The Proliferation of Sovereigns:

Are There Lessons for Integration?

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December 2002

Abstract. While most of the attention recently has gone to the vaguely defined phenomenon of "globalization" it is not often noted that an empirically equally important phenomenon is the proliferation of sovereign states. This proliferation of states has created increasing numbers of the political and economic perquisites of statehood: not only are their more flags, more borders, more armies, but also more monies, more control of labor flows, more control of trade, more independent contract enforcers (judiciaries), more independently determined economic policies. In this paper we ask what can be learned from the grand "experiment" with the expansion of the numbers of sovereign states about current discussions of reform and integration. First, we examine the pattern of expanding numbers of sovereign states. Second, we postulate a simple theoretical framework that establishes that sovereignty may increase or decrease steady state income. The impact of borders would tend to reduce market scope and hence reduce income. The policies adopted with sovereignty could either increase or decrease income. Third, we use an episodic analysis to compare growth outcomes of countries before and after sovereignty. Fourth, we compare the variance of growth outcomes across countries to variances across states or provinces within countries. Fifth, we examine a specific case study by focusing on the variation across the Caribbean. Sixth, we do some econometric analysis to try to disentangle the effect of market size from that of policies. This analysis produces several conclusions. First, unlike the optimistic expectations, the expansion of sovereignty, which allowed national control of economic policies, has not in fact produced universally positive results. In particular, the newly independent countries slowed down relative to OECD countries and did no better on average than old independent countries. Second, econometric analysis shows that - controlling for the quality of policies - the market size effect is large. Third, the variance of outcomes has been dramatically increased by the expansion in sovereignty. Fourth, deep integration—in the sense of binding commitments on the range of actions of the national sovereign--holds some promise of reducing growth rate variance but would only accelerate mean growth if the effect of increasing market size is not accompanied by a worsening of policies.

March, 2003

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Introduction

Economic integration has been a stated goal of many polities throughout the years. From the time of the *zollverein* among German-speaking states in the XIX century to the current plans for a Free Trade Area of the Americas, going through many other initiatives such as the European Union, the Latin American Free Trade Area (known by its Spanish acronym ALALC), the North American Free Trade Area, Mercosur, the Andean Pact, the Central American Common Market, the Asian-Pacific Economic Cooperation, significant efforts have been made to achieve greater economic integration. The typical content of these arrangements involves *inter alia* the reduction in tariff and non-tariff barriers to trade, the liberalization of migratory flows, the harmonization of market regulations and macroeconomic policies, the adoption of common currencies and the commitment to a process of conflict resolution in the process of cross-border investments and contract enforcement. While these efforts to integrate sovereign states have been taking place at differing speeds in different regions, a much more dramatic change has taken place in the opposite direction: the number of sovereign states has tripled over the last 50 years, multiplying the constraints that sovereignty imposes on economic integration.

Integration efforts exist to compensate for the often-unintended obstacles to trade created by the existence of sovereign states—which is often the result of political *dis*integration. It is sovereign states that, through their trade policy, impose barriers to the movement of goods across borders. It is sovereign states that restrict migratory flows across borders. It is sovereign states that insist on having a national currency, an

autonomous macro policy and an adequately suited regulatory framework. Economic integration agreements are there to lower some of the negative consequences for economic integration that sovereign states create. The typical agreement involves a multilateral renunciation to the sovereign exercise of discretion in exchange for other members also letting go of that discretion. The subtext of these agreements is: we will give up our sovereign right to discriminate against your goods and factors provided that you give up your right to do the same to ours.

The purpose of this paper is to shed light on the potential growth implications of greater economic integration by studying the impact that political *dis*integration has had on the growth experience of the newly independent countries. Section 1 describes the process of formation of newly independent states. Section 2 presents a brief theoretical framework that relates sovereignty to income and growth. It highlights the importance of market size and policies in determining the net effect of independence. Section 3 proposes a difference in difference analysis of the historical record and finds that in general, countries that became independent saw a growth reduction relative to the OECD countries, although they grew at rates similar to those of old independent countries. Section 4 studies the case of the Caribbean and finds that the still dependent countries are 10 times richer than the old independent countries and about 2 times richer than the newly independent states.

Section 5 studies the variance in growth performance within a state and between states. To do this analysis we use data on growth for regions of India and compare it to growth performance among newly independent states. We find that the variance of growth performance is an order of magnitude larger in independent states. This suggests

that independence increases significantly the variance of results with some countries doing significantly better while others doing worse.

Section 6 tries to account for the variance of growth performance among 51 newly independent states as a function of the loss of secured market access and domestic policies. It finds evidence that both have important effects on growth. In particular, controlling for the quality of policies, the loss of market access has a large impact on growth.

I) The Proliferation of Independence

In 1940 there were only 65 independent countries, as of 200 there are (roughly) 190 independent countries. One hundred and twenty five new countries have been created in the last 60 years, more than double the number that existed in 1940[1]. This proliferation of states has come about in three waves (of differing size and intensity). Figure 1 presents the raw numbers of new nations in each year by former controlling country, while figure 2 shows the distribution by region.

First, far and away the largest in population terms, in the immediate aftermath of World War II many Asian states became independent—including India and Pakistan in 1947, Indonesia in 1945, as well as the Philippines, Korea.

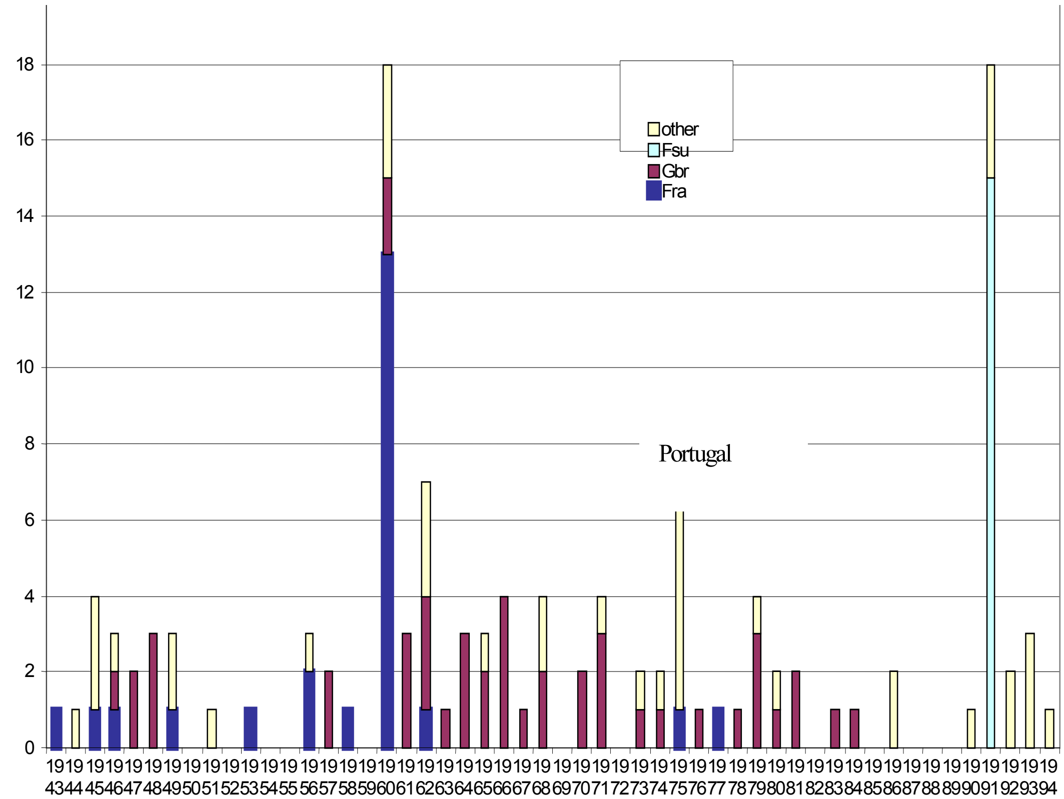
The second big wave was the process of decolonization of British, French, Belgian and Portuguese colonies. These were numerically concentrated in sub-Saharan Africa, but also included possessions in the Caribbean and in the Indian Ocean. The bulk of this process took place between 1956 and 1968, but the pattern was somewhat spaced over time. Most French and Belgian colonies became independent in 1960, British colonies

[1] Other methods and sources give different numbers, but with the same direction. Alesina, Spolare and Wacziarg (2000) report 69 in 1920, 89 in 1950 and 192 in 1995.

largely became independent between 1956 and 1963 (with the exception of (then) Rhodesia). Within this group, typically, large countries became independent first while smaller countries followed suit later, often in a steady trickle during the 1970s and 1980s especially in the Caribbean and the Pacific. Thus the larger countries in the Caribbean - e.g. Trinidad and Tobago and Jamaica – became independent in the early 1960s while the Bahamas and Belize did so only around 1980. By contrast, Portugal granted independence to its colonies late and suddenly after it underwent its own political revolution in 1975.

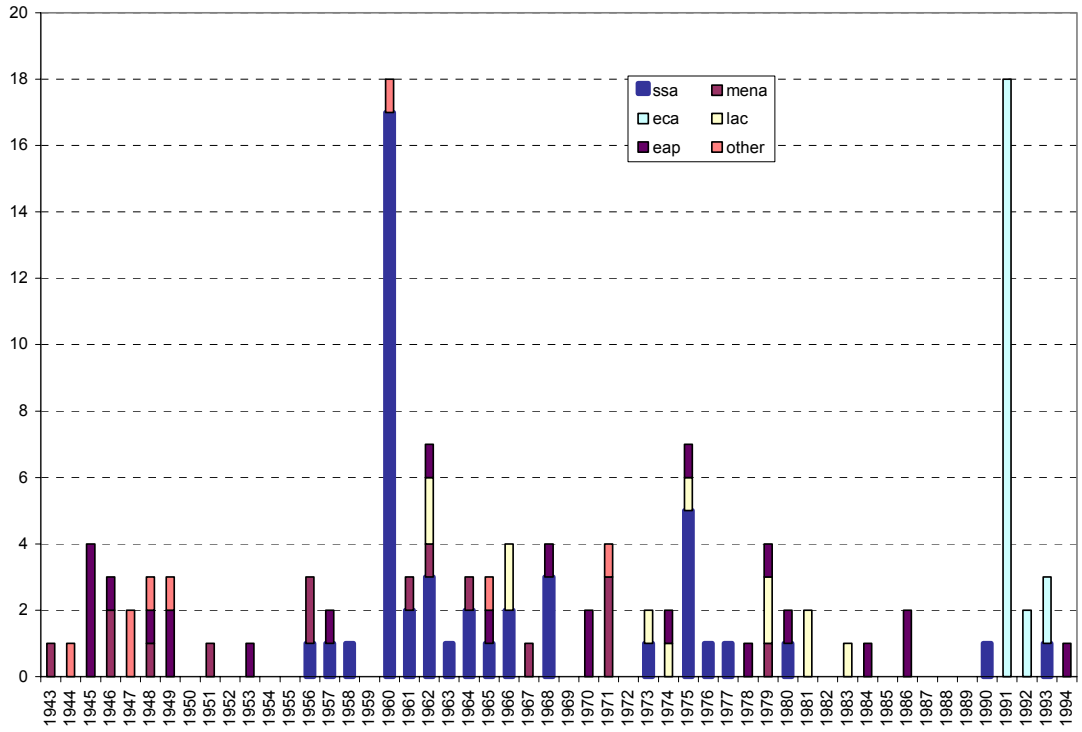
The third big wave of independence is the disintegration of the Soviet Union (and its Eastern European satellites) which has occasioned the creation of new countries both out of the USSR and from the division of other Eastern European countries such as Czechoslovakia and Yugoslavia.

Figure 1: Number of newly independent countries in each year by former controlling country



There are today still a number of “still dependent” entities, which are neither fully integrated parts of states nor fully independent. The US maintains arrangements with Puerto Rico, Guam, American Samoa, and the US Virgin Islands. France possesses overseas jurisdictions such as Guadeloupe, Martinique and French Guiana and the Netherlands claims sovereignty over Aruba, Curacao and Bonaire. Dependent countries are typically very small.

Figure 2: Number of newly independent countries in each year, by region.



Since independence events are driven by internal and external facts there is very little relationship between timing of independence and country characteristics like size, openness, income level, ethnic fractionalization, etc. That is, while the large Asian countries became independent first, followed by the generally smaller states in Africa, the newly independent states from the USSR are larger than the African states and richer than either. However, for each colonizer, and especially for Britain, it is the case that larger more distant entities became independent first, while smaller jurisdictions did so at a later stage.

II) *What is the expected growth impact of independence?*

Before examining the data on the economic performance of countries before and after independence we want to specify what we might expect. State sovereignty in the modern world systems implies control of at least five economic features. First, the control of the movement of *labor* across national boundaries. Second, the control of the movement of *goods* across national boundaries. Third, the choice (not always exercised) to maintain a national *currency* (which implies at least the potential for control of capital flows). This in turn implies a macroeconomic policy of some sort. Fourth, the control of the *enforcement of contracts* within national (since contract enforcement in the limit implies compulsion). Fifth, the ability to set a wide range of legal and regulatory conditions, which include policies to subsidize and promote certain activities, that affect economic activities within national boundaries.

Said differently, when a border is set up in a previously undivided economic entity, people on one side of the border will:

- lose the right to work on the other side,
- lose the right to trade with the other side unless they obtain a special dispensation which may be taxed or restricted in the present or in some future scenario
- expect to be paid in a currency different from that used on the other side
- have problems having their contracts signed on this side of the border to be enforced by the authorities on the other side of the border
- need to adapt products and practices to the rules of the other jurisdiction

Notice that many of these consequences of borders are exactly the issues that integration agreements are meant to alleviate.

Independence will have two, potentially offsetting impacts. One is that independence almost certainly will reduce market size—in spite of the most open trade policies market size will be smaller. The other is that independence allows the new sovereign more freedom in choosing national policies. If the new policies are superior growth could accelerate, or, the risk exists of worsening policies.

II.A) Market size

Market size will be affected by sovereignty in several ways. We define "market size" as the scale of economic activity over which agents can contract. This definition of market size is built around the notion of the benefits of specialization. Larger and larger markets allow agents to become more and more specialized. But, to the extent specialization requires specific investments (in physical capital, in human capital, in marketing channels) the desired degree of specialization is informed not just by current, but also future anticipated probabilistic distribution of market size.

The geographic scope of markets both is probabilistic and depends on the particular market. That is, if I am a producer in California the odds I will not be able to sell goods into Oregon now and in the future is infinitesimally small, the odds I will not be able to sell in Canada small, but non-zero, the odds I will not in the future be able to sell my goods in Mexico is still small, but a larger non-zero. The odds I will not be able to sell my goods in Nigeria are reasonably high. These same odds are different for movements of labor, capital, and ideas. *Certain market size* is much smaller than *expected market size,* which in turn could be larger or smaller than *current market size*.

Some might argue that with sufficiently open trade policies borders do no matter as market size is defined by the world only. This appears not be the case as borders matter for trade, price equalization and capital flows even in countries with very open policies. The impact of borders on economic integration has attracted a lot of attention since McCallum (1995) found that trade between Canadian provinces was 20 times larger than with an equidistant American state[2]. This result was particularly surprising as the US-Canada border must be among the least problematic to cross: after all, both countries share a language and a legal tradition; they have similar levels of development and a history of peaceful coexistence. If the effects can be so large between these two countries, what to expect among others? Helliwell (1998) estimated border effects for several Latin American countries with estimated coefficients between 35 and 60.

On a different strategy, Engel and Rogers (1996) explored the implications of borders for the equalization of prices across different cities. They found that crossing a border is the economic equivalent of adding thousand of miles to the distance between two cities. In particular, Parsley and Wei (2000) estimate that crossing the US-Japan border adds 43,000 trillion miles to the process of price convergence between cities. Bradford and Lawrence (2003) still find that both quantity and price evidence suggest that the presence of a border *per se* has an enormous impact on the quantity of trade and price convergence[3]. Their new results based on detailed examinations of prices across markets suggest that "international fragmentation among industrial countries remains

[2] By contrast, Anderson and Wincoop (2001) argue that the McCallum approach significantly overestimates the effect because of the small size of the Canadian economy relative to that of the US. They estimate the effect to cause a reduction of trade of "only" 44 percent.

[3] This view is shared by Obstfeld and Rogoff (2000) who find that, while high elasticities of substitution across finely disaggregated items can account for some of the home bias puzzle in quantities (so that small barriers inducing smallish price differentials could explain large quantity differences with little welfare loss) the results on prices are much harder to explain.

considerable, even among countries with low or no tariff barriers" as the typical price differential was 20 percent in adjacent countries in North America and Europe and 30-50 percent across countries in different continents.

Helliwell and McKitrick (1998) find that the US–Canada border also distorts the flow of capital between provinces and states: at the national level, savings and investment seem to be correlated, but this is not true at the provincial level: the Feldstein-Horioka puzzle is a national phenomenon, not one that can be observed within Canadian provinces.

Finally, in a sequence of papers Rose and different co-authors have studied the impact of currency unions on trade[4]. They typically find that a currency union increases trade between its members by a large extent, with measures going from increases of 80 to 200 percent. This means that the exercise of monetary sovereignty has implications for the volume of trade. This effect is separate from that of belonging to a political union. Frankel and Rose (2000) estimate that both a currency union and a political union triple trade. This means that two regions that belong to the same sovereign and share a currency are estimated to trade 9 times more than if they had separate sovereignties.

In addition to the spatial dimension, the market size relevant for investment decisions also has an important temporal dimension—since profits are forward looking. In dealing with sovereign states contract enforcement to prevent predation may be impossible so that it is impossible to reliably contract into the future over anything. That is, the authorities in the sovereign country may decide to favor the domestic entrepreneur or the government in adjudicating a complaint or in carrying out the orders of a foreign

[4] More recently, Edwards and Magendzo (2002) examined the impact of international currency unions and "strict dollarization" and found some effects of higher growth rates of international currency unions—but the results were strongly determined by a few small countries.

court. Alternatively the sovereign could carry out a "taking" by a direct seizure of assets, or prevent future transactions through regulatory action, or otherwise limit the scope of competitive economic activity (for instance through providing subsidies to some firms and not others). It is important not to confuse this risk with the risk of repudiation of government debt (as might be proxied by sovereign bond premia) but rather the risk that if a producer makes a specialized investment in a fixed asset: property in downtown Lima, a CAT scan machine in Buenos Aires, an accounting degree in Rio—the government will undertake some action (zoning, price control, regulation) that would affect the returns to this asset. Generally, these risks are perceived to be higher than the pure sovereign country risk, explaining the common practice by credit rating agencies of setting a sovereign ceiling on private corporate bonds. In fact, these risks need not involve other countries: if the protection of property rights is poor, the effective domestic market size will be limited.

These differences can make a large difference in thinking about the relevant market size, which is often simply considered as ratios of GDPs (or exports). But, as table 1 shows, if the market is considered as the net present value (NPV) of the current flow discounted at a rate that reflects uncertainty of being able to realize gains in the future markets are even smaller relative to developed country markets than is commonly measured. In dollar terms the Brazilian market is 10 percent of the US market. However, suppose that there is sufficient certainty about contracting that the discount rate that reflects the risk to a specific asset is 3 percent in the USA and 10 percent in Brazil. Then the market over which a producer would make decisions about investment and

specialization is only 3 percent as large in Brazil as the USA—the whole NPV of Brazilian market is barely equal to the current USA flow.

Table 1: Role of uncertainty in market size					
	GDP 1997 in billions US dollars	NPV (flow/r) of market size at various discount rates in billions			
		3%	5%	10%	20%
USA	8,110	270,333	162,200	81,100	40,550
Germany	2,103	70,090	42,054	21,027	10,514
Brazil	804	26,804	16,082	8,041	4,021
NPV(r) relative to USA NPV(3%)	9.9%	9.9%	5.9%	3.0%	1.5%
NPV® relative to USA flow		331%	198%	99%	50%
India	431	14,352	8,611	4,306	2,153
NPV(r) relative to USA NPV(3%)	5.3%	5.3%	3.2%	1.6%	0.8%
NPV® relative to USA flow		177%	106%	53%	27%
Indonesia	215	7,167	4,300	2,150	1,075
NPV(r) relative to USA NPV(3%)	2.7%	2.7%	1.6%	0.8%	0.4%
NPV® relative to USA flow		88%	53%	27%	13%
Nigeria	57	1,884	1,131	565	283
NPV(r) relative to USA NPV(3%)	0.7%	0.7%	0.4%	0.2%	0.1%
NPV® relative to USA flow		23%	14%	7%	3%

Does market size really matter? In a related literature, Alesina, Spolaore and Wacziarg (2000) study the endogenous formation of countries. They posit that a larger entity has a larger internal market but also more diversity in preferences, which complicates the choice of common policies. The optimal size of a country will depend on a balance between these two forces. They show that more open economic policies should imply smaller countries. We take from this literature the idea that in countries that become independent has an incentive to adopt more open policies in order to limit the consequences of the reduction in market size. Singapore, Taiwan, Slovenia and the Baltic states are an example of this as may be some of the islands in the Caribbean. By contrast, as we shall see later, many newly independent countries ended up with very

large black market exchange rate premia suggesting that domestic policy imbalances limited their degree of openness.

While borders seem to have quite negative effects on trade, does this affect output levels (and growth as a transition to the new, higher, level)? There is an ample debate on this matter. In a recent paper, Frankel and Romer (1999) argue that trade has a significant and large effect on income[5]. They argue that an increase trade by 1 percent raises income by 1/3 of 1 percent over 20 years. If this is the case, then borders, by restricting trade lower expected income in a significant manner. Countries that become independent by increasing the number of transactions that need to cross borders would see their total domestic plus foreign trade decline and hence would exhibit less income.

There have been numerous studies that have tried to estimate the benefits of economic integration. Many of these studies have been prospective: efforts have been made to calculate the potential impact of the single market policy in Europe (Ceccini) or of NAFTA. The point of all these studies is to assess the potential effects of a move towards more integration. In this paper we move in the opposite direction: we will try to learn about the potential benefits from integration by looking at the effects of political disintegration.

II.B) Policies

In addition to market size (which is itself a function of institutions and policies) production and investment decisions are determined by *effective policies and institutional performance.* The phrase e*ffective policies* is intended to emphasize two things. First, a *policy* is a mapping of states of the world to policy actions. The literature often confuses

[5] Rodriguez and Rodrik (2001) challenge this result.

policy actions—like a budget deficit, or a given pattern of tariffs—with a *policy*[6]. A policy is a (possibly unconditional) rule that maps states of the world to those policy actions. The second point is that a policy is not an *effective* policy without the specification of the means by which the policy will be implemented. That is, a protectionist policy of "place high tariffs on goods whose production has high backward linkages" is not an *effective* policy without a specification of how the determination of the "state of the world" will be undertaken. The same *stated* policy of protecting goods with "high backward linkages" can lead to very different outcomes depending on the incentives of those making the policy. The same policy can mean very different *effective policies* if the determination of which goods those are is left to (a) executive discretion, (b) an expert commission (with what incentives?), (c) a trade ministry with a given administrative decision process, (d) legislative discretion, (e) other.

Similarly we wish to emphasize institutional performance to distinguish between "institutions" and "institutional performance" as empirically there may be very little link between the formal structure and design of institutions and institutional performance. Take for example an "institutional" characteristic like "rule of law." The legal system may by formally identical in two countries (e.g. Britain and Kenya) and yet outcomes completely different. Similarly, the legal system may have completely different institutional foundations and yet produce roughly equivalent outcomes (e.g. the US state of Louisiana has state law based on the French "civil code" approach and yet "rule of law" does not vary significantly between Louisiana and its neighboring states).

[6] Pritchett 2001 illustrates the dangers of this confusion, as growth regressions on *policy outcomes* (results of the mapping of the state of the world into a particular policy action) will not give reliable inference about the growth impacts of underlying *policies* (the mapping itself).

Effective policies and institutional performance are constrained by (though not completely determined) by the *institutional framework.*

Within any given geographic territory effective policies in each of the five dimensions above (trade, labor, monetary, contract enforcement, regulatory environment) and institutional performance can be determined in one of three stylized fashions: *no sovereignty, full sovereignty,* or *limited sovereignty.* No sovereignty is the condition of completely colonial or dependent jurisdictions in which decisions are made—not necessarily in the interests of the residents—by some other sovereign authority. In a classic colonial situation the colony did not have rights to control key policies, and even if those rights were granted they were revocable by the colonial power but this should not be overstated. A recent study by Clemens and Williamson (2002) of tariffs in the pre WWI era suggests that even colonies did have some tariff autonomy. So, while to some extent colonies followed the tariff policies of their colonial power, there was scope for difference.

By *full sovereignty* we mean not only does the state control the policies, but also that the state has not undertaken any obligations that limit its sovereignty over policy choices by binding commitments to other sovereign states or supra-national bodies.

It may be useful to distinguish the creation of two separate countries from a situation in which all the population had equal citizenship rights and policies are decided democratically from a the emancipation of a colony in which the laws were decided by a government of which they were not citizens. Said differently, the separation of Quebec from Canada is different from the independence of the Belgian Congo. Quebecois are citizens of Canada, arguably with equal rights, while the Congolese had policies

determined by Belgium, a country that did not grant them citizenship rights. Also, in determining policies for the Congo, the Belgian government did not have to impose those same rules on its citizens. This implies that more exploitative policies were feasible in the Congo relative to those present in Quebec. Consequently, the impact of sovereignty on growth should be greater in the Congo than in Quebec as the distance between actual policies under colonialism and policies desired under sovereignty is that much larger.

An interesting case is *limited sovereignty* in which a state chooses to make binding agreements with other states or supra-national bodies. Obviously trade agreements are a classic example in which countries agree to forswear certain policies (e.g. quantitative restrictions, export subsidies) in connection with a reciprocal agreement from other states. This limits the range of policies the state can adopt and still be consistent with the agreement. Of course the state can always exit from the agreement, but this usually involves some cost, at the very least freeing other sovereign states from their reciprocal obligations.

The range of limited sovereignty agreements can extend from very specific (e.g. the recent debate about ceding legal jurisdiction over actions involving "crimes against humanity" to a supra-national court) to very deep and broad. The progressive stages of the EU from free trade area to more and more common policies—e.g. common currency, free labor flows—illustrates the range of limits to national sovereignty.

Given the conditions of no, full, or limited sovereignty in any given policy dimension the effective policy outcome will be determined as an outcome that depends on the commitment and a range of political, institutional, and organizational factors (e.g. implementation capacity, corruption in administration) etc. Therefore the effective

polices (which remember are not "real numbers" or even vectors of real numbers but are mappings from states of the world to policy actions) in any policy area, such as trade, can be expressed as a function of sovereignty commitments (S), which in our stylized system can be No, Full, or Limited, and other factors (Z):

$$EP^{Trade} = EP^{Trade}(S^{Trade}, Z), \quad EP^{Macro} = EP^{Macro}(S^{Macro}, Z), \quad etc.$$

The economic policy climate is the set of all policy areas:

$$\mathbf{EP} = \begin{bmatrix} EP^{Trade} \\ EP^{Macro} \\ \text{M} \end{bmatrix}$$

II.C) Model of economic growth

Before moving to an empirical investigation of the impact of independence we want to establish a reasonably complete but general model that allows us to discuss the expected impacts. This model will move from the *proximate* determinants of output, to the determinants of the desired and supportable level of proximate determinants, to the dynamics of those determinants.

The direct proximate determinants of national income at any point in time are the level of accumulated factors--capitals of various kinds (physical, human, social)—called K, natural resources R, raw labor and the efficiency with which those factors are used (A). We write this as an income determination function Y():

$$Y = Y(A(), K(), R(), L()).$$

Market size is determined by effective policies and institutional performance as well as by other natural factors we call geography (G).

$$MS = MS(EP, IP, G)$$

Each of the components of income determination—accumulated factors, productivity, and even resources and raw labor has some maximal *supportable* level that is determined by market size and independently by effective policies and institutional performance. We use the term *supportable* to mean equilibrium subject to constraints, where the constraints may include feasible and sustainable levels of state compulsion. For instance, Singapore may require contributions to a provident fund that are much larger than individuals would choose in the absence of those compelled contributions. Given those one could talk about the equilibrium level of the capital stock, conditional on this compulsion, but we prefer to talk about the supportable level of the capital stock to make it clear the "equilibrium" in these systems involves producers and consumers choosing over options that are constrained by state action in a myriad of ways. In this model the long-run level of income is determined by the levels of policies and institutional performance.

The exception is that the supportable level of productivity (A) is determined in part by the world technological frontier T which progresses at some rate. This creates the constant *possibility* of convergence as if countries are below the world achievable productivity frontier this creates the possibility of rapid progress toward that frontier through imitation.

$$K^* = K(MS, EP, IP, A^*)$$
$$A^* = A(MS, EP, IP, T^W)$$
$$R^* = R(MS, EP, IP, A^*)$$
$$L^* = L(MS, EP, IP, A^*)$$

If actual or anticipated effective policies or institutional performance change this has the effect of changing the level of supportable proximate determinants of income.

We assume a dynamic adjustment function so that these adjust towards their supportable level. This adjustment is not instantaneous and not all elements adjust at the same rate. There is another set of country specific factors (W) that may independently determine the speed of adjustment (e.g. the efficacy and flexibility of the financial system).

$$\frac{dK}{dt} = g^{K}(K_t - K^*, W)$$
$$\frac{dA}{dt} = g^{A}(A_t - A^*, W)$$
$$\frac{dR}{dt} = g^{R}(R_t - R^*, W)$$
$$\frac{dL}{dt} = g^{L}(L_t - L^*, W)$$

This means that economic growth is determined by (a) the relationship between current and supportable levels of the proximate determinants of the level of income, which are themselves functions of policies and institutions, market size, and the productivity frontier and (b) by the adjustment dynamics of those proximate determinants:

$$\frac{dY()}{dt} = g^{Y}(\Delta EP, \Delta IP, W, T^{W})$$

Countries could undertake policy reforms that raise the supportable level of income substantially (which intrinsically involves expectations) which then occasions and episode of rather rapid growth as agents act to move towards the supportable level. Conversely, governments can act in ways that reduces supportable income—to levels even below current income, in which case agents act in ways that lead to negative growth.

We haven't forgotten what we are doing. We want to ask the question: "would deeper integration lead to more or less rapid economic growth?" We are asking the

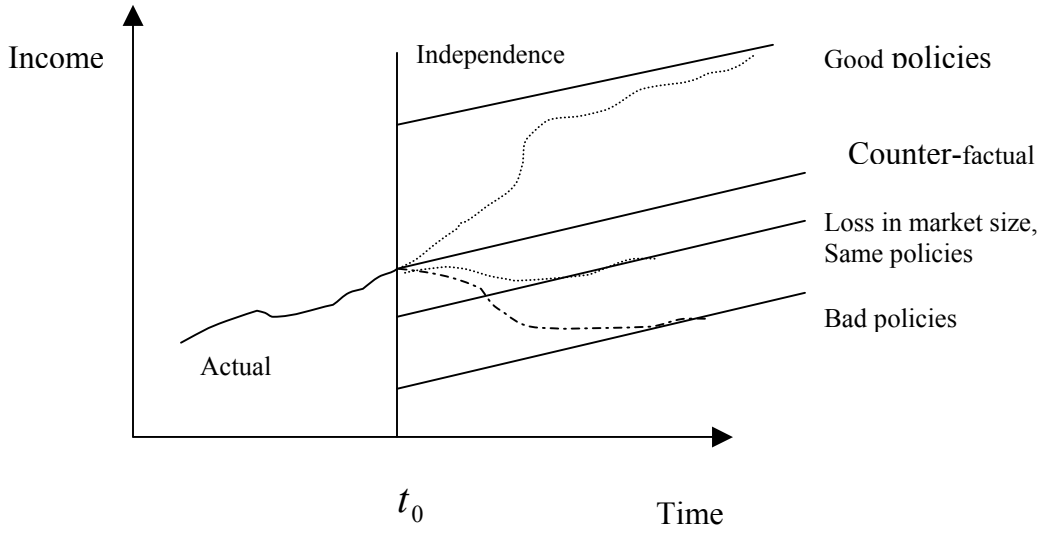
question: “did countries which moved from the lack of sovereignty to full sovereignty experience higher or lower income growth?” As countries become independent from colonialists (or other sovereigns) EP and IP moved from their values under “no sovereignty” to values under “full sovereignty” (but which may have involved some commitments to limited sovereignty in some policy dimensions). Before moving to the empirical evidence let us ask, what would we expect the impact to be? There are three possible movements:

(a) the independence episode may correspond to a reduction in market size because of inevitable border effects, which in turn would lead to decrease supportable levels of income and hence an adjustment of lower growth relative to the no independence counter-factual.

(b) The independence episode allows the newly sovereign state to choose policies that are superior to the policies that were formerly imposed on the entity. In this case supportable income could increase (possibly dramatically) which then should produce more rapid than counter-factual economic growth. In fact, as Alesina et al have argued, the choice of becoming independent may go hand in hand with the choice of adopting more open policies.

(c) If the underlying political and social determinants of effective economic policies and institutional performance (Z) are unfavorable the independence episode may unleash a dynamic in which policies even *worse* for supportable income than those imposed by the colonialist are adopted. In this case there could result in growth that is slower than counter-factual—perhaps even negative.

Figure 1: Possible post-independence trajectories



One implication is that the *average* growth rate might not shift in any particular direction comparing pre and post independence as there might be a mix of countries some of which adopt better policies and some worse policies. However, controlling for policies, one should observe that the larger the secured market lost, the greater the reduction in growth. In any case the variance of growth rates should be high whether or not the mean increases.

III) Episodic evidence on the impact of independence on per capita income

The episodic method has been used to examine a wide variety of phenomena from exchange rate devaluation (Kamin, Edwards) to inflation stabilization (Bruno and Easterly). Empirically using the episodic method to examine the impact of independence is quite simple. For the i*th* country with date of independence t_0^i we calculate the growth

rate of GDP per capita for various length periods before and after t_0^i (10, 20, and 30 years and the "maximum available sample"--which is, at most. from 1900 to t_0^i and from t_0^i to 1992). This gives a simple *before and after* estimate.

$$\textit{Before and after}\ (n): \quad g^{i}_{t_0^i, t_0^i+n} - g^{i}_{t_0^i, t_0^i-n}$$

But the before and after ignores other factors that may have caused growth rates to be higher or lower for all countries (or, more particularly, for the country of interest). Another possible estimate is to compare the *difference* in growth rates over the post-independence period of a newly independent country versus a comparator set of countries over the same period:

$$\textit{Difference}\ (C, n): \quad g^{i}_{t_0^i, t_0^i+n} - \overline{g}^{C}_{t_0^i, t_0^i-n}$$

Since what we really want is how much faster or slower the country would have grown had it not experienced an independence episode we need to take into account that maybe the country would have grown slower (or faster) than comparator countries because of persistent country specific factors. Hence, when we have data for both before and after with a set of countries that did and did not experience independence in a given time period we can calculate the estimate of the *difference of differences,* which is the growth acceleration (before and after independence) of the newly independent country less the before and after of the comparator countries over that same period:

$$\textit{Differences of differences}\ (C, n): \quad (g^{i}_{t_0^i, t_0^i+n} - g^{i}_{t_0^i, t_0^i-n}) - (\overline{g}^{C}_{t_0^i, t_0^i+n} - \overline{g}^{C}_{t_0^i, t_0^i-n})$$

We do this for six different samples, in which the countries and comparator countries are determined by data availability.

III.A) Historical evidence

Table 2 presents these estimates for the all of the six countries which have long historical times series and which experienced independence in the post WWII period. One comparator is the growth rate of average GDP per capita in seventeen developed countries[7]. The other is the growth rate of six Latin American countries—which are developing countries but which had experienced independence much earlier (in the early nineteenth century) so presumably any transitional "independence" effects had played out.

There are several points. First, these countries growth rate did accelerate in the post-independence period in the short (10 year) and long-run by 1 percentage and 2 percentage points per annum respectively.

Second, the comparison with the developed countries reveals the importance of comparators. The years after independence were good years for growth of nearly all countries compared to the previous 20 years (depression followed by war). This means that although countries growth accelerated post-independence—so did that of the developed countries. Compared to the acceleration of the developed countries over this same period the acceleration of the newly independent countries was much lower—2.45 percentage points less. This same relative growth deficit persisted on average through 20 years—three of the four countries have post-independence growth accelerations smaller than the developed countries. Only in the very long run, comparing growth 1900-independence with growth from independence to 1992 is there some evidence of superior growth performance, with the average acceleration for the newly independent countries .5

[7] Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, Netherlands, New Zealand, Norway, Sweden, Switzerland, UK, USA.

percentage points faster over this period than the acceleration of the developed countries. But this suggests the growth pay-off of independence is in the very long-run. Even 30 years on, growth acceleration was lower in India (by -3.3 percentage points) and Indonesia (-2.5 percentage points) was less than developed countries. Only after the growth acceleration after the ascension of Soeharto in the mid-1960s—twenty years post independence and the growth acceleration in India of the late 1970's—thirty years post-independence—did their accelerations outperform the developed countries.

Third, Table 2 demonstrates the huge variability in post-independence growth outcomes. Compared to the developed countries over the longest period—roughly 45 years pre and post independence—two countries had dramatically outperformed the developed countries with growth accelerations 2.9 (Korea) and 3.8 (Taiwan) percentage points larger, two countries had roughly similar performance with exactly the same acceleration (India) and .5 percent (Indonesia), and two had accelerated less than the developed countries with Ghana experiencing an absolute deceleration of 2.3 percentage points and Philippines accelerating only .5 percentage points—1 percentage point less than the developed economies.

Table 2: Episodic analysis of countries with long historical times series

		Years before and after independence			
		Before and after			
	Year of Independence	10	20	30	Maximum[a]
India	1947	1.50%	1.70%	1.40%	1.70%
Indonesia	1945	1.00%	1.30%	2.20%	2.20%
S. Korea	1945	2.20%	5.20%	5.60%	4.50%
Taiwan	1949	-1.80%	3.20%	6.00%	5.40%
Ghana	1957	1.30%			-2.30%
Philippines	1946	2.30%			0.50%
Average		**1.08%**			**2.00%**
		Difference of differences with developed countries			
		10	20	30	Maximum
India	1947	-2.70%	-2.80%	-3.30%	0.00%
Indonesia	1945	-4.20%	-3.30%	-2.50%	0.50%
S. Korea	1945	-3.00%	0.60%	0.90%	2.90%
Taiwan	1949	-5.70%	-1.50%	1.40%	3.80%
Ghana	1957	0.90%			-3.30%
Philippines	1946	0.00%			-1.00%
Average		**-2.45%**			**0.48%**
		Difference of differences with six Latin American countries			
		10	20	30	Maximum
India	1947	-3.10%	-2.00%	-2.50%	2.00%
Indonesia	1945	-3.10%	-2.30%	-1.70%	2.40%
S. Korea	1945	-1.90%	1.60%	1.70%	4.90%
Taiwan	1949	-7.60%	-1.10%	1.90%	5.90%
Ghana	1957	2.70%			-1.20%
Philippines	1946	0.40%			1.00%
Average		**-2.10%**			**2.50%**

Source: Calculations based on Maddison on real GDP per capita..
Notes: a) for all countries except Ghana and the Philippines the "maximum" data is from 1900 to 1992, for Ghana the data begins in 1913. The inter-war data (1938-1946) is missing for the Philippines
So the comparison is 1929-1938 versus 1950-60. The "maximum" comparison is 1900-1938 versus 1950-1992.

We only have historical data for two Latin American which experienced independence in the early 1800s—Brazil (1822) and Mexico (1810). Since Maddison's data begins only in 1820 (for a large number of individual countries) we can only do

difference estimates. Table 3 shows the growth rates for Brazil and Mexico from 1820 to 1850 and 1870 compared to various other countries. Their growth rates are substantially slower than those in Europe, slower than the other "areas of recent settlement" (USA, Canada, Australia), and even slightly slower than India and Indonesia (which were not independent) and USSR and China, which were.

Table 3: Estimates of post-independence growth differences for Brazil and Mexico.

Year	1820	1850	1870	1820-1850	1820-1870
Brazil	670	711	740	0.2%	0.2%
Mexico	760	668	710	-0.4%	-0.1%
Average:				-0.1%	0.0%
Europe	1220	1498	1898	0.7%	0.9%
ARS	1236	2056	2626	1.7%	1.5%
Difference with Europe:				**-0.8%**	**-0.9%**
India, Indonesia	572.5	602	608	0.2%	0.1%
USSR, China	637		773		0.4%
Developing	604.75		690		0.3%
Difference with "developing":				**-0.3%**	**-0.1%**

III.B) Episodic analysis using recent (post-1960) data: Absolute growth differences

In this sub-section we address the same empirical question using roughly the same technique, but for many of the "newly independent" countries we lack data before independence so instead of differences of differences we will just use differences in the growth performance of the newly independent countries and the growth over the same period of comparator groups of countries. We use three comparison groups: (a) the trade

weighted average of OECD countries, (b) all other developing countries (not in the midst of an independence episode), (c) other developing countries[8].

The basic result (Table 4) is that newly independent countries grew substantially slower than the OECD countries and about the same as all other developing countries. At every horizon the average and median growth of the newly independent countries was about 1 percent per annum *slower* than the OECD countries. This is striking because it implies that not only are these countries not gaining on the OECD but are falling further and further behind. Compared to other developing countries the newly independent countries growth is about the same—*average* growth is slightly higher (by about ½ a percentage point at each horizon) but *median* growth is slightly lower at 10 years and at the long-run. This implies that a few newly independent countries did very well, but the *typical* newly independent country fared about the same as if there had been no independence episode. There are differences between the former colonialist with French colonies doing substantially worse and British colonies doing substantially better—but this is perhaps because in this sample all the French independences are in Africa while the former British colonies are spread between Africa, Caribbean, and Pacific.

III.C) Episodic on independence: recent differences on differences

There are many fewer countries for which the national income data exists both before and after independence. We have two sources of data. One is the Maddison (1992) historical data, which has data going back to 1950 for five countries in addition to those with long historical series above. We can also use the standard data source on constant

[8] We also did the calculations comparing newly independent countries to countries: (1) in the same income quartile, (2) with similar export structure (e.g. minerals, manufacturers), (3) similarly in the tropics (or not), (4) similarly landlocked (or not).

price, local currency GDP per capita for countries where the data goes back in time both for the newly independent country and the comparators. This means the second set are mainly countries for which independence was more recent, which are in turn, usually much smaller than the average country.

Table 5: Before and after and differences of differences estimates of circa 1960 independences from Maddison (1992) data.

Country	Year of indepdendence	10 years			1950 to t, t to end of data		
		Before and after	Differences of Differences		Before and After	Differences of Differences	
			Developed	LA		Developed	LA
Morocco	1956	-1.70%	-2.00%	-0.90%	-0.20%	0.40%	1.00%
CIV	1960	2.40%	1.80%	2.60%	-1.40%	-0.90%	0.00%
Kenya	1963	2.00%	1.50%	1.50%	0.20%	0.90%	1.40%
Tanzania	1961	1.80%	1.30%	1.70%	-0.50%	0.10%	0.80%
Zaire	1960	-3.20%	-3.80%	-3.00%	-4.30%	-3.80%	-2.90%
Average		**0.26%**	**-0.24%**	**0.38%**	**-1.24%**	**-0.66%**	**0.06%**

For those countries growth is slower before than after independence. For the sample of 26 countries with data the average (median) 10-year growth jumps from 1.5% (1.2%) before independence to 2.0% (2.7%) after. Over this same period in which these countries gained independence, the continuously independent countries growth rates actually decelerated, growing 0.8% slower. Therefore the difference of differences suggests that the newly independent countries grew roughly 1 percentage point faster post independence than the comparator developing countries.

Table 6: Episodic analysis of recent independences, 10 year before and after and difference of differences				
			10 year horizon	
Country	Year of Independence	From	Before versus after (acceleration positive)	Difference of difference with "old independent" developing countries
Cape Verde	1975	Portugal	6.9%	8.9%
Malta	1964	Britain	5.6%	5.0%
Angola	1975	Portugal	3.4%	5.4%
Guyana	1966	Britain	3.4%	3.1%
Kenya	1963	Britain	2.1%	1.1%
Uganda	1962	Britain	1.8%	0.8%
Malawi	1964	Britain	1.6%	0.9%
Fiji	1970	Britain	1.3%	2.6%
Nigeria	1960	Britain	0.9%	-0.4%
Seychelles	1976	Britain	0.3%	2.5%
Zaire	1960	Belgium	-0.5%	-1.7%
Bahamas	1973	Britain	-1.9%	0.6%
Comoros	1975	France	-2.2%	-0.2%
Papua New Guinea	1975	Australia	-2.5%	-0.4%
Belize	1981	Britain	-2.7%	-1.4%
TTTO	1962	Britain	-3.6%	-4.5%
Mozambique	1975	Portugal	-3.8%	-1.7%
Guinea-Bissau	1973	Portugal	-7.4%	-4.8%
		Average:	**0.6%**	**1.2%**
		Median	0.9%	0.8%

This difference however does not suggest that all of the gain was a large growth spurt as the newly independent countries grew on average faster by only .6 percentage points in their 10 first post-independence years than the continuously independent countries. But, they grew 1.2 faster than the comparators since these independences mainly occurred in a period in which other countries were slowing down.

III.D) Summary of episodic analysis

There are three outcomes of the episodic analysis for the various periods (from the 1800s to 1980s) with various comparators.

First, in no case did independence bring an acceleration of growth relative to the developed countries. While one might have thought freeing countries up to pursue policies in the national interest would allow them to converge more rapidly this was not the case. The difference and the difference of difference estimates suggest that post-independence countries grow *slower* relative to the developed countries than in the pre-independence period for a considerable time (at least 30 years).

Second, the evidence of the growth rates of newly independent versus continually independent developing countries is mixed, with the sense that it is "about the same"—post-independence growth is neither dramatically higher nor dramatically lower than in countries not experiencing independence. (The exception is those countries becoming independent in the late 1970s and 1980s).

Third, while *on average* independence did not create an increased tendency to convergence, there is enormous variability around these "average" results. Post-independence some countries grew very rapidly and did in fact converge on the income of the leaders (S. Korea, Taiwan, and Singapore). Others muddled along. Other countries actually saw income *fall* precipitously after independence.

Table 7: Summarizing the episodic analysis of independence

	# of coun-tries	Before/after		Developed				LDC			
				Diffs in diffs		Differences		Diffs in diffs		Differences	
		10	Long	10	Long	10	Long	10	Long	10	Long
Historical, 1900-1992	6[a]	1.1	2.0	-2.5	.5			-2.1	2.5		
Historical, 1820-1870	2[b]						-.9				-.1
Recent (post 1960)	52					-.9	-1.1			.5	.4
Recent (post 1960)	61									-.6	
Recent (with pre-1960 data)	5[c]	.26	-1.24	-.24	-.66			.38	.06		
Recent (mostly 1970s,80s)	17	.6						1.2			

a) India, Indonesia, South Korea, Taiwan, Philippines, Ghana, b) Mexico, Brazil, c) Morocco, CIV, Kenya, Tanzania, Zaire.

IV) Case Study: Caribbean

Two difficulties with attempting to estimate the impact of independence is that those countries which are still dependent are by and large atypically small and, by being dependent, do not have easily available comparable income data. This has bedeviled our efforts to estimate the growth of "still dependent" countries as the counter-factual for the newly independent countries. However, within the Caribbean there is something of a natural experiment as there are a large number of entities that are reasonably similar in size, which share geographic features by being in or bordering the Caribbean, and hence one might have expected reasonable similar outcomes on other grounds. However, some have become independent relatively recently (since the 1960s), while others gained independence many years ago (Haiti was the first, in 1804).

Table 8 shows the interesting, if well known, fact that median GNP per capita is *three times* higher in the still dependent countries than in the recently independent

countries ($15,000 versus $4,500). The median is nearly *an order of magnitude* higher in dependents than the old independents (which includes Haiti and Cuba).

Table 8: Level of GDP per capita within the Caribbean: still dependents, recent independents, old independents

Country name		Independent from	PPP GDP per capita
		Still dependent	
Anguilla	AGI	.	8,200
Aruba	ABW	.	28,000
Bermuda	BMU	.	33,000
British Virgin Islands	BVI	.	16,000
Cayman Islands	CYM	.	24,500
French Guiana	GUF		6,000
Guadeloupe	GLP	.	9,000
Martinique	MTQ		11,000
Netherlands Antilles	ANT	.	24,400
Puerto Rico	PRI	.	10,000
Virgin Islands	VIR	.	15,000
	Average		**16,827**
	Median		**15,000**
		Recent Independents	
St. Kitt	KNA	BRITAIN	7,000
Antigua	ATG	BRITAIN	8,200
Belize	BLZ	BRITAIN	3,200
St. Lucia	LCA	BRITAIN	4,500
St. Vincent	VCT	BRITAIN	2,800
Dominica	DMA	BRITAIN	4,000
Suriname	SUR	NLD	3,400
Grenada	GRD	BRITAIN	4,400
Bahamas	BHS	BRITAIN	15,000
Barbados	BRB	BRITAIN	14,500
Guyana	GUY	BRITAIN	4,800
Jamaica	JAM	BRITAIN	3,700
Trinidad	TTO	BRITAIN	9,500
	Average		**6,538**
	Median		**4,500**
		Old independents	
Cuba	CUB	.	1,700
Dominican Rep.	DOM	.	5,700
Haiti	HTI	.	1,800
	Average		**3,067**
	Median		**1,800**

Source:

V) Variability in performance: countries versus regions

To this point the analysis has shown that sovereign countries have done no better than countries that lacked sovereignty. The gain of policy sovereignty has, at the very least, not been an unmitigated blessing. This might suggest that the lesson of disintegration is that it "does no harm"—the losses from borders and the potentially diminished market size *can* be more than compensated by setting better policies, but *on average* the combination of lost market size and policy setting capacity has been a wash. However, this ignores the very important point of the *variance* of growth rates. It may well be that the lack of full or partial policy sovereignty does not guarantee higher growth rates. Rather limited policy sovereignty sacrifices the best outcomes to eliminate the worst. Let us present two suggestive pieces of evidence: comparison of standard deviations of growth rates across regions within a country versus across countries and the performance after the break-up of the USSR.

V.A) States within countries (India, USA) versus countries

To some extent growth rates of various countries are arbitrary, in that boundaries are arbitrary. There is no deep historical necessity or compelling logic to many of the national boundaries that exist today: they were imposed by contingencies of history and were often imposed by colonial powers with no regard for on the ground realities. So, even though India contains approximately the population of Sub-Saharan Africa and Latin America and the Caribbean *combined,* India is *one* country while there are 75 countries in our sample (Below) in SSA and LAC. This is not because India is any more geographically or economically homogenous than regions of LAC or of SSA. Similarly, the United States, which began as a federation of originally independent sovereigns has

states which are larger (both in terms of population and market size) than most other countries. One could easily imagine that, had history taken a different course, various of the states of India or the United States could be independent countries. In this sense, one can compare the variability of growth performance across the states of India or the United States—which have, to a large extent, ceded sovereignty to the nation—with the variability of countries to see how much the variance of growth outcomes is reduced by a pre-commitment to deep integration.

Table 9 shows the standard deviations of the growth rates across 14 major states of India and 50 states of the USA for various periods with the standard deviations of the growth rates of countries within regions. The standard deviation of growth across states is .6 percentage points. Every region in the developing world has a standard deviation at least *three times* as high. Interestingly, countries within Western Europe—which have moved increasingly towards arrangements that limit nation-state sovereignty—have a standard deviation of growth nearly as small as India.

Table 9: Variability of growth rates across the states of India versus across countries within regions.

Country/region	N	Standard deviation of growth rates across states/countries within regions in various periods			
		1960s	1970s	1980s	1960-1992
USA (States)	50				.63%[a]
India	14	0.8%	1.2%	1.4%	0.6%
Countries within regions					
Middle East, North Africa	19	1.7%	2.5%	1.0%	4.2%
East Asia, Pacific	19	2.4%	2.5%	2.3%	2.3%
Eastern Europe	6	1.5%	1.4%	1.9%	1.9%
Sub-Saharan Africa	46	2.5%	3.4%	1.9%	1.9%
Latin America and Caribbean	29	1.6%	2.0%	1.2%	1.9%
Western Europe	17	1.2%	1.1%	0.9%	0.7%

a) 1986-2000 for USA.
Sources: US Census for population and BEA for real State GSP, Indian state data are from Datt and Ravallion, India Growth and Poverty Project, 1954-1994. Other countries are from PWT5.6.

We are aware that we are pointing out the obvious. If people, capital, and goods are allowed to move freely across regions then the scope for the very worst growth outcomes, which are often the result of predatory states, are precluded. On the other hand, it is not the case that *mean* growth in India was high so presumably some states might also have pursued *better* economic policies than chosen by the center.

V.B) Break-up of the USSR

Again, an obvious point from the economic collapse that followed the demise of the Soviet empire and the USSR in particular was not only that there was an economic catastrophe, but also that the magnitude of the fall varied widely across the newly independent countries. The peak to trough fall in income that followed the creation of the new states varied from merely that of the US Great Depression (the Baltics, Uzbekistan, Belarus) to those whose income fell roughly in half (Russia, Khazakastan, Kyrgyz

Republic) to those that did even worse. Obviously the "benefit" of being part of the USSR was that, although growth was low on average, the worst extremes had been averted and the variance of outcomes was reduced. As the post-independence period proceeds there will likely be increasing divergence amongst the areas of the FSU.

Table 10: Variability in the economic collapse of the FSU countries

Country of Former USSR	Percentage fall peak to trough	Peak	Trough In data
UZB	-26.5%	1989	1995
LTU	-35.4%	1989	1993
EST	-36.2%	1989	1994
BLR	-39.5%	1989	1995
RUS	-42.6%	1989	1996
KAZ	-48.0%	1988	1995
LVA	-49.0%	1989	1993
KGZ	-52.9%	1990	1995
TKM	-57.0%	1988	1996
UKR	-57.8%	1989	1996
MDA	-66.0%	1989	1996
ARM	-68.3%	1985	1993
TJK	-70.4%	1988	1996
AZE	-73.2%	1987	1996
GEO	-80.6%	1985	1994

The same is true, perhaps to a lesser extent in Eastern Europe. Now that they are no longer under the Soviet Union umbrella some Eastern European countries are doing reasonably well (Poland, Hungary, Slovenia) while others are doing badly (e.g. Romania)—and others formerly "within the Soviet sphere" have dis-integrated even further. The (involuntary) integration of the Eastern European countries with the USSR appears to have reduced the variability in outcomes they experienced while possibly hampering their average growth.

VI) An empirical investigation: market size and policy independence

In our theoretical section we argued that independence would likely impact growth through two factors: the change in the secure market size and the change in the economic policies that the new independence allows. In this section we explore these factors empirically. We concentrate on the first 20 years of post-independence experience and try to explain the factors that account for the different growth experience across countries. We take as our dependent variable the cumulative rate of growth expressed in annual terms of newly independent countries during the first 20 years after independence. This provides us with a sample of 51 countries.

To measure the decline in secure market size that a country underwent due to independence we calculate the percentage decline in secure market access. This is done by calculating the ratio of the distance-weighted GDP of the secured economic area lost because of independence (composed of the colonizer and the other colonies that were part of the same sovereign jurisdiction) to the total secured market before independence composed of the area lost plus the (internal) distance-weighted GDP of the newly independent country.

Secure market lost = [DWGDP(colonizer)+DWGDP(other ex-colonies)]/
[DWGDP(newly independent) + DWGDP(colonizer)+DWGDP(other ex-colonies)]

We take this as a measure of how large was the reduction in secure market access for any producer in the newly independent economy. The variable is bound between 0 and 1 and takes high values when the loss of market access is large. We used the CIA factbook. GDP figures are for 1999.

In the same spirit, we also consider whether a country became landlocked as a consequence of its independence. We therefore calculate a dummy variable which takes the value of 1 if this is the case.

As a measure of domestic policies we take the black market premium. We chose this variable as it indicates a failure to achieve macro balance in a way that complicates international economic integration[9]. This variable is available for 44 out of the 51 countries in our sample. We also consider the number of revolutions during the first 20 years of independence as a measure of problems in setting domestic policies.

In addition, we control for the initial level of GDP and for the rate of growth of the trade-weighted countries during the first 20 years of independence of each of our observations. The results are presented in the Table 11 below.

The results broadly show the importance of the reduction in market size as an explanatory variable for growth in the post-independence period. The typical country in the sample lost 78 percent of the secured market. The estimated coefficient, which varies between 0.25 and 0.43 implies that for the average newly independent country the impact of a smaller market size implied a growth rate about 2 to 3 percent slower. A one standard deviation change in market size would explain about a 0.6 percent growth difference over 20 years.

Revolutions and black market premia also have significant effects on the growth experience of the newly independent countries. Each additional revolution would lover growth by about 0.2 percent over the 20 year period. Notice that the mean number of

[9] This variable is readily available and according to Rodriguez and Rodrik (2001) it captures the bulk of the explanatory power of the Sachs and Warner openness variable.

revolutions is 3.1 with a standard deviation of 3.9. Hence, a one standard deviation difference would account for growth differences of about 0.8 percent.

We estimated the effect of the black market premium in tow ways. First, we calculated the average black market premium over the 20 year period. We also created a dummy variable that is equal to 1 for countries with above average black market premia. Both measures are significant in most specifications. The estimated effect implies that countries with black market premia above the median grew on average 1 percent less than those with smaller premia.

Interestingly, in this sample we observe no convergence nor is the growth of the trading partners a significant determinant of the growth experience. Interestingly, once account is made of the decline in the secured market, the newly landlocked countries do not significantly underperform, even though the estimated coefficient is insignificant but consistently negative and equal to about -0.5.

In sum, the data seems to suggest that the reduction in secured market size is an important determinant of the growth experience after independence as is the potentialities for new forms of economic and policy problems associated with the formation of the new state.

It could be argued that these two effects are not independent. Countries that would suffer a greater collapse in their secured market size may face greater difficulties in stabilizing their economies post-independence. If this were the case, the estimated coefficients would be biased towards zero. One way to take care of this possibility is to use a two-stage process. In the first stage we estimate equations for the black market premium and for the number of revolutions and in the second stage we use the estimated

values in the regression for growth. As Table 12 shows, the estimated effects remain significant, and the estimated coefficient almost doubles in size.

Table 11: Determinants of New Independents' Growth
(t statistics below coefficient)

OLS Regressions

Dependent Variable:	Average GDP pc growth rate (Indep to Indep+20)									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
log(GDP pc at independence)	0.005746	0.004014	0.005328	0.005809	0.000858	0.002089	0.00276	0.000618	-0.000614	0.000788
	1.26	0.93	1.16	1.24	0.21	0.44	0.56	0.13	-0.13	0.17
Trading Partners GDP pc growth (%)	0.008866	0.004741	0.002886	0.004159	0.005812	0.003585	0.004742	0.005253	0.004353	0.00751
	2.02	1.1	0.56	0.79	1.51	0.72	0.9	1.05	0.9	1.64
New Landlock	-0.004593				-0.004347	-0.005878	-0.008292	-0.00473	-0.006183	-0.004259
	-0.5				-0.55	-0.67	-0.9	-0.55	-0.73	-0.5
Share of Market Lost (colonizer + other colonies / own + colonizer + other colonies)	-0.034425				-0.043255	-0.035427	-0.025011	-0.039167	-0.039001	-0.036471
	-2.36				-3.39	-2.03	-1.43	-2.28	-2.33	-2.14
Revolutions (Total)		-0.002421			-0.002878			-0.001729	-0.002284	-0.002503
		-3.11			-4.09			-1.62	-2.89	-3.14
Black Market Premium (Average)			-3.83E-05			-5.35E-05		-2.69E-05		
			-2.06			-2.85		-1.1		
Black Market Premium (Higher than median 14.87)				-0.010645			-0.013976		-0.010927	
				-1.54			-2.02		-1.7	
Constant	-0.020907	-0.017477	-0.02756	-0.032045	0.037256	0.022722	0.010088	0.034313	0.050689	0.024968
	-0.54	-0.48	-0.69	-0.78	1.03	0.53	0.22	0.81	1.16	0.6
R2	0.2101	0.2423	0.17	0.1334	0.4242	0.2892	0.2229	0.3365	0.3645	0.315
Adj R2	0.1414	0.1939	0.1077	0.0684	0.3602	0.1956	0.1184	0.2289	0.2615	0.2248
# Obs	51	51	44	44	51	44	44	44	44	44

Summary Statistics

	Mean	Std. Dev.	Min	Max
Average GDP pc growth rate (Indep to Indep+20)	0.014556	0.021525	-0.022082	0.064987
log(GDP pc at independence)	6.913391	0.716866	5.713733	9.243665
Trading Partners GDP pc growth (%)	2.828322	0.695913	1.213541	4.60124
New Landlock	0.181818	0.390154	0	1
Share of Market Lost (colonizer + other colonies / own + colonizer + other colonies)	0.780751	0.203284	0.086738	0.981905
Revolutions (Total)	3.136364	3.991799	0	16
Black Market Premium (Average)	0.5	0.505781	0	1

Correlation Matrix

		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Average GDP pc growth rate (Indep to Indep+20)	(1)	1						
log(GDP pc at independence)	(2)	0.1639	1					
Trading Partners GDP pc growth (%)	(3)	0.1786	-0.2865	1				
New Landlock	(4)	-0.2295	-0.3608	0.0461	1			
Share of Market Lost (colonizer + other colonies / own + colonizer + other colonies)	(5)	-0.1777	-0.2113	0.3055	0.3887	1		
Revolutions (Total)	(6)	-0.4058	-0.2295	-0.1121	0.0434	-0.276	1	
Black Market Premium (Average)	(7)	-0.3106	-0.0357	-0.3979	-0.1179	-0.2727	0.2649	1

Table 12: Determinants of New Independents' Growth, Total Effect of Market Size
(t statistics below coefficient)
Equations (3) and (4): Instruments for Revolutions and BMP: New Landlock, Share of Market Lost and Island.

	OLS Regressions (First Stage)		IV Regressions	
Dependent Variable:	Black Market Premium (Average)	Revolutions (Total)	Average GDP pc growth rate (Indep to Indep+	
	(1)	(2)	(3)	(4)
log(GDP pc at independence)	20.45405	-0.483553	-0.009246	-0.002407
	0.42	-0.41	-0.83	-0.36
Trading Partners GDP pc growth (%)	-115.2695	-0.813258	0.004125	-0.004605
	-3.03	-0.89	0.54	-0.53
New Landlock	6.424908	0.764755	-6.95E-05	-0.005645
	0.09	0.45	-0.01	-0.53
Share of Market Lost (colonizer + other colonies / own + colonizer + other colonies)	-297.3103	-6.727303	-0.075638	-0.059146
	-2.22	-2.1	-1.8	-2.14
Revolutions (Total)			-0.008426	
			-1.66	
Black Market Premium (Average)				-0.000135
				-2.08
Island	-196.5339	-3.153242		
	-2.33	-1.56		
Constant	530.9817	14.53779	0.152306	0.101594
	1.45	1.66	1.22	1.29
R2	0.375	0.2267		
Adj R2	0.2929	0.125		
# Obs	44	44	44	44

Conclusion and future extensions

The literature on border effects suggests that these are large. The last 60 years have seen a tripling of the number of sovereign states with their associated borders. Sovereignty implies the right to restrict trade and migration, the power to issue money, the discretion to regulate and set macro policies and the discretion to enforce contracts. Integration agreements can be interpreted as attempts between sovereign states to reciprocally renounce some of these rights in order to facilitate economic activity.

This paper has tried to use the historical record of disintegration in order to derive some lessons for the integration process. We find that countries that became independent in general saw their growth rates decline relative to those of OECD countries, meaning that independence did not facilitate convergence. Also, the comparison to still dependent entities suggests that the costs of sovereignty may not be trivial. The evidence from the Caribbean islands suggests that the old independents are poorest while the still dependent are richest. However, when comparing to developing countries that were already independent the results are less clear. There is a big increase in variance in the performance of newly independent countries: some doing very well while others deteriorated very significantly.

The econometric evidence suggests that the impact of sovereignty on growth depends on the balance between two forces: on the one hand, the reduction in secure market access, which includes, the possibility of migrating to other regions of the sovereign jurisdiction; on the other, the change in the quality of policies. These may move the economy to a more open economic stance in order to compensate for the reduction in the

size of the secure market. Singapore, Slovenia and the Baltic states may be examples of this. On the other hand, political economy problems may translate into internal difficulties that close off the economy. We find that the black market premium helps explain the relative performance of newly independent states.

Our tentative conclusion is that integration agreements have the potential of increasing the size of the secured market and thus increase incomes. However, it is critical these agreements to improve the quality of domestic policies. Arrangements that deteriorate the overall policy framework may in fact limit the effective market size by reducing the space of contractible arrangements within the country, the union or in the economic links to the rest of the world. Earlier attempts at integration in the Americas may have had some of these effects.

It would be interesting to shed some further light on the aspects of integration that are important for income by analyzing the relative growth performance of newly independent states that maintained certain features of integration. For example, some countries such as the Caribbean and the CFA zone in Africa established currency unions after independence. Others kept free trade areas with their former colonizers and neighbors. How does their performance compare to that of countries that adopted a more unilateral approach to integration? Did these arrangements facilitate effective integration or did they limit it? What is the relative importance of trade arrangements vis a vis currency unions? How significant are migratory flows in facilitating income convergence? Is this the mechanism that makes some of the still dependent entities so rich? Is it fiscal transfers?

The experiment with political disintegration is perhaps the most significant policy event of the last 50 years. It is an experience that should shed light on many current debates. Yet the impacts seem remarkably under investigated and the returns to further exploration seem high.

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Table 4: Differences in growth rates between newly independent and other countries

Gained Independence from:			10 year			20 year			Maximum available years		
			Growth of newly independent countries	Difference:		Growth of newly independent countries	Difference		Growth of newly independent countries	Difference	
		N		OECD (tw)	Indep-endent		OECD (tw)	Indep-endent		OECD (tw)	Indep-endent
France/Belgium	average	18	1.2%	-2.9%	-1.0%	0.9%	-2.3%	-0.8%	-0.1%	-2.4%	-0.9%
France/Belgium	median	18	0.8%	-3.2%	-1.5%	1.0%	-2.3%	-0.9%	0.1%	-2.3%	-0.8%
UK	average	27	3.1%	0.4%	1.7%	2.2%	0.1%	1.4%	1.8%	-0.2%	1.2%
UK	median	27	2.7%	0.2%	0.6%	2.0%	-0.2%	1.3%	1.6%	-0.3%	1.0%
Other	average	7	1.0%	-1.0%	-0.2%	1.2%	-0.9%	0.6%	1.2%	-0.9%	0.6%
Other	median	7	-0.6%	-2.0%	-1.3%	0.8%	-1.6%	0.1%	0.8%	-1.6%	0.2%
All	average	52	**2.1%**	**-0.9%**	**0.5%**	**1.6%**	**-0.9%**	**0.5%**	**1.1%**	**-1.1%**	**0.4%**
All	median	52	**1.8%**	**-0.9%**	**-0.1%**	**1.7%**	**-1.1%**	**0.3%**	**0.7%**	**-1.6%**	**-0.2%**
Using different sample of countries and data											
All	Average	61	**2.2**		**-.6**						
All	Median	61	**2.8**		**-.7**						

Source: Appendix 1.