Institutional Vulnerability, Breakdown of Trust: A Model Of Social Unrest In Chile*

Vulnerabilidad institucional, ruptura de la confianza: un modelo del malestar social en Chile

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Abstract

This paper revisits the standard explanations of the violent Chilean protests of late 2019, and in particular their exclusive focus on the role of inequality, which in fact had been falling prior to the emergence of unrest. Instead, we suggest that blame may lie in a crisis of trust in institutions, political and otherwise. We employ a formal model of how trust in government institutions can arise —and also disappear— overnight. In that model, the level of trust is tied (but not uniquely tied) to the level of civic capital in a society. If civic capital is above a certain threshold, then trust can only be high and increasing, but if civic capital is below that threshold, then the outcome is indeterminate, meaning the level of trust is vulnerable to self-fulfilling bouts of optimism or pessimism. The threshold for civic capital can be shifted by exogenous shocks to parameter values, including the quality of institutions, with the consequence that small shocks can have small and lasting effects if they take the system from one region to another. We document how these dynamics resemble the facts from Chile, where a small drop in reported institutional quality was associated with a large drop in measured trust around the time of the protests. In turn, the protests involved patterns of behavior (like the destruction of urban infrastructure, the evasion of user fees in buses and trains, and the non-repayment of student loans) which further deteriorated the capacity of the state to provide certain quality public services, and aggravated the decline in institutional trust.

Key words: *Dynamic Games, Crisis Management, Public Services, Trust, Political Economy.*

JEL Classification: *C73, H11, H41, P16*

Resumen

Este artículo revisa las explicaciones más comunes que se han entregado sobre las violentas protestas en Chile de fines de 2019 y, en particular, su enfoque exclusivo en el rol de la desigualdad, que de hecho venía disminuyendo antes de la irrupción de los disturbios. En cambio, sugerimos que la culpa recae en una crisis de confianza en las instituciones, políticas y de otro tipo. Empleamos un modelo formal sobre cómo la confianza en las instituciones gubernamentales puede surgir —y también desaparecer— de la noche a la mañana. En ese modelo, el nivel de confianza depende (pero no es únicamente dependiente) del nivel de capital cívico en una sociedad. Si el capital cívico se mantiene por encima de un cierto umbral, entonces la confianza solo puede ser alta y creciente, pero si el capital cívico se encuentra por debajo de ese umbral, entonces el resultado es indeterminado, y como consecuencia el nivel de confianza es vulnerable a episodios de optimismo o pesimismo autocumplido. El umbral del capital cívico puede desplazarse mediante perturbaciones exógenas a los valores de los parámetros, incluyendo la calidad de las instituciones, con la consecuencia de que pequeñas perturbaciones pueden tener efectos pequeños y duraderos si trasladan el sistema de una región a otra. Documentamos cómo estas dinámicas se asemejan a los hechos en Chile, donde una pequeña caída en la calidad institucional reportada se asoció con una gran caída en la confianza al momento de las protestas. A su vez, las protestas involucraron patrones de comportamiento (como la destrucción de infraestructura urbana, la evasión de tarifas en autobuses y trenes, y la negación a pagar préstamos estudiantiles) que deterioraron aún más la capacidad del Estado para proporcionar ciertos servicios públicos de calidad y agravaron la caída en la confianza institucional.

Palabras clave: *Juegos Dinámicos, Gestión de crisis, Servicios públicos, Confianza, Economía Política.*

Clasificación JEL: *C73, H11, H41, P16.*

1. THE PUZZLE

Why did millions of angry Chileans take to the streets in protest in late 2019? Why did many of them stop paying bus and subway fares and road tolls? And why did a country like Chile –arguably the most prosperous and law-abiding country in Latin America– explode in a rampage of street violence, vandalism and looting?

Chile tried to find a way out of its political crisis by drafting a new constitution. But a first draft text, which leaned to the far left, was rejected by voters in

September 2022, and a second one, which leaned to the right, was also rejected in a referendum in December 2023. So it seems that Chilean voters themselves are far from holding a single interpretation of the multiple tensions and conflicts revealed back in 2019.

As Pons et al (2020) highlight, the Chilean protests of 2019 appear to have been part of a global movement of rage that resulted in social unrest from Israel to Hong Kong, and from Iran to Bolivia. In Chile, the immediate trigger was a 3% increase in subway fares, which caused most observers to lay the blame more generally on rising prices and inequality.[1] As in other cases around the world, a sense of unfairness was likely at the root of the protests. But with its narrow focus on inequality and the cost of living, the standard account was overly simplistic.

Take price increases. Yes, Chile had a history of inflation. And, yes, because it is more prosperous, Santiago tends to be more expensive than most Latin American cities. Yet Chilean inflation in the 12 months to September 2019 was barely 2.1%, and the Central Bank had been cutting interest rates because inflation was below target.

Or take income inequality. For an upper-middle-income country, Chile is very unequal, with a high Gini coefficient of 46.6 in 2017 (100 represents absolute inequality). Yet according to the World Bank, the Gini coefficient had fallen from an eye-popping 57.2 when Chile returned to democracy in 1990.[2] The notion that *rising* income inequality was behind citizen discontent does not fit reality.[3]

Another explanation that has been offered is that years of economic stagnation clashed with public expectations of ever-increasing incomes and social mobility. In addition to the meagre growth rates of the 2010s, Donoso (2020), for example, adds the issue of deteriorating labor conditions and increased immigration during the period, creating a crisis of expectations.

While it seems natural to link economic grievances, including inequality and sluggish growth, to the occurrence of protests, it is far from clear that they are either a necessary or a sufficient explanation. In their ambitious cross-country analysis if the determinants of protests, Cantoni et al (2023) conclude that "while a society's economic performance has limited association with the occurrence of protests at the country level, a range of attitudes, preferences, per-

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[1] This New York Times piece, "Chile Learns the Price of Economic Inequality", is representative of this type of analysis (https://www.nytimes.com/2019/10/22/opinion/chile-protests.html, accessed 9 March, 2020).

[2] See the data in https://datos.bancomundial.org/indicador/SI.POV.GINI?locations=CL

[3] Proponents of this view would have to explain why intolerance for income inequality rose in the recent past, so that even a reduced level of inequality became unacceptable and triggered protests and looting. The classic paper by Hirschman and Rothschild (1973) provides a few clues along these lines.

sonality traits, and social factors are strongly associated with individual protest participation."

To understand the causes of a social phenomenon, one must ask: Why here? Why now? If citizen discontent spiked in Chile, some other causal factor must also have spiked so as to explain the change (or, alternatively, the sensitivity to the relevant causal factor must itself have spiked suddenly, which seems unlikely). What changed dramatically in Chile over the year or so prior to October 2019 that might explain massive citizen anger? Here is a possible answer: Chileans lost trust in the institutions of their country.

Development is always a race between frustration and trust. In a not-quite developed nation with much inequality and large pockets of poverty, many people lead harsh lives. Their income and consumption fall far short of their needs; they have difficulty paying their bills at the end of each month; they worry about losing their job or getting sick; they receive mediocre public services. All of this causes anxiety, frustration and, yes, anger.

But people control their anger as long as they believe that things will get better for them and their children. And crucially, that institutions —the executive, parliament, judges, prosecutors, the police, the military, labor unions, big business— are working to make that improved future possible (or at least are not working to impede it). Over time, trust rises and social or civic capital is accumulated (Persson and Tabellini, 2009; Aghion, Algan, Cahuc and Shleifer, 2010; Guiso, Sapienza and Zingales, 2011).

But if trust suddenly collapses, and people come to believe that institutions are not working —or, worse, that they are working to further the interests of people in power, not of ordinary citizens— then frustration and anger can boil over and quite possibly turn violent. That may be what happened in Chile.

Chile, like most Latin American countries, never achieved the levels of institutional or interpersonal trust seen in the United States. This should not be surprising. When de Tocqueville travelled to the United States, he was struck by what he found. American exceptionalism extended to the trust citizens accorded one another. In France, by contrast, rather than turn to each other for help, citizens looked to the state (de Tocqueville (1856)). Latin America is more like France than the United States in this respect. In the region, according to Latinobarómetro, interpersonal trust has been very low and on a downward trend for the last fifteen years. So has trust in most institutions: government, parliament, political parties and the judiciary, among many others.[4]

It might seem odd that trust in political institutions declined after many countries in Latin America became democracies. But politicians are not trusted in advanced democratic countries, either. Ronald Inglehart has argued that modernity and postmodernity contribute to a decrease in trust in institutions.

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[4]   Latinobarometro.org.

Alternatively, in Robert Putnam's account, modern life reduces face-to-face interactions and, as a result, interpersonal trust (Putnam, 2000). While traditional societies have a strong sense of authority resulting from paternalism or religious authority, modern societies, as they become more democratic lose respect for authority, and also trust in the institutions that in one way or another channel that authority (Inglehart, 1999).

Many organizations gather data on trust in Chile and Latin America, —including Latinobarómetro and Chile's Centro de Estudios Públicos (CEP)— but the CERC-Mori poll has the longest series on the subject, having asked the same set of questions regularly since 1990. Figure 1 shows CERC-Mori data for Chile on trust in five institutions: political parties, the Senate, the Catholic Church, the Judiciary and Carabineros (the national police force). Plotted is the share of people answering "very much" and "to some extent" to the question "Do you trust the following institution?"

For some institutions, like political parties, trust has been consistently low since the 1990s. For others, like the Catholic Church and Carabineros, sizeable drops are plausibly associated with specific scandals: a slew of cases of sexual abuse in the Church, starting around 2010, and financial fraud in Carabineros, revealed in 2016. But a generalized decline seems to have begun around 2009-10, and it accelerated prior to 2019.

FIGURE 1
DO YOU TRUST THE FOLLOWING INSTITUTION?
(PERCENTAGE ANSWERING "VERY MUCH" AND "TO SOME EXTENT")
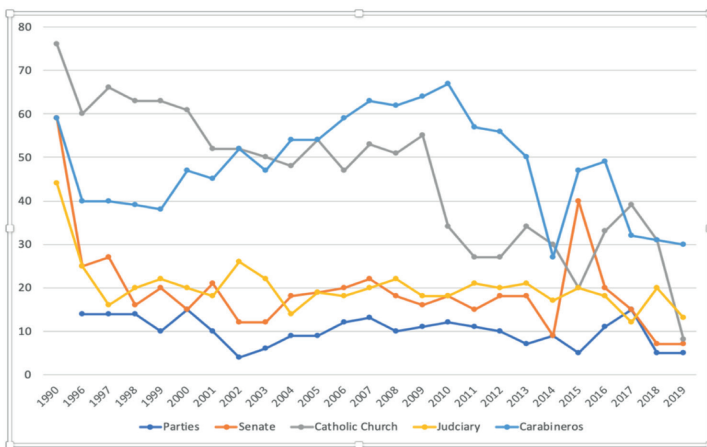
Source: CERC-Mori

The CERC-Mori report issued in May 2019, just 5 months before the outbreak of violence, was alarming in both tone and content: "Trust collapses between 2018 and 2019, reaching the darkest moment since we began measuring trust in 1990." The report goes on to point out that in the previous year trust in Carabineros fell from 49% to 32% and trust in the judiciary dropped from 31% to 13%. The two institutions displaying the lowest levels of trust were the Catholic Church (from 31% to 8%) and political parties (from 15% to just 5%). The least trusted categories of people, the report concludes, were politicians with 6%, and bishops and priests, with just 5%.

The *Centro de Estudios Públicos* (CEP) polls show a similar shift regarding how much Chileans trust institutions in their country. A comparison between 2013 and 2019 one reveals a generalized collapse. Trust in the national government (the same President, Sebastián Piñera, was in office at both times) fell from 25.8 to 4.7 percent. Institutions that already endured low levels of trust (Congress, political parties, private business firms) reached unbelievably low figures: by late 2019 fewer than 3 percent of citizens reported trusting Congress or political parties.

TABLE 1

DO YOU TRUST THE FOLLOWING INSTITUTION

(PERCENTAGE ANSWERING "VERY MUCH" AND "TO SOME EXTENT")

	July / August 2013	November 2018	December 2019
National government	3.8 + 22.0 = 25.8	NA	0.7 + 4.0 = 4.7
Congress	1.5 + 10.1 = 11.6	0.9 + 3.6 = 4.5	0.5 + 2.2 = 2.7
Political parties	1.6 + 6.4 = 8.0	NA	0.3 + 1.8 = 2.1
Municipal governments	3.3 + 14.0 = 17.3	NA	1.7 + 14.9 = 16.6
Courts of justice	1.8 + 9.5 = 11.3	1.2 + 5.7 = 6.9	0.8 + 7.5 = 8.3
Armed forces	9.8 + 40.4 = 50.2	NA	7.5 + 16.6 = 24.1
Carabineros	10.9 + 37.5 = 48.4	NA	3.9 + 12.7 = 16.6
Ministerio Público	3.5 + 25.1 = 28.6	NA	0.9 + 5.3 = 6.2
Private businesses	3.5 + 14.0 = 17.5	2.3 + 9.5 = 11.7	2.2 + 6.0 = 8.2
Labor unions	3.3 + 17.1 = 20.4	NA	3.2 + 14.4 = 14.6
Catholic church	13.8 + 19.7 = 33.5	4.5 + 8.7 = 13.2	4.7 + 9.3 = 14.0
Newspapers	2.8 + 26.3 = 29.1	NA	1.5 + 9.8 = 11.3
TV channels	2.8 + 25.2 = 28.0	NA	0.7 + 7.4 = 8.1
Radio stations	7.3 + 39.5 = 46.8	NA	4.5 + 24.4 = 28.9

Source: www.cepchile.cl

The courts of justice and the public prosecutor´s office, two institutions responsible for law enforcement, also suffered a sharp drop: by 2019 neither commanded the trust of even one citizen in ten. And that is not the end of the story. Institutions that were once widely trusted —the Catholic Church, radio stations, Carabineros (the national police), the military— also fell sharply in public esteem, losing the confidence of more than half the people who once trusted them. What Chile experienced, then, was a meltdown of institutional trust.

The Centro de Estudios Públicos also asks whether the country is, in the opinion of respondents, moving forward, stagnating or going backwards. Between 2013 and late 2019, the survey shows, Chileans took a gigantic leap toward pessimism. Table 3 shows that the share of people who felt the country was "moving forward" went from 41.6 to just 6.3 percent, and those fearing the country was "going backwards" grew four-fold, from 8.2 to 32.3 percent of the total. This drastic change in the national mood surely influenced people´s assessments of the quality of the country´s institutions —and could possibly been affected by it, in a two-way feedback loop.

TABLE 2

DO YOU THINK THAT AT THE PRESENT MOMENT THE COUNTRY IS…
(PERCENTAGE CHOOSING EACH ALTERNATIVE)

	July / August 2013	*December 2019*
Moving forward	*41.6*	*6.3*
Stagnating	*48.6*	*60.5*
Going backwards	*8.2*	*32.3*

Source: www.cepchile.cl

A character in a Hemingway novel says that he went bankrupt in two ways: first gradually and then suddenly.[5] The same seems to have been true for Chile´s trust crisis. Most indicators of trust had been declining slowly but in the CERC-Mori data the sharp collapse happened in 2018 and 2019. The consumer confidence compiled by GFK Adimark had no clear trend in 2010-17, but went from the low 50s (it runs from 0 to 100) to the high 20s in late

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[5]   The line is from the character Mike Campbell in *The Sun Also Rises* (2022).

2019.[6] Other indicators fell even more abruptly. The monthly index of business confidence, had been in the high 40s and low 50s (it also runs from 0 to 100) for years until it suddenly dropped to the low 30s in late 2019.[7]

Do these subjective assessments of the quality of Chilean institutions coincide with more objective assessments? Not quite. The World Bank compiles six indices of the quality of governance. They are based on household surveys but also on the assessments of experts, NGOs, businesses, multilateral organizations and other public sector bodies. As such, the indices offer a different evaluation of the quality of institutions in Chile than the opinion polls cited above.[8]

Table 3 contains the World Bank indices for Chile in 2013 and 2018. Chile´s performance is strong: in both years and in 5 out of the 6 indicators, Chile is in the top 20 percent of countries in the world. And in Political Stability, the one indicator in which Chile is not in the top 20 percent, there is an improvement starting in 2013 that places Chile in the top 40 percent of countries by 2018.

TABLE 3

WORLD BANK GOVERNANCE INDICATORS FOR CHILE

(BASED ON SURVEYS / EXPERT OPINION)

	2013		2018	
	Governance Index (-2.5 to 2.5)	Percentile Rank (1 to 100)	Governance Index (-2.5 to 2.5)	Percentile Rank (1 to 100)
Voice & accountability	1.11	84.5	1.05	82.27
Political stability	0.36	59.72	0.43	61.43
Government effectiveness	1.26	86.73	1.08	81.73
Regulatory quality	1.49	91.94	1.34	89.94
Rule of law	1.37	87.79	1.12	83.65
Control of corruption	1.54	90.52	1.01	81.73

Source: www. https://info.worldbank.org/governance/wgi/Home/Report

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[6]   Index available in https://www.gfk.com/es/home
[7]   See https://www.icare.cl/assets/uploads/2020/01/imce_dic2019.pdf
[8]   For details on the methodology behind the surveys, see Kaufmann, Kraay and Mastruzzi (2010).

Yes, five of the indices for Chile show a decline between 2013 and 2018, but that drop is small. The average for all six indices was 1.19 (in a range that goes from -2.5 to +2.5) in 2018, and 1.01 in 2013 —a drop of 15%. The decline is much smaller than that in the CEP survey, where the average drop in the share of people reporting high trust is 56%.[9]

So, the World Bank indices suggest that Chile has reasonably high-quality institutions, even after the drop in quality for the last five or six years. And there was no sharp decrease in institutional quality or in the quality of the services they provide that could obviously explain citizen discontent. Yet, in 2019 Chileans believed that their country´s institutional framework was in terrible shape, and their assessment was getting dramatically more pessimistic. Ideally, an account of what happened in Chile should explain how this divergence was possible.

Last but not least, an account of social unrest in Chile must also include a role for foreign factors, and perhaps also for contagion from abroad. Whenever something as dramatic as the protests and the rioting of 2019 takes place, the natural tendency is analysts is to look for domestic triggers. But the fact is that in the same period people took to the streets in Chile, there was similar social unrest in countries from Brazil, Bolivia, Colombia and Chile to Iran, Egypt, Lebanon, India and Hong-Kong. Advanced countries were also affected, including France (the so-called *gilets jaunes* movement) and the United States (the *Black Lives Matter* protests after the death of George Floyd). Arezki et al (2020) report a sharp increase in protests world-wide in 2017-2020, compared to the prior period starting in 2000. They also report finding "strong evidence for contagious protests with a catalyzing role of social media". One way to think about contagion relies on multiple equilibria, with information from abroad shifting the prevailing equilibrium at home. The model we develop below allows for that kind of contagion.

One caveat is important. We try to explain in this paper why Chile had a sudden crisis of citizen discontent. This discontent was manifested through protests that often turned violent, but also in several other ways. Users stopped paying bus and subway fares and tolls in roads subject to concessions to private operators; there was a sharp increase in non-payment of guaranteed student loans, which quite plausibly was politically-motivated, given that university fees and the cost of student loans had been the major focus of an earlier round of protests in 2011; the approval ratings of President Sebastián Piñera and his conservative coalition tanked; and in May 2021, Chileans elected a constitu-

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[9]   In the World Bank data there is one category, Control of Corruption, which is a bit of an outlier, with a 34% drop in the index. But that drop is still smaller than 11 of the 14 drops in trust reported in the CEP survey.

tional convention where the far left held a large majority.[10] The model here can shed light on why the increase in discontent was so sudden and deep. It has little to say on why that discontent may have then manifested itself through violent or peaceful protest, civil disobedience and non-payment of financial obligations, shifts in poll results and electoral preferences –or all at the same time.

This paper is related to several strands of the academic literature. There is, first, a growing empirical literature documenting the recent wave of worldwide unrest, which includes papers by Arezki et al (2020), Abi-Nassif et all (2020), Barrett et al (2020) and Cantoni et al (2023). Bursztyn et al. (2021) study which factors have a causal effect on participation in the Hong Kong protests and find individual incentives directly increase protest turnout and attendance has a persistent effect on future protest engagement. Chenoweth et al (2022) examine who protested, what they protested against, and why, during the summer of 2020 in the United States. They present evidence that protesters were a diverse sample of the population and that the decision to protest was responsive to individual circumstances and incentives. They also find, contrary to conventional wisdom, that attending a Black Lives Matter protest was associated with a higher likelihood of attending a protest calling for fewer public health restrictions.

An interesting theoretical literature has been developing on an issue we do not address directly: why and how acute citizen discontent expresses itself via protests. That literature includes Bueno de Mesquita (2013), Battaglini (2017), Pasarelli and Tabellini (2017), Barbera and Jackson (2020), and Bueno de Mesquita and Shadmehr (2022).

There is of course a long literature on trust, its causes and its consequences, dating back to de Tocqueville (1856) and Max Weber (1964). Recent and important contributions include Fukuyama (1996) and Levi, Sacks, and Tyler (2009). The idea of a 2-way feedback loop between government effectiveness and trust in government is present, under different guises, in Levi (2019) and Aghion, Algan, Cahuc and Shleifer (2010). Keefer and Scartascini (2022) argue low trust is behind all kinds of social and economic ills in Latin America. It may also be a cause of the rise of right-wing populism in Europe, as reported by Algan (2017).

Ostrom and Ahn (2009) also stress the link between social capital and collective action problems. Benabou and Tirole (2006a) call the kind of behavior

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10   Some of these changes were only transitory. The radical constitution drafted by that convention was rejected by a large margin in a September 2022 referendum. A second convention elected in 2023 is now dominated by the far right. In December 2022 Chileans elected Gabriel Boric, a far-left former student leader, as president. His honeymoon was brief and the drop in his approval rating precipitous. At the time of revision of this paper, in late 2023, fewer than one-third of Chileans approve of the job he is doing in office.

that helps solve collective action problems "pro-social"; Besley (2020) calls it "civic" behavior. Campante et al (2021) analyze the role of media in the accumulation and destruction of social capital. This is all part of a larger literature on the transmission and persistence of values, launched by Cavalli-Sforza and Feldman (1981), Bisin and Verdier (2001) and Boyd and Richerson (2005).

Last, our paper is related to the literature on multiple equilibria and the question of what pins down outcomes. The trap of the weak state, according to Fergusson et al (2022), involves a potentially self-reinforcing loop: citizens are unwilling to pay taxes to finance an effective state, and the state can therefore only engage in clientelism, defined as "the exchange of votes for particularistic benefits like money, jobs, and other private rewards". Krugman (1991) was the first to ask formally when it is that initial conditions (say, the stock of civic capital) determine outcomes, versus situations where expectations can be self-fulfilling and history (initial conditions) becomes irrelevant. We develop a similar approach here.

2. A Basic Model

Start from two simple ideas. The first is quite obvious: the trust people place in an institution depends on many factors, but a key factor is how effective that institution is. The British love the National Health Service because it delivers (waiting times notwithstanding) high-quality health care. Americans have rejected attempts to privatize the popular Social Security system for analogous reasons. The average Chilean used to trust Carabineros because it delivered a reasonably safe country (certainly when compared to neighbors in Latin America).

The second idea is less obvious: the effectiveness of a public institution depends crucially on how much citizens trust it. A national development bank can fund its operations via low-cost deposits only if savers are confident their money is safe when deposited there. Doctors at a public hospital can cure disease only if a patients trusts them and follows their instructions. Once users start jumping over turnstiles and refusing to pay their fee, as in the Santiago metro in the Spring of 2019, no one can be surprised if the quality of service deteriorates. Or, to return to the Carabineros: when they were widely respected, a verbal warning from a cop was all that it took for a protestor to stick to the unwritten rules of peaceful protest; by 2019, when Carabineros were widely viewed as brutish, ineffective and corrupt, no display of water cannons sufficed to keep protestors from breaking store windows and setting buses on fire.

This second idea comes with a twist: strategic complementarities are at work. If I trust the bank and no one else does, my money is not safe. If I trust

public health authorities and follow rules on social distancing but no one else does, then I am still susceptible to contagion during a pandemic. In short: the trust I place in an institution matters, but other citizens´ trust matters just as much.

To fix ideas, consider a concrete model, borrowed and simplified from Funk and Velasco (2023). There are two types of people: citizens and political elites. Politicians run the institutions whose job it is to provide public services such as education or healthcare. Citizens play a double role: they benefit from the public good but also contribute to financing it. The most natural interpretation is that citizens make tax payments and government then uses the revenue to fund the public good. The payments could also be interpreted as user fees —as in a subway or in a toll road— with the resulting resources then used to maintain the system.

Alternatively, the contribution by citizens could be non-pecuniary: for instance, behaving in a public school classroom so that fellow students can learn, or obeying the instructions of health authorities and respecting social distancing so that others will not catch a virus. In what follows we use the language of taxes and revenue, but keep in mind the alternative interpretation.

The continuum of citizens has size (measure) one. Everyone faces a choice: pay taxes and contribute to the public good, or evade taxes and fail to contribute. Let k_t be the fraction of people who contribute, which is a good proxy for the civic capital of society (to be defined in mor detail below). Suppose also that those who do not contribute enjoy only a share β, $\beta \in (0,1)$, of the benefits of the public good.[11] So β is a "free riding" parameter: the higher β, the easier it is to free ride, since one can get more of the benefits of the public good without helping pay for it.

Exogenous individual output is normalized to one. The constant tax rate on output is τ, $\tau \in (0,1)$, so total tax revenue is τk_t. Those resources are used by politicians to produce a public good that yields $(1+\alpha)\tau k_t$ in utility. One can interpret α in three alternative ways:

- A *policy-competence* parameter, indicating the ability of politicians in the government to turn private resources into a high-quality public good or high-quality public services.
- A *probity* parameter, indicating what share of tax revenues politicians use for public-good provision as opposed to stealing or redistributing to their cronies.

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[11]   Some of these changes were only transitory. The radical constitution drafted by that convention was rejected by a large margin in a September 2022 referendum. A second convention elected in 2023 is now dominated by the far right. In December 2022 Chileans elected Gabriel Boric, a far-left former student leader, as president. His honeymoon was brief and the drop in his approval rating precipitous. At the time of revision of this paper, in late 2023, fewer than one-third of Chileans approve of the job he is doing in office.

- A *suitability* parameter, indicating how well suited the public good is to people´s desires. Politicians who understand the preferences of the population will provide a suitable kind of public good or service, while an out-of-touch governmental elite will do the opposite

So competent, honest and "in-touch" politicians yield government institutions that have a high and positive α, while those who do not yield institutions with a low α.

The welfare level of an individual who contributes is

$$w_t^c = (1-\tau) + (1+\alpha)\tau k_t,$$

while the welfare level of someone who does not contribute is

$$w_t^n = 1 + (1+\alpha)\beta\tau k_t$$

For both contributors and non-contributors, welfare is increasing in k_t: the larger is civic capital, the higher the level of provision of the public good. But welfare rises more quickly as a function of k_t for contributors, since they can enjoy the full benefits of the public good. Notice that $w_t^n(k_t = 0) > w_t^c(k_t = 0)$ always, which is intuitive: if no one else is contributing, it pays not to contribute. Note also that $w_t^c(k_t = 1) > w_t^n(k_t = 1)$ if and only if $(1+\alpha)(1-\beta) \equiv \pi > 1$. Tr contribution to be a best response when everyone else is contributing, α must be sufficiently high and β sufficiently low. Intuitively, the quality of government in delivering public services must be high enough, while the incentives for "free riding" must be low enough. From now, assume this condition holds.

There is one k_t, labeled $\bar{k}$, that makes welfare from contributing and non-contributing equal:

$$\bar{k} = (1+\alpha)^{-1}(1-\beta)^{-1} \equiv \pi^{-1}$$

Note that $\bar{k}$ is decreasing in α and increasing in β, which is intuitive. Note also that $\bar{k} < 1$ requires $\pi > 1$, which we have assumed.
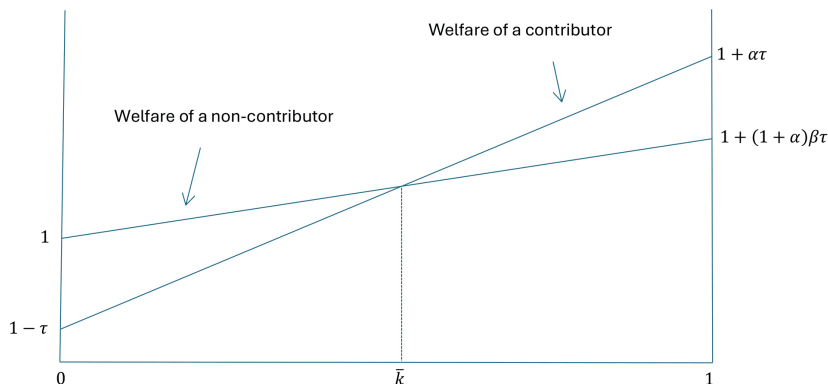
FIGURE 2

STATIC PAYOFFS

Figure 2 shows both welfare functions, which cross at $\bar{k}$. There are three candidates for equilibria: $k = 0$, $k = \bar{k}$ and $k = 1$. Multiple equilibria occur because of strategic complementarities across citizens: it is more attractive to contribute when many others are also contributing, and as the stock of civic capital rises, the return associated with contributing rises more quickly than that associated with not contributing. Which of these tree candidates turns out to be a stable steady state equilibrium will depend on the associated dynamics, which we specify in the next section.

What are welfare implications? When $k = 0$ individual welfare is 1, while if $k = 1$ individual welfare is $1 + \alpha\tau$. So having everyone be civic-minded and contribute is better than having no one contribute as long as $\alpha > 0$, which is intuitive. If politicians in government are minimally competent, honest and "in-touch," having as much civic capital as possible is preferable. Yet, as we explore next, society can be trapped in an equilibrium in which no civic capital vanishes and eventually no one contributes, in what constitutes a glaring failure of social organization.

3.   TRUST AND EXPECTATIONS

Trust is by definition a forward-looking variable. If I trust someone, it is because I expect that both today and in the future that person will "do the right thing". If people are free to choose at every instant whether to contribute and behave in a civic manner, then all that ought to matter to them is the share of fellow citizens who are civic-minded today. If the payoff from a course of action turns out to be low, then tomorrow one can always change.

But choosing to be a contributor or a non-contributor, and to be civic-minded or not, has important implications for people´s identity, self-esteem and social recognition so it is reasonable to assume such patterns of behavior, and the self-perception that goes with them, change within a lifetime, but changes come only occasionally and then only after lengthy intervals.

In Funk and Velasco (2023) we formalize this intuition in the following way: people can only choose whether or not to be to be civic-minded when they receive a signal, which arrives with probability θ. So, by the law of large numbers, at any time only a fraction θ of the population can choose to change behavior, while a fraction $1-\theta$ cannot. The lower is θ, the "stickier" are choices. An interpretation is that once a choice is made, the person internalizes a set of values (civic-minded or not) and continues to hold those values for a period of expected length θ^{-1}.

So far we have no variables that can serve as proxies for forward-looking trust. So, think of being a contributor as an asset. If everyone were free to change pattern of behavior at any given time, then such an asset would not exist. But if the expected value of contributing is higher than not contributing, then being a contributor today, and expecting to remain a contributor for a period for a period of time, has value, which is reflected in the price of this asset, denoted by q_t.

By arbitrage it must be the case that

$$\frac{\dot{q}_t}{q_t} + \frac{w_t^c - w_t^n}{q_t} = \theta$$

The LHS is the total return on this asset, given by the capital gain (the first term) and the difference in welfare levels between contributing and not (second term), both expressed as a proportion of q_t. On the RHS is the probability that at the next "instant" a person will be able to change from contributor to non-contributor, which plays the role of a discount rate.

Notice q_t is a forward-looking variable, since the arbitrage equation takes into account not only the contemporary level of q_t but also its expected change (technical details on the definition of q_t are in the appendix). We can think of this variable as a proxy for the trust placed on the institutions that produce public services which, in turn, depends on the degree of confidence that in the future others will act in a civic-minded way. Perhaps something akin to q_t is what public opinion polls were capturing in 2019 Chile, when they suddenly showed a collapse in trust.

Plugging in the welfare levels w_t^c and w_t^n and rearranging, the arbitrage equation becomes

$$\dot{q}_t = \theta q_t - \tau\left(\pi k_t - 1\right)$$

Funk and Velasco (2023) show that civic capital evolves according to

$$\dot{k}_t = \theta\left(\frac{p_t}{\theta} - k_t\right)$$

where p_t / θ is the fraction of those allowed to make a choice who decide to be civic-minded. If it is larger than k_t, the fraction of the population that already is civic-minded then, quite intuitively, k_t should be rising. Notice that p_t has an upper limit of θ, the share of the population that receives the signal and gets to choose.

Now, given the definition of q_t, people agents who get to choose will prefer to become civic-minded and contribute if and only if q_t is non-negative. So,

$$p_t = \begin{cases} \theta & if \ q_t \geq 0 \\ 0 & if \ q_t < 0 \end{cases}$$

In words, whenever it is advantageous to become civic-minded, all θ people who can, make that choice; while when it is not, no one does. Therefore, the evolution of civic capital follows:

$$\dot{k}_t = \begin{cases} \theta(1 - k_t) > 0 & if \ q_t \geq 0 \\ -\theta k_t < 0 & if \ q_t < 0 \end{cases}$$

We have a system of two differential equations in q_t and k_t, with q_t a "jumpy" variable (it can react instantaneously to changes in expectations) and k_t "sticky" (that is, it evolves gradually).

If $\pi \leq 1$, the benefit of being non civic-minded is always higher than that of being civic-minded, so the model has a single long-run equilibrium at $k = 0$. We have assumed away that uninteresting possibility. There are two other, and more interesting, cases: low-quality institutions, requiring $1 < \pi \leq 2$, and high-quality institutions, requiring $\pi > 2$.

Here we only consider the case of high-quality institutions, which would seem to be the one relevant for Chile given our earlier discussion. That case is simple enough to be analyzed by means of diagrams (Figure 3 and the others that follow), with no further algebra required.

Because institutional quality is high, there is always a range of initial conditions starting at $\tilde{k}$ and reaching all the way to $k = 1$ where saddle-paths do not overlap.[12] If civic capital starts out in that range, the only feasible level of trust is high (on the saddle path leading to the steady state with $k = 1$) and progress is inescapable: civic capital will accumulate gradually until it everyone is civic-minded and contributes to the financing of public services. In the language of Paul Krugman's (1991) pioneering paper on history versus expectations, for countries starting out between $\tilde{k}$ and 1, only "history" (initial condition) matters.

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[12]   The appendix shows that $\tilde{k} = 2\bar{k} = 2\pi^{-1} < 1$.

But to the left of $\tilde{k}$, and all the way to 0, there is a range of indeterminacy. Saddle-paths leading to steady states with $k = 0$ and $k = 1$ overlap, so pessimistic expectations and low trust can cause civic capital to decline until there is no one left to contribute, while optimism and high trust can cause civic capital to follow a sustained upward trajectory. Because government institutions are strong, even nations starting out with near-zero levels of civic capital can sustain high trust and a gradual increase in pro-social behavior. In the range between 0 and $\tilde{k}$, and again using Krugman´s terminology, expectations are all-important and history is irrelevant.

FIGURE 3
HIGH-QUALITY INSTITUTIONS
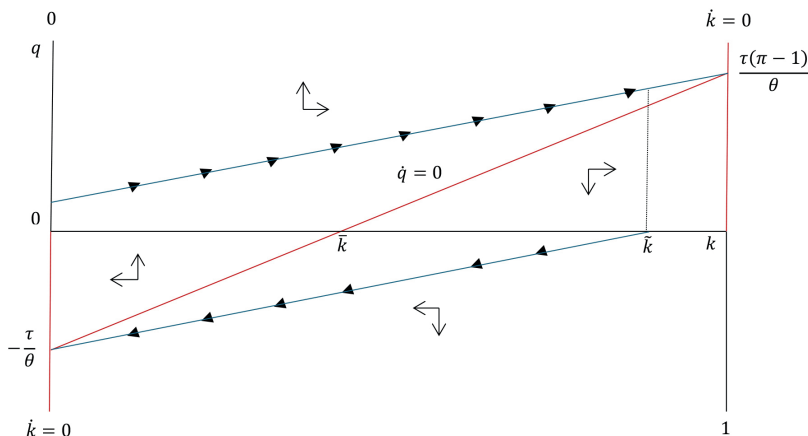
Notice that under this pattern of dynamic behavior, $\overline{k}$ is not a tipping point. That is, civic capital can start above $\overline{k}$ and still decline, or start to below $\overline{k}$ and rise persistently. This is because people are forward-looking: they consider the stream of payoffs associated with choosing to be or not to be a civic-minded contributor. And it makes sense for them to look forward, because after choosing they will be "trapped" in that pattern of behavior for a period of expected length θ^{-1}.

4. PUTTING THE MODEL TO WORK

We are now ready to apply this model to the situation of Chile. There are two kinds of shocks that could have occurred, leading to a situation reminiscent of what Chile experienced starting in 2019. The first is a self-fulfilling confidence shock. We saw above there is plenty of evidence, both formal (from polls and surveys) and also anecdotal, which suggests that around that time Chileans become a great deal more pessimistic and less trusting. And, crucially, the drop in reported trust and confidence levels was quite sudden.

Suppose that initially civic capital is at point $k_0 < \tilde{k}$, high enough to make strong trust possible, but not so high that strong trust is the only feasible outcome. Suppose in addition that initially expectations are optimistic, so that society is on the upper saddle path leading to the steady state with $k = 1$. From that initial point, labeled A, a sudden confidence and trust crisis causes a vertical drop to point B. Nothing has happened —except in the minds of people— but civic capital, which had been rising, suddenly begins to fall. And that in turn causes trust to drop even further, as the system moves down to the southwest along the saddle path leading to $k = 0$. Crucially, with reduced funding the quality of those services also drops along the transition, confirming people´s pessimistic expectations and rendering initial expectations self-fulfilling.

Such a shock and its consequences have plenty of similarities with what transpired in Chile in 2009. The change was sudden and its consequences profound. There was a collapse in measured trust and confidence, without an obvious exogenous shock, internal or external, that could have caused it. An open question is whether the switch in expectations was the result of contagion from abroad, with citizens becoming pessimistic and taking to the streets to protest in response to similar developments in other nations, both close by and far away.

FIGURE 4
SHOCK TO EXPECTATIONS
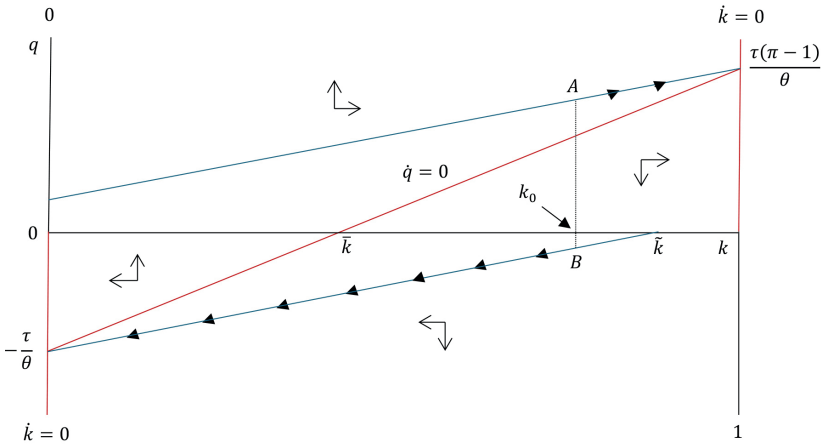
A self-fulfilling expectational shift is not the only perturbation that can occur. Suppose instead that π drops permanently to π', so that the quality of institutions goes down forever. Recall that this shock can be interpreted as a drop in the policy competence of elites, their probity, or the suitability of the public services they provide. It could also imply a change in the free-riding parameter, with free riding now easier or less costly. In any case, π matters for the slope of the $\dot{q}_t = 0$ line and the associated saddle paths. New and old schedules are shown in Figure 5 (original saddle-paths in blue and post-shock saddle paths in green).

The long-term consequences of this shock depend on initial conditions. If initial civic capital was to the right of $\tilde{k}'$, then nothing dramatic happens. Society was initially enjoying high trust and accumulating civic capital, and after the shock it would continue on such a path. Trust would drop a bit on impact (the new saddle path leading to the steady state with $k = 1$ is now lower) and the eventual resting point would involve lower welfare than before the shock, but society would still converge to a steady state in which everyone is civic-minded and contributes.

If the initial condition was to the left of $\tilde{k}'$, on the other hand, new (and dangerous) possibilities arise. Imagine society starts from a point like k_0, where $\tilde{k} < k_0 < \tilde{k}'$. Before the shock, that level of civic capital was only congruent with high trust and growing civic-mindedness, so the country had to find itself at point A. But because k_0 is smaller than $\tilde{k}'$, the new threshold

below which multiple equilibria are possible, point B, with low trust and de-clining civic capital, is now also feasible. If the exogenous shock puts society in a position where self-fulfilling confidence crises can occur, and one does take place (taking the system from A to B), then the country in question shifts to a trajectory of low-trust and declining civic-mindedness.

FIGURE 5

HIGH-QUALITY INSTITUTIONS

We could put the model to work in analyzing other kinds of shocks (tem-porary instead of permanent, for instance) but we leave that task to readers. Instead, we summarize the uses a model of this kind have in thinking about events like those of Chile (and other countries) in 2019. The first is that trust and civic-mindedness are fragile. The trust we place in other people, the trust we place in government institutions, and the ability of those institutions to de-liver, are all interrelated, and can fluctuate as a result of exogenous shocks and self-fulfilling confidence crisis.

The second lesson is that reversals in trust can be sudden and unexpected. This would seem to fit the narrative of the Chilean crisis, where few people, if any, "saw it coming". It also fits the sudden deterioration of trust as reported in surveys and polls.

Third, contagion from abroad can happen —and seems to have happened, given that so many different countries around the world suffered from unrest at

about the same time. Whenever multiple equilibria are possible, events outside our borders can help trigger a shift from the "good" to the "bad" equilibrium, with consequences for trust and civic-mindedness.

Fourth, if they trigger a change in expectations, small changes —in the quality of institutions, for instance— can have a large and lasting impact on both institutional trust and long-term individual welfare. But notice: the large adverse effect will only occur societies in that are not too developed to begin with —that is to say, where the initial stock of civic capital is not too high.

Fifth, there can be a large divergence between the reported "objective" quality of government institutions and the trust people place on those institutions —and that gap can rise sharply overnight, as it seems to have occurred in Chile in 2019. That is because trust is forward-looking and it depends not just on the quality of public services today, but on their anticipated quality in the future as well. And when that quality is expected to deteriorate, trust drops. And, course, that trust crisis can be self-fulfilling if initial civic capital is not sufficiently high.

5. Conclusions

In the early 2010s the world witnessed a series of protest movements, associated with the after-effects of the Financial Crisis and the Arab Spring. There was another wave of street unrest late in the same decade, of which the Chilean protests of 2019-2020 were an extreme example: angry citizens did not just join protest marches, but some also torched supermarkets, firebombed subway stations, and vandalized uncounted small businesses. Chile, often celebrated for having the best institutions in Latin America, experienced a breakdown in the rule of law. But unlike the Occupy Wall Street protests in the United States, Chile's unrest did not follow a spike in economic hardship; and unlike the Arab Spring, it was not associated to a call for a transition to democracy. Instead, Chile's protests followed a generalized breakdown in institutional trust.

The quality of institutions and the trust that citizens deposit in them are two sides of the same coin. Quality of course promotes trust, but a citizenry that trusts and respects a country´s institutions in turn allows them to function better. There can be a virtuous cycle along which quality inspires trust which in turn improves the performance of institutions. But the opposite can also happen: shocks can trigger a vicious circle in which collapsing trust and deteriorating public good provision reinforce each other. It does not take much to push a successful society off the "narrow corridor" that leads to development and into an abyss of distrust, distemper, bad politics, bad policies —and even violence. That is what seems to have happened to Chile.

Several kinds of shocks can push a country off the narrow corridor of institutional progress. We saw that "small" declines in exogenous institutional quality and in the ability to free ride can do the trick. Some of this seems to have happened to Chile. Its institutions were strong compared to those of most other emerging nations (and some developed nations too), but not strong enough to shield society and politics from a sudden meltdown in national self-esteem.

What is to be done? If you believe the story in this paper, then you must conclude there is no quick technocratic fix that can get the country back on its feet. There are, as observers from Tocqueville to Putnam to Fukuyama point out, deep-rooted social foundations underlying trust, which include family life and associativity, and these have been evolving together with Chile's economic progress. Beyond playing institutional catch-up, the name of the game is social coordination. But coordination across millions of people who feel they are living through several intertwined crises —economic, political, social and, until recently, epidemiological— is notoriously difficult.

Coordination needs to happen along two dimensions. Citizens must come to believe again that it is their duty to pay taxes or subway fares even if many others are not doing so. The marauding gangs of toughs who harassed those who chose to pay at several Santiago metro stations, for example, show that task will not be easy to accomplish. At the same time, the leaders of the country's institutions —politicians, bureaucrats, judges, prosecutors, business and union leaders, reporters and journalists, even priests— must listen more carefully, get the message and improve their performance.

It took Chile the better part of two centuries to build trusted institutions of which citizens could be proud. All that vanished in a matter of months. How long will the rebuilding take?

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