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Big Business Stability and Social Welfare

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Many countries appear to have excessively stable big business sectors, in that higher rates of big business turnover have been correlated with faster economy growth. Public policies that stabilize big business sectors are sometimes justified as supportive of social objectives. We find no consistent link between big business stability and public goods provision, egalitarianism, or labor empowerment. While absence of evidence is not evidence of absence, these findings suggest that other explanations, such as special interest politics or behavioral biases favoring the status quo also be considered.

1. Introduction

Schumpeter (1912) describes capitalism as a system in continual flux. Observing carriage makers fall to automakers, traditional steel mills cede markets to the Bessemer process, and cotton mills quake at the advent of rayon, Schumpeter (1933) saw capitalism's unique forte as harnessing this turmoil to lift humanity above its millennia-long Malthusian trap. Creative entrepreneurs build innovative upstart firms that destroy staid and established firms in an ongoing turmoil Schumpeter (1942) called *creative destruction*. The new firms are more productive than the old ones they displace, so aggregate wealth rises steadily as individual firms and fortunes rise and fall – often abruptly and unpredictably. A large and rapidly solidifying body of theoretical and empirical work, surveyed in Aghion and Howitt (1998), now confirms the essential validity of Schumpeter's ideas. Given this, rescuing the losers without undermining the process of creative destruction itself becomes a critical public policy challenge.

In a recent study, Fogel *et al.* (2007) show that economies whose leading businesses die as new leading firms rise grow faster than economies whose lists of leading firms remain stable. The key variable in that study is “big business stability” – measured as the fraction of a country's largest employers in 1975 that persist to 1996. Persistence is defined variously as remaining in the top ten list, growing no slower than GDP, retaining in 1996 at least 50%, 25%, or 10% of its 1975 labor force. Using any of these measures, they show that real per capita GDP growth,

economy total factor productivity growth, and aggregate capital accumulation are all significantly higher in economies with less stable big business sectors.

This finding suggests that many economies pay for excessively stable big business sectors with depressed growth. One possibility, alluded to by Fogel *et al.* (2007) is that some governments may balance other policy goals against economic growth. This is plausible, for “man does not live by bread alone”. Indeed, the social objectives of modern societies are often framed, as by the republican idealists of the French Revolution, in terms like “liberty, fraternity, and equality!” A high per capita GDP can help with these, but the legitimacy of public policy goals other than economy growth must be conceded.

Might a more stable big business sector help a country attain these goals? Toned down creative destruction makes more predictable each firm’s future revenue streams, the composition of the big business sector, and the identities of the people in charge. The transactions costs of collecting tax revenues from a smaller number of larger firms, redistributing income via industrial policies, and co-opting business into social pacts may all be lower if big businesses are longer lived players. Big businesses might partake such transactions to maximize long-term profits, or to assuage their controlling shareholders’ souls or egos. These arguments, developed at greater length below, are admittedly highly tentative, and counterarguments are easy to generate. But we seek reasons why many countries’ big business sectors appear excessively stable, so we allocate the benefit of the doubt to these rationalizations – at least for now.

To see if this is so, we correlate big business stability with a variety of social development indicators, controlling for per capita GDP. We find largely insignificant results throughout, though occasionally big bossiness stability correlates with worse social outcomes.

We speculate that the countervailing policy benefits might be either more obscure or tightly focused on narrow interest groups. Alternatively, the well-documented *conservative bias* detected elsewhere in behavioral finance may induce suboptimal policy in some countries.

The article is organized as follows: Section two provides some background to motivate the assumption that excessive big business stability may indeed be a deliberate public policy goal. Section three describes the data and section four the results. Section five concludes, entertains our speculative explanations, and calls for further work.

2. On Stability

Instances of politicians using public funds to rescue tottering corporate giants are not rare. For example, when Philipp Holzmann AG disclosed a DM2.4 billion-mark problem in its books, its banks demanded a comprehensive restructuring. *The Wall Street Journal* (Nov. 25, 1999) describes the subsequent politicking as follows: When the banks rejected Holzmann's DM4.3-billion restructuring proposal as inadequate, a chorus of German politicians vilified the banks' unwillingness to "shield a 150 year old German company and save the jobs of Holzmann's 17,000 domestic workers." German Chancellor Gerhard Schroeder, after buying the banks' acquiescence with a federal guarantee on a DM100 million loan and DM150 million in new capital, exulted "The banks have recognized their economic and social responsibility."

Such respect for corporate stability is not confined to European politicians. *Business Week* (September 11, 1998) quotes an anonymous prominent businessman explaining that the Malaysian prime minister, Mahathir Mohamad "doesn't believe in bankruptcies. He has a moral objection to them." The *Business Week* article added that during the Asian crisis when "the intensity of business collapses and bank collapses was like tenpins falling every day," Mr. Mahathir Mohamad "couldn't stand it. He doesn't believe in bankruptcies."

Politicians can protect the stability of established corporate empires in less direct ways than bailouts. Although Thai Petrochemical Industries was insolvent in 1997, the firm was not officially declared bankrupt until 2000. According to the *Wall Street Journal* (February 12, 2001), the CEO, Prachai Leophairatana filed thirteen different lawsuits and a criminal embezzlement charge against the creditors. Although the creditors have formally fired him, he

continues to occupy the CEO's office and run the company. The Thai government seems unable or unwilling to evict him.

In Africa too, government policies can tilt the playing field to favor old established firms and undermine upstart innovators.. In the mid 1990s, the government of Zimbabwe invested a great deal of effort to save the state telephone utility, PTC, from a cell phone company being organized by Strive Masiyiwa, an entrepreneur. The story, according to the *National Post* (February 26, 2000), is as follows. PTC phone lines served 1.4% of Zimbabweans, and the hundreds of thousands of people requesting new lines endured waits of up to four years and were expected to pay large bribes to bureaucrats. When Masiyiwa proposed a joint venture with PTC to provide cell phone service, he recounts that "They looked at me and said: 'We don't see a future in it. We certainly aren't going to waste valuable resources on it.'" When Masiyiwa decided to go it alone, PTC forbade it on the grounds that the state had a monopoly on telecommunications. Masiyiwa hired an American lawyer, challenged PTC's position in court, and won. He then formed a company, Econet, and with foreign partners built base stations across the country. A few days before service was to begin, Zimbabwe's president Robert Mugabe, invoked emergency presidential powers and made it illegal for a private business to build a cellular network. Offenders would face two years in jail. Masiyiwa recounts that "Parliament sat through three sittings to turn [the decree] into law in one day." He returned to the courts, and a judge finally ordered that a cell phone license be put up for public tender. A string of politically connected consortia sprung up to bid, and Telecel, a consortium backed by Leo Mugabe, the president's nephew and a member of parliament, won the license. Masiyiwa's salvation was an anonymous civil servant, who leaked documents proving that a corrupt official had docked 20% from Econet's score on the tender bid. Strive Masiyiwa should have won in the first place. After more court battles, a cabinet shuffle, and threats of resignation from the late vice-president, Econet finally got a license to operate. Within a week of its launch, the company had 10,000 subscribers, and rapidly overtook Telecel and the state-run cell phone company, NetOne. As the situation in

Zimbabwe further deteriorated in the late 1990s, Masiyawa found it prudent to move his base of operations to South Africa.

Anecdotal evidence is not proof, but the incidents reviewed above at least justify the hypothesis that stabilizing a country's big business sector might be a commonplace public policy goal, or at least a perceived means to other policy goals, that countervail any slowing of economic growth.

How might a stable big business sector aid in the achievement of laudable policy goals beyond the purely economic ones?

2.1 Liberty

A more stable big business sector might ease governments' fiscal uncertainty by providing stable and predictable tax inflows. This might be important in funding health care, education, public infrastructure, or other public goods that must be built up slowly over time. Some of the costs of these goods might even be off-loaded to large stable firms. For example, many health care costs are paid by large firms, not government, in the United States and Switzerland. Education costs can also be paid by employers on occasion, as when firms pay for advanced business degrees for their managerial staff or for technical skills upgrading for blue collar workers.

Public goods are a critical, and often overlooked, aspect of development. Amartya Sen (1999) argues that development should be defined as that which expands human freedom. Educated people have more options to choose from than illiterates, so better education is an important component of development. Healthy people have more options than the chronically ill. People living near roads, ports, and airports have more options than those isolated in impenetrable wilderness. All of these considerations lead Sen to conclude that governments need to invest heavily in public goods like education, infrastructure, and healthcare to provide basic necessary freedoms to their peoples. An overly single minded focus on GDP growth is inadequate.

2.2 Equality

The crux of the matter might be egalitarianism. In public pronouncements explaining decisions to support large established firms, politicians often take an instrumental perspective – a stable big businesses sector is not desirable *per se*, but because it leads to other desirable public policy outcomes, such as high quality public goods, labor rights, or an egalitarian income distribution. Such factors apparently moved the German government’s bailout of Philipp Holzmann, which Finance Minister Hans Eichel justified thus: “the government has a responsibility to step in if a major German company is about to collapse and cost thousands of people their jobs”.¹ A like motive seems to underlie Chancellor Gerhard Schroeder’s pressing German banks to “save the jobs” of the 22,000 employees of the bankrupt engineering firm Babcock Borsig AG with a \$700 to \$800 million bailout.²

If big business stability, by preserving blue collar jobs, sustains incomes across a wide segment of the population, while letting innovative upstarts displace them benefits only a handful of entrepreneurs, egalitarianism might bias government policies against upstarts to protect established large firms. Governments might have to choose a balance between the rapid growth of unfettered creative destruction and the equality attainable by slowing that process.

2.3 Fraternity

But public goods might not be the only non-economic goal at issue. Several of the politicians we cite above proclaim big business stability desirable because it protects workers. The underlying economics is often obscure, but this linkage may have led the Japanese government to propose a ¥200 billion (\$1.90 billion) bailout of Sogo Department Stores, which *Asiaweek* described as part of Japan’s long tradition of corporate bailouts designed to minimize “confusion”.³ *Asiaweek*

¹ See Edmund Andrews ‘Navigating the Economy of a Changing Germany’, *New York Times*, December 7, 1999.

² See ‘Schroeder Seeks bailout Aid for Bankrupt Firm’ *International Herald Tribune*, July 6, 2002, p 11.

³ See Jonathan Sprague and Murakami Mutsuko ‘Tokyo’s Sogo Shocker - A bailout and a reversal show no policy at all’ *Asiaweek*, 26(29), July 28, 2000.

continues that, to the bewilderment of senior politicians, the bailout was derailed when “[t]he public exploded over the use of their tax money to rescue a poorly managed private company.”

The long-term stability of large Japanese firms is sometimes stressed as economically advantageous because it promotes implicit labor contracts, workers’ firm-specific human capital accumulation, and otherwise reduces labor market transactions costs (Aoki, 1988). This logic might apply to Japan, but if it were more generally valid, these economic advantages should be evident in faster economy growth, all else equal.

But a stable big business sector might nonetheless be viewed by some politicians as a useful tool in the art of nation building. For example, *Business Week* reports that Malaysian Prime Minister Mahathir is unapologetic about his government’s policy of selecting a handful of wealthy businessmen for privileges and assigning them the role of creating jobs, implementing big projects, and keeping the economy growing. The article quotes Mustapha Mohamed of the Finance Ministry as saying “We view Malaysia as a corporation, and the shareholders in the government are companies.” and that “To the extent you help the bigger guys, the smaller guys benefit.”⁴ Some mixture of nation building and the promotion of social cohesion seem evident in these remarks.

Such thinking reflects the corporatist tripartite bargaining intrinsic to many European social democracies (Högfeltdt, 2000). In these countries, representatives of big labor, big government, and big business periodically got together to map out economic strategies for the entire country. Such negotiations are obviously easier if the same big businesses are represented year after year (Roe, 2003). Innovative and dynamic upstart big businesses may, quite understandably, fail to adhere to tripartite agreements made by their more sedately run former competitors. Indeed, staid established firms might even be able to use such bargains to drive

⁴ See Sheri Prasso, Mark Clifford and Joyce Barnathan ‘Malaysia: The Feud - How Mahathir and Anwar became embroiled in a clash that threatens to send Malaysia into upheaval’ *Business Week*, October 28, 1998.

through labor or social agendas favorable to themselves and detrimental to potential creative upstarts (Rajan and Zingales, 2003)

3. Data

Our measures of the stability of each country's biggest businesses are from Fogel (2007). They list the biggest employers in each country in the 1975 and 1996, from *Dun & Bradstreet's Principals of International Business*. These lists include a wide spectrum of businesses: listed and unlisted firms, corporations and other businesses, as well as private sector and state controlled enterprises (SCEs).⁵ This catholicism evades sample selection problems due to stock markets, and thus listed firms, being more or less common in some economies. Enterprises not usually considered "businesses", such as educational institutions, medical institutions, membership organizations, government agencies, and the like are excluded, though.

La Porta *et al.* (1999), Claessens *et al.* (2000), Faccio and Lang (2002), and others show that large businesses outside the US and UK are often members of business groups, not freestanding firms. Using raw data provided by those researchers, as well as data on controlling shareholders from *Hoover's online*, *Worldscope*, *SDC*, Forbes' annual lists of billionaires, newspaper archives, case studies, academic research papers, corporate websites, corporate histories, and business family biographies. Fogel *et al.* (2007) consolidate group member firms into business groups. They define a firm as controlled if it is so defined in any of these sources, or if 20% or more of its stock is voted by a wealthy family, government, trust, or bank.⁶ The stability of big business is thus gauged by the continued importance of the largest businesses, whether groups or freestanding firms, in each country. This avoids problems due to intragroup asset transfers. However, consolidating firms into groups leaves countries like Sweden and

⁵ We use the term *state controlled enterprise* (SCE) rather than *state owned enterprise* (S.O.E.) because the state may hold a control block without owning the firm outright.

⁶ La Porta *et al.* (1999a) shows that 51% is not necessary as a single dominant shareholder can exert effective control when all other shareholders are small. We use voting rights to assign control, for cash flow rights and voting rights diverge substantially in some countries because of dual share classes and control pyramids.

South Africa only a few extremely large businesses. Since even the 15th or 20th biggest business in such countries is quite small, the stability measures define each country's *big business sector* as its ten largest employers (if there are ties in tenth place, all the ties are included).

Gauging the stability of a country's large business sector requires determining whether or not each leading 1975 business persist to 1996. One obvious approach is to define *persist* as "still in the top ten list in 1996". But a truly vibrant economy might admit new businesses to the top ten, even as the 1975 top ten prosper. A more suitable definition might thus target 1975 top ten businesses that grow no slower than GDP to 1996; though this might be inappropriate for an economy that shrank from 1975 to 1996. Or a firm might *persist* if it employs no less than 50%, 25%, or 10% of its 1975 workforce in 1996.

Below, we use a combined definition – a top ten 1975 business *persists* if it retains top ten list in 1996 *or* grow at least as fast as its country's GDP from 1975 to 1996. Thus, we define persistence for each 1975 top ten business i as the maximum of δ_i and η_i , with

$$[1] \quad \delta_i = \begin{cases} 1 & \text{if } i \text{ is in the top ten lists in both 1975 and 1996} \\ 0 & \text{otherwise} \end{cases}$$

and

$$[2] \quad \eta_i = \begin{cases} 1 & \text{if its employment grew no slower than GDP in both 1975 and 1996} \\ 0 & \text{otherwise} \end{cases}$$

The country's *equal-weighted stability index* is then

$$[3] \quad \Omega_E = \frac{1}{10} \sum_{i=1}^{10} \max[\delta_i, \eta_i]$$

and its *labor-weighted stability index* is

$$[4] \quad \Omega_L = \frac{\sum_{i=1}^{10} \max[\delta_i, \eta_i] L_i}{\sum_{i=1}^{10} L_i}$$

with the L_i the 1975 labor forces of the countries top ten 1975 businesses

Using this procedure, Fogel *et al.* (2007) construct various alternative stability measures

including or excluding financial firms, multinational subsidiaries, and sometime state controlled enterprises in all possible combinations. Since they find two of these to be representative of the others, so we focus here on *minimally inclusive* indexes $\underline{\Omega}_E$ and $\underline{\Omega}_L$ using the top ten private-sector nonfinancial domestically controlled businesses only, and *maximally inclusive* indexes $\overline{\Omega}_E$ and $\overline{\Omega}_L$ that also includes sometime state-controlled enterprises, foreign controlled enterprises, and financial firms as well. Table 1 presents summary statistics for these four measures.

Our objective is to see if big business stability, shown to correlate with slow growth by Fogel *et al.* (2007) might correlate positively with offsetting laudable social outcomes. We therefore examine a broad spectrum of measures of such outcomes.

We first consider several measures of public goods provision. These are:

Health

We use three indicators to measure the average level of public health from 1996 to 2000. “Infant mortality” is the number of infants dying before reaching age one, per one thousand live births. “Child mortality” is the estimated number of infants dying before reaching age five, per one thousand live births, assuming the current age-specific mortality rates hold. “Life expectancy” is the number of years a newborn baby would live holding the current patterns of mortality constant throughout its life. All three indicators come from the World Development Indicators (WDI) database online, made available by the World Bank.

Education

Measures of public expenditures on education are collected from WDI for the period of 1996 to 2000. “Public spending on education” consists of current and capital public expenditure on education and subsidies to private education as a percentage of total GDP. We also obtain data on “education attainment” from Barro and Lee (2001). This variable indicates the total number of years of schooling in the adult population aged 25 or older in 1995.

Infrastructure

We are interested in four aspects of infrastructure essential to social economic development: “electricity” is the net production of electric power by power plants, measured in MWh per capita; “roads” is kilometers of paved roads as a percentage of all roads in the country; “telecommunication” is fixed and mobile phone line subscribers per one thousand people; and “internet” is broadband internet access subscribers per one thousand people. All four measures are taken from WDI and are averaged from 1996 to 2000.

Pollution

We measure “water pollution” by the number of metric tons of organic water pollutant emissions per day and “air pollution” by the number of metric tons of carbon dioxide emissions per capita. Both measures again come from WDI and take the average values of 1996 to 2000.

Overall Quality of Life

We use the United Nation’s Human Development Index (HDI) to measure the overall quality of life. This index is constructed to incorporate three dimension indices capturing nations’ achievements in health, education, and standard of living relative to the best performing country in each dimension. Specifically, the health dimension index is based on life expectancy at birth, the education dimension on adult literacy and the gross enrollment of primary, secondary and tertiary schools combined, and the standard of living dimension on Purchasing Power Parity adjusted GDP per capita values in U.S. dollars. The technical note of each year’s Human Development Report contains further details of the index construction and can be accessed at <http://hdr.undp.org>. This paper uses the average HDI from 1997 to 2000.

To gauge each economy's concern for inequality, we consider measures of income distribution and abject poverty:

Poverty:

We use poverty headcount ratios to measure poverty. Poverty defined using “\$1 a day” is the percentage of the population living on less than \$1.08 a day at 1993 prices, adjusted for Purchasing Power Parity. Poverty defined using “\$2 a day” is similarly defined, with the benchmark set at \$2.15 a day. A value of 2% is assigned to countries whose poverty rate sits below 2%. Data is averaged between 1996 and 2000 wherever possible, but is missing for 24 countries, 21 of which OECD members, plus Hong Kong, Israel, and Singapore. A value of zero is assigned to these countries.

Income Inequality:

Gini coefficients, first introduced by the Italian statistician Corrado Gini in 1912, are widely accepted as a measure of income inequality. To ensure robustness of results, we use two versions of Gini coefficients, one published by the World Development Indicators (WDI) database, and the other by the World Income Inequality Database (WIID), detailed in Deininger and Squire (1996). The WDI data is undated, whereas the WIID data is for 1996 or the closest year available.

Finally, we consider measures of the bargaining power of labor.

Unemployment:

We use unemployment rate as a percentage of total labor force to account for the share of the total labor force that is currently without work but seeking employment. For robustness, we also use

unemployment rates by gender, similarly defined. The data is retrieved from the online WDI database.

Labor Rights:

We use three measures of labor rights, all taken from Botero, et al. (2004). First, “union density” is the percentage of the total labor force affiliated to labor unions in 1997. Second, “the right to form unions” is a four-value dummy that assumes a maximum value of 1 if the country's constitution expressly grants the right to form labor unions. The dummy is set to 0.67 if labor unions are described as a matter of public policy or public interest, 0.33 if labor unions are otherwise mentioned in the constitution, and 0 otherwise. Third, “minimum wage” is a dummy variable that equals 1 if a mandatory minimum wage is either defined by statute, or established by mandatory collective agreement and made legally binding for most sectors of the economy, and 0 otherwise.

Labor Protection:

We measure the protection of labor afforded by social security laws with indices capturing “old age, disability, and death benefits”, “sickness and health benefits”, and “unemployment benefits”. A higher value of the old-age benefits index means higher post-retirement life expectancy, fewer months of contributions or employment required for normal retirement by law, lower deductions in the worker's monthly salary to cover these benefits, and larger proportion of the net pre-retirement salary covered by the pension. A higher value of the sickness benefits index means fewer months of contributions or employment required to qualify for these benefits by law, lower deductions in the worker's monthly salary to cover these benefits, shorter waiting period, and higher percentage of the net salary covered for a two-month sickness spell. The unemployment benefits index is defined similarly to the sickness benefits index, with a higher value indicating fewer months of contribution, lower deduction, shorter waiting period, and higher percentage of

salary covered for a one-year unemployment spell. All three indices come from Botero, et al. (2004).

Each specific variable and its source are described in detail in Table 2. Their summary statistics are displayed in Table 3.

4. Findings

Section two outlined three sets of arguments as to why big business stability might be socially desirable even if it retards economic growth somewhat. First, big business stability might permit sustained investment in public goods. Second, big business stability might permit stronger labor rights. Third, big business stability might level income distributions and contribute to a more egalitarian society.

In the tables below, we first document simple correlation coefficients of the stability variables with a set of social outcomes, and then regress the social outcome measures on stability and per capita GDP. This is because countries with higher *per capita* GDP are likely to exhibit better outcomes across a range of development outcomes – economic and social. We wish to test for big business stability contributing to laudable social outcomes through channels other than economic prosperity.

4.1 Public Goods

Table 4 considers the possibility that a stable big business sector permits governments to invest more in public goods. We gauge the quality of a country's public goods in a variety of ways. Its health care is reflected in its infant mortality rate, child mortality rate, and overall life expectancy. Table 4 shows lower infant and child mortality rates as well as greater life expectancies in countries with more stables maximally inclusive lists, suggesting a possible social offset to laggard economic growth. But these correlations disappear or switch signs after controlling for

per capita GDP. If anything, countries at a given level of per capita GDP that opt for big private-sector business stability appear to exhibit both worse health care and slower economic growth.

A very important social goal is education. Measures of the quality of the countries' education – mean education attainment and public spending on education – show no correlation with big business stability after controlling for *per capita* GDP – though the simple correlations with the maximally inclusive stability indexes are significant..

Public infrastructure is also composed of critically important public goods. Electricity provision, the quality of roads, telecommunication infrastructure, and internet penetration all exhibit intermittently significant positive simple correlation coefficients with the stability indexes; but all fade to insignificance after controlling for per capita GDP.

Another set of high demand public goods pertains to environmental protection, which we gauge by water pollution and air pollution (in terms of CO₂ emissions) statistics. Worse pollution correlates with more stable big business sectors. The correlations between air pollution and big business stability significantly weakens after controlling for *per capita* GDP; however, water pollution is highly significantly and positively associated with private sector stability even with per capita GDP as a control variable. Finally, the United Nations assesses the overall quality of life in each of its member countries. This can be interpreted as an overall measure of the consumption of private and public goods by the population, for it weights health care and education against purely economic outcomes like a high per capita GDP. Big business stability is positively correlated with the human development index, but this correlation evaporates when we control for per capita GDP.

If big business stability helps governments direct resources towards public goods, others than those in Table 4 must be the focus. Insignificance cannot prove the absence of a relationship, but a tie to the quality of public goods is clearly elusive.

4.2 Income equality

If stable big businesses provide employment to those who would otherwise be marginalized, this may be a public policy outcome worthy for which a few points of GDP growth might well be sacrificed. Table 5 measures egalitarianism by each country's GINI coefficient and by the fraction of the population condemned to live on less than one or two dollars per day.

More stable big business sectors are actually correlated with worse inequality in the simple correlation coefficients. If inequality is measured by the fraction of people living on less than two US dollars per day, the table actually shows worse inequality where big business is more stable even after controlling for per capita GDP.

If big business stability seeks to promote egalitarian outcomes, it is remarkably unsuccessful.

4.3 Labor Power

Table 6 correlates big business stability to the status of labor in the economy. Unemployment – total, male, and female – is utterly uncorrelated with big business stability. So are labor rights, for unions are neither more common nor easier to form where big businesses are more stable. Minimum wages are also not more likely to be mandatory by law; and various benefits for old age, disability, and death or for illness are no more generous. (Though health benefits are higher where big businesses are more stable if the visibly extreme observations of Indonesia, Malaysia, and Sri Lanka are retained.) Unemployment benefits appear positively correlated with big business stability in simple correlations, but these are rendered insignificant when per capita GDP controls are added.

If big business stability permits a greater voice for organized labor, we cannot detect it.

4.4 Robustness Checks

We conduct residual analysis and robustness checks to ensure that our results are not driven by outliers or other statistical anomalies.

Generalized White tests suggest the presence of heteroskedasticity in regressions involving public health measures, electricity, education attainment, inequality, and labor rights. We follow White (1980) to deal with this problem by estimating heteroskedasticity-consistent standard errors (HCSEs) for all regressions, which yield qualitatively similar results to those in the Tables. A close inspection of the data indicates wide tails, particularly the right ones, in the social outcome variables' distributions. Substituting versions of these variables winsorized at 10% eliminates this problem, leaving White's generalized tests indicating no heteroskedasticity, and generates qualitatively similar results to those shown.

Our control variable is the average of the logarithm of per capita GDP from 1996 to 2000. Our results do not change if we replace the control by the log of 1990 per capita GDP. Using the latter avoids possible distortions of GDP figures by the late 1990s economic and financial crisis in the Asian countries.

Wherever possible, we also substitute closely related variables for our variables of to confirm robustness. For example, using “government spending on education as a percentage of government expenditure” yields qualitatively identical results to those using “government spending on education as a percentage of GDP”. Similarly, using the inverse of “labor participation rates” instead of unemployment rates result in qualitatively similar predictions.

Finally, we produce residual diagnostics such as Cook's D and student residual and an “added-variable (AV)” plot (also referred to as a “partial regression plot”) for each regression to identify unusual or influential observations. The AV plot essentially lets us plot the residuals from the dependent variable, given the control, against the residuals from the independent variable of interest (in this paper the stability indexes), given the

control. If any observation seems influential, we rerun the regression without it and check for changes in the signs and significance of the regression coefficients. For example, South Africa appears to be an outlier in the “public health” regressions. However, removing it does not change the results qualitatively. The only place where outliers are evident is in the “sickness and health benefits” regression, and its results with and without the outliers are discussed in the text accordingly.

5. Conclusions

We undertook this exercise hoping to find evidence that big business stability might correlate with laudable social outcomes – liberty, equality, and fraternity in the words of the French revolutionaries. Such non-economic goals are legitimate policy objectives, and if stability in the large corporate sector contributed to them in any important way, no matter how indirectly, policies designed to stabilize that sector might be justifiable even if they impede growth by slowing the process creative destruction.

Absence of evidence is not evidence of absence. This is a first pass analysis only, and much more work is needed to conclude that no such contribution exists. But if one does exist, it must be subtle, or well hidden. General equilibrium interconnections, more complicated statistical interactions, or any number of complications might be in play. But our inability to find clear evidence of big business stability contributing to laudable non-economic policy goals suggests that we might entertain other reasons politicians might value big business stability.

One possibility is political rent-seeking (Krueger, 1974, 1993). Big businesses

might be well positioned to invest in political favors they can call in when needed⁷. If so, big business stability might well be wholly undesirable condition – inimical to rapid growth and primarily a result of special interests manipulating the political system. Enhancing the stability of the big business sector might thus bestow substantial benefits, but on a narrow special interest group – the insiders of those businesses – not on the economy as a whole.

Another possibility is that policies aimed at saving or stabilizing large established businesses reflect behavioral finance influencing public policy (Shleifer, 2000). Kahneman and Twersky (1979) demonstrate that people are *loss averse* – a loss of a given magnitude has negative welfare effects that far outweigh the positive effects of an equal sized gain. This gives rise to a so-called conservative bias in human behavior. If voters irrationally fear losing a current set of jobs, even though better ones are likely to come along, politicians intent on winning elections should represent such concerns in public policy decisions – even if this slows growth.

We wholeheartedly concede the tentative nature of these musings and welcome further research that might clarify matters. In particular, the role of cognitive biases in explaining seemingly unjustifiable economic policies merits consideration.

⁷ A growing empirical literature documents the first-order importance of rent-seeking relationships between politicians and the business sector in low-income economies. See e.g. Fisman and Svensson (2007) and Fisman (2001), as well as developed economies, see e.g. Fisman and Di Tella. (2004).

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Table 1. Summary Statistics of Big Business Stability Measures

Big Business Sector Stability Measure	N	Mean	Std. Dev.	Min	Max
Maximally inclusive labor-weighted $\bar{\Omega}_L$	43	0.498	0.225	0.071	0.839
Maximally inclusive equal-weighted $\bar{\Omega}_E$	43	0.385	0.179	0.100	0.727
Minimally inclusive labor-weighted $\underline{\Omega}_L$	43	0.456	0.228	0.064	0.842
Minimally inclusive equal-weighted $\underline{\Omega}_E$	43	0.355	0.168	0.091	0.700

	$\bar{\Omega}_L$	$\bar{\Omega}_E$	$\underline{\Omega}_L$	$\underline{\Omega}_E$
Argentina	0.31173	0.2	0.39277	0.3
Australia	0.66851	0.6	0.73239	0.6
Austria	0.83342	0.5	0.22772	0.2
Belgium	0.40802	0.3	0.53091	0.5
Bolivia	0.74855	0.3	0.27430	0.3
Brazil	0.47057	0.5	0.29455	0.3
Canada	0.40118	0.4	0.57342	0.4
Chile	0.43968	0.4	0.27919	0.3
Colombia	0.28799	0.2	0.60121	0.5
Denmark	0.56300	0.4	0.72525	0.4
Finland	0.78035	0.7	0.57816	0.5
France	0.56400	0.4	0.55802	0.4
Germany	0.76277	0.7	0.73497	0.7
Greece	0.38197	0.3	0.07193	0.1
Hong Kong	0.60582	0.3	0.60582	0.3
India	0.12107	0.1	0.56486	0.4
Indonesia	0.31485	0.3	0.39913	0.3
Ireland	0.45014	0.3	0.39698	0.2
Israel	0.59483	0.6	0.74440	0.4
Italy	0.76126	0.4	0.78853	0.3
Japan	0.72527	0.7	0.59077	0.6
Korea	0.45119	0.5	0.34111	0.4
Malaysia	0.07326	0.1	0.12253	0.1
Mexico	0.76431	0.5	0.62523	0.5
Netherlands	0.83944	0.6	0.84228	0.6
New Zealand	0.20476	0.2	0.24253	0.3
Norway	0.30084	0.3	0.12190	0.1
Pakistan	0.22827	0.2	0.45168	0.4
Peru	0.45936	0.5	0.26775	0.2
Philippines	0.25999	0.2	0.07253	0.1
Portugal	0.34266	0.2	0.08388	0.1
Singapore	0.56019	0.4	0.06400	0.1
South Africa	0.57996	0.5	0.66960	0.6
Spain	0.46344	0.3	0.30168	0.3
Sri Lanka	0.07093	0.1	0.24317	0.2
Sweden	0.78482	0.5	0.78337	0.4
Switzerland	0.83344	0.7	0.83344	0.7
Thailand	0.74212	0.6	0.60927	0.5
Turkey	0.20833	0.1	0.38338	0.2
United Kingdom	0.23128	0.2	0.53862	0.4
United States	0.53122	0.5	0.53122	0.5
Uruguay	0.49031	0.3	0.40564	0.2
Venezuela	0.77755	0.5	0.40070	0.4

Table 2. Descriptions of Control and Social Development Variables

GDP Control		
GDP per capita	Log of per capita GDP in thousands of 2000 international dollars, PPP adjusted, average of 1996 to 2000.	Penn World Tables 6.2.
Social Development Measures		
Public Goods		
<i>Health</i>		
Infant mortality	Number of infants dying before reaching age one per one thousand live births, average of 1996 to 2000.	
Child mortality	Probability of infants dying before reaching age five per one thousand live births assuming the current age-specific mortality rates, average of 1996 to 2000.	World Development Indicators (WDI) Online
Life expectancy	Number of years a newborn baby would live holding the current patterns of mortality constant throughout its life, average of 1996 to 2000.	
<i>Education</i>		
Education attainment	Log of the average years of schooling for people aged 25 or older in 1995.	Barro and Lee (2001)
Public spending in education (% of GDP)	Current and capital public expenditure on education and subsidies to private education as a percentage of GDP, average of 1996 to 2000.	WDI Online
<i>Infrastructure</i>		
Electricity	Net production of electric power by power plants (MWh per capita), average of 1996 to 2000.	
Paved roads	Paved roads as a percentage of all roads in the country, average of 1996 to 2000.	World Development Indicators (WDI) Online
Telecommunications	Fixed and mobile phone line subscribers per one thousand people, average of 1996 to 2000.	
Internet	Broadband internet access subscribers per one thousand people, average of 1996 to 2000.	
<i>Environmental Protection</i>		
Water pollution	Tons of organic water pollutant emissions per day, average of 1996 to 2000.	WDI Online
Air pollution	Tons of carbon dioxide emissions per capita, average of 1996 to 2000.	WDI Online
<i>Quality of Life</i>		
UN human development index (HDI)	Higher values of HDI indicates longer and healthier life span, better education, and higher standard of living relative to the best performing countries, average of 1997 to 2000.	http://hdr.undp.org/
Equality		
<i>Poverty</i>		
Poverty, \$1 a day	Percentage of the population living on less than \$1.08 a day at 1993 prices, PPP adjusted, average of 1996 to 2000.	
Poverty, \$2 a day	Percentage of the population living on less than \$2.15 a day at 1993 prices, PPP adjusted, average of 1996 to 2000.	WDI Online

<i>Income Inequality</i>		
Gini, avg. 96-00 (WDI)	Index value ranges from 1 to 100, with higher value indicating more income inequality, average of 1996 to 2000 wherever possible.	WDI Online
Gini, 1996 (WIID)	Gini coefficients based on high quality income or expenditure data for all national population and ranges from 1 to 100, with higher value indicating more income inequality, 1996 or the closest year available.	http://www.wider.unu.edu/wiid/wiid.htm

Labor Power

<i>Unemployment</i>		
Unemployment in total labor force	Unemployment rate as a percentage of total active labor force, average of 1996 to 2000.	World Development Indicators (WDI) Online
Unemployment in male labor force	Unemployment rate as a percentage of male active labor force, average of 1996 to 2000.	
Unemployment in female labor force	Unemployment rate as a percentage of female active labor force, average of 1996 to 2000.	

<i>Labor Rights</i>		
Union density	Percentage of the total labor force affiliated to labor unions in 1997.	Botero, et al. (2004)
Right to form union	A dummy that assumes 1 if the country's constitution expressly grants the right to form labor unions, 0.67 if labor unions are described as a matter of public policy or public interest, 0.33 if labor unions are otherwise mentioned in the constitution, and 0 otherwise.	
Minimum wage	A dummy that equals 1 if a mandatory minimum wage is either defined by statute, or established by mandatory collective agreement and made legally binding for most sectors of the economy, and 0 otherwise.	

<i>Labor Protection</i>		
Old age, disability & death benefits	A higher index value means higher post-retirement life expectancy, fewer months of contributions requirement, lower deductions in the worker's monthly salary to cover these benefits, and larger proportion of the net pre-retirement salary covered by the pension.	Botero, et al. (2004)
Health benefits	A higher index value means fewer months of contribution requirement, lower deductions in the worker's monthly salary, shorter waiting period, and higher percentage of the net salary covered for a two-month sickness spell.	
Unemployment benefits	A higher index value indicates fewer months of contribution, lower deduction, shorter waiting period, and higher percentage of salary covered for a one-year unemployment spell.	

Table 3. Summary Statistics of Control and Social Development Measures

	Mean	Std. Dev.	Min	Max
Control variable				
GDP per capita, avg. 96-2000 (in '000s)	16.1	9.28	2.41	32.3
Public goods quality measures				
Infant mortality	17.0	19.7	3.48	85.0
Child mortality	21.3	25.4	4.30	108
Life expectancy	74.0	6.15	50.3	80.6
Education attainment	2.00	0.355	0.866	2.50
Public spending in education (% of GDP)	4.79	1.44	1.36	8.29
Electricity	5.50	5.14	.243	245
Paved roads	64.6	32.5	6.0	100
Telecommunications	578	374	22.0	1201
Internet	3.28	6.01	0.000	23.2
Water pollution	318	480	11.8	2457
Air pollution	6.72	4.68	0.434	20.1
UN human development index (HDI)	0.838	0.107	0.510	0.939
Income equality measures				
Poverty, \$1 a day	4.27	8.04	0.000	41.8
Poverty, \$2 a day	13.5	20.9	0.000	80.4
Gini, avg. 96-00 (WDI)	39.0	9.81	24.7	59.6
Gini, 1996 (WIID)	41.0	9.77	23.7	59.0
Labor power measures				
Unemployment in total labor force	7.82	4.43	2.16	23.6
Unemployment in male labor force	6.99	3.63	2.12	20.3
Unemployment in female labor force	9.18	5.99	2.12	27.9
Union density	0.312	0.234	0.012	0.900
Right to form union	0.597	0.475	0.000	1.000
Minimum wage	0.651	0.482	0.000	1.000
Old age, disability & death benefits	0.625	0.139	0.233	0.846
Health benefits	0.716	0.228	0.000	0.988
Unemployment benefits	0.558	0.360	0.000	0.997

Sample is the 43 countries are as listed in Table 1, save infant and child mortality rate which lack Hon Kong observations.

Table 4. Big Business Stability and the Quality of Public Goods

The left panel reports correlation coefficients between big business stability and variables measuring the quality of public goods provision. The right panel presents regressions of the form: $public\ goods = \beta_0 + \beta_1\ stability + \beta_2\ \ln(y) + \varepsilon$. Only coefficient estimates on stability (β_1) are shown.

	Simple Correlations				Regressions controlling for log of per capita GDP averaged over 1996 to 2000			
	$\bar{\Omega}_L$	$\bar{\Omega}_E$	$\underline{\Omega}_L$	$\underline{\Omega}_E$	$\bar{\Omega}_L$	$\bar{\Omega}_E$	$\underline{\Omega}_L$	$\underline{\Omega}_E$
Panel A: Public Health								
infant mortality	-0.279 (.07)	-0.344 (.03)	-0.0841 (.60)	-.0296 (.85)	6.77 (.37)	6.46 (.44)	13.80 (.04)	18.91 (.04)
child mortality	-0.278 (.07)	-0.348 (.02)	-.0868 (.58)	-.0307 (.85)	8.46 (.42)	6.98 (.53)	17.29 (.05)	24.02 (.05)
life expectancy	0.27 (.08)	0.273 (.08)	0.12 (.44)	0.0171 (.91)	-1.78 (.46)	-3.24 (.38)	-3.08 (.31)	-5.60 (.28)
Panel B: Education								
education attainment	0.322 (.04)	0.425 (.00)	0.227 (.14)	0.214 (.17)	-0.01 (.94)	0.18 (.34)	0.00 (1.00)	0.11 (.62)
public spending on education	0.274 (.08)	0.239 (.12)	0.233 (.13)	0.144 (.36)	0.43 (.64)	0.04 (.97)	0.56 (.55)	0.30 (.79)
Panel C: Infrastructure								
electricity	0.234 (.13)	0.348 (.02)	0.177 (.26)	0.149 (.34)	-1636 (.62)	1138 (.76)	-645 (.86)	32.58 (.99)
Roads	0.265 (.09)	0.2 (.20)	0.209 (.18)	0.0294 (.85)	-0.57 (.97)	-19.99 (.41)	3.56 (.82)	-21.44 (.32)
Telecom	0.403 (.01)	0.413 (.01)	0.32 (.04)	0.189 (.23)	48.05 (.66)	12.92 (.93)	102.05 (.29)	-6.69 (.95)
Internet	0.165 (.29)	0.182 (.24)	0.129 (.41)	0.113 (.47)	-0.33 (.92)	-0.27 (.95)	0.21 (.94)	0.91 (.79)
Panel D: Environmental Protection								
water pollution ^a	-0.0234 (.88)	0.1322 (.40)	0.2034 (.19)	0.3175 (.04)	-0.0955 (.72)	0.390 (.30)	0.444 (.05)	0.926 (.02)
air pollution	0.309 (.04)	0.438 (.00)	0.257 (.10)	0.309 (.04)	-0.07 (.97)	3.31 (.15)	0.91 (.67)	4.39 (.17)
Panel E: Quality of Life								
human development ^b	0.393 (.01)	0.421 (.00)	0.214 (.17)	0.146 (.35)	3.432 (.86)	3.51 (.89)	-27.6 (.32)	-32.9 (.37)

a. Regression coefficient to be multiplied by 10^3 .

b. Regression coefficient to be divided by 10^3 .

Numbers in parentheses are probability levels for rejecting the null hypothesis of zero correlation coefficients or regression coefficients. Heteroskedasticity-consistent standard errors are used to calculate p-levels in all regressions. Sample includes 43 countries listed in Table I, except for "infant mortality" and "child mortality" for which Hong Kong is missing.

Table 5. Big Business Stability and Poverty and Income Inequality

The left panel reports correlation coefficients between big business stability and variables measuring the degree of poverty and income inequality. The right panel presents regressions of the form: *poverty or inequality* = $\beta_0 + \beta_1$ *stability* + $\beta_2 \ln(y) + \varepsilon$. Only coefficient estimates on stability (β_1) are shown.

	Simple Correlations				Regressions controlling for log of per capita GDP averaged over 1996 to 2000			
	$\bar{\Omega}_L$	$\bar{\Omega}_E$	$\underline{\Omega}_L$	$\underline{\Omega}_E$	$\bar{\Omega}_L$	$\bar{\Omega}_E$	$\underline{\Omega}_L$	$\underline{\Omega}_E$
Panel A: Poverty								
Poverty (\$1 per day)	-0.252 (.10)	-0.313 (.04)	-0.111 (.48)	-0.0453 (.77)	3.1 (.44)	2.02 (.65)	4.35 (.23)	5.92 (.12)
Poverty (\$2 per day)	-0.343 (.02)	-0.345 (.02)	-0.142 (.36)	-0.0645 (.68)	3.48 (.54)	8.47 (.24)	11.73 (.05)	16.19 (.03)
Panel B: Income Inequality								
GINI coefficient (WDI)	-0.1365 (.38)	-0.2173 (.16)	-0.2397 (.12)	-0.1466 (.35)	3.55 (.53)	0.19 (.98)	-4.58 (.41)	-2.64 (.72)
GINI, 1996 (WIID)	-0.116 (.46)	-0.165 (.29)	-0.132 (.40)	-0.132 (.40)	4.22 (.39)	3.20 (.67)	0.25 (.96)	-1.97 (.78)

Numbers in parentheses are probability levels for rejecting the null hypothesis of zero correlation coefficients or regression coefficients. Heteroskedasticity-consistent standard errors are used to calculate p-levels in all regressions. Sample is the 43 countries listed in Table I.

Table 6. Big Business Stability and the Voice of Labor

The left panel reports correlation coefficients between big business stability and variables measuring the voice of labor. The right panel presents regressions of the form: $labor\ rights = \beta_0 + \beta_1\ stability + \beta_2\ \ln(y) + \varepsilon$. Only coefficient estimates on stability (β_1) are shown.

	Simple Correlations				Regressions controlling for log per capita GDP averaged over 1996 to 2000			
	$\bar{\Omega}_L$	$\bar{\Omega}_E$	$\underline{\Omega}_L$	$\underline{\Omega}_E$	$\bar{\Omega}_L$	$\bar{\Omega}_E$	$\underline{\Omega}_L$	$\underline{\Omega}_E$
Panel A: Unemployment								
total labor force unemployment	-0.0513 (.74)	-0.0643 (.68)	0.0906 (.56)	0.102 (.52)	-0.44 (.89)	-0.89 (.84)	2.39 (.46)	3.25 (.51)
male labor force unemployment	-0.0359 (.82)	-0.0227 (.89)	0.137 (.38)	0.147 (.35)	-0.47 (.87)	-0.25 (.95)	2.52 (.34)	3.46 (.41)
female labor force unemployment	-0.101 (.52)	-0.136 (.39)	0.0323 (.84)	0.0504 (.75)	-0.93 (.83)	-2.42 (.67)	2.34 (.59)	3.22 (.60)
Panel B: Labor Rights								
union density	0.265 (.09)	0.164 (.29)	0.113 (.47)	-0.0055 (.97)	0.143 (.44)	.00336 (.99)	.00963 (.95)	-0.119 (.48)
rights to form union	0.0858 (.58)	0.0112 (.94)	-0.178 (.25)	-0.152 (.33)	0.404 (.23)	0.298 (.50)	-0.287 (.42)	-0.339 (.46)
minimum wage	-0.291 (.06)	-0.235 (.13)	-0.235 (.13)	-0.0786 (.62)	-0.217 (.52)	-0.043 (.92)	-0.211 (.52)	0.077 (.86)
Panel C: Labor Protection								
old age, disability & death benefits	0.1154 (.46)	0.1558 (.32)	0.2307 (.14)	0.0663 (.67)	-0.083 (.39)	-0.085 (.41)	0.049 (.52)	-0.042 (.67)
sickness & health benefits ^a	0.3749 (.01)	0.2046 (.19)	0.1665 (.29)	0.063 (.69)	0.349 (.07)	0.174 (.46)	0.115 (.45)	0.026 (.90)
unemployment benefits	0.3193 (.04)	0.353 (.02)	0.3594 (.02)	0.3251 (.03)	0.052 (.79)	0.096 (.69)	0.269 (.25)	0.397 (.18)

a. Significance disappears if Indonesia, Malaysia, and Sri Lanka are dropped.

Numbers in parentheses are probability levels for rejecting the null hypothesis of zero correlation coefficients or regression coefficients. Heteroskedasticity-consistent standard errors are used to calculate p-levels in all regressions. Sample includes 43 countries listed in Table I.