through their real estate businesses. It also enabled

migrant workers to find affordable housing in close proximity to areas with employment opportunities. According to Du (2020), more than half of Shenzhen's population between the years 2009-2016 lived in urban villages.

Hypothesis 3

Interviews and site visits neither supported nor disproved Hypothesis 3. Our data is too inconclusive to provide additional insights into clustering and path dependency in the Shenzhen SEZ. We recommend clustering and path dependency as promising topics for future research. Regardless, it is evident that Shenzhen rapidly progressed through known stages of urban and economic development. Several interviews revealed how Shenzhen's policies have actively evolved as the city has shifted from primarily export manufacturing towards technology and R&D (research and development). The government official we interviewed stated, for instance, that Shenzhen no longer offers tax cuts for manufacturing. High-tech firms in internet and telecommunications, biotech, and other fields now receive incentives and drive the city's economy (He 2018).

B. Other economic pros and cons

Aside from findings tied closely to our three hypotheses, interviews also stressed the market's contributions to Shenzhen's historical and ongoing development. One interviewee from an architecture and interior design firm stated that the SEZ's biggest economic advantages today are ample job opportunities, high average salaries, and status as the top technology city in China. The only "warning signs" interviews mentioned were a) Shenzhen's large business network imposing costs on the relocation of manufacturing or services, as employers can lose local connections, and b) surging local real estate prices. Even as salaries rise, an increasingly unaffordable housing market could begin to price out qualified workers and impair economic development in the SEZ.

C. The Shenzhen SEZ – not so special anymore?

Our findings highlight the important role of good institutions – efficient local government, market-driven policies that benefit entrepreneurs as well as large corporations, and policy adaptation over time – for the development of SEZs. However, Shenzhen and other Chinese SEZs

have become less politically exceptional since 1980. Whereas exclusive policies and other privileges were extended to SEZs in the early years, by 1992 many of these benefits had spread outside the zones to other parts of China (Yeung, Lee, and Kee 2009). In 2001, SEZs' exceptionalism had been further diluted by China's admission to the World Trade Organization (WTO), which bound all parts of the country to the same set of rules for liberalizing trade and openness to foreign investment. One could thus argue that any "special" attributes associated with SEZs today are either a legacy of past policy or reflect internal strengths (Ibid). Still, Shenzhen may remain special even as other SEZs lose some of their luster. The city's government continues to innovate. Local policies, labor and population demographics, and private sector conditions have yet to be replicated elsewhere in China.

Our understanding of the drivers behind Shenzhen's success can be summarized using a framework of root and proximate causation that explains observed outcomes, as visualized in Figure 1.

Figure 1 encapsulates how the root cause of proximity to Hong Kong led to cheaper transport costs, which then led to

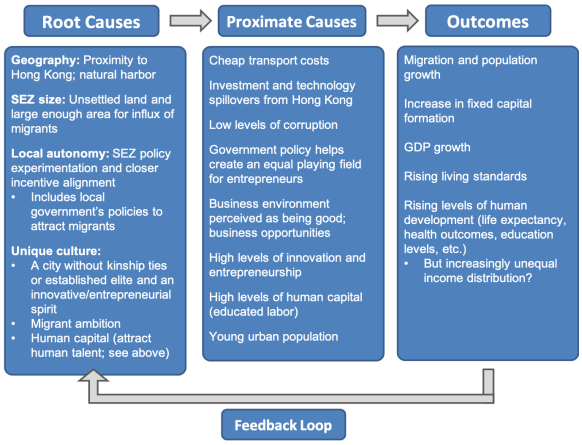

Figure 1: Key success factors in a root-proximate causation framework. Source: Authors' own visualization

more export-oriented investments and economic growth. Similarly, the unusually large geographic size of the SEZ and the fact that it was sparsely populated allowed for the creation of a new city of domestic migrants. The Shenzhen SEZ was also granted an unusually high degree of governing and policy autonomy by China's central government. These root causes allowed for the creation of superior institutions which are well understood in the literature to be direct causes of economic growth. Importantly, there is a feedback loop from the outcomes back to the root causes because, over time, urban agglomeration and economic development (outcomes) and future drivers of growth

(causes) influence each other in an evolutionary way.

5. LESSONS FOR NON-TERRITORIAL GOVERNANCE

The Shenzhen SEZ also provides lessons for non-territorial governance. "Non-territorial governance" is defined for the purpose of this paper as governance institutions not bound to a defined geographical area, and thus standing in contrast to the institutions of the Westphalian territorial nation-state.

There are multiple pre-Westphalian predecessors for non-territorial governance, such as private merchant dispute resolution mechanisms (see e.g. Greif 2006) and civil and penal law being autonomously administered along religious lines (see among others Hoppe, 2001 and MacDonald, 2015a). In modern times, the main drivers of non-territorial governance are technology (e-residency and blockchain), globalization, and the proliferation of SEZs such as Shenzhen. The Order of Malta is another example that has persisted since pre-Westphalian times. After losing its territory in the late eighteenth and early nineteenth centuries, The Order of Malta still functions as a sovereign subject of international law and is recognized as a small sovereign state by most countries in the world. In other words, it is the closest thing to a country (in legal terms) without a territory.

The academic debate on non-territoriality (also referred to as de-territoriality) started in the mid-1980s. The discourse arose from Eastern European dissidents criticizing political systems who simultaneously wanted to avoid direct political confrontation. Increasing cosmopolitanism has also driven interest in the topic. As more people acquire multiple citizenships and travel across borders, more corporations become internationally active, and globalization as a whole accelerates, there is an emerging understanding that territorially defined governance has its limitations (Pugh et al. 2007).

SEZs represent an area of tension in relation to non-territorial governance. On the one hand, they are by definition territorial tools of governance. As geographically defined areas with different

regulations than the rest of a country, SEZs' regulations and institutions are only available to people and companies located within their territory. On the other hand, SEZs fragment the territory of the nation-state in terms of governance. As tools for political experimentation, they are often seen as pilot areas and forerunners to deeper institutional reforms and developments such as non-territorial governance. In the case of Shenzhen, O'Donnell, Wong, and Bach assert that the SEZ "as innovated in Shenzhen represents an evolving strategy of territorial exceptionalism now seen around the world where not only trade laws but the form of the city itself are up for grabs" (2017, p. 251).

MacDonald (2015a) points out that the SEZ sorting mechanism comes with trade-offs. Whoever wants to benefit from the policies in Shenzhen regarding foreign direct investment, housing, labor law, or immigration will need to accept the whole bundle; there is no option of selecting only one's preferred local policies. Non-territorial governance has the potential to overcome this trade-off because it unbundles the package of policies offered in a given location (e.g. a SEZ or other types of zones). For instance, one could theoretically benefit from Shenzhen's housing policy but follow the family law of another jurisdiction based on their individual or organizational preferences.

MacDonald (2015b) makes the case that the low-hanging fruit in institutional reforms for SEZs have been exhausted and that experimenting with non-territorial governance is the next step. He sees SEZs such as Shenzhen to be particularly well suited for experiments in non-territorial governance. SEZ populations are more heterogeneous than comparable cities due to their high proportion of domestic and international migrants. Thus, elements of non-territorial governance can overcome issues associated with "one size fits all" institutions. MacDonald also sees democratization as the most pressing concern for Shenzhen. He sees an opportunity in transitioning to a polycentric democracy, as this can avoid direct confrontation with vested interests of China's one-party state structure. He explains this as "not transitioning from a one-party state to a multi-party state, but instead transforming into a multi-state party" (MacDonald 2015b).

With this context in mind, what are lessons from Shenzhen's experience in experimental governance for future projects in non-territorial governance?

First, experimentation and continuous refining of policies and institutions is key. The reforms in the Shenzhen SEZ constituted a discovery process. This will be the case even more for new non-territorial governance institutions, as there are only few and very limited precedents. A tolerance for experimentation and responsive feedback mechanisms will therefore aid the process of establishing successful non-territorial governance institutions.

Second, autonomous decision-making at low levels of governance is beneficial. This decentralization brings two main benefits: a) it enables policy experimentation with relatively lower risks and initial resource requirements, and b) it helps to solve the knowledge problem of a robust political economy (see e.g. Moberg 2015; Pennington 2010). The closer decision-makers are to the people and topics involved the more information they will have to design, implement, analyze, and refine successful policy.

Third, institutions and policies need to constantly evolve over time to adapt to changing conditions. This was a key feature for Shenzhen's success, as the SEZ passed through different stages of economic and urban development at an accelerated rate that demanded a highly responsive local government. Similarly, non-territorial governance institutions elsewhere will need to continuously adapt to survive and thrive.

Fourth, non-territorial governance will increase the competition between institutions. In China, SEZs compete for talent and investment. The Shenzhen SEZ's superior economic performance helped the city attract many entrepreneurs from Shantou, a less successful SEZ. This inter-institution competition is a crucial part of the learning and discovery process and should not be hindered. As entrepreneurs can move from Shantou to Shenzhen, so should individuals also be able to "vote with their feet" and move from one non-territorial governance institution to another.

Fifth, the relations of non-territorial governance institutions to national or

territorial sovereigns are important. Shenzhen needed a credible commitment from Beijing that the national government would tolerate the city's experiments and limit interference. Non-territorial governance institutions will also overlap with territorial states to some degree. At the very least, the residents or members of a non-territorial institution will be physically located on the territory of existing states (possible exceptions being seasteading or space-based communities). A working relationship with these states will be necessary for co-existence. In Shenzhen's case, the SEZ provided benefits for China as a country by acting as testing grounds for nation-wide reforms and by contributing to the national economy. If non-territorial governance institutions provide such benefits to their "host" states, the likelihood of those states' support or limited interference will increase.

6. CONCLUSION

This paper explored why and how Shenzhen has become, by far, China's most successful Special Economic Zone. Through 15 in-depth semi-structured interviews during a six-day field study in Shenzhen, we identified underlying drivers of the SEZ's rapid urban agglomeration and economic growth. Our research confirmed the importance of the Shenzhen SEZ's geographical proximity to Hong Kong and its superior institutional environment as key factors for its relative success. We were not able to shed new light on the dynamics of clustering and path dependency in the development process.

Even if some of the economic incentives such as lower taxes, tariffs, and FDI privileges that once distinguished Shenzhen as a SEZ in the 1980s and 1990s are now standardized or mirrored in cities across China, Shenzhen still provides a case study of how local policymaking – supplementing and interacting with market forces – can dramatically benefit SEZs and urban economies more broadly. The importance of this case study and the broader findings of this paper, we assert, still hold true despite the limitations of our study. As mentioned in section (III), these were limited time, funding, labor force, local connections, and access to government officials resulted in a small sample size of 15 interviews. To compensate for this, we aimed to make each interview as in-depth and informative as possible and adopted an open-ended set of questions (see Appendix) that facilitated longer conversations.

Future research can build upon this paper's research question by adopting a comparative approach and going further into the details of the policies and governance institutions behind Shenzhen's development – for instance, reviewing key policy differences across time between Shenzhen and other first generation SEZs, and/or between Shenzhen and non-SEZ top-tier Chinese cities, such as Beijing, Shanghai, and Guangzhou. More geographically broad, comprehensive, and historical policy analysis of Chinese SEZs will further deepen scholars' understanding of their performance. Researchers can also collect and analyze large amounts of data on the role Hong Kong played in Shenzhen's development – the annual quantity of exports from Shenzhen to Hong Kong (and vice versa), the number of companies founded by Hong Kong residents in Shenzhen since 1980, the number of employees and productivity of those companies, data on investments by Hong Kong residents in Shenzhen-based companies, etc. Using our research design and qualitative methods as a template, future efforts to conduct interviews and surveys with a large, representative sample of Shenzhen residents across sectors, income levels, age groups, education levels, etc. can provide an important complement to quantitative data analysis. Illuminating and important insights about SEZs – especially China's groundbreaking SEZs – for global scholars of development economics, institutional economics, economic geography, and non-territorial governance will likely arise from a blend of quantitative and qualitative research. Hopefully, this paper serves as a first stepping stone towards this larger research project.

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8. APPENDIX

Questionnaire: This questionnaire served as the guideline for our interviews in Shenzhen. In every interview, we attempted to ask all eight questions within the time permitted as well as follow-up questions. Questions 5-8 were intentionally open-ended to provoke longer conversations and in-depth discussion. We assured interviewees that their names, professional titles, and other personal information (except for place of work) would be anonymized in order to encourage candid responses and remove sensitivity barriers.

1. How long have you lived, worked, or studied in Shenzhen?
2. Which company, school, or organization do you work or study at?[7]
3. How did you come to work, study, or live in Shenzhen?
4. In what ways did proximity to Hong Kong influence your decision to work, study, or live in Shenzhen?
5. The city of Shenzhen is a Special Economic Zone.[8] In what ways do you think the SEZ policies in Shenzhen make working, studying, or living here especially attractive?
6. In what ways do you think local SEZ policies have helped Shenzhen develop more than China's other first-generation SEZs?
7. In what ways did the presence of firms, labor, or investment opportunities draw you or your company to Shenzhen?
8. In your opinion, what are the top economic reasons to live in Shenzhen?[9]

[7] We asked for company, school, or organization depending on the interviewee and their current occupation.

[8] We prefaced the question with this reminder and provided explanations and facts about the Shenzhen SEZ to interviewees as necessary.

[9] If interviewees were unclear on what "economic opportunities" entailed, we gave cost of living, job opportunities, and investment opportunities as examples.

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Entry Barriers and Competitive Governance

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Abstract

Existing work on competitive governance has focused primarily on citizen mobility and the degree of decentralization. Although these are important, we argue in this exploratory paper that entry barriers are another important and underemphasized precondition for competition. Unless institutional entrepreneurs are able to create new jurisdictions, we are likely to see problems of collusion, centralization, and institutional inertia. Contemporary competitive governance proposals which push the creation of new jurisdictions are thus, according to our analysis, a promising path towards a more robustly competitive and innovative governance market. We consider three such proposals (Zone-based governance, seasteading, and non-territorial governance), showing that each is likely to reduce entry barriers and briefly considering the merits, challenges, and limitations of each.

Keywords: entry barriers, competitive governance, governance market, non-territorial governance, seasteading, zones.

Resumen

Los trabajos existentes sobre gobernanza competitiva se han centrado principalmente en la movilidad de los ciudadanos y las ciudadanas y el grado de descentralización. Aunque estos son importantes, en este artículo exploratorio argumentamos que las barreras de entrada son otra

condición previa importante y usualmente poco enfatizada. A menos que los y las emprendedoras puedan crear nuevas jurisdicciones, es probable que sigamos viendo problemas de colusión, centralización e inercia institucional en la gobernanza. Las propuestas contemporáneas de gobernanza competitiva que impulsan la creación de nuevas urisdicciones son, de acuerdo con nuestro análisis, un camino prometedor hacia un mercado de gobernanza más competitivo e innovador. Aquí exploramos cómo tres de estas propuestas (gobernanza basada en zonas especiales, asentamientos en el océano y gobernanza no territorial) pueden potencialmente reducir las barreras de entrada a la industria de gobernanza y consideramos brevemente los méritos, desafíos y limitaciones de cada una.

Palabras clave: barreras de entrada, gobernanza competitiva, mercado de gobiernos, gobernanza no territorial, seasteading, zonas.

1. INTRODUCTION

Competition among governments has the potential to enhance the quality of policies and institutions by constraining government power and allowing for innovation in the art of governance. If citizens can exit underperforming jurisdictions in favor of better alternatives, governments wishing to attract and retain migrants are forced to offer rulesets which satisfy citizen preferences. Following the foundational work of Tiebout (1956), a significant academic literature has analyzed the pre-requisites for and consequences of interjurisdictional competition. At the same time, liberal policy advocates and activists have proposed various reforms aimed at increasing competition among government.

For the most part, however, these academic works and proposals for reform have focused on enhancing the ability of citizens to exit jurisdictions. Another important precondition for effective competition is the ability of institutional entrepreneurs to create new jurisdictions. In economic terms, there has been a neglect of barriers to entry in the market for governance. Our aim in this paper is to point to the importance of entry barriers and to explain how three contemporary proposals aimed at increasing competition among governments (Zone-based governance, seasteading, and non-territorial governance) are especially promising in this regard relative to more well-known proposals such as competitive federalism and devolution.

The notion of entrepreneurs starting their own jurisdictions is often considered outlandish, and this may explain the neglect of entry barriers among political economists. If we are stuck with a more-or-less fixed population of jurisdictions, any talk of the implications of low barriers to entry is hypothetical and irrelevant to any serious political discussion. Although such a stance is understandable in light of the geopolitical status quo, we maintain that it is mistaken and further speculate that it results from an excessive focus on the short term. The current geopolitical system of nation states is a relatively recent development, and a number of alternatives have existed at various points in history (Spruyt, 1994). It

is far from obvious that the current system is stable in the long term.

There have been a number of historical contexts with low entry barriers judged by today's standards. Frontiers provide a space for new entrants in the governance market, and have played a major role in institutional development. People generally settle frontiers to exploit economic opportunities. The absence or perception of pre-existing political arrangements available to settlers, though, creates the need and opportunity for institutional innovation at the same time. And so throughout history, we have seen new frontiers, with their abundant space, giving rise to new forms of political organization.

The European settlement of North America in the seventeenth and eighteenth centuries shows this dynamic at work. There were, of course, indigenous inhabitants with their own political organization prior to European settlement (Grinde & Johansen, 1991), and the harm of colonization was and continues to be enormous. While we do not wish to defend colonialism in ethical terms, the American experience can help understand the relationship between the formation of new jurisdictions and institutional innovation. Although America was not in fact a blank slate, the early European settlers treated it as such and we can learn from their experience without endorsing the colonial project as a whole.

The open space of this frontier allowed many new jurisdictions to be formed. Colonies, some of which were explicitly for-profit enterprises, had a great deal of independence and varied in their approach to governance. Settlers during this period were highly mobile, and colonies needed to attract migrants in order to survive and grow (Billias, 1965; Doherty, 1999; Greene, 1994; Hughes, 1965; Osgood, 1904). Although the decision of where to live depends on many considerations, the quality of governance is one important factor, both directly in that settlers will choose rulesets which match their preferences and indirectly in that settlers will move to the economic opportunities opened by good governance. Colonial America thus combined low entry barriers with highly mobile citizens.

As space on the East coast became scarce, the frontier shifted west. Those

settling the Old West became institutional entrepreneurs and devised a number of ingenious ways of solving collective action problems. Some new institutions were entirely voluntary and decentralized, while others began to resemble states (Anderson & Hill, 2004). As North America's frontier closed and power slowly centralized, the forms of government that resulted from this innovative period turned out to be a significant improvement over their European predecessors when judged by the conventional standards of contemporary liberal democracy. The compound republic of the United States was a unique combination of features from other past and contemporary political systems and, while not perfect, its constitution has served as a model for new and reforming nations since that time (Blaustein, 1987; Brennan, 1991).

Another suggestive example is the Greek city state culture, which consisted at any one time of around 100 self-governing (though not always entirely independent) *poleis* scattered around the Mediterranean and Black seas. During the fourth century BC, the total population of these poleis was probably at least 7.5 million (Hansen, 2006, pp. 31–38). New cities were formed via colonization; upon settlement, each colony would be an independent polis with its own laws and constitution. Although settlement was often directed by existing *poleis,* this was not always the case. Some colonization efforts were undertaken by groups of individuals without any formal sanction (Graham, 1964; Hansen, 2006, p. 5; Tsetskhladze, 2008).

During this time, entry barriers were low and we saw a great deal of state formation. Greek city states were highly competitive and innovative. Due to cultural and linguistic similarity, among other factors, the Greeks were "unbelievably mobile and unbelievably easy-going about letting strangers settle in their cities" (Hansen, 2006, p. 34). Each polis faced a genuine risk of being eliminated through desertion or conquest and were forced to compete in various ways, including the attraction and retention of citizens (Ober, 2008, pp. 80–84).

The result was a robust system of competition and cooperation which limited government power and produced a number of institutional innovations. Although franchise was limited to adult

male citizens, some Greek city states formed the first recognizably democratic systems of governance. As Ober (2008) argues, Athenian democracy was, relative to alternative systems at the time, a very effective system of making collective decisions and anticipated many modern findings in the social sciences. At the time, democracy was often maligned as leaving governance to the incompetent masses. In this respect, the practice of democracy downplayed the role of experts and sought to aggregate the dispersed knowledge of many individuals, the importance of which would later be described by Hayek (1945) and others (Ober, 2008, p. 1). The selection of representatives by lottery anticipated the argument of Mueller et al. (1972) that randomly selecting representatives does a better job than current democratic practice of aggregating preferences by avoiding the problem of rational ignorance (see also Biondo et al., 2013). The structure of Athenian political institutions, such as the Council of 500, anticipated findings in network science regarding the creation of bridges between otherwise isolated groups to facilitate the flow of information (Ober, 2008, pp. 142–151). Greek city states were also able to negotiate a robust form of federalism which addressed large scale collective action problems while avoiding centralization of power (Mackil, 2013; Larsen, 1968).

Today, the creation of new jurisdictions does not match the pace we saw in Colonial America or classical Greece. The frontier has closed and the nation-state has, for the most part, driven out smaller autonomous jurisdictions. This is not a situation which can easily be changed; the degree of entry barriers is not a variable under the control of policy-makers but rather an emergent property of the geographic, technological, and socio-cultural environment in which jurisdictions are embedded. However, several recent proposals seek to change or exploit these underlying conditions in order to enhance competition among governments.

In this paper, we argue that three proposed models of competitive governance – zone-based governance, seasteading and non-territorial governance – are promising ways to reduce entry barriers in the governance industry. To do so, we outline in section 2 the concept of

entry barriers in economic theory and apply this to jurisdictional competition. We make the case that low entry barriers are an essential part of robust competition; even when other requirements of competition are met, high entry barriers are likely to produce collusion, centralization, and institutional inertia. We then in sections 3-5 apply this analysis to the three competitive governance models and suggest that they each represent a promising way of lowering entry barriers while pointing to the challenges and limitations of each model.

2. ENTRY BARRIERS TO THE GOVERNANCE INDUSTRY

A number of political economists have argued that competition among governments for mobile citizens constrains the power of government and promotes individual liberty (Buchanan, 1995; Osterfeld, 1989; Sinn, 1992; Tullock, 1994). Building on the foundational analysis of Tiebout (1956), these works argue that citizens "voting with their feet", by physically moving to a different jurisdiction, would choose policy bundles suited to their preference and thus force governors to more seriously take those preferences into account. These analyses have generally seen the degree of individual mobility and the number of jurisdictions as the defining features of meaningful competition among governments. If individuals are free to move among multiple jurisdictions, threats of exit will limit the power of governments and promote institutional innovation. Although individual exit – the ability of individuals to move to a different jurisdiction – is no doubt a crucial element of a competitive system of governance, we argue in this section that barriers to entry are also crucial. As Kirzner (1973, 1997) and other Austrian economists have argued, the level of competition in a given market does not primarily depend on the number of competing firms, but on the extent to which entrepreneurs can enter the market in order to test their ideas.

Barriers to entry have been defined variously in terms of pricing behavior (Bain, 1968, p. 252) or cost asymmetries between incumbents and potential entrants (Stigler, 1968, p. 63). These definitions are problematic insofar as they define entry barriers in terms of their supposed effects or exclude some important barriers (Demsetz, 1982; Gilbert,

1989, pp. 476–478). We here follow Gilbert (1989, p. 478) in defining an entry barrier as "a rent that is derived from incumbency." This definition is agnostic on the concrete features which block entry, but captures the essential point that incumbents often have an exploitable advantage which discourages newcomers from entering the market. Such barriers may, in some cases, be legally imposed, but may also reflect the underlying cost structure of a market.

In the governance industry, entry involves the creation of a new jurisdiction or non-territorial provider of governance services. New jurisdictions may be formed through the colonization of an inhabited or uninhabited area, the centralized creation of autonomous subnational administrative governmental units, secession, or the collapse of an existing jurisdiction and subsequent state-formation. A barrier to entry in the governance market is thus any rent accruing to existing jurisdictions deriving from the fact that they are established entities and can avoid the costs and hurdles potential upstarts must face. This definition is quite broad and includes limits on citizen mobility (Gilbert, 1989, pp. 506–508), the financial costs of setting up a new jurisdiction, which cannot be recovered in the event it fails, and the perceived legitimacy of existing jurisdictions.

There has been much work in public choice and public finance on competition among governments (Mueller, 2003, p. 9). The classic work in the industrial organization of the market for governance is Tiebout (1956). His work was a response to concerns by public finance scholars about the challenges of central planning in the face of information problems. According to Tiebout, instead of adapting policy to voter preferences, local governments can keep policies constant and allow consumer-citizens to adopt whichever bundle of services best matches their preferences. If consumers can vote with their feet, local government planners do not face the same information deficit as central government planners. In the idealized case of an infinite number of jurisdictions and completely costless movement among them, everyone would get exactly the bundle of policies and public services they most preferred.

In the real world, of course, there can only be a finite number of jurisdictions

and there will remain some cost of switching. As the number of jurisdictions rises and the cost of switching falls, though, we come ever closer to the unattainable ideal of complete economic efficiency in the market for governance. All markets have friction caused by distance,[10] imperfect information, and other factors. Still, compared to the central planner groping in the dark, Tiebout sorting is likely to produce something much closer to the optimum.

The Tiebout model is focused on the *sorting* of individuals into communities which best suit their needs and does not consider the response of governments. More recent work has extended the model by considering the ways in which citizen exit might limit government power (Brennan & Buchanan, 1980; de Figueiredo & Weingast, 2005; Sinn, 1992) and promote institutional innovation (Vihanto, 1992; Vanberg & Kerber, 1994; Stansel, 2012). On this understanding, the market for governance is not simply a metaphor. Citizens choose among alternative providers of governance, and these providers compete by limiting taxation and efficiently producing the public goods citizens demand.

Although some of this work has stressed that Tiebout competition is a dynamic process of entrepreneurial discovery, existing analyses have explicitly or implicitly taken the necessary conditions for meaningful competition to be static – a large number of competitors and free movement between them. In practical terms, this would mean that those wishing to foster competition should attempt to geographically decentralize government (Osterfeld, 1989; Tullock, 1994) or increase citizen mobility (Edwards & Mitchell, 2008; Frey & Eichenberger, 1999). Decentralization and mobility are no doubt important, but, as we argue below, they are not able to deal with a number of serious problems. The issues of collusion, centralization, and institutional inertia are likely to persist even with high levels of mobility and decentralization if barriers to entry remain high. A relatively neglected precondition for meaningful and robust competition is the freedom of entrepreneurs to create

[10] Tiebout (1956, p. 422) suggests that the need to make shopping trips constrains the perfect satisfaction of consumer preferences in the same way costs of moving jurisdiction constrains the satisfaction of political preferences.

new jurisdictions or non-territorial governance providers.

2a. COLLUSION

Most analyses of competition among government stress the avoidance of monopoly. Monopoly is one uncompetitive market structure, but not the only one. Competition is a prisoner's dilemma situation among competitors: all firms would be better off if they could raise prices and act as a joint monopolist, but each could increase profit by charging a slightly lower price. Without enforceable agreements, such a price-fixing, arrangements will unravel and an oligopolistic market will behave much like a perfectly competitive one (Tirole, 1988, pp. 209–211). When a small number of firms repeatedly interact, however, the prisoner's dilemma is iterated, and we know from theory (Taylor, 1976), simulation (Axelrod, 1984), and the field (Ostrom, 1990) that cooperation is common in such situations. Cooperation is desirable for members of the cooperating group, but it can be harmful more generally if group members cooperate to harm others (Cowen & Sutter, 1999). In the case of market competition, collusion produces inefficiently high prices and low production levels (Feuerstein, 2005; Tirole, 1988, p. 6). Collusion can happen either explicitly, as in a cartel arrangement, or tacitly, as each firm seeks to avoid triggering a price war. In either case, firms can maintain a collusive arrangement if and only if they are able to cooperate. There are many factors which facilitate cooperation, including the existence of entry barriers (Feuerstein, 2005; Levenstein & Suslow, 2006, 2011).

Collusion allows incumbent firms to earn positive economic profits, and this will attract entrants. If entry is possible, new firms will need to be brought within the collusive arrangement, lest they set competitive prices. Although accommodation is sometimes achieved, this is not always the case. Entry barriers are not entirely exogenous, of course. Incumbents may consciously attempt to increase entry barriers by committing themselves to harsh punishment of entrants or by lobbying for restrictions on entry (Levenstein & Suslow, 2006, pp. 74–75). Again, such deterrence is possible but costly and not guaranteed. The empirical evidence supports the hypothesis that barriers to entry are an

important determinant of cartel success. Levenstein and Suslow (2006) review a number of empirical studies and conclude that entry is among the most important problems which cartels need to overcome, with a significant proportion of cartels being unraveled by entry.

The governance market exhibits a number of features which suggest that collusion is likely. Cartels are most durable when the number of firms is small (Levenstein & Suslow, 2006, pp. 58–61), when there are industry organizations able to coordinate firm behavior (Levenstein & Suslow, 2006, pp. 67–75) and when the cartel is able to detect and punish competitive behavior by firms (Levenstein & Suslow, 2006, pp. 69–72). This describes the governance industry fairly well. There are relatively few countries, coordination mechanisms in the form of supranational organizations (such as the OECD and World Trade Organization), observable policy decisions, and established means of punishment. Recent moves towards tax compliance and tax harmonization can easily be seen as price-fixing arrangements (Edwards & Mitchell, 2008), with defecting countries dubbed "tax havens," blacklisted, and threatened with formal sanctions (Sharman, 2006, 2012; Whyte, 2019)

Even if we saw a one-off decentralization of power and a dramatic decrease in interjurisdictional mobility, barriers to entry would remain as a potential threat to competition. Any fixed population of jurisdictions could potentially solve the problem of collusion. If it were possible for new jurisdictions to enter the governance market, collusion would be much more difficult. Existing states would need not only to reach an enforceable agreement, but also to find some way of bringing new entrants into the agreement without undermining profitability. This is not impossible, but it is a much more serious challenge.

2b. CENTRALIZATION

One way competing firms can thwart competition is through mergers. Horizontal integration can be expected when it increases profitability after accounting for the costs of merger. One factor enhancing profitability is market power, and thus mergers can reduce the level of competition in an industry (Viscusi et al., 2005, p. 7). Mergers in the governance

market involve political centralization, either through the full or partial merging of formerly separate jurisdictions (like the European Union) or the transfer of powers from lower to higher levels of government (like the gradual centralization of American federalism). Such anticompetitive centralization would not be surprising from a public choice perspective, since local governors are able to increase market power through centralization (Blankart, 2000; Eichenberger, 1994; Vaubel, 1994).

Centralization might also happen more innocently. There are many public goods which are most efficiently produced at a large scale, and joint production is often achieved via some sort of federation. Even when such a federation is desirable, it carries the risk of excessive centralization. The creation of a robust federation – that is, one which neither disintegrates due to internal disagreement nor centralizes due to the ambitions of federal bureaucrats or strong member states – is not a trivial task, and requires careful constitutional craftsmanship (Bednar, 2009; Buchanan, 1995; de Figueiredo & Weingast, 2005; Volden, 2005)

The United States of America is one notable example of an innocently-created federation which later centralized. The Articles of Confederation and the Constitution were significantly motivated by the need to protect against external military threats, and this required a federation responsible for national defense. As the *Federalist Papers* show, however, the framers of the Constitution were aware of the risks of over-centralization and thought the republic should give states sufficient rights to protect against encroachment[11]. Although it seems that competition among American states has remained in some areas of business law (Romano, 1985, 2006), decision-making power has incrementally shifted towards the federal government, especially since the New Deal, and this has undermined Tiebout competition (Greve, 2012; Zimmerman, 2008).

There are potential benefits from cooperation among local governments in producing large-scale public goods, such as national defense, but creating super-jurisdictional institutions to produce

[11] See especially Hamilton's discussion in Federalist 17.

or coordinate the production of such goods carries the risk of over-centralization. The possibility of entrepreneurial entry mitigates this problem by providing a mechanism for people to opt out of the federation. This is especially important when federation members are not allowed free exit. Assuming that newly formed states have the autonomy to refuse to join the union, centralization could be reversed. This allows for the benefits of federation while limiting the risks of over-centralization by providing a fallback option of creating a new jurisdiction outside the federation.

2c. INSTITUTIONAL INERTIA

Another advantage of competition in ordinary markets is its propensity to drive innovation. Hayek (1948) sees competition as a discovery mechanism which sorts good ideas from bad. The world is inherently imperfect, but proposed means of improvement are always uncertain. Profit-seeking entrepreneurs make conjectures which test the realities of technological feasibility and consumer demand. Seen in this light, the market is not primarily a mechanism which provides incentives for efficient behavior and maintains equilibrium; rather, the market is a "creative process" which generates knowledge. This open-ended process allows producers to discover new products and processes and consumers to discover the consumption bundles which best satisfy their preferences (Buchanan & Vanberg, 1991; Potts, 2001). Numerous small discoveries compound over time to produce technological innovation and economic growth (Baumol, 2002; Mokyr, 1992).

The establishment of new firms plays an important role in this process. Firms establish decision-making routines in order to economize on decision costs (Cyert & March, 1963; Nelson & Winter, 1982). These routines are learned from prior experience and are thus well-suited to the environment the firm faced in the past. In stable environments, this allows the firm to operate efficiently, but in rapidly changing environments such routines can prevent desirable organizational change. Routines are maintained by the behavioral norms and values of the individuals who constitute the organization. They evolve slowly and cumulatively, as the organization learns from past experience, and cannot be

changed easily. As the firm matures and grows larger, inertial forces will become stronger (Hannan & Freeman, 1984, pp. 157–162). This inertia can be exacerbated by "competency traps": as an organization gains experience in using a particular routine, its competency with that routine will increase and short-sighted learning from often-reliable feedback mechanism will lock suboptimal routines in place (Levinthal & March, 1993).

One effect of such routines is that established firms will be relatively unable to seize on the opportunities presented by a changing technological environment. Large established firms do seem to be able to produce "competency-enhancing" innovations (i.e. those which increase the value of a firm's existing resources), but not "competency-destroying" innovations (i.e. those which decrease the value of a firm's existing resources), which come primarily from new entrants (Christensen, 1997; Henderson & Clark, 1990; Hill & Rothaermel, 2003; Romanelli & Tushman, 1994). The point here is not that new firms are more innovative than incumbents, but rather that new firms and incumbents innovate *differently*, responding to different incentives and behaving differently depending on the technological environment (Acs & Audretsch, 1987, 1990; Winter, 1984). Incumbents can often devote large R&D budgets to research on well-defined problems but will be less effective at producing breakthrough ideas which open new markets. This suggests that high barriers to entry will reduce product innovation at an industry level, and the empirical record seems to suggest that this is in fact the case. High rates of entry in an industry are correlated with innovation and increases in productive efficiency (Caves, 1998, pp. 1971–1975; Geroski, 1995, p. 431). Startups are a major contributor to innovation, and this makes barriers to entry an important factor in industry performance.

The evolution of routines also limits the ability of an organization to remake its formal organizational structure, and other factors add to this difficulty. Hannan and Freeman (1984) argue that most organizational change comes from the establishment of new organizations rather than the reorientation of existing ones. Firms in modern economies face selection pressures to reliably and predictably produce goods of a certain quality, and must demonstrate

accountability to investors and customers. To achieve the goals of reliability and accountability, routines will be highly standardized and rigid. As in the arguments with respect to product innovation described above, this will produce efficient performance in stable environments, but will not allow for much organizational innovation. Organizational change, they argue, happens primarily at the population level as new firms replace old ones. Some firms are able to successfully remake their organizational structure (Romanelli & Tushman, 1994), but the empirical evidence suggests that younger firms are more likely to successfully undergo organizational change (Amburgey et al., 1993; Delacroix & Swaminathan, 1991; Miller & Chen, 1994).

These arguments hold *a fortiori* to government. Barriers to innovation are much higher in established governments than they are in established firms in traditional industries. Like other organizations, governments as producers of policy establish routines which can lead to inertia. In democracies, there are many such inertial forces which tend to make the implementation of bold ideas unlikely. Tight agenda-control (Tullock, 1981), party platforms shifting to match the preferences of the median voter, and various institutional barriers which dampen and delay the influence of public opinion on public policy (Riker, 1982) all work to thwart the generation of novel governance experiments. Further, the life-cycle dynamics of organizations described above mean that inertia will increase over time.

An additional factor here is the power of interest groups in protecting their own position. Olson (1982) argues that the formation of impactful interest groups is difficult, but that once formed, such distributional coalitions are quite robust. This means that those coalitions will gradually proliferate in politically stable societies. These groups will produce market distortions, reduce economic growth and prevent the reforms which would be required to reduce rent-seeking. The power of entrenched interests is particularly important when it comes to decision-making rules, since those with the power to make choices have this authority by virtue of current arrangements[12]. Olson

[12] Congleton (2004) shows that the median voter is benefitted by current degree of suffrage and will not want it expanded absent exogenous change, and Dunleavy and Margetts (2001, p. 295) suggest that stability in voting rules

shows that interest groups are generally only displaced in periods of political instability. When regimes are overthrown, interest groups are thrown out with them. The new regime which emerges will initially be relatively free of interest groups and may grow rapidly. Olson points to the post-war economic success of Germany and Japan as an example. The problem with relying on instability to reduce rent-seeking, of course, is that the collapse of regimes is normally accompanied by violence and misery. Low barriers to entry in the governance market would allow for the peaceful creation – and demise – of new regimes free of distributional coalitions. This allows people to escape special interest groups without existing systems being overthrown by force (Taylor, 2013). This produces a "bloodless instability" (Chamberlain, 2009) in which distributional coalitions are destabilized by entrepreneurial entry rather than revolution, much like disruptive innovation which already occurs in traditional industries.

With free entry, the problems of institutional inertia are effectively sidestepped. Rather than struggling against the status quo, institutional entrepreneurs could found startup jurisdictions in order to test ideas at a smaller scale than would be possible even in a very competitive governance market with a fixed population of established jurisdictions. Such an experimental economy of governance would be more conducive to innovation, which is surely a significant benefit of competition.

The very reason we need space for political experimentation is that existing systems are uncompetitive and unresponsive, meaning that there are weak incentives for desirable reform. If we *could* expect existing governments to enact reforms which substantially lowered barriers to entry, a major argument for the desirability of such reform would be undermined (Friedman & Taylor, 2012, pp. 219–222). If there is hope, it must lie on the entrepreneurs. Governments are unlikely to move in this direction of their own accord; rather, entrepreneurs must look for opportunities within existing rulesets, propose reforms aligned with the objectives of existing states, or find new spaces for political experimentation. In the following sections, we discuss three

can be explained by the fact that they "often exclude from political power those with most cause to change them."

contemporary examples of entrepreneurial entry in the governance service industry, which have the possibility of overcoming entry barriers.

3. ZONE-BASED GOVERNANCE

Currently, the most viable means of institutional entry is the creation of special jurisdictions, i.e. subnational jurisdictions which are exempt from some laws and regulations of the host country (FIAS, 2008), such as Special Economic Zones and Special Administrative Zones. A number of countries allow for the creation of such zones in order to foster economic development, and this willingness can be leveraged by those seeking to experiment with new forms of governance (Bell, 2018; Farole & Akinci, 2011; Frazier, 2018; Moberg, 2015, 2017; Taylor, 2017).

Entrepreneurship plays a key role in Special Economic Zones, with privately founded and operated zones having experienced stronger performance than government-run zones (FIAS, 2008, pp. 4, 45–47; Moberg, 2015, pp. 173–174). This can be explained in part by the stronger incentives to foster economic development faced by private entrepreneurs, as well as by their greater autonomy to implement policy without costly consultation (MacCallum, 1970; Stringham, 2006; Taylor, 2019)

One of the most promising current opportunities for low-cost political experimentation within the borders of a host nation emerges from the 2013 Honduran legislation allowing for the creation of Zones for Employment and Economic Development (ZEDEs) (Bell, 2018, Chapter 1.5; Colindres & Lutter, 2019). ZEDEs are constrained in a number of respects; they are required to comply with the Honduran constitution, remain an inalienable part of the country, and must defer to the national government on issues of national defense, passports, and other issues central to national sovereignty. In terms of internal governance, however, ZEDEs are granted a remarkable degree of autonomy. Zones can not only set their own tax rates and regulations, but could also run their own courts and could use an entirely different legal system – for example, adopting common law rather the statutory system of Honduras at large. The legislation enabling the creation of ZEDEs was passed in June 2013 and at the time of writing (May 2020) the first such Zone,

Prospera Roatán, is in its early stages of development.[13]

The barriers to creating a new zone are significant, but orders of magnitude lower than the barriers to starting a sovereign country on a similar scale. A potential ZEDE must be approved by a Committee for the Adoption of Best Practices before it can be created, for example, but this appears eminently feasible when compared to the challenges and uncertainties of setting up an entirely autonomous jurisdiction.

ZEDEs and other Zone-based systems of governance remain reliant on the host country, and with this comes the risk of centralization and collusion discussed above. Since entry must be accepted by the host country, entrepreneurial entry does not offer the same safety valve it might in the other models discussed below. However, such Zones are a promising avenue for promoting experimentation and overcoming institutional inertia. Policies and institutions which would be too risky or face too much opposition in existing jurisdictions can be tested in the lower-risk environment of a Zone which require the active opting-in of participants.

The first Zones face a difficult task without the guidance of past efforts. Entry barriers will be rather high for the first few Zones, but every success (and indeed every failure) in this space adds to our knowledge and reduces the barriers to the creation of future Zones. Entry barriers in this space will never be as low as they are in the restaurant industry, but the ZEDE model in Honduras shows that they can be much lower than they currently are. Although the freedom granted by such Zones is far from absolute, nor is it trivial.

4. SEASTEADING

Another avenue for political experimentation is *seasteading* (Bell, 2018, Chapter 1.6; Friedman & Taylor, 2012; Quirk & Friedman, 2017). Seasteading is the creation of permanent, politically autonomous communities on the ocean, on ships or, in the long term, larger and more stable structures perhaps modeled on oil rigs. In its ideal version, by relocating 12 nautical miles from land, entrepreneurs could effectively start their own country.

[13] See https://prospera.hn/

While the freedom of the seas is far from absolute or inviolable, the current regime of maritime law provides for a significant degree of internal autonomy which, following existing regulations by other states and compliance with the United Nations, could be used to create settlements with innovative governance structures. Cruise ships and oil rigs show that life at sea is feasible given a sufficiently strong economic incentive. Pirate radio and gambling ships show that such an incentive can come from the costs of regulation on land. As commercial operations on the ocean drive innovation in seafaring technology and increase the legal and political knowledge required to co-exist with incumbent states, barriers to entering the governance market decrease.

An important first step towards seasteading is to work with existing governments, for example, through the use of what Bell calls "SeaZones" – special jurisdictions spanning land and sea (Bell, 2018, Chapter 1.6). To this end, The Seasteading Institute and the government of French Polynesia signed a Memorandum of Understanding in 2017, with the Seasteading Institute, Blue Frontiers and Blue21 to undertake research into the environmental impact and sustainability of a pilot project. As an archipelago of 118 islands and atolls, French Polynesia is extremely vulnerable to rising sea levels. Initial discussions proposed floating platforms or seasteads which could help adapt to sea level rise, while helping manage energy production and waste disposal (Mezza-Garcia, 2019).

The pilot, the Floating Island Project, was led by the private company, Blue Frontiers, and aimed to initially house around 300 people in residential, commercial, and research spaces. The cost of the marine real estate would likely be around US$1500 per square foot, comparable to the cost in major US cities (Mezza-Garcia, 2019). Although this is quite expensive and the autonomy provided by the French Polynesian government would have been far from complete, such projects advance state of the art of seasteading projects and reduce the costs of future initiatives. More importantly for our argument, this type of project show that there are routes for entrepreneurs who wish to enter the governance market to do so.

In the longer term, if seasteading projects are able to strike out on their own

without the need for a host country, this would provide a much greater degree of freedom and potentially much lower barriers to entry. Not only would this overcome the problem of institutional inertia, but, relative to zone-based governance, it would also provide much stronger protection against centralization and collusion. Since there would be no need to ask anyone's permission to set up a new jurisdiction, it would be much easier to opt out of an over-centralizing federation and much more difficult for a cartel to thwart competition.

Moreover, the ability to create settlements on the high seas outside the control of any existing government would sidestep the serious challenge of reforming political systems. The Honduran ZEDE legislation shows that governments are sometimes willing to take steps to foster competitive governance, but it is not at all clear the extent to which we can expect this experience to be replicated in other countries. The high-seas variety of seasteading focuses on a technological environment, out of which the governance industry arises. This side-steps the need for reform and replaces a political challenge with a technological one. Since humans have shown themselves more capable of overcoming technological rather than political hurdles, this brings the problem into our sphere of expertise.

We must emphasize, however, that this long-term vision is not feasible in the short term. The immediate imperative of working with, rather than against, existing governments, is highlighted by the recent experience of Chad Elwartowski and Nadia Supranee Thepdet. Their single-family seastead anchored 13 miles off the coast of Thailand was raided and dismantled by the Thai government. They are now in hiding, charged with the capital crime of treason by the Thai government. Although complete autonomy from any existing government would be desirable, it is simply not a feasible option in the short term.

5. NON-TERRITORIAL GOVERNANCE

A more radical proposal which could dramatically reduce barriers to entry in the governance market is the unbundling of governance and territory. One such model would involve each individual or household choosing among competing

general-purpose governance providers and "subscribing" to whichever best meets their needs, regardless of where they physically live. This would increase preference satisfaction and reduce barriers to entry in the governance market relative to territorially bundled governance, but it would not be without limitations on this regard. A more promising model would be to allow special-purpose governance providers specializing in providing particular governance services. This model would allow individuals or households to choose providers of particular governance services *a la carte* rather than being forced to choose from a fixed set of bundles (MacDonald, 2019).

The most obvious advantage of this approach is that it gives individuals greater choice and preference satisfaction. Unless the number of jurisdictions is unrealistically large, bundled territorial governance, even if highly decentralized, will force trade-offs among different policy dimensions (MacDonald, 2019, pp. 22-24).

More importantly for our argument here, non-territorial unbundling would substantially lower entry barriers. Indeed, bundling itself can be a powerful entry barrier in product markets; Nalebuff (2004) shows that bundling can be used by an oligopoly as a powerful deterrent to entry. If a firm has market power in the provision of two goods, bundling these goods together can decrease the expected profit of firms with only one of these goods to offer. Thus, market power in each one of these markets can be used to maintain market power in the other. This logic can be applied to the case of bundled governance. If a governance provider has a particularly strong reputation in one area, say, police protection, they can leverage this market power to charge higher prices for the other bundled services even if strong competition exists in these areas. More generally, the capital requirements will be much lower for special-purpose than general-purpose governance providers. Unbundling governance would allow for more parallel experimentation and likely more institutional innovation.

The non-territorial unbundling of governance would be the most transformative model of competitive governance discussed here, but the toughest challenge is its political feasibility. Moreover, as in the other two models of competitive governance

discussed above, the degree to which unbundling overcomes entry barriers depends crucially on how reliant non-territorial providers are on existing governments. For example, a system which required the active approval of a central authority might promote innovation and overcome institutional inertia, but it would be unlikely to prevent centralization or collusion.

Given the world we currently live in, is there any way to get from here to there? From the current model of nation states to a robust form of unbundling which avoids the problems of collusion, centralization, and institutional inertia?

Although public choice theory gives us reasons to doubt that today's liberal democracies will enact the necessary reforms any time soon, there are a couple of somewhat more viable pathways to imperfect forms of unbundling. Firstly, the development of cryptography and blockchain technology may increasingly allow individuals to sidestep territorial governance and opt-in to alternative virtual systems of economic governance. MacDonald (2019) labels this "cryptosecession" and models it as a form of partial internal exit. Individuals cannot escape their territorial government altogether, but can exit particular dimensions of centralized governance. This provides incentives for private special-purpose governance providers to enter specific markets enabled by cryptographic technology. The present level of technology makes this workable only for high-margin illicit markets such as narcotics, but past some level of development, partial cryptosecession may become viable for other areas of economic and social life (Allen et al., 2019; Berg et al., 2018; Berg et al., 2019).

Secondly, if either special jurisdictions or seasteading provide adequate space for institutional experimentation in the future, unbundled governance could be one of the tested ideas. The founders of a seasteading community or a startup city could choose to allow for the unbundled provision of some or all services within the jurisdiction. This would allow for a less constrained form of unbundling, albeit in a more geographically contained area. For example, a Special Economic Zone could be founded on the premise that businesses within the zone are free to choose their

own system of commercial law when making contracts, allowing them to adopt the legal code of some other country and nominate an arbitration agency to resolve disputes.

Some forms of non-territorial governance should be treated with caution, however. Berry (2009) argues that in the United States multiple levels of government competing for a common tax base actually decreases democratic accountability and leads to excessive levels of taxation. The important lesson for our purposes is that non-territorial governance must be combined with robust exit rights. Adding more layers of government is unlikely to increase competition unless citizens are able to opt-out.

6. CONCLUSION

The future of governance has yet to be written. Some predict – either with dread or jubilation – the emergence of a single world government or a centralization of power in large regional states (Marchetti, 2008; Wendt, 2003). At the other end of the spectrum is a future decentralized system of many autonomous, competing governments (Barber, 2013; Bell, 2018). Neither theory nor history supports the assumption that the number of nations, or the height of entry barriers, will remain the same. Moreover, since history is path-dependent, modest developments now could alter the future path of governance and have enormous consequences for the future of humanity. This makes an understanding of the preconditions for meaningful and robust competition among governments, as well as a consideration of how various concrete proposals fare in this regard, of the utmost importance. Well-designed projects, even at a small scale, develop our stock of knowledge while ill-conceived attempts could be damaging if they provoke backlash or disenchantment.

There has been a longstanding recognition of the importance of competition and experimentation in governance, but only recently with the development of the theory and practice of special jurisdictions has the issue of entry barriers come to the fore. To allow a thousand nations to bloom, and unlock the experimentation required to find new and better ways of governing, it is necessary to

find means of reducing entry barriers in the governance market.

We have suggested three broad possible means of lowering entry barriers – zone-based governance, seasteading, and territorial unbundling. In all cases, the challenges are significant, but worth pursuing. We cannot be sure that any particular project will be successful. But the potential upsides of creating a more robust and innovative system of governance, along with the lessons learned from failures and successes, easily justify continued efforts in this area.

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Cryptodemocratic Governance in Special Economic Zones

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Abstract

Special jurisdictions are testbeds for institutional experimentation. The newest waves propose voting mechanisms to make complex and evolving policy decisions. In this paper, we explore how blockchain technology—as a new infrastructure for voting rights—might be applied in special jurisdictions. We use the example of a 'cryptodemocracy', previously explored by Allen et al. (2019). In this system, voters are given property rights in votes that are recorded on decentralized blockchain ledgers. The votes can be given different bundles of property rights—such as the ability to delegate votes—that change the structure of the democratic system. Our aim in this paper is to explore the underappreciated collective choice problems underpinning special jurisdictions, outline the potential for cryptodemocratic voting systems as new infrastructure for special jurisdictions, and propose directions for future research.

Keywords*:* Special Economic Zones, Blockchain Technology, Robust Political Economy, Cryptodemocracy, Blockchain Voting

Resumen

Las jurisdicciones especiales son lugares que facilitan la experimentación institucional. Las nuevas olas proponen mecanismos de votación para tomar decisiones políticas complejas y cambiantes. En este documento, exploramos cómo la tecnología blockchain, como una nueva

infraestructura para los derechos de voto, podría aplicarse en jurisdicciones especiales. Utilizamos el ejemplo de la previamente explorada por Allen et al. (2019). En este sistema, a los votantes se les otorgan derechos de propiedad en los votos que se registran en los libros de contabilidad descentralizados de blockchain. Los votos pueden recibir diferentes paquetes de derechos de propiedad, como la capacidad de delegar votos, que cambian la estructura del sistema democrático. En este artículo, nuestro objetivo es explorar algunos los problemas de elección colectiva presentes que sustentan jurisdicciones especiales y describir el potencial de los sistemas de votación criptodemocráticos como una nueva infraestructura para jurisdicciones especiales. También proponemos direcciones para futuras investigaciones.

Palabras clave*:* criptodemocracia, Zonas Económicas Especiales, tecnologías blockchain, Economía política robusta, votación por medio de blockchain.

1. INTRODUCTION

Special Economic Zones (SEZs) are a class of special jurisdiction where geographic areas have different rules—such as lower taxes or fewer regulations—compared to host jurisdictions (e.g. see Akinci et al., 2008; Bell, 2017). New special jurisdictions represent a devolution and decentralization of political power, spurring diverse governance structures that differ widely in terms of their policies, size, funding and governance. Special jurisdictions have historically generated political, social and economic liberalization.

There is a long history of research examining SEZs, much of which examines their economic performance compared to host jurisdictions (see Devereux and Chen, 1995; Fenwick, 1984; Liang, 1999; Wang, 2013; Yeung et al., 2009). Special jurisdictions provide a comparatively effective environment for experimentations in new forms of governance, including democratic governance. In this paper, we contribute to the understanding of special jurisdictions by exploring the potential for blockchain-enabled voting infrastructure to facilitate some collective choice problems in special jurisdictions. Our analysis might help to address some of the collective choice frictions in special jurisdictions, namely transparency, accountability and corruption of governments and private governing bodies.

An underappreciated problem for special jurisdictions is the need to make choices in groups. Special jurisdictions require collective choices to be made under uncertainty, over a wide range of policy alternatives, and with fuzzy stakeholder groups. Some of those choices are in the initial establishment and founding of a zone, such as where a zone is located. In that stage, important decisions include the policy margins of a zone and how it differs from the host jurisdiction. In later stages, as the special jurisdiction develops and evolves, new questions arise, and they might include reflections upon initial policies that were not fit for purpose and must be changed. In Special Economic Zones, these choices are exacerbated by often high levels of migration and policy uncertainty, as well as a complex and competing mix of private and public stakeholders. As we shall argue, these governance challenges present an

opportunity for alternative democratic structures enabled by new technologies.

In this paper, we explore the potential for cryptodemocratic governance to ameliorate challenges in designing and governing special jurisdictions. A 'cryptodemocracy' is a blockchain-enabled collective choice infrastructure on which individuals coordinate their voting property rights on a decentralized platform. What blockchain technology enables, we argue, are more emergent, dynamic and responsive forms of democratic governance—that is, collective choice infrastructure that better overcomes knowledge and incentive problems. These are precisely the challenges we have identified that a cryptodemocracy could address in the governance of special jurisdictions.

Cryptodemocracies could potentially overcome some collective choice problems faced in special zones today, and further problems that arise as more special zones are developed. There are several further reasons why examining cryptodemocratic governance in SEZs is fruitful. First, special jurisdictions have a comparative advantage in testing policy ideas than larger jurisdictions—they are highly experimental testbeds. Applying cryptodemocracies in special jurisdictions could extend experimentation within special jurisdictions beyond policy questions (such as lower taxes or fewer regulations) and into political structures themselves (such as new institutional possibilities of democratic decision making).

Second, the opportunity for experimentation extends beyond the borders of the special jurisdiction within which cryptodemocracy could be trialed. Some policies from special jurisdictions have spread to host jurisdictions, sparking "liberalization avalanches" far beyond initial comprehension (Moberg and Tarko, 2014). China's experience demonstrates the way that this contagion effect can occur (e.g. see Crane, 1990, 1994; Montinola et al., 1995). Shenzhen, the first special zone in China, was implemented in 1980. The lessons were quickly expanded across other areas of the country (see Yeung et al., 2009). Even further, cryptodemocracies might first be applied in special jurisdictions before being exported to other jurisdictions. In this way, cryptodemocratic governance of special jurisdictions might not only facilitate zone

governance, but provide insights into innovative governance for existing jurisdictions seeking to reform their democratic structures.

This paper proceeds in the following way. In the second section, we introduce special jurisdictions and make a case for collective choice infrastructure to discover new policies (knowledge problems) and to incentivize good governance (incentive problems). In the third section, we introduce the challenges of designing systems for collective choice, including a range of proposals to improve the functioning of democracy. In the fourth section, we define and introduce cryptodemocracies, including their theoretical properties. In the fifth section, we consider how cryptodemocracy might be applied in special jurisdictions and deployed to facilitate zone governance. In the sixth section, we conclude by discussing directions for future research.

2. BLOCKCHAINS AND DISTRIBUTED VOTING SYSTEMS

Blockchain is a decentralized and immutable digital database that is made possible through the combination of several technologies, including asymmetric cryptography, cryptographic hash functions, peer-to-peer networking, consensus algorithms, and game theoretic incentive design (Berg et al., 2019). Blockchain was initially invented to support a trusted digital currency that did not require a centralized financial intermediary (Nakamoto, 2008). The applications of blockchain, however, extend well beyond finance and cryptocurrencies into areas such as enabling transparency in global supply chains and logistics (e.g. see IBM, 2018).

More broadly, blockchains are decentralized and distributed ledgers where a network of computers maintain consensus over shared data—and can undertake shared computations—using economic incentives. Blockchains can be considered a new type of decentralized infrastructure (see Allen, Berg, Novak, Markey-Towler and Potts, forthcoming; Berg, Davidson and Potts, 2019; Davidson, De Filippi and Potts, 2018; Werbach, 2018). Blockchain protocols are now being developed with a range of different cost, speed, privacy and security characteristics. Where blockchains provide trust more effectively than firms or governments, we should expect some exchanges and

activities previously maintained by centralized ledgers to shift towards decentralized blockchain networks (see Davidson et al., 2018). Indeed, blockchains are now being applied in diverse areas that are relevant and of particular interest to the success of and investment in special jurisdictions, including supply chains, charity donation tracking and property registries. Our focus is on blockchain's application to solve problems related to voting.

A cryptodemocracy is a new type of collective choice infrastructure that uses blockchain technology for coordinating voting property rights (see Allen et al., 2019; Allen, Berg, Lane, et al., 2018). Rather than votes being recorded centrally by governments and organizations, blockchain enables votes to be recorded in a decentralized and distributed way. Blockchain has the potential to overcome some of the challenges of traditional democratic governance, including transparency and voter fraud. Moreover, this infrastructure opens the possibility for voters to trade, decompose and delegate their voting rights to others, creating an entirely emergent democratic structure. This is an idea we explore in subsequent sections.

Cryptodemocracies could facilitate proposals for innovations in democratic governance, such as quadratic voting. This can be enabled by embedding rules into the protocol, constraining voting rights in different ways. Therefore a cryptodemocracy should be understood as the general infrastructure in which democratic structures can be designed and built. The new institutional structures that blockchains enable include more dynamic and non-territorial decision-making systems. These new democratic systems might integrate more voter knowledge (e.g. about potential policy choices) into collective choices and could potentially make democracies more accountable and responsive.

3. WHAT MAKES SPECIAL JURISDICTIONS ROBUST

Special jurisdictions exist amongst the messy and complex reality of a political-economy system. Here we use the robust political economy framework to help understand the governance problems of special jurisdictions (Boettke and Leeson, 2004; Leeson and Subrick, 2006;

Pennington, 2011). Institutional governance systems are more robust if they deal comparatively well with knowledge problems (discovering effective policies) and incentive problems (preventing opportunistic behavior). Moberg (2015, p. 169) has applied this framework to special jurisdictions to argue that "decision makers need both be able to find the proper policies for the zones and have the incentive to implement them."

Special jurisdictions face certain knowledge problems. Knowledge problems arise because information is distributed about an economy in the minds of individuals and individual preferences are not given but must be discovered (Hayek, 1945; Boettke, 2018). In special jurisdictions, decisions about the 'rules of the game' themselves must be made. They need institutions to make collective decisions such as the breadth and extent of reform in the zone. In the most extreme cases, these decisions include the structure of the political system and how the jurisdiction will maintain governance autonomy. Policies within special jurisdictions also need to change dynamically. While a special jurisdiction might begin with simple reductions in tariffs, it might later decide to implement reforms to immigration restrictions to attract workers. Addressing these choices underscores the need for collective choice infrastructure in special jurisdictions. The more effective that infrastructure is at coordinating knowledge, the better it will solve knowledge problems and make the jurisdiction more robust through time.

The institutional frameworks in special jurisdictions must also deal with incentive problems. Political elites and powerful companies can and do act in self-interested ways that may lead them away from providing effective governance. People governing zones have to be held accountable for their actions, incentivized to provide good governance. This raises the question of how we can implement institutions that encourage what Acemoglu and Robinson (2012) call inclusive institutions (those institutions that encourage peaceful cooperation and exchanges) rather than "extractive" institutions. There are two main ways to ameliorate the incentive problem in special jurisdictions: privatization and democratic accountability (Lutter, 2017; Moberg, 2015).

Privatization can help align the incentives of investors, administrators and citizens by giving the zone's governing body a stake in the outcome of those decisions (such as whether those choices generate growth). Lutter engages with privatization through the concept of 'proprietary cities'. They have three main characteristics: The land owner is a private for-profit entity; they have a high degree of legal and regulatory autonomy; and the entity has a "meaningful role in creating and enforcing the legal system" (Lutter, 2017, p. 2). Such an arrangement could enable experimentation and discovery of new institutional systems, partly because, in some ways, they could be seen as beginning from blank slates rather than approaching reform at the margin.

While autonomy and privatization can help align incentives and encourage innovation, it can also create other incentive problems. The role of the host government in a proprietary city at the most basic level is to provide a separate company (or a group of companies) with the autonomy to govern over a territory. This, however, creates complicated incentive relationships between private investors, citizens and governments. Private autonomous governance could ameliorate both knowledge problems through decentralized institutional entrepreneurship. As for incentive problems, it could address them through more accountability and preventing the encroachment of external interests.

Democratic accountability in zones also helps solve incentive problems by making those who govern accountable for their decisions by those subject to them (Moberg, 2015). Moberg argues that corporate and political elites gain from making good policy choices by maintaining political power. Coupled with this is the notion of decentralization of governance that gives local officials the incentive to make good choices and contribute to solving the knowledge problem (Moberg, 2015). That is, by tying governance choices to outcomes, we can suppress opportunistic behavior by officials. This notion of decentralization and devolution of power, and the additional accountability that comes with it, also creates external political and governance challenges. Special jurisdictions must maintain relationships with host governments, where incentives between host governments and special jurisdictions may

not be aligned (e.g. the host jurisdiction may seek to extract rents or favor their private interests).

One example of this tension with governments, as Bell (2017) charts in a case study in his recent book, is the tumultuous history of special zones in Honduras. In 2011, the Honduran Congress (almost unanimously) voted in favor of constitutional amendment to enable a new form of special zones. These zones were to be extensive including more autonomous commercial laws, public administration, courts and policy—including the power to set their own tax regulations. Then, in 2012, the Supreme Court struck down the proposal on the basis that it was unconstitutional. Later, in 2013, Honduras passed legislation that enabled another type of special zone called a 'ZEDE' (Zonas de empleo y desarrollo económico).

The ZEDE attempts to overcome some of the incentive problems between special and host jurisdictions through institutional design. For instance, in Honduras, each ZEDE is required to transfer 12 per cent of tax revenues back to the central government. This arrangement allows it to remit money back to the central government but remain the residual claimant on profits.

In this section we have outlined the knowledge and coordination problems that special jurisdictions face. Solving those problems requires collective choice (voting) infrastructure. We have argued that special jurisdictions have unique governance problems, such as the relation to a host government and their need for balancing this with attracting investment.

4. THE COLLECTIVE CHOICE PROBLEM

To understand innovations in democratic governance we must first understand the nature of collective choice. We structure democracies to make group decisions. Coordinating decisions in small homogenous groups is easy. With more participants, and with diverse preferences, group decisions become hard—there are substantial transaction costs in integrating preferences into decisions about what governments should, should not, can and cannot do. One common way to overcome the costs of this group decision-making problem is through the mechanisms of representative democracy. We elect political representatives in defined

geographical areas (i.e. electorates) through a one-person-one-vote election process, and then those representatives vote on our behalf. These representatives might also be organized into multiple houses of parliament or congress, creating a supermajority (where in effect more than 51% of votes are required to change rules). Power is then delegated to other statutory bodies to enforce and administer that legislation. In this way, representative democracies both attempt to enable people to take part in decisions, while also delegating day-to-day powers away from the entire franchise. From this perspective, democratic mechanisms are complicated and intricate processes for collective decisions in a world of positive transaction costs (i.e. the various costs of coming to collective decisions under uncertainty).

There have been several recent scholarly efforts to propose new institutions to improve collective governance processes. Let us briefly examine three such proposals: Quadratic Voting (QV), Epistocracy, and Futarchy. These examples of innovative new forms of governance provide insights into the potential scope of cryptodemocratic innovation for special jurisdictions. It is important to note that these are not necessarily alternatives to cryptodemocratic governance, as a cryptodemocracy does not presuppose the structure of any democratic system. Instead, it is infrastructure for coordinating voting rights. Each of the three following proposals could be implemented as rules constraining voting rights.

First, Quadratic Voting (QV) is a rule where voters may purchase additional voting rights for a price that is a square of the number of votes purchased (Posner and Weyl 2015). After the vote, the money collected is redistributed to the voters on a per capita basis (Posner and Weyl 2015). QV attempts to avoid the tyranny of an apathetic majority associated with the traditional 'one person, one vote' rule where the democratic outcome may not reflect the intensity of preferences of the collective group. Under QV, the number of votes cast is not fixed, however the quadratic nature of the voting rule means that "it becomes prohibitively expensive for a small group of wealthy individuals to affect the outcome" (Allen et al, 2019, p. 80). QV could be implemented using blockchain (Allen, Berg, Lane et al, 2018)

or as a governance infrastructure to support blockchain communities more generally (Buterin et al. 2018).

Second, Epistocracy or the 'rule of the knowledgeable' is a proposal to weight voting rights according to a voter's knowledge and intelligence (Brennan 2016). This proposal seeks to ameliorate perceived problems with 'one person, one vote' rule where the aggregation of preferences is not efficient because voters may be biased, misinformed, or ignorant of the policies and candidates that they are voting for. A practical application of this using blockchain infrastructure is the political movement 'Flux', where voters can choose to delegate voting rights to trusted experts (voteflux.org). In the Flux model, individuals are encouraged to vote particular candidates into parliament, and then a form of Issues Based Direct Democracy is implemented, enabling people to vote more directly on issues that come before parliament.

Third, Futarchy seeks to harness speculative betting markets as an alternative mechanism for aggregating knowledge about which policies should be implemented. Under this system, voters would decide the political goals while betting markets would determine the specific actions that the elected government would implement and administer. The basic rule of Futarchy is that "when speculative markets clearly estimate that a proposed policy would increase national welfare, that policy becomes law" (Hanson 2013, p. 152). There has been speculation that this system could be used for the governance of Decentralized Autonomous Organizations (Buterin 2014; Merkle 2016), which are new types of organizations run on blockchain-based networks and governed through various decentralized voting mechanisms.

Each of these proposals seeks to create a new arrangement of voting property rights. This raises the questions about the purpose of democratic voting, and how we can judge the effectiveness of a democratic system? According to Hayek (1960), the benefits of democracy come through its dynamic process and the formation of opinion. Indeed, as Hayek (1960, p. 94) notes, the "... chief advantage [of democracy] lies not in its method of selecting those who govern but in the fact that, because a great part of the population takes an active part in the formation of

opinion, a correspondingly wide range of persons is available from which to select."

The way we structure democratic institutions has changed through time and is affected by technological change. New technologies change how we deal with transaction costs and enable us to organize ourselves in new ways. Over millennia, technologies have created new possibilities by changing the way we record and organize votes. History demonstrates new technologies do not just lower the costs of existing collective choice institutions, they fundamentally change the shape and functioning of those infrastructures. Communications technologies, including writing, enabled us to lodge and record votes. Some technologies, such as the Kleroterion in Athenian polls, were specifically invented to reduce opportunism by ensuring the process of random sortition was not compromised. The printing press enabled us to use printed ballot papers and facilitated representative democracy over greater distances. The internet has not only facilitated complementary parts of democratic governance, such as the free press, to a certain extent, but also promises more direct democracy by lowering the costs of frequent online voting. That is, technologies facilitate our ability to vote more often by lowering the costs of casting votes into a collective decision. Democracies do not only get faster and cheaper when we invent new technologies. Technologies make new democratic mechanisms possible.

Indeed, democratic structures solve knowledge and incentive problems in different ways. On one hand, direct democracies integrate more dispersed knowledge through more frequent voting and therefore might ameliorate some knowledge problems. On the other hand, representative democracies (where we vote less frequently) put decision making power in representatives, but open the potential for agency and incentive problems.

We can think of votes as a bundle of rights—that gives one the capacity to do some things but not others with that property—that enable you to take part in a collective decision, to fulfil some democratic purpose. In modern elections, voting rights are tightly regulated and planned. Votes are evenly distributed across the adult population. Your vote must be cast at set times (perhaps every

three to five years). You can only vote for the candidates in your geographical area in which you are registered. Your vote must also be made in secrecy at a polling booth (in the sense your vote cannot be externally verified). You cannot withdraw your vote once it is cast (wait three more years). You cannot vote directly on some issues, but delegate other decisions to representatives. Further, exercising your individual voting right is contingent on the pattern of other people exercising their voting rights. Some nations with compulsory voting, such as Australia, even compel you to exercise your right (or risk being fined).

Voting rights look the way they do for many reasons, but generally they exist to create some democratic political process. Those political systems variously seek to coordinate and aggregate information, or prevent the tyranny of the majority, or to make governments legitimate or accountable. Voting rights can change over time in relation to some desirable democratic processes, justified through greater efficiency of collective decision making. For instance, restrictions on your right to sell your vote are connected back to the potential of individuals imposing externalities on others, and the mapping on economic inequality onto political inequality (more on this later). It is in this context that blockchain demonstrates the potential to secure votes, opening the potential for more voting rights and new democratic structures. We refer to this underlying collective choice infrastructure that blockchain facilitates as cryptodemocratic governance.

5. WHAT IS A CRYPTODEMOCRACY?

New technologies open new institutional possibilities, including novel ways to organize collective decision making, that were previously unfeasible. We now turn to the opportunities that blockchain technology presents as collective choice infrastructure. Earlier we defined a cryptodemocracy as a blockchain-enabled collective choice infrastructure on which individuals coordinate their voting property rights on a decentralized platform. A cryptodemocracy is a technological infrastructure that facilitates the recording and contracting of votes between parties. Together, blockchains and smart contracts enable votes to become programmable and contractible.

Given the complexity of such a voting system—with many layers and unbundling—a decentralized blockchain infrastructure for securely and transparently recording voting property rights is critical.

A cryptodemocracy has distinct properties that may help ameliorate some of the collective choice problems identified in the previous section. In this section, we explore some of those properties before turning to the specific application of cryptodemocracy to special jurisdictions.

Blockchain has been proposed as a new digital infrastructure for democratic decision-making to give voters more wide-ranging voting rights, radically reshaping how democracies work (e.g. see Van Rijmenam and Ryan 2019; Allen et al., 2019). This is because democratic governance requires mechanisms for recording an entitlement to vote and managing where or how votes can be executed. Historically, these records have been centrally maintained by a trusted intermediary (such as an electoral commission for the conduct of public elections). There are well-known problems and controversies surrounding the integrity of centralized voting systems—such as the potential for bribery and corruption of central electoral authorities, ballot stuffing, vote-rigging, misplaced or destroyed votes, inaccurate and unauthenticated voter identification. There are similar problems with attempts in digitizing those systems (see Allen, Berg, Lane, et al., 2018).

Blockchain applied to democratic voting attempts to overcome issues of erroneous recording of voters and votes that comes from having a centralized voting process administered by a government entity. For instance, rather than a centralized recording of votes, it is possible that each voter could be given a cryptographically-secure token, recorded on a decentralized ledger, which represents their vote.

There are many reasons why distributed and decentralized blockchain ledgers may be effective for the problem of recording votes. For instance, “compared to standard centralised voting systems (where there is a single authority monitoring actions), a blockchain-based voting system can allow some level of decentralisation on the monitoring and implementation of the system’s procedures” (Dhillon et al 2019, p. 6).

Bogucki (2017) also outlines several benefits of blockchain for the voting process including the robustness of a distributed system in the case of a server being compromised, and the potential protection of voter identities. One of the obvious benefits of such an infrastructure is that this ledger is publicly auditable, thus providing transparency over the conduct of the voting process. Blockchain was originally introduced to solve the 'double spending problem' for digital currencies, but it may also solve the 'double voting problem'. A blockchain-enabled cryptodemocracy can ensure integrity in collective choice processes not only for public government elections, but also for private companies. This is pertinent for special jurisdictions, which are increasingly operated by private companies.

But cryptodemocracy would not simply be an application of blockchain to voting where the same democratic structures (e.g. representative democracy) are maintained. The concept of cryptodemocracy does not necessarily presuppose any specific constitutional rules about the allocation of those voting property rights (e.g. the franchise) or the specific rules regarding the exercise of voting property rights (e.g. voting districts, election cycles). Instead, a variety of different structures could emerge. And this, we argue, has far more radical implications:

Allen et al. (2019) explain that a cryptodemocracy could draw on the decentralization and cryptographic security of blockchain to establish and govern a system of property rights over votes. Once property rights over votes are allocated and enforceable, individuals would be able to contract, exchange, and utilize their votes in a decentralized and evolutionary system. In that way, cryptodemocracy would provide for a democratic, polycentric and spontaneously ordered system of collective choice that has not yet been possible under the existing institutional and technological framework.

Compared to more familiar democratic structures, a cryptodemocracy theoretically exhibits some unique and desirable characteristics. By giving people cryptodemocratic voting rights, more local tacit knowledge can enter collective choices. Indeed, democratic processes are not a process of aggregating preferences to

some objectively correct outcome, but rather a messy process of knowledge coordination and learning over subjective policy problems.

Cryptodemocratic governance can be applied to solve some of the governance problems underpinning special jurisdictions. There is potential here for both public elections (e.g. electing governments or administrative bodies) as well as within and between private and not-for-profit organizations (e.g. corporate shareholder voting or union governance). These opportunities could ameliorate some of the knowledge problems of special zones (such as what policy changes should be made) by incentivizing the revelation of preferences and by making decision making more dynamic. Cryptodemocratic governance may also create new incentive structures, bringing about more responsive and accountable governance.

In current democratic systems, one reason why voting property rights are restricted (e.g. not being able to transfer votes) is because those voting rights could not be securely or reliably executed. Given that blockchains enable us to execute particular voting rights (e.g. delegations) more securely, this allows new forms of democratic governance to emerge, with the potential to reshape democratic institutions. In contrast, blockchain technology, together with smart contracting technology, enables a much more extensive set of rights to be attached to votes, opening new structures of collective decision making. As we saw above, people have long proposed and discussed new democratic structures, contrasting them with our current rigid systems. These systems are partly rigid because we did not have the technology to overcome the transaction and political costs of more fluid and dynamic political group decisions. However, blockchain, we argue, might bring those democratic structures into the realms of possibility through cryptodemocratic governance.

While the decision of what voting rights would be enabled in a cryptodemocracy is a constitutional decision written into the voting protocol—for instance, whether votes could be bought and sold, or some maximum amount of votes a single voter could acquire—it is worth exploring what some of those rights might be. Voters could be free to delegate (i.e. contract) to

any other individual voter within the franchise, or even outside the franchise (rather than just their geographical representatives). Voters might be able to place conditions on those delegation contracts, such as time limits after which the voting right would return to the original holder. Voters might decide to retain their right to vote on certain issues (e.g. social issues) while delegating portions of their voting rights to others (e.g. economic issues). This unbundling of votes is, of course, limited by the extent to which such unbundling could be coded. Even further, voters might be able to buy and sell votes (integrating compensation into the voting contracts). But it is not clear which way this money would flow: would voters sell their voting rights, or would they delegate their rights and pay delegates to act on their behalf? This final proposition—vote buying and selling—is controversial and worth further exposition.

A long history of stigma sits around voting markets. But there are several arguments for developing markets for votes. In 'one person, one-vote' systems with restrictions on voting rights, voters are unable to express their intensity of preference. It does not matter the extent someone cares about an issue; everyone gets to cast one vote. This means a reasonably indifferent majority can overpower a minority who cares very strongly about an issue.

In product markets, this is solved by enabling trade. Indeed, there are gains from trade between two blocks of voters, one of which can compensate the other for their voting rights. The core (utilitarian) argument for voting markets, aside from arguments about fundamental freedoms of vote alienability, is that markets process information and integrate more preferences and distributed knowledge into a collective choice.

Arguing for vote buying is often quickly followed by vehement disagreement along three main directions (Allen et al., 2019). The first problem, or concern, with voting markets is inequality. In this view, the rich would buy all the voting rights from poor populations. While there is reason to be fearful of economic inequality mapping onto political equality, one of the challenges with this objection is the reality that politics and money are already intertwined—but that money gets captured by the political elites through

lobbying and funding. Logrolling processes also look very much like voting markets—except the transfers are between the representatives.

Another common argument for restricting vote buying and selling is inefficiency. In this argument, there is a distinct difference between voting markets and other markets. In product markets each voluntary exchange can be mutually beneficial, and this might not impose externalities on others. In voting markets, while each exchange can be beneficial, the overall collective decision is imposed on everyone. That is, voting markets are bad and inefficient because they impose externalities.

However, democracies inherently impose externalities through group decision and enforcement. Indeed, as Brennan (2016, p. 9) describes, there are fundamental differences in how democracies govern and individuals make other choices:

> An electorate is not like an individual. It is a collection of individuals with separate goals, behaviors and intellectual credentials. It is not a unified body in which every person advocates the same policies. Instead, some people impose their decisions on others… Political decision making is not choosing for oneself it is choosing for everyone. If the majority makes a capricious decision, others have to suffer the risks.

Coase (1960) taught us that, with sufficiently low transaction costs, property rights will be bargained through contracts towards their more efficient use. Some have attempted to extend this understanding into the political sphere. In the political sphere, by giving people property rights in votes and then opening voting markets, externalities could be internalized. This is the "Political Coase Theorem" (PCT). But there are several arguments against PCT. For instance, Acemoglu points out commitment problems in the PCT, arguing the system is based on the idea of credible commitments and enforceable contracts, and that these cannot exist within politics (e.g. Acemoglu, 2003). However, as we will see further below "blockchain might facilitate a Coasian bargaining process—that is, the process of bargaining may tend property rights to their most valued use—by

lowering agency costs of enforceability" (Allen et al., 2019, p. 78).

The third argument against voting markets is that votes are anti-commodifiable. In this view, the votes belong to the community, not individual people, and serve a public purpose for group decision making. Therefore, they should not be sold. When a cryptodemocracy is established, one of the decisions that must be made is the extent of rights that will attach to each vote. For instance, are voters able to buy and sell votes? Is there a maximum number of votes that any one delegate could hold? This decision can be considered a form of "constitutional" choice that is coded into the blockchain protocol. There are many ways that voting rights might be restricted. For instance, votes could be bought and sold but there may be some restrictions attached, such as quadratic voting mechanisms that make it prohibitively costly to buy many votes (Posner and Weyl, 2015).

While the exact scope and application of what we here refer to as cryptodemocracy could be discovered over time, we can explore some of the features of cryptodemocratic governance compared to features of more conventional governance structures. Some of these properties, we claim, could make cryptodemocracies more interesting than democratic systems which are more limited, inasmuch they do not offer possibilities such as vote delegation. Cryptodemocracies could have emergent structures and multiple centers of decision making. That is, they would be polycentric. Cryptodemocracies are hard to define because their structures could be seen as a "catallaxy" (a spontaneously emergent order) rather than a "taxis" (a consciously planned order) (Hayek, 1973), whereby the constellation of voting property rights at any given time is a function of voter preferences.

Cryptodemocracies could also be more knowledge-rich than conventional democratic structures. This is because the process of delegation and coordination between voters and delegates could potentially integrate more local and contextual knowledge into collective choices. Some of that knowledge might come from the buying and selling of voting rights. This process can enable people to demonstrate their preferences clearly. Other knowledge will come through the

process of delegation, where individual votes have more power to self-identify how and in what way they wish to take part in the political process. It is worth reexamining here some of the claims of voter ignorance and irrationality as described previously. In a cryptodemocracy voters—by having property rights within their own vote—will not homogeneously have the right to exercise their vote within predetermined constraints. Rather than some homogenous "bundle" of voter property rights being defined, individuals can more fully determine how they wish to engage.

6. CRYPTODEMOCRATIC GOVERNANCE FOR SPECIAL ECONOMIC ZONES

No one knows exactly what cryptodemocracies will look like and at what scales they will be applied. For instance, cryptodemocracies might be applied across both the private sector (e.g. corporate governance) and the public sector (e.g. regional governance) to solve different governance problems. There will likely not be "a" cryptodemocracy, but several forms of them. At various levels, over the coming decades we are likely to see extended experimentation with cryptodemocratic governance infrastructure. These applications will implement different types of democratic systems with variances in the bundles of voting property rights given to voters. Where could we expect the first application of cryptodemocratic governance is in the private sector. The private sector has fewer barriers to application and adoption of new technologies. While over time we might see these innovative forms of governance in public elections, or within the operation of political parties themselves, special jurisdictions are particularly well-placed for governance experiments. As we saw in previously, special jurisdictions have a range of overlapping and ongoing collective choice governance problems. Those governance problems include issues of incentivizing effective governance, relationships to host governments, and policy change. However, the autonomous and greenfield nature of special jurisdictions also suggests they are comparatively well-placed for experiments in innovative governance. It's highly unlikely that a new cryptodemocratic governance system would be implemented within a major established country in the

near future because of entrenched political interests and risk aversion. By contrast, the formation of new special economic zones can be a greenfield for new collective choice governance infrastructure. Special jurisdictions are forms of innovative governance for new policies to be implemented and tested compared to host jurisdictions. When new special jurisdictions are developed, they also come with the creation of new governance. This presents an opportunity for testing new cryptodemocratic governance structures. To be sure, cryptodemocracies are not a silver bullet for the governance challenges of special jurisdictions, but they provide a promising and complementary possibility for experimentation in a unique environment that requires new institutional infrastructure.

Cryptodemocratic governance structures could be implemented in the public and administrative processes of new zones. That is, cryptodemocracies could be used as a mechanism to create new parliamentary structures, or to enable forms of direct democracy where voters vote more regularly on issues. This might make those governance structures more responsive and accountable to voters and to investors. The features of a cryptodemocracy, including its ability to integrate more voter preferences into collective decision, could also be useful with issues facing special jurisdictions. For instance, special jurisdictions might have a rapid increase in population numbers due to migration. This increase in population not only increases the size of those who may be eligible to vote (i.e. the franchise), but also changes the preferences and structure of that voter base. These migration dynamics further underscore the need for effective collective choice infrastructure, such as cryptodemocratic governance.

Special jurisdictions have a wide range of challenges regarding knowledge coordination and discovery. The epistemic features of cryptodemocratic governance, such as the delegation and unbundling of rights, might enable more knowledge to be integrated into those political decisions. Competition between jurisdictions leads to better governance as policymakers are incentivized to provide policies that better reflect its population's preferences in decision making, given the relatively free movement of people and flow of capital.

Indeed, information is generated through the process of competition itself as institutional level experimentation occurs (see Vanberg and Kerber 1994). Cryptodemocracies might therefore provide collective choice infrastructure for better public governance *within* special jurisdictions, further increasing the capacity of jurisdictional competition.

The applications of cryptodemocracies extend into the private sector too. As we have seen, there are an increasing number of zones that are privately funded and operated. One clear application of cryptodemocratic governance is for corporate shareholder voting. A company's shareholders vote on a range of important company decisions including director elections, merger deals, winding up, and constitutional changes. Shareholders are already contracting and delegating voting rights in this corporate context. However, problems with identifying and tracing votes has undermined integrity in corporate voting (see Kahan and Rock, 2007). Blockchain-enabled share registries promise to address these problems (see Geis, 2018). Cryptodemocratic governance might therefore strengthen corporate voting processes and provide greater scope for shareholder decision making (see Allen et al., 2019). This might further facilitate the development of privately funded and operated special economic zones.

Moreover, special jurisdictions could adopt Distributed Autonomous Organizations (DAOs) that draw on the local knowledge of citizens (or some other voter or investor group) to make decisions around funding of future infrastructure projects—as well as innovative ways to fund public goods such as dominant assurance contracts (on dominant assurance contracts see Tabarrok, 1998).

Cryptodemocratic governance could also help special jurisdictions scale. There are various benefits of people living together in cities, including the benefits of mutually beneficial trade, and the way that innovation diffuses between organizations (i.e. innovation spillovers). To effectively leverage these dynamics, special zones might aim to incorporate large groups of people. At the same time, however, one of the benefits of special jurisdictions, by their definition, is providing smaller scale innovations in governance that can be tested and can compete with other

jurisdictions. That discovery process might better occur at a lower, more disaggregated level to draw from local knowledge, and to test and trial new policies while maintaining close proximity in physical space.

Institutional entrepreneurs can create private governance structures (where they are the residual claimants on those rules) to facilitate contracting. Competing private governance structures can bring the benefits of innovation and competition to rule systems. Blockchain provides a new technology for private entrepreneurs—who have the incentive for their institutions to succeed—to spin up competing institutional governance structures to facilitate voluntary exchange (Allen, forthcoming). Cryptodemocratic governance, we argue, is a new mechanism for robust special jurisdictions that relies on the emergence and discovery of new institutions by sovereign institutional entrepreneurs (see Salter 2018).

7. CONCLUSION AND FUTURE RESEARCH DIRECTIONS

Special Economic Zones (SEZs) have mixes of public and private collective choices. Some governance problems are at the public level, such as what taxation policies should be changed, or what physical infrastructure should be built. Other choices are in the private sector, such as shareholder voting and labor union governance. Collective choice problems might be exacerbated given levels of policy and regulatory uncertainty, competing and sometimes unclear groups of stakeholders, and rapid migration and movement across jurisdictions.

Since ancient times, societies have invented and applied technologies to facilitate collective choice. One recent advance in technologies of collective choice is blockchain. Blockchain technology is a class of distributed ledger technology—an institutional technology—that has potential application in collective choice infrastructure by creating cryptodemocracies. To be sure, technical problems remain over blockchains themselves. One major challenge relating to cryptodemocratic governance is the implementation of voter identities. There are, however, substantial innovation resources directed at solving problems such as identity.

Cryptodemocracies involve individuals being given voting property

rights that they can delegate to others using smart contracts. Just as the printing press enabled the modern secret ballot, blockchain can facilitate new institutional possibilities of democratic governance, perhaps with radically different shapes.

Our contribution in this paper is combining an understanding of the challenges in special jurisdictions with blockchain as a new, frontier digital collective choice infrastructure. Existing research on special jurisdictions has comparatively analyzed and measured the impact of special zones (and their policies) on economic and social development. Our focus on cryptodemocratic governance suggests a new area of comparative analysis over the collective choice mechanisms of forming and developing those different institutions. Better collective choice infrastructure enhances the capacity for the devolution of political power to smaller jurisdictions, potentially spurring greater jurisdictional competition. While we have focused on the potential impact of cryptodemocratic governance—to solve collective choice voting problems—it is worthwhile noting that these applications are just one example of the potential for blockchain technology in special jurisdictions. Blockchain is an institutional technology and can be used to provide trust in shared data, including in supply chains, tracking donations and investments, and charities. In this way blockchain can be more broadly understood as a tool to facilitate experimentation in institutional infrastructure, which can help to expand investment in special jurisdictions along multiple margins, including through the reduction in corruption (see Moberg, 2015).

Our analysis of the knowledge and incentive problems of special zones opens a new scope of research questions. There are at least two main directions for future research. First, theoretical analysis of cryptodemocratic governance, as specifically applied to challenges in special jurisdictions, might go further to incorporate computational simulations of the operation of cryptodemocratic infrastructure—including some of its characteristics, such as stability—and laboratory experiments to investigate how people act with a wider range of voting rights at their disposal. Second, if cryptodemocracies are developed within a special jurisdiction context there, will be

empirical data to analyse. Once cryptodemocracies are applied in practice, we expect a range of potential case studies to shed light on some of the more specific challenges and opportunities of developing new digital collective choice infrastructure.

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The Journal of Special Jurisdictions is announcing a call for papers for its next two issues:

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We are receiving papers that discuss pandemics in relation to special jurisdictions. Papers can discuss how special jurisdictions have historically or contemporarily responded to pandemics. They can also explore the economical, political, or epidemiological impacts of pandemics, including Covid 19, on special jurisdictions. We also welcome publications about the role of special jurisdictions in a post-COVID-19 world. This last topic is based on a virtual event held by the Startup Societies Foundation on the 1st and 2nd of May 2020.

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