The Violence Trap:
A Political-Economic Approach
To the Problems of Development

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Abstract

Why do developing countries fail to adopt the institutions and policies that promote development? Our answer is the *violence trap*. The trap is set by the unavoidable interdependence of economic and political development. Key political reforms—opening access and reducing the risk of state predation—are typically feasible only when the domestic economy reaches a given level of specialization and integration (for reasons we specify); yet the economy typically can only reach the required threshold of development when key political reforms are already in place (for standard reasons). The trap entails violence because, as we show, the structure of unreformed polities (natural states) ensures poor adaptive efficiency. Following shocks to the distribution of military and economic power and bargaining to adjust to the shocks often fail among those with access to violence, due to the low economic cost of violence, asymmetric information, and commitment problems. Indeed, we show that violence is endemic in the developing world, with the median regime experiencing violent leadership turnover once every eight years. The trap is hard to escape because whenever overt violence breaks out, leaders seeking to restore order face an unspecialized economy, to which the best response is yet another unreformed polity. Indeed, the limits on access and rents characteristic of natural states are necessary to re-establish peace. Yet, these rents and limits also deter specialization, thereby keeping the economic costs of resorting to force low and ensuring that future bargaining will be in the shadow of viable military outside options.

1. Introduction

To explain the problems of development – with a billion people mired in poverty and governments resistant to economic reform – economists and political scientists have proposed a wide range of development or poverty traps, self-reinforcing mechanisms that prevent developing countries from embarking on the path of steady development. Economists —though not exclusively— tend to focus on the problems posed by increasing returns to scale.[1] In these accounts, impoverished nations are trapped in poverty because they cannot organize sufficiently large investments in, for example,education (Kremer 2003) or access to credit and capital (Sachs 2005).

Various political poverty traps have also been proposed. Here, the culprit is the state's inability or unwillingness to reform itself and adopt good economic policies. Explanations for the lack of reform include persistent internal violence (Collier 2007); incumbents' inability to ensure they will remain in power long enough to benefit from infrastructural reforms (Besley and Persson 2011); incumbents' resistance to liberalizing reforms that threaten their hold on power (North 1981; Acemoglu and Robinson 2006b); and the superior organization of the beneficiaries of the status quo vis-à-vis the losers (Fernandez and Rodrik 1991).[2]

In this paper, rather than focusing on the incumbent ruler's incentive and ability to protect the status quo, we focus on the problem of violence. We argue that, because of this problem, it may be in no one's interest to undertake small reforms and difficult to undertake large reforms.

Following North, Wallis, and Weingast (2009)—henceforth, NWW—we argue that the problem of violence is endemic and is not confined to just those states experiencing persistent conflict (Collier 2007). Indeed, we show that violence is surprisingly common throughout the developing world, including the richest developing countries. The median number of years

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[1] Azariadis and Stachurski (2005) provide a survey of economic poverty traps that hinge on increasing returns. Pierson (2000) considers the role of increasing returns phenomena in sustaining suboptimal political equilibria but does not stress the consequences for economic performance.

[2] Other explanations include entrenched interest groups (Ekelund and Tollison 1997, Bueno de Mesquita et al. 2003, Grossman and Helpman 2001, etc.) and the absence of persistent external threats (Bates 2001).

between violent regime changes in the poorest half of the world's countries is seven years; at twelve and a half years, it is not much higher in the richest developing countries. In contrast, the median number of years between violent regime change in the richest decile of countries is sixty years.

The endemic risk of violence implies, as many have argued (Alesina et al. 1996, Collier 2007, NWW 2009), that reducing violence is crucial to long-term economic performance. Yet, as NWW (2009) point out and we elaborate below, developing and developed countries seek to deter recourse to violence in very different ways. The risk of violence in developing countries prevents investors from undertaking many potentially profitable economic projects. Moreover, the empirical record (more on this below) reveals that developed states are far more successful at preventing violence as a form of political competition. This raises the question of resistance to political reform in a more precise form: Why do developing countries not adopt the institutional solution to the problem of violence that developed states have adopted?

Our answer, in a nutshell, is the violence trap: developing countries face an increasing returns problem in the control of violence. Sufficiently large investments in raising the economic costs of violent domestic conflict for domestic elites can allow a transformation of the state toward what NWW (2009) call an “open access order.” Yet, the main way to raise the economic cost of domestic fighting is to promote greater specialization and integration of the domestic economy, and domestic actors will be able and willing to invest in such an economy only if political reforms—such as those allowing anyone to form a business firm and those protecting property from state predation—are already in place. Thus, complex specialized economies capable of providing sustained growth cannot be established without reformed states and reformed states cannot be created without complex specialized economies.[3]

From our perspective, then, one cannot separate political development from economic development. The two processes are inherently intertwined. Moreover, we argue that the violence trap we identify in this paper undergirds most of the purely economic poverty traps on which much of the literature focuses.

This paper proceeds as follows. Section 2 shows that disorder has been common in polities over the last century and a half. At least one violent succession to political power has occurred within the lifetime of most people in most countries. Section 3 views political violence as a species of bargaining failure and begins to explain the environmental conditions that foster it. Section 4 explains how natural states have sought to mitigate the problem of violence. Section 5 turns to a dynamic issue, the problem of post-shock bargaining. Because bargaining failure in the face of crises or changing circumstances often results in violence, perpetual order requires that countries facilitate bargaining. Sections 6 and 7 put the various pieces of the argument together to explain why a transition from violence and poverty to peace and prosperity is so difficult to achieve.

2. Endemic violence in developing countries, 1840-2005

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[3] Our argument bears some resemblance to those emphasizing trade (Angell 1913 [1911], Weede 1996) or capital openness (Gartzke 2007) as a deterrent to international war. However, we focus on domestic politics and connect the nature of economic activity explicitly to the conditions for peace in a rationalist model of war (Fearon 1995).

Many scholars and practitioners of development associate the problem of violence mainly with failed states, such as Somalia or the Congo. Unfortunately, violence—latent or manifest—is endemic to all developing countries.

To document the prevalence of violence, we consider data on regime duration in countries since 1840 (Goemans, Gleditsch, and Chiozza 2009). For the purposes of this exercise, we define a regime as a state that experiences an uninterrupted sequence of nonviolent leadership successions. In other words, a regime ends when succession involves violence.[4] Defined in this way, we have complete data on 697 regimes in 162 countries since 1840.

Table 1 presents the data on regime duration for all countries (column 1), countries in the bottom half of the income distribution (column 2), countries in the 75th to 90th percentiles of the income distribution (column 3), and countries in the top decile of the income distribution (column 4).[5] The data reveal several patterns.[6]

First, violent regime change is common. Looking at all regimes, the first row shows that ten percent of all regimes in the sample last only one year, the third row that a full half of all regimes last only eight years. Three-quarters of the regimes last only a generation (here, 24 years). Finally, only ten percent of regimes last fifty years or more, less than a human lifetime.

Second, the richest developing countries are more like poor developing countries than they are like the developed world. In the poorest half of the countries (ranked by income), fifty

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4 This definition ignores major outbreaks of violence, such as civil wars, if they fail to alter succession. Thus, we provide a lower bound on political violence. Note also that we do not view a succession produced by an assassination as involving violence, unless the assassination was part of a serious attempt to take power. Thus, for example, the JFK-LBJ succession in the United States does not count as violent.

5 The income ranking is based on the average post-World War II income for each country.

6 Two points should be noted in interpreting these patterns. First, the data in this sample are truncated at both ends. To see this, consider the United States. The data begin in 1840, and codes every country then in existence as one year old, when in fact the United States had been in existence since 1776. Similarly, the data set codes the United States in 2003 as being 163 years old, when it will presumably last many more years. Second, the GDP data are from the post-WWII era.

percent of regimes last only seven years, and only one-quarter last beyond seventeen years. In countries ranking between the 75th and 90th percentiles of income—the developing world elite—the corresponding figures are 12.5 and 45.5. Finally, for the developed world (the richest decile of countries), the figures are 60 and 88. Thus, *the richest developing countries move only 10% of the total distance between the third and first worlds in median duration*.

Table 1: Regime Duration in years

Percentile	Regime Duration (all countries with post-WWII GDP data)	Regime Duration (below median GDP)	Regime Duration (ichest quartile with richest decile removed)	Regime Duration (richest decile)
10	1	1	2	10
25	3	2	4	34
50	8	7	12.5	60
75	24	17	45.5	88
90	50	34	71	131
95	65	50	99	133
99	130	84	131	136

All told, then, violent attempts to seize political power are common in the developing world. The only regimes in which such attempts are extremely rare constitute the rich developed world.

3. How Developing Countries Mitigate the Problem of Violence

To understand the endemic violence documented in the previous section, we adopt the standard view that fighting results from a kind of bargaining failure (Fearon 1995, Powell 1999). Actors know that violent conflict is inefficient: They could have peacefully reached the outcome resulting from conflict by negotiation, thus avoiding the costs of fighting and leaving everyone better off. The challenge is to understand why their negotiations fail despite this recognition.

We envision the bargaining situation in which actors in developing countries find themselves as follows. First, the exogenous feature is the military cost of fighting. Second, there are three endogenous features: the actors' violence potentials (abilities to fight), the actors' shares of the current regime's spoils, and the actors' commitments, which are actions they take to reduce their own violence potential (e.g., by disarmament) or to raise their own cost of fighting (e.g., by exchanging hostages).

The distribution of violence potential establishes actors' payoffs from initiating fights. To illustrate in the context of a two-actor model, let v_A and v_B denote A's and B's violence potentials, which depend partly on previous decisions to (dis)invest in arms, and $P_A(v_A,v_B)$ denotes the probability A prevails in a conflict with B. The payoff to a risk-neutral actor from a fight is then $P_j(v_j,v_j)W - c_j$, where W is the value of winning and c_j is j's total expected cost of fighting (which will reflect any endogenous cost due, for example, to an exchange of hostages).

Rent-Creation and the Proportionality Principle

A key result that follows from the bargaining perspective on violence is the *proportionality principle*: Rents and privileges must be allocated in rough proportion to military power in order to keep the peace. Specifically, let R_j denote j's share of the rents. Then the proportionality principle says that peace can be maintained only if $R_j > P_j(v_j,v_{-j})W - c_j$ for j = A,B. This expression says that each player's rents must exceed their expected value of fighting. If this condition is not satisfied, then those groups with more power than rents prefer to fight for more, rather than play by the regime's rules.[8]

NWW (2009) call polities that distribute rents in order to keep the peace natural states because they have been the dominant form of social and economic organization since the beginning of civilization. Indeed, until the last two hundred years, they constituted the only form of state organization.

Economists often interpret the natural state arrangements of rent-creation and privileges as market intervention. Unfortunately, this concept obscures the logic of the natural state. The observation that natural states create rents and manipulate markets for political purposes is correct. But viewing this phenomenon as market intervention suggests that these countries began with competitive markets that the state has transformed into non-competitive ones through rent-creation and regulatory policies that intervene in the markets.

The economists' view has the problem backward. Countries with efficient, competitive markets must construct and protect them, including secure property rights, protections against predation, and open access to organizations, not to mention perpetual order (as North 1990, Rodrik, Subramanian, and Trebbi 2004 and Acemoglu and Robinson 2011 have recognized). All of these features are the outcomes of political choices. They are relatively rare in the world; they are not natural.

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[8] The idea that privileges and policy benefits must be allocated roughly in proportion to power has a long history. It is central to Barrington Moore's (1966) famous work on the "social origins of dictatorship and democracy," and Harrington (1656) used it to explain the English Civil War (1641-49). More recently, formal models of rationalist war clearly derive the proportionality principle under conditions of complete information (cf. Fearon 1995, Powell 1999).

Limits on access

Natural states limit access to organizations (NWW 2009). The most obvious reason they do so is that rent-creation requires limiting competition. Entry dissipates rents, so natural states restrict the right to form competing organizations in many sectors of the economy.

Natural states limit access to organizations for a second reason. Organizations allow new interests and groups to become powerful, potentially forcing existing elites in the natural state's dominant coalition to share rents and authority over policy. To preserve the existing distribution of violence potential, most regimes in developing countries therefore have placed strong limits on who can form organizations. In many cases—including Hosni Mubarak's Egypt, Suharto's Indonesia and Saddam Hussein's Iraq—all significant organizations had strong ties to the ruler.[7]

Personal commitments

Another tactic that actors in natural states may be able to deploy is the exchange of commitments: endogenous adjustments of either violence potentials or costs of fighting.

Endogenous adjustments of violence potential can take the form of arms races, which worsen the prospects for peace, or disarmament, which can theoretically promote peace. In natural states, however, the only common form of disarmament is that imposed on outsider factions by regime insiders. There may be personal deals between insider factions regarding demilitarizing their borders, for example, but a general and impersonal policy of domestic

[7] In our formal notation, limiting access is a way to reduce the violence potential (v_j) of groups outside of the elite who form the regime.

disarmament is, as we discuss further below, very difficult to implement in the natural state environment.

Endogenous adjustments of the cost of fighting may also help insider factions maintain peace among themselves. Bilateral cost adjustments can be arranged, for example, by the exchange of physical hostages whose lives will be at risk should the factions begin fighting or by investment in specialization-and-exchange relationships that will be profitable if and only if the factions remain at peace. Such commitments provide additional assurance to insider factions that other insiders will not attack them. To put it another way, endogenous cost adjustments, when available, can help the regime satisfy the proportionality principle.

Summary

All told, then, we think of a natural state as constituted by three endogenous structural features—limits, rents, and commitments—by which it mitigates the problem of violence. By denying organizational rights to factions outside the regime, it reduces their ability and hence incentive to initiate violence against the regime. By distributing rents among its insider factions in proportion to their probabilities of prevailing in fights, and fostering a matrix of personal commitments among them, it deters internecine fights.

As noted above, the proportionality principle implies that positive rents are necessary to maintain peace, whenever at least one actor has a positive expected utility from war. In other words, a *necessary* precondition for transitioning from a natural to an open state is that the expected benefits of domestic war fall short of the expected costs for *all* actors with significant violence potential.

Whether all sides expect negative utility from domestic conflict depends greatly, we shall argue, on the nature of the economy. Consider the benefits of winning such conflicts first. Following Montesquieu (1989[1748]), many have argued that mobile wealth reduces the benefit of conquest, because the victor cannot reliably expropriate such wealth after winning. From here many conclude that economic development—because it generates specialized skills and other hard-to-confiscate assets—should pacify politics (Kant 1957[1795], Angell 1913[1911], Hirschmann 1997[1977], Gartzke 2007).

Consider the costs of fighting next. Following Steuart (1966[1767]), many have analogized complex modern economies to delicate watches that cannot operate under the stress of domestic warfare. The resulting lost profits constitute endogenous *economic* costs of domestic war that are much higher than the analogous costs in less developed economies.

In sum, a long line of theorists have argued that more complex and interdependent economies reduce the benefit and/or raise the cost of waging domestic war. If these effects are large enough, there will exist a threshold of economic development above which no one is willing to fight in order to secure greater rents from the state.

Of course, noting that it is abstractly possible to promote an open access order by lowering the benefit and raising the cost of fighting is very different from actually doing so. Indeed, Hirschman's famous analysis concluded that the Montesquieu-Steuart hypothesis about the effects of economic modernization manifestly failed to explain why the Nazis and Soviets were both able to combine highly advanced military-industrial complexes with dictatorship. Thus, much of the discussion that follows concerns why it is so difficult to implement the reforms creating an open access order (no limits, no rents, and impersonal commitments) when starting with a natural state (limits, rents, personal commitments).

4. Bargaining and Adaptive Efficiency in Natural States

Many developing countries experience years of peace before succumbing to violence. If a bargain had been structured to satisfy the proportionality principle and thereby generate peace, why does it break down? And why is violence episodic?

The answer is that the world is constantly changing. In particular, a developing country faces shocks that can alter the balance of power so much that the existing distribution of rents and matrix of commitments no longer suffice to ensure peace.

As power shifts, maintaining peace requires that groups experiencing substantial gains in coercive power be allocated more rents, lest they be tempted to fight for them. Similarly, personal commitments among groups may need to be adjusted after power shifts as the value of previously exchanged hostages may no longer suffice to prevent violence.

Unfortunately, bargaining over the new allocation of rents and the new matrix of commitments does not always succeed, and its failure often leads to violence and regime change. In this section, we analyze how natural states, by limiting access and relying on personal rents and commitments between regime insiders, reduce the state's adaptive efficiency.

Limiting access creates bargaining difficulties

When states deny organizational rights to segments of their populations, they necessarily worsen their ability to bargain with factions from those segments should shocks endow them with either temporary or more enduring violence potential. The problems arise because access limits make it more likely that the regime will lack information about outside factions' abilities, and that those factions will lack clear and cohesive leadership capable of committing their followers to any deal negotiated with the regime.

Outside factions in natural states understand that they cannot approach the regime, document their violence potential, and begin bargaining. If their violence potential is based on organized forces, then the leaders of those forces will be subject to legal punishment (as they have no organizational rights). If outsiders' violence potential lacks organization, then the factions' leaders will find it difficult both to measure the extent of their own fighting ability and to credibly communicate any private information they have on this matter without exposing their sympathizers to retaliation. Thus, limiting the organizational rights of outside factions virtually ensures that intractable informational asymmetries will make bargaining difficult.

Further complicating matters, a regime that prevents the opposition from organizing thereby deprives itself of an opposition leadership that can commit its followers to any deals it might negotiate with the government. Thus, if the government suddenly faces decentralized mass action it is unable to quell—as in several countries during the Arab Spring of 2010-12—it will have great difficulty finding anyone credible with whom to negotiate. Even when agreements exist that make both sides better off, the lack of corporate organization of the opposition hinders the negotiation and implementation of these agreements.[8]

Personal rents and commitments

[8] Fearon (2012) analyzes the problems that beset bargaining when one side cannot commit to abiding by the offers it itself makes.

Both rents and commitments in natural states are personal. The rents are conferred on particular persons by virtue of their violence potentials and are typically not transferable. Commitments are made by bilateral exchanges of hostages or specialized investments in joint economic enterprises and are similarly difficult to exchange.

During periods of stasis, the personality of rents and commitments does not pose a problem. After shocks that destroy the basis for peace, however, it is costly to reallocate personal rents and to contrive new personal commitments. These difficulties pose another problem for post-shock bargainers.

Summary

Key design features of natural states—in particular, their propensity to deny organizational rights to regime outsiders, to confer personal rents, and to rely on personal commitments between regime insiders—ensure that they face difficult bargaining problems after shocks to the distribution of violence potentials. Thus, they are prone to violence after such shocks.

Yet, after violence erupts, the leaders of natural states almost always retain the design features that worsen their adaptive efficiency in the first place. All that changes is that a different set of actors are denied organizational rights and a different matrix of personal commitments keeps the peace between the new set of insiders. In the next section, we explain why leaders of natural states find it difficult to open access and to devise impersonal commitments.

5. The Violence Trap

We have seen that natural states are prone to episodes of violence—empirically (section 2) and theoretically (section 4). After episodes of violence, factions in a natural state have a choice. They can retain their state's natural institutional design by creating rents, limiting access and fostering personal commitments among regime insiders all in a way that satisfies the proportionality condition. Or they can attempt economic and political reform by (1) lowering rents, (2) relaxing limits on access, and (3) fostering impersonal commitments.

In this section, we consider why natural states' factions face substantial difficulties in initiating the path of reform. Significant doses of any one of these reforms violate the proportionality condition and thus ensure violence; only large enough doses of all three reforms together have a chance of successfully establishing order on a new basis. Thus, polities can be trapped in the inferior institutional equilibrium of the natural state because there are increasing returns to joint investment in rent reduction, open access, and impersonal commitment.

Fostering organizational rights

Opening access to organizations in a natural state allows new entrants to compete away existing rents. If all else remains constant, this will lead to violation of the proportionality condition, whereupon powerful actors may seek to restore their rents by force.

Opening access also poses a second, deeply existential problem. Consider a regime that seeks to open access, perhaps in response to pressure from below. What happens once the oppressed are granted organizational rights? The literature on democratization highlights elite fears that wealth will be redistributed via taxes and transfers (*cf.* Boix 2003, Acemoglu and Robinson 2005). But a more existential fear plausibly trumps the fear of redistribution in many cases: Formerly oppressed groups may use their new rights to organize militarily and crush the old regime insiders. The fear of annihilation (rather than of redistribution) may explain why the tsar did not liberalize much prior to the Russian Revolution, why the Assad regime in Syria did not respond to the Arab Spring by liberalizing, and so on.

The fear of reprisals by current regime insiders will be acute when they have a history of repression, the distinction between regime insiders and outsiders coincides with other salient cleavages (ethnic, class, caste, religious) and the current underclass lacks the ability to credibly commit to a transfer of rights without violence (for example, because they lack organization). Yet, many natural states have precisely these characteristics. Steps toward an open access order are thus deterred because the state's solution to the problem of violence makes opening access a mortal threat to the incumbent insiders.

All told, most natural state leaders lack any motive to open access. Many have come to power by exploiting violence, not by cultivating a stable base of support in the opposition. Those who do have some motivation to open access may lack the means to do so safely.

Fostering impersonality

In natural states, rents and commitments are distributed to those with significant violence potential, in order to satisfy the proportionality condition and deter violence. Because allocating rents and commitments to the powerful helps keep the peace, most natural state leaders lack any incentive to convert to impersonal commitments and policies, and those with the incentive face difficult coordination problems. Because impersonal policies and rights allocate similar benefits and make similar commitments to a large set of people regardless of their violence potential, they reduce the rents available to prevent violence. For the most part, then, natural state leaders lack any incentive to create impersonal benefits and commitments because they compromise the state's ability to satisfy the proportionality condition, especially as circumstances change.

Even if a regime had incentives to create widespread impersonality, it would face substantial coordination problems in doing so. To see this, consider two of the main methods of impersonal commitment: domestic disarmament and economic interdependence.

As noted in section 3, domestic disarmament is a big step that no single actor will undertake unilaterally, in a polity that currently has only personal commitments. Demilitarization of a polity works only if (a) everyone simultaneously disarms and (b) the various factions somehow assure themselves that the new national military and police forces will not be turned against them once they no longer have private militias. Yet, simultaneous disarmament is hard to engineer, due to problems of commitment and opportunism, and ensuring the neutrality of national armed forces is difficult as well.

Many contemporary natural states have not managed to turn their de jure rules outlawing private militias into consistent practical realities, as witnessed by warlords in Afghanistan, death squads in Colombia, and many other similar examples. Other regimes have not ensured the domestic neutrality of their armed forces, as witnessed by the long histories of military intervention in politics in Thailand, Argentina, and many other countries.

Next, consider investments that create impersonal economic interdependence through the standard processes of specialization and exchange. Suppose, for example, that a production chain with n specialized steps exists that produces a final product, pins, more efficiently than a single individual or faction can. If n factions each occupy one position in the specialized production chain, their total product will exceed the sum of the products that each can produce acting on its own. If pin production has to be shut down if and only if conflict erupts between some subset of the participants in the production chain, then the factions' investments in pin production are club commitments: They raise the cost of fights erupting within the club. If pin production has to be shut down if and only if conflict erupts between any major domestic actors, then the factions' investments constitute public commitments; they ensure the factions will bear a cost when any domestic fight erupts, even one they do not directly participate in. When we refer to impersonal economic interdependence we mean the sort created by investments that lose considerable value upon the onset of any domestic violence (or, somewhat less stringently, on the onset of violence within a large domestic club). Such investments, which feature specialization and long supply and production chains, assure all (or many) other factions that the investor's cost of fighting them is higher.

However, no single actor would wish to undertake such intricate investments unilaterally in a natural state, as they would simply reduce their bargaining leverage and hence their rents. Just as with disarmament, complex interdependent investment can be in equilibrium only if it is widespread enough.

The cycle of violence

The natural state's reliance on rent creation, personal commitments among insiders, and limits on access imposed on outsiders results in a cycle of violence. Large enough shocks render the old commitments and limits inadequate to keep the peace. Sometimes the relevant parties negotiate new agreements in the aftermath of such shocks but, as argued in section 4, natural states lack adaptive efficiency. Thus, in many cases, bargaining fails, violence ensues, and peace is restored only with a smaller economy and a new set of rents, internal personal commitments, and external limits on organization.

In principle, a state might break out of this cycle of violence by institutional reform, moving from the natural state design principles of rents, limited access, and personal commitments to the design principles characteristic of advanced industrial democracies: no rents, open access, and impersonal commitments. The latter recipe satisfies the proportionality condition if every major actor is sufficiently plugged into the specialized economy so that the cost of domestic conflict is prohibitive for each. However, reforming a natural state is difficult, for the reasons noted above. First, impersonal commitments are risky to undertake unilaterally or in small groups; they only become worthwhile if enough others also undertake them. Second, opening access while commitments are still largely personal threatens the incumbent regime's factions.

Thus, natural states are enmeshed in a violence trap with a similar logical structure to many other development traps in the literature. Because there are increasing returns to investment in the institutional features of open access orders, states can be caught indefinitely in the inferior institutional equilibrium of the natural state. On the one hand, large enough investments put the state within the basin of attraction of better institutions, wherein it benefits from a benign feedback loop: Specialized investments, by raising the cost of domestic violence, make such violence less likely; while lower risks of violence promote specialized investment, thereby further raising the costs of violence. On the other hand, natural states begin in the basin of attraction of their own inferior institutions and thus face a malignant feedback loop that leads them continually back to natural state principles. The threat of violence hinders investment, especially economic integration across groups likely to fight if violence breaks out, but the lack of economic integration means a low cost of violence.

6. The modernization hypothesis and other ideas in the literature

A natural question to ask about our theory concerns its relationship to Lipset's (1959) modernization hypothesis. By way of an answer, we stress that our theory entails *neither* of the following two versions of the *modernization thesis*: (1) higher *rates* of economic development should increase the probability of a transition from autocracy to democracy and (2) higher *levels* of economic development should increase the probability of a transition from autocracy to democracy. We then restate what our theory does entail, and note that extant evidence is consistent with our predictions.

The rate of development

Our theory does not imply that high rates of economic development—as measured by the growth rate of per capita GDP—promotes democratization. Indeed, autocracies can exhibit cycles of low and high growth, with the chance of transition to democracy no higher under high growth than low.

To explain, consider an autocratic state in which the ruler collects a tax on investment profits at a fixed rate τ but can also levy arbitrary ex-post surtaxes. In such a state, the ruler's rate of predation (the expected rate of surcharge σ above τ) will depend on how sensitive investment is to predation. The autocrat will set the marginal gain from current predation equal to its marginal cost of lost future tax revenues due to depressed investment.

In this autocracy, the only investment projects undertaken (except those by the ruler or his cronies) will be those enjoying such high rates of return that they can pay a risk-of-predation premium. Suppose the ruler predates at a high rate (σ_{hi}) for an extended period, and let $T(\sigma_{hi})$ be the threshold rate of return such that investors will risk projects given the level of predation, σ_{hi}. Then a substantial backlog of potentially profitable investments will build up. The autocrat's high level of predation implies that all projects with positive rates of return below $T(\sigma_{hi})$ are potentially available for investment; further, these investments would occur, if only the returns were safe from predation. If the backlog of investments grows it will eventually become large enough so that the future tax revenues from investments with rates of return between $T(\sigma_{lo})$ and $T(\sigma_{hi})$ exceed the revenue generated by predation on the much smaller group of projects above the threshold $T(\sigma_{hi})$. The autocrat thus has an incentive to commit to a lower predation rate, σ_{lo}, so that actors will make these investments.[9]

Unfortunately, as time passes, the country burns through its backlog of high-valued investments, leaving mostly those with returns below $T(\sigma_{lo})$. At this point, the future revenue from new projects with rates of return between $T(\sigma_{lo})$ and $T(\sigma_{hi})$ no longer exceeds the revenue generated by predation on the much smaller group of projects above the threshold $T(\sigma_{hi})$. The autocrat's policy of low predation is no longer credible, so he will then readjust the predation

[9] The logic of our story is similar to that in Kletzer and Wright (2000), who argue that sovereign borrowers are more credible if they have more variable revenues and thus a greater need for tax-smoothing services. In our story, the source of credibility is a larger set of investments in the taxable economy that would be foregone by raising the rate of predation.

rate back up. Thus, an autocrat's predatory behavior generates cycles of growth. During periods of high predation, growth is low; followed by periods of low predations with higher growth.[10]

This account is not intended as a universal description of autocracies. It merely illustrates one way in which high rates of economic development can occur in autocracies without inducing a regime transition. The ruler's commitment not to predate does not reflect a perpetual commitment based on institutions. Instead, it is based on circumstances that, by their nature, erode as more investments take place. The authoritarian gains so much for a time from the backlog in investment that he has little incentive in the short run to predate, but, over the long run, the investments are realized, the marginal value of the next one declines, and at some point this decline is sufficient to change the authoritarian's behavior. This form of temporary credible commitment differs from one in which a perpetual institutional mechanism ties the authoritarian's hands regardless of the profitability of investment. To put it another way, high growth rates are sometimes just a testament to colossal predation, corruption, and mismanagement in the past.[11]

The discussion just concluded should be kept in mind when interpreting the famous results in Acemoglu et al. (2008). That paper begins by regressing the change in a country's democracy score on the change in its GDP per capita, finding that within-country rates of economic growth do not predict democratization. The study then conducts essentially similar analyses including country fixed effects, again finding that growth does not predict

[10] This pattern is consistent with the evidence on growth in developing countries (Rodrik 1999 and NWW table 1.2).

[11] But shouldn't the high growth phase of an autocracy bring specialization with it, which pacifies the polity? Note that the amount of specialization is limited by actors' perception of the state's predation rate. If this rate has fallen, then more specialization will ensue. But the amount of such specialization may still be well short of that attained in advanced democracies, because the predation rate, albeit lower, is still higher than in a democracy.

democratization. Acemoglu et al.'s null finding is consistent with the analysis just presented, in which autocratic countries may cycle through periods of high and low growth without ever escaping the violence trap.

Our analysis of high and low growth periods in natural states may also help to explain such events as the Mexican Miracle. Santaella (1998) reports that Mexican per capita income grew by 3.09 percent per year during the miracle years between 1940 and 1980, but then fell by -.11 percent per year over the period 1981-97. From our perspective, the initial period of high growth was possible without political reform, given the strong U.S. economy in the postwar period. However, Mexico's domestic economy remained relatively underdeveloped, and, relatedly, it failed to develop an open access order. Thus, it did not have the political infrastructure necessary to sustain its miracle.

The level of development

Our theory is closer to agreeing with the most common version of the modernization thesis, which holds that higher levels of economic development promote democratization. However, we make two important caveats. First, in our theory, economic development promotes democratization only if it entails the specialization and integration of the domestic economy.[12] Thus, a high GDP per capita need not necessarily promote democratization. Second, the modernization of the domestic economy makes a transition to open access possible but does not assure it. Let's consider each of these points in greater detail.

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[12] Our terminology here resonates with Ward and Rustow's (1964) view that economic modernization entails "high specialization of labor and interdependence of impersonal markets."

To explain why we insist that economic development must entail the specialization and integration of the domestic economy if it is to promote democratization, consider Saudi Arabia and the other gulf oil states. These countries are highly specialized and integrated into the global economy and have attained very high levels of GDP per capita. However, their domestic economies are relatively underdeveloped. Weighted by value, few production chains can be disrupted by purely domestic conflict. In particular, the oil fields can be walled off and protected, and they thus do not constitute commitments against violence. Moreover, the oil fields ensure that the value of winning a domestic conflict remains very high.[13] Thus, our theory does not predict that GDP growth of the kind seen in the Gulf States should promote a transition to democratic governance.

To underline the point made previously that economic modernization is necessary but not sufficient for transitioning to an open state, suppose an exogenous shock makes the payoffs to domestic conflict universally negative. The incumbent ruler would still desire as many rents as possible and would, under inherited natural-state institutions, have the means to create such rents. Thus, there is no guarantee that economic modernization, even when it assures universally negative payoffs to domestic conflict, induces political reform.

What do we say?

The main conclusions of our argument can be summarized as follows. First, natural states and low economic development—defined in terms of the specialization and integration of the domestic economy—reinforce one another. Underdevelopment necessitates that a natural state

[13] Our argument here differs from the usual rentier state argument, which holds that states that can raise revenues without their taxpayers' consent are less responsive to public opinion.

deal with the problem of violence by creating rents and limiting access, but political rents and access limits retard development. Second, open access states and high economic development reinforce one another. High development allows the creation of an open state without risk to political order, and open states facilitate development.

The well-known cross-sectional correlation between high GDP per capita and democracy is consistent with the predictions just made. However, there is some disjuncture between GDP per capita and our ideal measure of economic development (as noted above).

As to our theory's predictions about the within-country data, we expect something like a discontinuity or step function: a long period with natural states, low economic development, and highly variable growth rates, followed by a transition at some critical juncture to a period with open states, high economic development, and less variable growth rates.

Is the evidence consistent with this vision? The within-country relationship between the level of GDP per capita and democracy is still disputed, with scholars such as Acemoglu et al. (2008, 2009) finding no relationship and others (Epstein et al. 2006, Boix 2011) finding a significant positive relationship.[14] We think the latter evidence is more persuasive. It could, moreover, be consistent with our theory. Suppose, for example, that, after a country first attains a high level of economic development, its incumbent ruler does not immediately dispense with the natural-state system of rents and access limits. Instead, the polity undertakes a long series of political reforms over time. This scenario of Whiggish development, after the problem of violence has been solved, would generate a correlation between level of democracy and level of economic development.

[14] This inconclusiveness has been a feature of this literature for the last two decades. In the early 1990s, Barro (1997) provided evidence in favor of the Lipset hypothesis, whereas Przeworski and Limongi (1993) provided evidence against it.

7. Violence as the root of all traps

In this section, we argue that the violence trap described in the previous section is the root of all development traps. Thus, economic development, defined in terms of income per capita, and political development, defined in terms of perpetual and inclusive order, cannot be separated.

Most models of development or poverty traps focus on economic development and seek to explain how economic actors can be stuck in Pareto-inferior equilibria. The typical reasoning hinges on increasing returns of various sorts and the associated coordination problems they pose.

Our view is that most and perhaps all of the coordination problems highlighted by the array of purely economic models could be solved, sometimes straightforwardly, by an effective government. Indeed, coordination through government is precisely how today's developed countries solved these problems when they were developing. The root problem is thus the inability of the government to undertake the policies that help extricate the economy from its inferior equilibrium. To illustrate our position and highlight the difference between our approach to development and that in the previous literature, consider two examples.

First, Kremer (1993) provides a model in which the return to education depends heavily on collaborating with other educated colleagues. The economy can be stuck in the low-education equilibrium because no single individual has an incentive to invest in education without assurance that enough others will also invest.

In principle, an effective government could solve this problem by establishing universal public education, coupled with an elite training program in which some minimum number of students would be enrolled and training costs would be paid for by student loans and future surtaxes. If the problem of education were purely economic, then it would be easily solved. Governments in 19th-century Great Britain and the United States, for example, initiated programs that resulted in widespread education. Because governments can, in principle, solve this type of coordination problem, the real problem underlying an education trap must be that governments are unable to provide effective public education.

Second, consider the following credit trap. "[T]he poor lack collateral almost by definition; as a result they are credit constrained. Credit constraints, in turn, restrict participation by the poor in activities with substantial set up costs, as well as those needing large amounts of working capital. For the poor, then, the range of feasible income-generating activities is reduced. Thus, the vicious circle of poverty: Income determines wealth and low wealth restricts collateral." (Azariadis and Stachurski 2005).

This is a common and plausible argument. Yet, effective micro-loan programs can in principle be built in developing countries. That they are so scarce, and come mostly from international agencies rather than domestic governments, suggests again that the root of the problem is not simply that the poor lack access to credit. Rather, it is that governments lack the motivation or means to improve the poor's access to credit.

The reason that so many governments fail to provide the policies that help overcome purely economic traps, such as education and credit access, is that such policies worsen the problem of violence.[15] As impersonal policies, universal education and micro-lending programs

[15] A similar argument holds for the thesis that poor countries cannot develop because they lack capital. Sachs (2005), for example, argues that poor countries need massive aid to end poverty. How did today's developed countries raise capital at an earlier stage in their development? Those countries earlier in the processes often borrowed money to invest from the countries later in the process. But sustained

contradict the logic of the natural state in multiple ways. First, both violate the proportionality principle; they require the government to expend scarce fiscal resources on a wide range of people who have little violence potential. These policies thus siphon scarce resources away from policies and privileges that induce those with high violence potential to cooperate. Second, these policies provide tools and resources to those outside of the current regime and its supporters, potentially allowing new groups to threaten the regime's rents or, more fundamentally, its existence.

Because these policies increase the likelihood of violence and regime change, political leaders seek to avoid them. When nominal programs are put in place, the money often goes elsewhere.

Our argument, therefore, is that the problem of violence is the root of all economic development traps. There are many levels at which the problem of violence can be solved, ranging from the Hobbesian war of all against all to the ideal of perpetual and inclusive order with which we began. As a natural state moves up this hierarchy, governments become more capable and more economic development traps can be overcome. Yet, the path up the hierarchy does not consist of a series of small steps. Instead, moving from the design principles of a natural state to that of an open access order often requires simultaneous and large reforms on a number of fronts, which introduce impersonal commitments, opening access, and reducing rents.

Moreover, the mixture of simultaneous reforms needed to make the transition touches on the military sphere (domestic disarmament), the economic sphere (economic specialization, freedom to form economic organizations), and the political sphere (freedom to form political

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investment to promote development requires that investors have a strong reason to believe that they would earn a return and not have their capital expropriated. Regular shocks to natural states, however, make it very difficult for them to make the commitments needed to attract such capital.

organizations). Among other things, this means that political and economic development are mutually reinforcing or complementary: economic specialization enhances domestic peace, but domestic peace promotes specialization.

Adam Smith observed that specialization was limited by the extent of the market. We would add that the extent of the market is in part a political decision. At the national level, the policy of mercantilism sought to isolate the national economy, making it self-sufficient in as many key markets as possible in order to allow the nation to wage war on its enemies without suffering economic dislocation. In terms of our analysis, mercantilism sought to reduce the endogenous, economic cost of fighting other nations. Our emphasis has been on the use of specialization to increase the economic cost of fighting within the nation.

8. Conclusion

We have argued that a violence trap underpins the various development traps, both economic and political, described in the literature. We started with a simple rationalist model of (domestic) war in which two polar kinds of state could in principle establish domestic tranquility, depending on the cost of warfare.

First, if the costs of domestic strife are relatively low, then suppressing violence requires rent-creation. Sufficiently high rents deter intra-regime conflict when they are targeted to individuals and groups with violence potential. The rents are productive, in the sense that they produce peace, but they hinder economic competition and hence long-term economic performance because to be sustained rents require that the state limit access to economic and political opportunities. In other words, if the costs of domestic war are low, then keeping the peace entails building what NWW (2009) call a natural state.

Second, if the costs of domestic strife are prohibitive, then neither rents nor limits are needed to keep the peace. This suggests that open access orders—ideally with no rents and no limits—can emerge when the costs of fighting are sufficiently high. Moreover, we argue that such states are uniquely capable of sustaining the economic conditions that keep the costs of fighting high.

Given these two institutional equilibria, with very different means for establishing order, we have asked why natural states do not reform, turning themselves into open access orders? Our answer is that they are caught in a violence trap.

The first part of the violence trap is that natural states lack adaptive efficiency, the ability to adapt to various shocks in the environment. Their key structural features—the allocation of rents among insiders, the imposition of limits on outsiders, and the negotiation of personal commitments among insiders—are not robust to shocks (Rodrik 2000). Indeed, by worsening actors' abilities to make credible commitments and ensuring intractably asymmetric information across actors, natural state arrangements foster bargaining failure after shocks that alter the balance of domestic power. Thus, while natural states can be very stable in static environments, they are prone to violence in dynamic ones.

The second part of the violence trap is that natural states are unable to reform, even in the aftermath of bouts of internal violence that might motivate a search for constitutional reforms able to establish a more durable peace. In our account, the reason for this inability is that there are increasing returns in investing in domestic disarmament and economic specialization; yet such investments are essential for raising the costs of domestic fighting enough to allow political reforms that reduce insiders' rents and relax the limits placed on outsiders. Thus, political reform requires economic progress (in the form of Smithian specialization and increased economic integration), while economic progress requires political reform.

In our view, economic development and political development are inextricably intertwined, two sides of the same coin. Most of the previous political economy literature has analyzed how different political institutions affect economic performance (North 1990, Rodrik, Subramanian, and Trebbi 2004, Acemoglu and Robinson 2011). Here, we have emphasized the opposite direction of causality: how different kinds of economic orders—and the extent of specialization they sustain—determine the cost of domestic conflict and hence the nature of the problem of violence that political development must solve.

Recognizing the dual political-economic nature of development helps explain a number of puzzles of development. First, it explains why—contra Huntington 1968—the Soviet Union and the United States were never equally developed. Although each provided an orderly society, the USSR never allowed its citizens to participate freely in either the economy or the polity, leading to its stagnation and, eventually, a tumultuous change of regime under the pressure of global competition.

Second, it explains why the various purely economic development traps highlighted in the literature (and surveyed in Azariadis and Stachurski 2005) can exist. Most of these traps could be straightforwardly eluded, simply by the state organizing large enough investments of the appropriate kind. Thus, the problem is not the increasing returns in any particular economic area; rather, it is the underlying inability of the state to reform so that it can undertake the appropriate coordinating actions.

Third, it deepens our understanding of incumbents' resistance to reform. Most theories of such resistance (North 1981, Acemoglu and Robinson 2006b and Fernandez and Rodrik 1991) take the political structure as exogenously given and argue that incumbents will defend the status quo. We endogenize both political structure and resistance, explaining how leader after leader emerges in natural states with the same economic and existential fears regarding political reform, despite its well-documented potential benefits.

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