

# **A Novel Perspective on Cuba's 'Reforms'**

**Roger R. Betancourt\***

**Professor of Economics**

**College Park, MD 20742**

**Version 2.0**

**September 2014**

\* The main ideas in this paper were initially presented at the XXIV Meetings of ASCE and I benefitted from observations by R. Castañeda and J. Sanguinety on the presentation. Subsequently, Jorge Pérez-López made extensive editorial comments on the first written version. J.L. Betancourt, R. Morán, and C. Quijano also provided very useful comments on the first written version. This second one incorporates those comments as well as additional modifications of my own. Remaining errors and omissions are my responsibility.

## **A Novel Perspective on Cuba's 'Reforms'**

### **Abstract:**

In this paper we provide a perspective for evaluating the changes taking place in Cuba associated with reforms under Raul Castro's regime. This perspective is provided by drawing from basic concepts in the literature on political economy, the New Institutional Economics (NIE) and complexity theory. From the first strand of literature we take the concept that those who control the state have interests of their own; From the second strand of literature we take the concept of relational contracts and adapt it to a broader area of applications, and from the last strand we take the concept of relational constraints and use it to suggest consequences of market liberalizing reforms for economic growth. These ideas are used together with standard economic concepts in Cuba's specific context. We make extensive use of Mesa-Lago and Pérez-López description of Cuba's reforms while highlighting in our evaluation the ones they label structural reforms. Our perspective allows us to evaluate macro reforms, reforms associated with updating of the socialist economic model as well as those associated directly with market liberalizations. This perspective can be extended to evaluate any type of transition, not just those from socialism to a market economy. In general, it can be applied to any set of extensive changes in relations within an economic system accompanied by similar changes, or lack of, in governance arrangements.

**Key Words:** political economy, reforms, relational contracts, updating the model, socialist transitions, relational constraints, market liberalizations.

**JEL CODE:** L2; P1; P2; P26; P3; N16

## Introduction

One encompassing early characterization of the NIE approach is as analyses relying on the literature on transaction costs, property rights and collective choice, e.g., Nabli and Nugent (1989). Our perspective adds insights from what one may label a micro based political economy approach to encompass macro issues and a concept from complexity theory to include hard to capture microeconomic general equilibrium effects associated with government's role in the economy. Our aim is to consider relevant aspects of all types of reforms that are usually ignored in the traditional economics literature. These aspects need to be considered in conjunction with the more traditional ones for a thorough evaluation and interpretation of a reform process. Cuba's case provides a convenient experiment to explore these issues as a result of its being an outlier in many dimensions before and after their reforms, including those labelled 'structural'.

For expository purposes, it is convenient to group the nine reforms labelled as 'structural' by Mesa-Lago and Pérez-López (2013, Table 6.1) into three types. In addition, a few changes that can be viewed as reforms, not explicitly listed by them as structural, are assigned to their type. In the first group are macro reforms, i.e., exchange rate unification and tax reform. A second group includes reforms associated with updating of the economic 'model'. This type includes the end of rationing system, dismissal of state workers and creation of private jobs through self-employment and cooperatives, to which I add foreign direct investment, *perfeccionamiento empresarial* (enterprise optimization program) and participation in Mariel's free economic zone (ZDEM). The last group are reforms associated with market liberalizations. For instance, the ability to buy, sell and own assets e.g., autos and houses, to migrate (internationally and domestically), and to have land in usufruct. Moreover, I also include among this type less visible reforms, e.g., allowing agricultural producers to sell to foreign hotels and restaurants.

The next section discusses elementary political economy aspects that provide insight into the interpretation and evaluation of the two structural macro reforms. Subsequently, an interpretation of the updating of the economic 'model' and associated reforms is provided by viewing them as a realignment of what the industrial organization and law and economics literature would call relational contracts. Finally an interpretation and evaluation of structural reforms associated with market liberalizations is put forth. It includes applying a concept derived from information theory, relational constraints, to interpret and evaluate the improvement in aspects of civil liberties associated with these market liberalizations. This interpretation also differentiates Cuba's reforms from China's.

### **I. Macro Structural Reforms: A Political Economy View of Exchange Rate Unification & Tax Reform.**

Exchange rate unification is one of the most talked about reforms in Cuba by the regime, its critics and what might be called 'neutral' observers. It has been under discussion for many years. Indeed, José Luis Rodríguez (2013), evaluating 50 years of revolution at the end of his term as Minister of Planning and Economy in 2009, identified this reform as a critical challenge. For a detailed account of the unification process up to August 2014 from a perspective also friendly to the Cuban government see Amuchástegui (2014). What is missing from both accounts as well as from other less friendly ones are important fundamental reasons for the delays in implementation.

There is a consensus that it is the convertible peso (CUC) and not the Cuban peso (CUP) widely used by the population that needs to be eliminated. For instance, V. Echevarría indicates that Day Zero (eliminating the CUC) for business institutions can happen as early as January (2015) and cites Pavel Vidal as a source. Echevarría also notes that when this elimination of the CUC will happen for other agents is left very much up in the air by the Cuban government. The economic logic for eliminating the CUC rather than the CUP is simple. Cuba's economic activities fail to generate enough dollars for a

unified currency at the CUC's rate of about 1:1 but might be able to do so at much lower rates such as the CUP's rate of 1:25.

Such a wide differential raises a basic political economy question suggesting reasons for the delays. Who benefitted from introduction of the CUC and who loses from its elimination? When dollarization took place in 1993 there was a redistribution of wealth in Cuba towards people who had direct access to dollars for a variety of reasons, including friends and relatives abroad or strategic placements in the Cuban government hierarchy that generated this direct access. This redistribution process eliminated many loyal supporters of the regime from being economic elites even though they remained politically elite. The CUC was a mechanism under the sole control of the Cuban government. It initially provided access to dollars on a 1 to 1 basis for these suddenly marginalized political elites.<sup>1</sup>

Elimination of the CUC has two negative effects on its holders as currency or demand deposits: an immediate or short-term negative wealth effect (the size of which would depend on the rate of conversion from the CUC to CUP's at the time of elimination); and a long-term effect, requiring this newly marginalized elites to find new sources of dollars or more generally foreign currencies. The delays dampen both effects on current economic and political elite members of society. Delays allow those affected to soften the blow, for example by exchanging CUC's for CUP's at the current rate. Furthermore, they also provide time for CUC holders to find alternative sources of foreign currencies and for the state to acquire foreign currencies to be exchanged at a more favorable rate for CUC holders upon unification. Of course, others who are not members of the original elites and have acquired CUC's would also benefit from the delays.

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<sup>1</sup> A brief account of the evolution of the CUC in the context of a history of recent monetary policy in Cuba is provided by Hernández-Catá (2014).

Political economy considerations are also insightful on tax reform issues. More precisely on why certain aspects of tax reform will not happen. Namely, the Cuban state is desperate for foreign currencies and, thus, is unlikely to relinquish voluntarily basic distortionary and inequitable taxing mechanisms by which it has been acquiring them. One specific valuable source to them is the current system for taxing earnings of Cuban workers' in foreign companies investing in Cuba or working abroad. The lack of plans to change this system as part of the tax reform provides a compelling illustration. The system is well known. For instance, papers presented at the 2014 ASCE meetings by participants from Cuba provide details on this system and its variations, e.g., Aquique (2014).

In essence the system can be described as a mechanism to collect income taxes from workers' foreign earnings at confiscatory rates. One anchor of the system for foreign enterprises investing in Cuba is requiring them to hire Cuban workers through the *Empleadora Nacional*. The latter is paid by the investor in foreign currency and the Cuban worker is paid in CUP's at, for example, 1\$:1CUP rate rather than at the \$1:25 CUP rate enjoyed by the government company. This amounts to a tax rate of over 95%. There are many variations that can improve on this rate for the Cuban worker and still keep it at a confiscatory level. Ironically, even at these confiscatory rates workers in this system are part of an economic elite as a result of their potential access to dollars or CUC's formally or informally. Indeed, their selection by the *Empleadora Nacional* to hold jobs with access to foreign exchange is usually conditioned on indicators that suggest their being part of the regime's loyal elites, e.g., membership in the Communist party.

This confiscatory income tax system is also applied to the dozens of thousands of Cuban government workers sent abroad under government to government agreements, including those serving in Venezuela for example. The latter have been subjected to income tax rates as confiscatory as the one above. Ironically, at the insistence of the Brazilian government a new agreement with Brazil lowers the rate the Cuban government receives in dollars directly for its doctors to 70%, while leaving

30% to be paid in dollars directly to the Cuban doctors in Brazil. While this is an improvement over the Venezuelan arrangement, especially since the wages for the doctors in absolute terms are fixed by the Brazilian government for all foreign doctors not just for Cubans, it is still a confiscatory rate. Indeed, an opposition candidate in Brazil challenged this aspect of the agreement while supporting the program of bringing foreign doctors to the country.

Werlau (2014) argues that Cuba is repaying Brazil's most recent investments in Mariel's ZDE by supplying Cuban doctors. She estimates that the supply of doctors to Brazil through the *Maís Medicos* program will generate \$400 million to the Cuban government on an annual basis. This amounts to 20% of the estimated \$2 billion value of remittances by ECLAC in 2010 (Mesa-Lago and Pérez López, 2013: p.80). For current purposes it also provides an illustration of what I call in the next section a broad relational contract. Finally, the 240% mark-up in the dollar stores operated by the government acts as an indirect tax or sales tax that captures foreign earnings. While normally sales taxes are viewed as regressive, it is not clear that this would be the case in Cuba since it is the economic elites that have access to foreign currencies.

## **II. Updating of the Economic 'Model': A Re-Alignment of Relational Contracts**

It is difficult to describe the current economic 'model' in coherent terms from either a socialist or a capitalist perspective. This is partly the case because there are variants of both systems that would not fit any given characterization or model. For instance, Castañeda (2014) relies on Kornai's views (2000) of both systems (socialist and capitalist) to characterize transitions and finds Cuba's reform attempts with respect to updating the model (*actualización*) lacking. Mesa-Lago and Pérez-López (2013, p.196) cite more sympathetic writers such as Chaguaceda and Centeno (2011) as noting that the agreements from the Sixth Party Congress are silent with respect to the relative shares of the economy subject to plan and market.

Rather than attempting to define an old model and a new one based on the reforms, which seems a futile task due to the ambiguity in the use of the term model, I propose to characterize the old system as a set of relational contracts and the proposed new system through reforms as entailing a new set of relational contracts, which can include, exclude or modify previous ones. Armed with these ideas I will then try to explore the usefulness of this view in understanding the reforms we have identified as attempts to update the model. My main argument is that these reforms are far less perplexing from this perspective than from the alternative perspectives mentioned above. Before addressing the practical issues, however, it is useful to be precise about the conceptual ones.

What are relational contracts? These contracts can be viewed for our purpose as falling into two categories: narrow and broad. Narrow relational contracts are a concept that stems from the industrial organization literature. A seminal paper by Baker Gibbons and Murphy (2002) describes them as informal agreements and unwritten codes of conduct that powerfully affect behavior both within and between firms. The authors rely on game theory to differentiate the ones that underlie vertical integration (within firms) from the ones that underlie horizontal relations or connections between firms in terms of supply chains, alliances or networks.

Narrow relational contracts help circumvent difficulties in formal contracting when enforcement through an impartial third party is not feasible or is too costly. This can happen for a broad variety of reasons, ranging from absence of the rule of law to high costs of enforcement and other forms of transaction costs. For instance, verifiability may be impossible due the existence of large amounts of private information or unforeseeable contingencies in determining responsibility for contract outcomes. These contracts have become a standard concept in the modern literature on the theory of the firm. They even have an own chapter, “Relational Incentive Contracts”, in Gibbons and Roberts (2013) *The Handbook of Organizational Economics*.



Broad relational contracts are harder to describe in neat and tidy terms but they apply similar considerations to interactions between institutions, other organizations and economic agents. Indeed, the last two chapters of the mentioned *Handbook* are included in a part titled “Beyond Firms.” One of the chapters is on corruption and the other on “Delegation, Control and the Study of Public Bureaucracy.” More generally the Wikipedia definition of relational contracts, which stresses a legal perspective, views contracts as relations rather than discrete transactions. It argues “Thus, even a simple transaction can properly be understood as involving a wider social and economic context.” We will take this broad view to describe the relations between a government and its citizens, among governments and between governments and other organizations, e.g., firms, state-owned enterprises (SOE) either domestic or foreign. It also includes relations between combinations of these agents.

Our wide extension of the concept is somewhat novel but it makes sense when there are many unstated expectations about the behavior of the parties, a presumption of a continuing relationship between the parties involved, and no formal enforcement mechanism that can be reasonably provided by an impartial third party. These are the same conditions that underlie the rationale for narrow relational contracts. The weakness in this broad definition relative to the narrow one is that the logic of a self-enforcement mechanism consistent with the equilibrium of a game defined in terms of pay-offs to the agents subject to constraints of various types is much more difficult to apply in a broad setting. Notwithstanding, a similar objection can be made to recent applications of relational contracting in a different setting. For instance, Barron’s (2014) analysis of the impact of labor market institutions on unemployment insurance and trade.

Attractive features of both narrow and broad relational contracts are: they can improve or lower welfare of the participating parties; and their self-enforcement feature suggests that breakdowns in the conditions for their sustainability over time are not only possible but probable. With this perspective in mind we can now begin to consider some of the relational contracts between the state and its citizens

associated with updating of the Cuban model. Two obvious ones that have been unilaterally renegotiated by the Cuban state are: the rationing system and the dismissal of state workers.

Over at least the last twenty years Mesa-Lago has often described how much of the monthly ration promised to Cuban citizens has not been actually delivered to these citizens. Most recently Rios (2014) looked at this issue and concluded that the ration provides only one to two weeks of the allotted monthly amount. This is part of a relational contract between Cuban citizens and the Cuban state that has survived since 1962. It is now in the process of being unilaterally renegotiated or realigned by the Cuban state. In simple terms the Cuban state can't meet this obligation and is, therefore, publicly renouncing the obligation to its citizens in this relational contract through the reform process.

Similarly, the Cuban state can't afford for fiscal reasons to employ everyone regardless of their lack of productivity. Hence, the dismissal of state workers is a unilateral renegotiation of a relational contract between the Cuban state and its citizens, publicly announced as a reform, which renounces a standard obligation to its citizens – full employment-- embedded in any typical communist state. The obligation is so standard in communist systems that it has become part of folklore on how communist and capitalist systems deal with uncertainty. That is, it has been argued, somewhat in jest, that the main difference between capitalism and communism is where you stand in line: at the unemployment office or at the store, respectively. The Cuban government's justification for this reform in terms of productivity can also be characterized in jocular terms as an indictment of their incentive system summarized by the following saying "They pretend to pay me and I pretend to work."

Since citizens are supposed to have access to means for attaining a minimum standard of living, these two reforms require new or modifications of existing relational contracts to fulfill needs previously provided by adequate rations and assured state employment. Part of the updating of the model is through changes in other relational contracts that make jobs, which satisfy these needs, more available

to the population. For instance, self-employment occupations are expanded from the 150+ specified in the last decade of the 20<sup>th</sup> century to the 200+ specified during the current decade. Similarly, limits on numbers of customers and on hiring in a self-employment activity such as restaurants have been relaxed although not eliminated.

Of course, since the state wants to preserve the benefits of other relational contracts, new limits on some self-employment occupations are imposed as the need arises due to conflicting objectives. For instance, seamstresses were forbidden to resell clothing items as part of their activities in October of 2013. Their ability to do that on a substantial scale was made feasible by the new immigration law, which allows them or others to visit the US frequently since January 2013. By taking advantage of these arbitrage opportunities, they significantly lowered the profits of the 240% mark-ups of the government-operated dollar stores. Thus, this aspect of the broad relational contract between the state and this segment of its self-employed citizens was modified, ex-post, to maintain or restore the ex-ante benefits of those setting the contract terms through the government-operated dollar stores.

Other broad relational contracts have been modified to increase employment through the reforms. For instance, foreign direct investment contracts, discussed earlier, are expected to increase in numbers as a result of approval of a new foreign investment law announced in March 2014, see Luis (2014) for an evaluation. Since this new law also has limitations, additional jobs are expected to be provided through Mariel's special economic development zone (ZEDM). The conditions associated with Brazilian investments in Mariel's ZED, as described by Werlau, illustrate a broad relational contract involving a variety of economic agents, ranging from Cuban citizens to the Cuban and Brazilian governments and a well-connected Brazilian conglomerate, Odebrecht. Allowing cooperatives outside agriculture is a reform that provides a new broad relational contract between Cuban citizens that can create jobs.

One irony of cooperatives outside agriculture in Cuba is that one of its ardent proponents and supporters, Camila Piñeiro Harneker (2011, Prólogo, pp. 8-9), stresses in her arguments their democratic features to promote solidarity and defend socialism. Another view is that the interactions among cooperative members, including the democratizing features, is a mechanism leading to the development of social capital among cooperative members.<sup>2</sup> From either perspective, however, this feature could provide a basis for political democratization along western lines. Interestingly, the implementation of these cooperatives by the Cuban government has limited some of the democratizing aspects and Piñeiro Harneker is now a critic of the implementation, Bye (2014). From our point of view, cooperatives provide a new broad relational contract that will increase the number of jobs to meet the needs created by the renegotiated relational contracts leading to dismissal of workers and non-performance in meeting the monthly ration needs of citizens.

More generally, the reforms discussed in this section, and others not classified as structural such as those associated with *perfeccionamiento empresarial (enterprise optimization program)*, can be viewed as updating the model through changes in the nexus of both narrow and broad relational contracts underlying the old system. This re-alignment is consistent with the survival needs of the regime under new circumstances, including a substantial lowering of subsidies from foreign sources created by the possibility of a Venezuelan collapse. At the same time this re-alignment of relational contracts maintains support from the population and acceptance of the regime and of the socialist system given that the old nexus of relational contracts can no longer do so. From this point of view these reforms are far from perplexing and instead represent a sensible accommodation to the logic of survival under a new set of circumstances.

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<sup>2</sup> I owe this point to a comment by J. Sanguinety.

Last but not least, it is worth noting that relational contracts of either the narrow or the broad type are not unique to Cuba but exist everywhere. Indeed one could argue that these contracts are increasing in importance as a result of globalization, since the latter reduces the effectiveness of impartial third party enforcement mechanisms in any one country. Meanwhile supranational bodies have not become equally effective as the best within country impartial third party enforcers among developed countries. One interesting source of differences between countries is in the effectiveness of impartial third party enforcement mechanisms associated with the rule of law.

Where the rule of law is less effective more relational contracts are necessary to fill the gap. In this setting the set of corruption opportunities expand since there are more opportunities and incentives to break formal rules without consequences. One definition of corruption in the organizational setting suggests a positive association between the extent of relational contracts and corruption. Namely, corruption can be viewed as “... the breaking of a rule by a bureaucrat (**agent in an organization**) for private (**personal**) gain.” The bold face indicates our adaptation or simple generalization of the definition adopted by Banerjee, Hanna and Mullainathan (2013) in their essay for the *Handbook of Organizational Economics*. Under this definition the extent of the need for relational contracts provides a guide to the extent of incentives and opportunities for corruption in a society. Whether or not these opportunities and incentives are taken advantage of by economic agents in a society depends on a variety of other factors, including culture, that are beyond the scope of this essay.

### **III. Market Liberalizations: Growth Implications & Relational Constraints**

The reforms under the rubric of market liberalizations could also be viewed as an updating of the model. Nevertheless, they involve property rights and civil liberties in a fundamental way and, thus, they can also be viewed as a break from the model as typically conceived. Many observers would view the typical Marxist- Leninist conception of socialism to exclude any significant role for private property

rights. This was especially true for Cuba, except for brief interruptions (e.g., 1980-85), during the almost 50 years Fidel was in command. I adopt the second perspective to differentiate these structural reforms from the ones in the previous section which involve transaction costs in a fundamental way that is similar to the fundamental way market liberalizations involve civil liberties in general and property rights in particular. In addition, in principle, this perspective provides a clearer logical connection to potential outcomes for economic growth.

Let's begin by identifying in more detail the structural reforms associated with market liberalizations. First, they include the ability to sell, purchase and own assets such as houses and cars. While the housing market has thrived as a result of the reform, the automobile one has floundered since the initial purchase prices on newly available cars were set at very high levels. The ability to purchase and own durables such as air conditioners, computers and cell phones has been liberalized to some extent, but the right to sell or even alienate these items remains somewhat circumscribed. The right to migrate internationally has been substantially extended in meaningful ways even though some restrictions remain. Similarly, the usufruct of land has also been liberalized together with the ability to sell items to non-governmental entities.

In sum, it is fair to say that there have been substantial market liberalizations and that the welfare of Cuba's population has improved as a result. While the distribution of these improvements has been uneven, it is hard to believe that the market liberalizations, **by themselves**, would have decreased anyone's welfare in absolute terms. Perhaps devout believers on the moral superiority of a command economy or equally devout haters of all things associated with the regime would be willing to make that argument, but it makes little economic sense in the absence of envy or fairness considerations.

Interestingly enough, these liberalizations have taken place in the subcategory of civil liberties that Freedom House, e.g., Piano and Puddington (2006), labels Personal Autonomy and Individual Rights

(G), which includes all decisions most directly related to economic activity (and has a maximum score of 16). There has been no liberalization to speak of in the other three subcategories of civil liberties which are only indirectly associated with economic activity. The latter correspond to Freedom of Expression (D), Freedom of Assembly (E) and the Rule of Law (F), which have maximum scores of 16, 12 and 16, respectively. Indeed, there are reports of increased repression against dissidents during Raul's era which are consistent with Cuba's performance in the Freedom House scores. For instance, in terms of Freedom of Assembly (E) Cuba's already very low score of 2 in 2006 decreased to a score of 1 in 2012. By contrast, it increased its very low 2006 score of 2 to a 2012 score of 4 in the category of Personal Autonomy and Individual Rights (G), e.g., <http://devresearchcenter.org/2013/11/25/evolution-of-democracy-in-selected-developing-countries-by-roger-r-betancourt/>

Political rights have not been addressed by the reforms. Cuba's scores in the three political rights subcategories (A-C) measured by Freedom House did not change between 2006 and 2012, remaining at 0, 0 and 1, respectively. The maximum scores in these subcategories were 12, 16 and 12, respectively. There are similarities in this process with China where political rights have barely changed in a much longer time frame. Meanwhile civil liberties, especially those directly associated with economic activities, have changed quite a bit. For instance, in China the same source reports that political rights in subcategories A and B (Fairness of Electoral Process and Pluralism & Political Participation) have not changed between 2006 and 2012, remaining at the low scores of 0 and 1, respectively. By contrast, civil liberties such as Freedom of Assembly (E) were at 2 in 2006 and at 3 in 2012 while Personal Autonomy and Individual Rights (G) were at 7 in 2006 and at 6 in 2012. Thus, the similarities between Cuba and China lie in the strong limits on political rights with weaker limits on the civil liberties most directly associated with economic activities, subcategory G. The differences lie in that the process of weakening limits on civil liberties associated with economic activities has gone far more deeply in China according to the above evidence. Similar arguments can be made about Vietnam.

Even if one were to agree that the reform process associated with market liberalizations had been as profound in Cuba as it has been in China or Vietnam, it is very unlikely, if not impossible, that as a result Cuba could experience double digit or even high single-digit growth rates during an extended period of time similar to what these two economies have experienced. There are two basic factual differences between China and Vietnam, on one hand, and Cuba, on the other, that mattered for their high growth rates. It is impossible for Cuba to replicate them. The first fundamental difference is potential size of the market-- China's population is 100 times Cuba's; Vietnam's population is between 6 and 7 times as large as Cuba's.

Size matters for economic growth at the micro level in two different ways that are often overlooked in the process of abstraction when thinking about growth phenomena in a macro context. Size matters in an elementary accounting way that implies multiplicative effects which are best illustrated with an example. Consider the profits associated with a consumer product such as a very fancy bar of soap that sells for \$5 and generates, let us say for simplicity of arithmetic, \$1 of profits per bar. The actual amount of money an entrepreneur or a company makes depends on the number of customers served. Cuba's market of about 10 million persons would generate 10 million dollars of profits per year if everyone bought one bar per year; China's market of about one billion persons would generate \$1 billion dollars of profits per year in the same situation. If customers were to buy 10 bars per year, however, Cuba's \$10 million of profits would become \$100 million whereas China's \$1 billion would become \$10 billion. For simplicity of exposition, the above example ignores the possibility of competition in serving the countries' markets.

Note that this example, assumes there are no economies of scale anywhere in the process of producing and distributing the item. Moreover, it also does not take into account that any locally provided inputs which made profits would be subject to the same multiplicative mechanism. If capitalists' enterprises maximize profits, as they are presumed to, any economic production activity



investing in China is annually 100 times more attractive than one investing in Cuba. Furthermore, if there are 1000 of those products, the Chinese economy generates 100,000 times the profits from investing opportunities than what can be generated by investing in Cuba!

In addition size also matters in determining the impact of uncertainty on economic investments decisions. The latter was ignored when considering the multiplicative mechanism above. In the face of uncertainty, however, elementary analysis requires that investors consider not only the expected gains from an investment, but also the level of risk associated with any particular investment. Indeed, there is a trade-off between both dimensions in evaluating any individual investment. Investors will consider, for any given level of risk, the expected gains from the project, i.e., for any given amount of money put in what do they expect to get out in profits. Elementary decision making theory yields the result that investors are more likely to invest the higher are the expected gains for any given level of risk.

One can also use the prior example to illustrate why size matters as a result of uncertainty. The number of investments in fancy soap factories that will be attractive to risk-averse investors in China, for any given level of risk, will be far greater than in Cuba because the expected gains from the investment will be larger. Many projects that will not be worthwhile to undertake in Cuba due to the existence of expropriation risk, for example, would be attractive to undertake in China despite the existence of the same level of expropriation risk. In sum China's investment rate should be a lot higher than Cuba's due to its size generating larger multiplicative effects and more investments for a given level of risk and, consequently, its growth rate should be substantially higher.

A second factual difference between China or Vietnam and Cuba arises because of the size of their agricultural sector in the economy at the beginning of the market liberalizations process. In 1980 China's agricultural share of GDP was greater than 30%; in 1990 Vietnam's was greater than 40%. By 2012 China's share had fallen to 10% and Vietnam's to 19.3%. By contrast, Cuba's agricultural share of

GDP in 2012 was 3.8%.<sup>3</sup> Since W. A. Lewis (1954) famous essay economists have known that an essential characteristic of the development process is the transfer of labor from low productivity activities in rural areas to higher productivity activities in urban areas.

More recently growth accounting exercises a lá Denison (1967) have tried to estimate what percentage of the growth attributed to the Solow residual called technical change is accounted for by shifts from low productivity activities to higher productivity ones. Whatever percentage of the Chinese or Vietnamese growth rate may be due to this shift toward more productive non-agricultural activities, it will be close to non-existent in Cuba. It is impossible to shift many productive resources from agriculture to other sectors when agriculture's share of GDP is as low as it is in Cuba!<sup>4</sup>

Finally, there is a third factor related to the nature of markets, that is far more subtle than the previous two since it depends on the role of government in different types of markets, which affects potential growth rates. This factor is likely to limit Cuba's ability to grow very rapidly based on the current market liberalizations, barring other changes. Agricultural markets have been described as spontaneous or irrepressible markets and contrasted to some types of modern markets, which are described as 'socially contrived' markets, Clague, Keefer, Knack and Olson (1999). Examples of socially contrived markets would be insurance markets and financial markets, including mortgage markets.

Since the benefits of transactions in agricultural markets tend to be simultaneous in space and time, if governments provide a minimum of law and order, they can function at a relatively high level of transactions. Socially contrived markets, however, are characterized by transactions where the benefits to one party (e.g., receipt of monthly insurance payments by the insurer) differ from the benefits to the

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<sup>3</sup> All recent figures on population and sectoral composition of GDP are from the CIA World Factbook. Earlier ones are from the World Bank's Development Indicators

<sup>4</sup> An important factor in Chinese growth was the international economy and the role of foreign direct investment, including outsourcing by developed country retailers. An argument could be made that the international environment is less propitious under current circumstances due to the after-effects of the Great Recession. I ignore the impact of this factor in Chinese growth relative to its potential impact on Cuba's growth for simplicity.

other one (e.g., payment of death benefits to the family upon the demise of the insured) in terms of when they accrue and where they accrue. Because of this feature, in these markets the opportunities for one party to defraud the other are very widespread. Simply put, they will not exist or function at a high level of transactions for any length of time in the absence of powerful contract enforcement mechanisms.

While the rule of law provides one of the best, if not the best, contract enforcement mechanism for these types of markets, in terms of breadth of coverage of transactions and depth of impartiality in coverage, it is not the only one. Breaking knees and corruption as part of relational contracts can also work, but have obvious drawbacks. Betancourt (2004) uses the extent of protection of civil liberties as the best indicator of a government's commitment to the rule of law. Civil liberties impact on economic growth works through its effect on allowing socially contrived markets to operate at a high level of transactions. The basic logic is that they operate in a similar manner as a relational constraint operates in the nonlinear dynamical systems of complexity theory.

Relational constraints have a dual role (stemming from their origin in information theory, Shannon 1948) in that by limiting one dimension of activity (a government's ability to expropriate citizens, for example) they can enhance the range of activities that can take place in other dimensions (citizens' willingness to invest as a result of the reduction in uncertainty about expropriation) and can be viewed as a causal engine "...that drives creative evolution, not through forceful impact, but by making things interdependent," Juarrero (1999, Ch.9: p.150). Thus, in contrast to the standard constraints of economics they can increase welfare by reducing uncertainty in one dimension and allowing new institutional forms to come into existence in other dimensions. In this setting, they do so by allowing the emergence of a set of institutions which support high levels of operations in the socially contrived markets that are essential for economic growth in modern economies over the long term.

An example of how relational constraints operate in an economic subsystem is provided by Betancourt and Gautschi's (2001) analysis of service institutions. They illustrate how modern technologies, by limiting one dimension of activity (namely separating the production distribution and consumption of a good or service in space and/or time), have expanded the range of activities that can take place in other dimensions (by enhancing variety and novelty in the activities that satisfy consumption aims which lead to new market configurations). In the case of civil liberties, however, the closure or limiting role of these context sensitive constraints takes place with far greater uncertainty in terms of the ability to enhance alternatives or outcomes across space and time than in the case of technology. One surmises that, as a result, the attractors in complex systems generated by civil liberties in the evolution of societies will be far more strange or chaotic than the ones generated by technology in the evolution of markets that satisfy narrow consumption aims.

Market liberalizations in China and Vietnam were able to promote growth by taking advantage of the sizable proportion of their economies in spontaneous markets, which require no expansion of civil liberties for their operation at high levels. Moreover they were also able to take advantage of the shift of substantial resources from rural areas to more productive uses in urban ones, given the sizable expected gains from their large population size for any given level of risk. It is after substantial experience with this process when the development of socially constrained markets becomes imperative. At this point problems growing at a fast pace without expansion of civil liberties, or other equally effective means of ensuring contract enforcement, lead these countries to substantial decelerations in their growth rates.

Cuba's market liberalizations provide a very limited commitment to the protection of civil liberties. For instance, they do not encompass freedom of assembly and extend to freedom of expression and the rule of law in relatively minor ways. Their main focus is a relative commitment to protect most but not all individual rights associated with secure ownership and mobility of persons.

Given these characteristics one would expect the evolution of the resulting economic system to entail some economic growth, especially in markets characterized as spontaneous or irrepressible.

Nevertheless, one would also expect a much more limited effect on socially contrived markets.

Ironically, an exception would arise in those markets where relational contracts made up for a substantial and durable extent the absence of civil liberties as a relational constraint.

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