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Abstract:

Over a century ago, Max Weber described several elements of an effective bureaucracy. Building on his theory and a previous analysis by Peter Evans and James Rauch, I examine the effect several of Weber’s factors have on economic growth. After exploring the existing literature, I employ cross-sectional analysis to determine the relationship between my own measure of “Weberianness” and growth rates in 35 developing countries. Though this analysis proves inconclusive, I find that Weberianness is highly correlated with existing levels of growth. To explain these findings, I turn to an analysis of how globalization has affected the relationship between bureaucratic structures and economic performance.
Introduction

Around the beginning of the twentieth century, Max Weber produced an insightful analysis on the interaction of society and the economy (Weber 1968). In his essays, he examined the role of bureaucracy in economic development. He argued that “the mere fact of bureaucratic organization does not unambiguously tell us about the concrete direction of its economic effects, which are always in some manner present,” but that bureaucracy can be structured to encourage economic growth. He provided an outline of the factors necessary for effective bureaucratic structure, including rule-ordered processes, examinations for entry, high socioeconomic status for members, long tenure, and a hierarchical system where salary is based upon rank.

In 1999, Peter Evans and James Rauch performed an important study to test two Weberian factors: meritocratic recruitment and career appeal. They performed a cross-sectional analysis to determine whether more “Weberian” developing countries experienced higher rates of economic growth. This was the first attempt to apply Weber’s principles on a broad scale by examining the underlying structure of bureaucratic institutions. While they found that there was a significant relationship between bureaucratic structure and growth rates, their study represented only a preliminary foray into the subject area. Controversy still exists over the role that bureaucracies play in growth. The limitations of and discrepancies within the existing research warrant further exploration of the impact of “Weberianness” on growth.

In this study I begin by updating the analysis done by Evans and Rauch with more recent data, an expanded set of countries, and different measurements of Weberianness. In addition to the effects of measures of meritocracy and career stability, I examine the impartiality of bureaucratic structure and its relationship with the private sector. Though the relationship between Weberianness and growth proves inconclusive, I find a strong relationship between
Weberianness and existing levels of wealth. To reconcile my findings with those of Evans and Rauch, I turn to an analysis of the effects of globalization on the relationship between bureaucratic quality and wealth. I find that increases in levels of globalization have decreased the effect of bureaucratic institutions on economic performance.

**Bureaucracy and Growth**

There are two main themes that emerge in the research on bureaucratic structures and economic performance. Much of the research concerns the role that governments and bureaucracies have in encouraging economic growth. Also important to this study, however, is the research concerning the quality of data available to bureaucratic studies. This review will address the two subjects independently.

*The Role of the State*

Classical political economists argue, based upon Adam Smith’s laissez-faire approach, that government should only have one role in economics: protecting property rights. Beyond that the government is simply interfering with private markets and limiting the opportunity for growth. In the 1970s and 1980s there was heavy emphasis on the rent-seeking nature of states and the negative effect on economic performance (e.g. Buchanan et al. 1980; Collander 1984; Krueger 1974). The emphasis in both academics and politics was on ways to reduce the size and scope of the state and limit its intervention in the markets.

Alexander Gerschenkron (1962), in his seminal essay on the role of the state in economic development, was one of the first authors to explore the role the state could have in growth and industrialization. Gerschenkron argued that in “economically backward” states, or those that are
underdeveloped industrially relative to their neighbors, there is an incentive to rapidly
industrialize. Both the business community and the general society place political pressure on the
state, which is often expected to drive development. As such, the state chooses to support certain
industries or incentivize specific economic behaviors in a way that drives economic growth
(Gerschenkron 1962). Gerschenkron’s oft-cited analysis provided a foundation for many of the
more recent assessments of the state’s role in economic growth. With Gerschenkron, political
scientists and economists turned from simply trying to limit government to attempting to
understand how governmental institutions can affect growth rates. The emergence in the 1980s
of the “endogenous growth theory,” or the idea that economic growth is related to institutional
structures and policy measures, prompted many studies comparing various measures of
government quality to economic growth rates (Knack and Keefer 1995; Lucas 1988; Mauro

The scholarship on bureaucracy is a subset of the research that has emerged since the
popularization of the endogenous growth theory and has seen significant development in
sophistication and methods. The first studies to explore structural aspects of bureaucracy
specifically were detailed case studies, generally of the highly successful East Asian countries
such as Japan (Johnson 1982), Korea (Amsden 1989), and Taiwan (Wade 1990). These authors
studied government agencies throughout periods of rapid growth, and drew conclusions about
the influence of bureaucracy that were remarkably similar to Weber’s analysis. However, while
these case studies all found a link between various measures of bureaucratic structure and
economic growth, they did not provide a generalizable model that can be easily applied in other
countries.
The first research to directly address the theories advanced by Weber was a study by Evans and Rauch (1999) that examined two Weberian factors: the practice of the meritocratic recruitment and the existence of a predictable career ladder. The authors used data they collected on these two factors to create what they called a “Weberianness Scale,” or a measure of bureaucratic performance. They found a strong and statistically significant correlation \( r = .67 \) between Weberianness and total growth of real GDP per capita from 1970-1990, a relationship that held true even when they controlled for other factors that can influence growth. Their in-depth assessment of two specific bureaucratic qualities, rather than general ideas about strength or predictability, represented a unique approach to analysis of bureaucratic structure.

The Evans and Rauch study remains the most directly Weberian approach to bureaucratic analysis. However, several studies have paralleled their findings in suggesting that bureaucratic effectiveness (of varying definitions) has a significant effect on economic growth or poverty reduction (Henderson et al. 2007; Nee and Opper 2009; Pearce 2005; Portes and Smith 2008). Rothstein and Teorell (2008) implicitly engaged Weber in a study that highlighted the importance of the appearance of impartiality from the bureaucracy, as measured by the degree of meritocracy versus patronage.

Other research has been in direct contradiction to the analysis advanced by Evans and Rauch. The most important of these studies is the research conducted by Kurtz and Shrank (2007). They find that quality of governance is not connected to growth rates, but is connected to existing levels of GDP. To explain these findings, they suggest that economic growth breeds better institutions (rather than institutions causing growth) and that Evans and Rauch were wrong about the directionality of their causal relationship.
A survey of the literature indicates that a consensus still hasn’t emerged on the relationship between bureaucratic structure and economic growth, and there are still significant areas into which the research could expand. This is particularly illustrated between the incongruence between Evans and Rauch’s findings and those of Kurtz and Shrank. This study seeks to address the controversy over this relationship by reproducing Evans and Rauch’s study with different data to test the theory that bureaucratic structures can have a significant effect on economic growth.

The Importance of Data

Despite the significant developments that have occurred in bureaucracy literature, there are limitations to the existing body of research that are imposed by the availability of data. The first attempts to generate a model of “good” bureaucracy using quantitative cross-national analysis were based upon the data that many businessmen use to assess investment risk, including sources such as Business International, the International Country Risk Guide, and the Business and Environmental Risk Intelligence (Mauro 1995; Knack and Keefer 1995). The data came from surveys that asked about perceptions of concepts such as “red tape,” overall bureaucratic “quality,” and corruption. The respondents were asked to evaluate bureaucratic performance in these areas on scales from “good” to “bad,” making the measures extremely subjective. Because there was little definition of what “good” or “bad” meant, the results were entirely perception-based and might be biased by preconceived notions of the safety of investing in a certain country (Evans and Rauch 1999: 751).

In an effort to improve the available statistics, the World Bank has been collecting data measuring perceptions of governance since 1996. The information is grouped into six categories:
Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption. The six variables, though still largely perception-based, comprise many more detailed facets of government performance. While these measures have faced significant critiques (e.g. Kaufman et al. 2007), they are the first widely disseminated data on government performance. As such, they have enabled political economists to investigate in more detail the relationship between governance and growth.

In addition to the problem of the subjectivity of data, Sebastian Dellepiane-Avellaneda (2009) argues that studies need to examine not just the rules that supposedly govern institutions, but also how bureaucracies function in practice. In other words, looking simply at legal frameworks is insufficient. While surveys asked to evaluate overall performance may be unreliable and biased, collecting information on whether or not specific standards are actually followed can provide more accurate information on how the bureaucracy operates. I will use measures that address Dellepiane-Avellaneda’s insistence that the way in which the bureaucracy actually functions is more important than the formal rules. I will also address the common criticism about the subjectivity of data by using figures that are as objective as possible, rather than relying on broad perception-based indicators.

The Relationship between Bureaucratic Structures and Growth

Before presenting any statistical analysis, it is relevant to explain further the theory proposed by Max Weber and advanced by Evans and Rauch. According to this theory, the state’s contribution to economic growth is largely defined by the delivery of collective goods. These goods are the services that the bureaucracy provides, such as business regulation, assistance or
barriers to entering an industry, and requisite infrastructure. More efficient bureaucratic structures will attract more private investment, the primary vehicle for economic growth. Therefore, factors that help a bureaucracy run more smoothly will, in theory, generate economic growth. In this study, I focus on the three measures of “Weberian bureaucracy” for which reliable data is readily available.

The first of these factors is meritocratic recruitment, or the selection of employees based on competence rather than connections. The more intelligent the employees are, the more likely the system is to run smoothly. In addition, a hiring process based on nepotism or patronage is more likely to engender both corruption and hostility within the organization. The second important factor is the attractiveness of the career. The idea of attractiveness comprises such elements as the prospects for advancement, the likelihood of tenure, and base salary.

This study also includes a third factor that is not mentioned in Weber’s formulation of an effective bureaucracy, but one that has arisen frequently in politics. This factor is the ability of civil servants to leave the public service for work in the private sector. In the absence of restrictions, civil servants can leave their jobs to work for the industries they once regulated, where they may directly lobby or seek to influence their former government colleagues. The connections they fostered in the bureaucratic realm may reduce the efficiency of the bureaucracy in performing its duties impartially. Conversely, a relationship between the bureaucracy and business can actually improve businesses’ understanding of how to work with the bureaucracy, allowing for higher growth rates. One task of this study is to determine the directionality of this relationship.

Together, these factors all affect the competence, predictability, and efficiency of the state bureaucracy. Because private companies want to invest in an environment in which they
have an understandable and reasonable bureaucratic environment, these factors should have a nearly direct impact on private investment. In turn, that investment will determine the rates of economic growth. Therefore, the “Weberianness” of a state should correlate with long-term economic growth. If this logic is accurate, the ideas presented here should be easily borne out in my empirical analysis.

**Methodology**

To extend Evans and Rauch’s analysis, I will determine if it is still true for a different time period, dataset, and selection of developing countries. This will test both the robustness and the continuity of their findings. The data I use are from the Global Integrity database, a collection of empirical surveys generated and peer reviewed by in-country local experts (Global Integrity 2010). The survey that experts are asked to complete for their respective countries carefully defines standards for evaluation, rather than asking to rate bureaucratic structure on a scale of “good” to “bad,” in order to compile analyses that are as objective as possible. These surveys include questions that define both the legal standards and the actual practice of the country, and provide the most detailed and complete information about bureaucratic structures. Unfortunately, this data is only available from 2005-2009. Though this represents the end of my time period, in order to work with the best data available it is assumed that bureaucratic structures changed very little over the two decades I am studying.

The three questions I used to analyze legal standards were 1) “In law, there are regulations requiring an impartial, independent and fairly managed civil service;” 2) “In law, there are regulations to prevent nepotism, cronyism, and patronage within the civil service;” and 3) “In law, there are restrictions for civil servants entering the private sector after leaving the
government.” These questions addressed respectively impartiality, meritocratic recruitment, and independence from the private sector. The measures I used to address the true practices of governments were 1) “In practice, civil servants are appointed and evaluated according to professional criteria;” 2) “In practice, civil service management actions (e.g. hiring, firing, promotions) are not based on nepotism, cronyism, or patronage;” 3) “In practice, civil servants have clear job descriptions;” 4) “In practice, in the past year, the government has paid civil servants on time;” and 5) “In practice, the regulations restricting post-government private sector employment for civil servants are effective.” These questions measure meritocratic recruitment, the attractiveness of the career, and the independence from the private sector. Career attractiveness is in part the result of timely paychecks, as well as the existence of a “clear” job description that includes an established hierarchy, assigned functions, and position-appropriate salary.

I aggregated these data in three different ways to isolate the effects of various interactions. First, I created a variable that I called “Weberian Laws” that combined the three legal measures and a second variable called “Weberian Practices” that combined the five practical measures. The independent analysis of these two variables will address the postulation made by Dellepiane-Avellaneda that practice must be studied independently of legal institutions. The second aggregation of data made the same distinction between laws and practices, but excluded the questions regarding the independence from the private sector. These variables I called “Traditional Weberian Laws” and “Traditional Weberian Practices.” The final aggregation method combined the laws and practices of a country into one overall measure of Weberianness. For this measure I maintained the distinction between the traditional Weberian measures and my
adopted measure, hence creating both “Traditional Weberianness” and “Modified Weberianness.”

In all, I produced six variables that measured the Weberian characteristics of bureaucracies in slightly different ways. To determine their relationship to economic growth, I used the percent increase in per capita gross domestic product from 1990 to 2009, the period of time for which data are available following the Evans and Rauch study. By using the two decades pursuant to Evans and Rauch’s study, I intended to test the continuity of their analysis. To control for other factors that affect economic growth, I selected variables that measured existing economic environment, available human capital and infrastructure, region, and stability of government (for a complete list of variables and their explanations see Appendix 1). The control variables are data from 1990, the beginning of my time period, because they represent the existing levels of development prior to measured growth. My dataset consisted of sixty-three developing countries from every region of the world.

**The Civil Service and the Private Sector**

Before I began my analysis of how bureaucratic structures affect economic growth, I wanted to explore the relationship between the civil service and the private sector. As mentioned above, the ability of civil servants to enter the private sector could either inhibit or enable growth. To understand which occurs, I first created a variable that combined the laws and the practices that govern employment options for former civil servants. I then constructed a scatter plot of GDP growth and employment restrictions. This plot didn’t indicate a clear relationship, and in fact the two variables were not highly correlated (r=.0535). A simple bivariate ordinary
least squares (OLS) regression showed that the relationship between the two variables was positive, but confirmed that it wasn’t statistically significant.

These results indicated that the restrictions on private sector employment were more likely to enable growth than inhibit it. As such, their inclusion within my indices of Weberianness would not disturb the directionality of the expected relationship since higher values of all the measures within the variable are expected to correlate with higher levels of growth. However, the lack of significance indicates that my Modified Weberianness variable is unlikely to perform better in models than the Traditional Weberianness variable.

Explaining Economic Growth

As a preliminary method of understanding the data, I constructed a simple scatter plot of GDP growth and Traditional Weberian Laws (see Appendix 2). This revealed that China represented a significant outlier, which is unsurprising considering their unrivaled recent rates of economic growth. Due to my concern about the ability of China to distort the analysis I dropped the case from my dataset. The scatter plot also revealed another potentially problematic aspect of my data—due to the compositional nature of the Traditional Weberian Laws measure, the resulting variable was dichotomous. Additionally, only three of my sixty-two remaining countries fell into the less Weberian category. This inherent limitation to the variable provided an early warning that I would have to be wary about the interpretation of my results.

A simple measure of correlation did not indicate a strong relationship between any of my six measures of Weberianness and economic growth. As higher values of the variables indicate more Weberian bureaucracies, one would expect them to have a positive correlation with economic growth. However, three of my six variables actually correlated negatively with GDP.
growth, a finding that appeared to contradict the Weberian hypothesis. These three variables were Weberian Laws \((r = -0.0592)\), Traditional Weberian Laws \((r = -0.2480)\), and Traditional Weberianness \((r = -0.0687)\). The three variables that were positively correlated were Weberian Practices \((r = 0.0882)\), Traditional Weberian Practices \((r = 0.0881)\), and Modified Weberianness \((r = 0.0074)\). The variable with the most potential explanatory power was the measure of Traditional Weberian Laws, which had the opposite relationship than that which the theory predicts.

Before discounting the hypothesis completely, however, I turned to a more sophisticated analysis of the variables. I began with bivariate OLS analyses of the relationship between my Weberianness measures and GDP growth, the results of which reaffirmed those I found from simple correlation. The only variable that had a statistically significant relationship with GDP growth was Traditional Weberian Laws \((p = 0.052)\). However, this variable was still exhibiting a negative relationship with GDP growth.

Despite the lack of encouraging results, I decided to perform a multivariate OLS analysis to explore in more detail the causes of economic growth. I began with four separate models to address different theories of development: political environment, economic conditions, existing infrastructure, and regional differences. The political environment variable was simply the measure of Weberianness. Economic conditions and existing infrastructure were controls that sought to capture the effect that existing levels of development and capacity for growth would have on growth rates in order to isolate the bureaucratic effect. Finally, I included dummy variables for regional differences to control for the effect that region may have on growth.

The initial results of the four models were largely inconclusive, as few of the variables exhibited much statistical significance. I combined the most significant of the variables into a
comprehensive model for GDP growth, which I then pared down until I reached a relatively parsimonious model with the strongest explanatory power (see Appendices 3 and 5). Though the Traditional Weberian Laws variable was not statistically significant in most of the models, I kept it in my analysis as my primary explanatory variable. My final model contained six variables: Traditional Weberian Laws, gross domestic savings, net official development assistance and official aid received, current account balance, government consumption expenditure, and a regional dummy variable for Asia. Of these, all but the measure of Weberianness and the aid variable were significant at the 90% confidence level.

Several conclusions can be drawn from this model, primarily from my controls. First, an increase in gross domestic savings corresponds with higher per capita GDP growth. Second, a larger current account balance corresponds with lower growth. Third, higher government consumption is correlated with stronger economic growth. Finally, Asian countries are more likely to experience high GDP growth. This final conclusion is particularly predictable given the obvious successes of many East Asian countries. The conclusion that cannot be drawn, however, is that Weberian bureaucracies will experience higher economic growth.

This model for GDP growth differs significantly from the one proposed by Evans and Rauch. In a final attempt to replicate their results, I tested a model that closely approximated their multivariate model (see Appendices 4 and 5). This model contained only the three independent variables that their study found most influential: a Weberianness score, initial GDP per capita for the time period studied, and a measure of the initial educational attainment levels. In this model the Weberianness measure gained significance \( (p = .011) \) but still exhibited a negative correlation with growth. As in Evans and Rauch’s model, initial GDP and educational attainment were not statistically significant. The most striking difference between the model
results, however, was the explanatory power of each. While Evans and Rauch’s model explained 46% of the variation in GDP growth, my model only explained 8.5% of the variation.

Discussion

Rather than expanding Evans and Rauch’s analysis, my research seemed to directly contradict their findings. There are two possible explanations for that. First, Evans and Rauch’s findings could be inaccurate due to limited information or incomplete analysis. Second, my data and analysis could have been flawed. Along this vein, it is important to return to an aforementioned limitation of my dataset. The measure that I used as my primary explanatory variable was Traditional Weberian Laws, a combination of two survey questions from the Global Integrity database. Both of these were yes or no questions about the existence of specific laws, which means that there are only three possible levels of my bureaucratic measure: no to both laws, the existence of one law but not the other, or yes to the existence of both laws. The particular subset of countries I used produced an interesting distribution in which there were zero countries in the first category, only three in the second, and all the remaining countries in the third. As such, these three countries would have an extreme amount of influence on the performance of the variable. Any analysis that includes the variable could be inherently flawed.

Despite the limitations that my most statistically significant Weberianness measure places on the analysis, my results still appear to directly contradict those of Evans and Rauch. None of my other five more sophisticated measures of Weberianness correlated with GDP growth in my bivariate or multivariate analyses. In addition, several of them exhibited a negative relationship with growth. These findings call into question the applicability of Weber’s theories to developing countries in the last 20 years.
Explaining Existing Levels of Development

In the process of my analysis, I noticed that though GDP growth was not readily explained by the data I had collected, the initial levels of GDP per capita were strongly correlated with my Weberianness measures. This was similar to the findings of Kurtz and Schrank, who found that although there was no significant connection between governance and future growth, there was a strong positive relationship between wealth and governance. Because my findings up to this point had not supported Evans and Rauch’s theories, I turned to an exploration of the opposing theories advanced by Kurtz and Schrank. I examined the relationship between the Weberianness of a bureaucracy and existing levels of wealth.

For my dependent variable, I used the natural log of the per capita GDP for each country in order to normalize its distribution. The first analyses I performed were with simple bivariate OLS regressions of my Weberianness measures against the natural log of the per capita GDP. These results demonstrated a much stronger relationship between Weberianness and GDP per capita than the relationship I had found with GDP growth. All of the variables except for Traditional Weberian Laws exhibited a positive relationship that was statistically significant at the 95% confidence level.

Of these regressions, Weberian Practices and Modified Weberianness produced particularly telling results. As a single variable, Weberian Practices accounted for 16.12% of the variation in GDP per capita ($p<.001$). Modified Weberianness was even stronger, explaining 17.43% of the variance in GDP levels ($p<.001$). Because existing levels of economic development are the result of many combined factors, the ability of a single variable to explain more than 15% of the variance indicates a substantial relationship.
To construct a multivariate OLS model I chose to use Modified Weberianness as my primary explanatory variable. In addition to having a greater explanatory power, this measure is also a more complete assessment of all the facets of bureaucracy in which I was interested. I did not include both Weberian variables in my multivariate model because they are closely related and therefore likely to cause problems of collinearity. As with my previous analysis, I began by constructing four separate models for per capita GDP: political environment, economic conditions, existing infrastructure, and regional differences.

In each of these four models I included the Modified Weberianness variable, and it had a strong, positive, and statistically significant correlation with GDP per capita in every model. Again, I combined the most significant of the variables into a comprehensive model, which I then pared down until I reached a relatively parsimonious model with the strongest explanatory power. The final model contained eight variables: Modified Weberianness, gross domestic savings, current account balance, government consumption, primary education enrollment, and dummy variables for Latin America and Europe (see Appendix 6). This model explained an impressive 73.49% of the variance in GDP per capita, and held up to tests for heteroskedasticity and collinearity.\(^1\) It is important to note that the current account balance is responsible for a significant amount of the model’s explanatory power; when it was removed from the analysis, the adjusted R-squared value fell from .7349 to .5769. However, even the model that didn’t include the current account balance variable had impressive explanatory power and produced statistically significant results.

\(^1\) Removing the regional dummy variables from the model reduces the R-squared value to .6348.
Discussion

The results of this analysis could be interpreted in multiple ways. The first reason that wealth could be correlated with higher levels of Weberianness is, as Kurtz and Schrank argue, that “antecedent economic conditions are strong predictors of perceptions of the quality of public institutions,” and these perceptions lead to overly subjective measurements of bureaucratic performance (2007: 539). However, because my data delineate between the laws of a country and the practices, it allows for a distinction between objective measurements and those that are potentially more subjective. Though I can’t draw significant conclusions without better measures of institutional performance, it is interesting to note that the correlation between Weberian laws and GDP per capita was slightly weaker than that between Weberian practices and GDP. This indicates that the practices measure may be slightly biased by perceptions relating to existing economic conditions.

The second explanation for how wealth could correlate with bureaucracies that are more Weberian stems from the degree to which countries have the ability to reform their institutions. Kurtz and Schrank argue that “the record of political reform is far better in the places in which economic development has taken place” (2007: 541). In other words, it could be possible that only after a government has made significant economic gains does it have the capacity to enact substantial reform. As support for this argument, Kurtz and Schrank cite the sustained expansion that the United States experienced during the Progressive era (2007: 541). At the time, the judicial system was incredibly corrupt and served as the main arm of government that regulated economic practices. Since that period of rapid development, the United States has enacted many reforms to improve their governance system. Further analysis with more sophisticated objective
and subjective measures would be required to substantiate this explanation. In addition to improved data, allowing a time lag to determined delayed effects would enhance the analysis.

A final explanation for the relationship between wealth and bureaucratic structure is that even if current economic growth cannot be explained by the Weberianess of the bureaucracy, past growth must have been at least in part related to bureaucratic characteristics. It is quite possible that in previous decades Weberian bureaucracies were a crucial determinant of growth even though they don’t seem to have been in the past twenty years. This would be particularly convincing if I could prove that increasing globalization has decreased the importance of bureaucratic structures, thus negating the effects of bureaucratic quality in recent years. In order to test this interpretation, I decided to perform further analysis of the relationship between bureaucratic structures and economic growth over time. The fact that both Evans and Rauch and Kurtz and Shrank neglected to take globalization into account in their analyses represents a glaring omission in their research, and presents a significant opportunity for additional study. Globalization may be the link that can reconcile the various findings of Evans and Rauch, Kurtz and Shrank, and my preceding analysis.

Globalization Literature

There has been a significant amount of research done on the effects of globalization on the state. This literature is broadly focused on the question of whether countries are participating in a “race to the bottom” or experiencing constraints on government policymaking as a result of economic globalization. Those who believe that globalization severely restricts the ability of states to establish independent fiscal policy, or the “constraints school,” argue that states are forced to act in the interest of attracting international investors rather than in the interest of their
own citizens (e.g. Cerny 1994; Strange 1996; Keohane and Milner 1996; Cox 1997; and Scholte 2000). This perspective is epitomized by Thomas Friedman (1999), who coined the phrase “The Golden Straitjacket” to describe the position in which globally integrated states find themselves. Friedman defined the rules that states must follow in order to become a part of the globalized world economy, including such acts as shrinking the state bureaucracy, lowering tariffs, and deregulating capital markets. These rules combined to form the Golden Straitjacket, which would both grow the economy and shrink the government. As countries put on this straitjacket, they become part of a “race to the bottom” in which they compete to attract the most capital investment by reducing taxation, social spending, and regulatory restrictions.

In response to the constraints school, several scholars did research to demonstrate that globalization is not as pervasive as many scholars assume. For example, Robert Wade (1996) performed a thorough analysis of trade, financial flows, foreign and domestic investment, and other statistical measures of globalization. He argued that the world economy is much less integrated than many globalization theorists tend to posit. Other scholars have also analyzed economic statistics and come to similar conclusions about the limited nature of globalization (e.g. Hirst and Thompson 1996; Boyer and Drache 1996; Campbell 2003). Despite the evidence that globalization may not be as pervasive as is sometimes imagined, many constraints school scholars argue that globalization is constantly advancing and if countries aren’t experiencing policy constraints now then it’s only a matter of time until they do (Weiss 2003).

A second response to the constraints school is that advanced by Linda Weiss (2003), who argues that institutions aren’t simply constrained by globalization but continue to play a determining role in economic policy. Weiss contends that “Unlike the constraining aspect with its economic logic of exit, the enabling dimension of globalization reveals a political logic of
competition and insecurity, which generates incentives for governments to take initiatives that will strengthen the national system of innovation and social protection” (15). In other words, multi-national corporations desire countries that are innovative and stable, both of which require functioning national institutions. Her analysis is based upon research by Dennis Quinn (1997) who found that, contrary to the Golden Straitjacket hypothesis, measures of financial openness are correlated with increases in both taxation and spending. Similarly, John Hobson (2003) found that states are actually engaged in a “race to the middle” in which there is moderate convergence in tax rates but states retain some agency in balancing the interests of investors with those of their citizens.

The existing literature has extensively debated the relationship between openness and both taxing and spending. While this relationship between globalization and the policymaking decisions of the state is interesting, it does not represent the full picture. When states make policy there is variance in how effective it is. Alan Greenspan, former chairman of the United States Federal Reserve, recognized the implications of globalization on policy success. He argued that “global forces, combined with lower international trade barriers, have diminished the scope of national governments to affect the paths of their economies” (as cited in Smick 2008). As such, more research should be done on the implications of globalization on the economic policy effectiveness of states. By combining my work on bureaucracy with the dimension of globalization, I both address the inconsistencies in the bureaucracy literature and fill a gap in the existing globalization literature.
Bureaucracy and Globalization

Using data from 1970-1990, Evans and Rauch found a link between bureaucratic structure and growth. Neither my analysis nor the work of Kurtz and Shrank, both with data from 1990 and later, were able to substantiate their research. However, my research and that of Kurtz and Shrank did find a link between governance and existing levels of development. This suggests that the time period is the key difference and while bureaucratic structures may once have had an effect on growth, they no longer do.

Globalization can explain the change in effectiveness of bureaucratic structures. Instead of forcing tax rates and social spending down, firms that operate at the transnational level may simply be finding ways to evade bureaucratic regulations and operate independently of the governance structures in individual countries. As such, bureaucracies may have become less effective as the level of globalization has increased. To test this hypothesis, I decided to take a broader approach to my analysis. Rather than working solely with developing countries, I expanded my dataset to include 88 countries at varying levels of development from all regions of the world. In addition, I chose to perform a time-series cross-sectional (TSCS) fixed effects model to with GDP per capita as my dependent variable to examine in detail the change over time. I had to use a more general measure of bureaucratic quality, the International Country Risk Guide (ICRG) measure of bureaucratic quality, in order to have data that was measured over a longer time period (1984 to 2009). To measure globalization I used the KOF Index of Economic Globalization. My final explanatory variable was the interaction term between the ICRG and KOF measures (for an explanation of these indices, see Appendix 7).

After standardizing my explanatory variables to facilitate interpretation, the first test I performed was a simple TSCS bivariate regression of Bureaucratic Quality and GDP per capita
to ensure that my new measure of bureaucracy would correlate with existing levels of development in the same way as my previous measures had. This model indicated that a unit increase in bureaucratic quality (measured on a scale of -2 to 2) correlated with an increase in GDP per capita of $337 ($p=.010$). I performed the same analysis with globalization and found that a unit increase in globalization (measured on a scale of -43 to 43) correlated with an increase in GDP per capita of $88 ($p<.001$). These results indicated that both variables have been highly correlated with GDP across countries and over a period of 25 years.

To test whether globalization was influencing the relationship between bureaucratic quality and growth, I constructed an interaction term by multiplying my globalization and bureaucratic quality indices together. I then built a multivariate TSCS model, beginning simply with controls (see Appendix 8). My control variables were current account balance (as a % of GDP), net inflows of foreign direct investment (% of GDP), gross savings (% of GNI), net official development assistance received (% of GNI), and net trade (% of GDP). Of these variables, only FDI and ODA were significant. My second model contained my explanatory variables, all of which were significant. I then combined my controls and explanatory variables into a final model. In this model my controls lost significance. However, my explanatory variables were still very significant.

The statistical significance of my interaction term confirmed that globalization and bureaucratic quality do affect each other in the regression. The coefficients indicate that when globalization is held at its mean, a standard deviation increase bureaucratic quality corresponds with a $251 increase in GDP per capita. To put those numbers in context, this increase is approximately the difference between the GDP per capita of Chile and that of Poland in 2009. When bureaucratic quality is held at its mean, a standard deviation increase in globalization
corresponds with a $644 increase in GDP per capita. This increase is roughly equal to the entire GDP per capita of Pakistan.

To understand how the effects of bureaucracy, globalization, and their interaction term have changed over time I split my data into two time periods. I chose a cut date of 1990 to correspond with the final year of the Evans and Rauch study and the initial year of my study. By comparing the variable performance for the earlier and later time periods, I could determine what impact time has had on bureaucratic influence. To do so, I used a Prais-Winsten linear regression with panel-corrected standard errors, using the AR1 autocorrelation structure to eliminate problems of autocorrelation.

Due to the insignificance of my controls, I dropped them from my time-delineated models (see Appendix 9). In both my Pre-1990 and Post-1990 models, the interaction term remained significant. This indicates that bureaucratic quality and globalization continued to affect each other over the duration of the time period. In addition, both bureaucratic quality and globalization continued to have statistically significant relationships with GDP per capita. The coefficients, however, varied between the models. Before 1990, a standard deviation increase in bureaucratic quality corresponded with a $3,372 increase in GDP per capita. Since 1990, however, the corresponding increase in GDP per capita has only been $2,020. This indicates that the strength of the relationship has decreased over time. Additionally, the ability of globalization to predict changes in GDP per capita has decreased over time. A standard deviation increase in globalization corresponded with an increase in GDP per capita of $2,787 before 1990, but corresponded with a $1,952 increase since that time.
Discussion

These results suggest that in the last several decades the effect of bureaucratic institutions on economic performance has been waning. The strength of the relationship between bureaucratic structure and economic growth decreased in the previous decades. This supports my theory that the phenomenon of globalization can reconcile the differing conclusions reached by Evans and Rauch, Kurtz and Shrank, and my own analysis. While these variables continue to interact and all remain significant as predictors of GDP per capita in the later time period, it is clear that bureaucratic structures are poorer predictors of growth than in previous decades.

For both the Pre-1990 and Post-1990 models, the R-squared values were relatively high (.6028 and .3636 respectively). This indicates that bureaucratic structure and level of globalization can explain a reasonably large amount of the variance in GDP per capita. The weaker explanatory power for the Post-1990 model could be a result of the greater number of cases, or could indicate that the factors that influence GDP levels have diversified over time. Though these models performed extremely well, they were perhaps limited by the lack of controls, as no individual variable of those tested remained significant within my final model. Despite its simplicity, my regression functioned well as a parsimonious model.

Conclusions

This research sought to help resolve the controversy over the relationship between bureaucratic structure and economic growth. The two sides of the debate are exemplified by the studies by Evans and Rauch in support of the institutionalist approach and Kurtz and Schrank in opposition. In my initial analysis I tried to replicate Evans and Rauch’s study, an application of Max Weber’s theory that meritocratic recruitment and rewarding career paths will improve the
functioning of bureaucracy and hence increase growth rates. I was not able to substantiate any of their findings with my own analysis. Though I didn’t necessarily disprove the Weberian theory, my results called their finding into question.

I then turned to an analysis of the type of relationship that Kurtz and Schrank argued exists between bureaucratic structure and economic development. I found that there is a strong and statistically significant relationship between Weberianness and existing levels of growth. This relationship holds true across many different multivariate analyses, suggesting a strong and consistent interaction exists between the two factors.

In order to reconcile the various conclusions I mention above, I turned to a more robust analysis that included the dimension of time and a measure of globalization. This analysis demonstrated that the effects of bureaucratic quality on GDP per capita have declined over time, an indication that bureaucratic institutions are becoming less important in the process of capital formation. Additionally, the relationship between levels of globalization and GDP per capita has weakened, indicating that the effects of globalization on the economic performance of a state may have decreased recently.

Though it initially seemed to be contradictory, my analysis doesn’t disprove the conclusions of Evans and Rauch. Though it doesn’t appear to in the last decade, bureaucratic structure may have affected growth rates for the time period they studied. Nor does my analysis negate the argument of Kurtz and Shrank that in the 1990s governance could not explain growth but was correlated strongly with existing levels of development. Instead, my conclusions offer an explanation for why these two studies could both be right: bureaucratic structures have become less effective while globalization has become an extremely important component of growth in our modern economic system.
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Works Cited:


Lovett 28


## Appendix 1: Variable Definitions, Stage 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weberian Laws</strong></td>
<td>An index of three questions about bureaucratic laws that addressed respectively impartiality, meritocratic recruitment, and independence from the private sector</td>
</tr>
<tr>
<td><strong>Weberian Practice</strong></td>
<td>An index of five questions about bureaucratic practices that measure meritocratic recruitment, the attractiveness of the career, and the independence from the private sector</td>
</tr>
<tr>
<td><strong>Traditional Weberian Laws</strong></td>
<td>Weberian Laws excluding the measure of independence from the private sector</td>
</tr>
<tr>
<td><strong>Traditional Weberian Practice</strong></td>
<td>Weberian Practices excluding the measure of independence from the private sector</td>
</tr>
<tr>
<td><strong>Traditional Weberianness</strong></td>
<td>The sum of Traditional Weberian Laws and Traditional Weberian Practice</td>
</tr>
<tr>
<td><strong>Modified Weberianness</strong></td>
<td>The sum of Weberian Laws and Weberian Practice</td>
</tr>
<tr>
<td><strong>GDP per capita</strong></td>
<td>1990 GDP per capita in constant 2000 USD</td>
</tr>
<tr>
<td><strong>GDP Growth</strong></td>
<td>The percent growth in GDP per capita from 1990 to 2009</td>
</tr>
<tr>
<td><strong>Savings</strong></td>
<td>Gross domestic savings in trillions of current USD</td>
</tr>
<tr>
<td><strong>ODA and Aid</strong></td>
<td>Net official development assistance and official aid received in billions of 2008 USD</td>
</tr>
<tr>
<td><strong>FDI</strong></td>
<td>Foreign direct investment, net inflows as percent of GDP</td>
</tr>
<tr>
<td><strong>Primary Enrollment</strong></td>
<td>Primary school enrollment as percent of gross</td>
</tr>
<tr>
<td><strong>Current Acct</strong></td>
<td>Current account balance as percent of GDP</td>
</tr>
<tr>
<td><strong>Gov Consumption</strong></td>
<td>Net general government consumption as a percent of GDP</td>
</tr>
<tr>
<td><strong>Population</strong></td>
<td>Total population in millions</td>
</tr>
<tr>
<td><strong>Africa</strong></td>
<td>Dummy variable for African region</td>
</tr>
<tr>
<td><strong>Asia</strong></td>
<td>Dummy variable for Asian region</td>
</tr>
<tr>
<td><strong>Latin America</strong></td>
<td>Dummy variable for Latin American region</td>
</tr>
<tr>
<td><strong>Europe</strong></td>
<td>Dummy variable for European region</td>
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</tbody>
</table>
Appendix 2:
Scatter Plot of Weberianness vs. GDP growth

Appendix 3:
Linear Regression of “GDP Growth” Model 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>T</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.123</td>
<td>.598</td>
<td>1.88</td>
<td>.066</td>
</tr>
<tr>
<td>Traditional</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weberian Laws</td>
<td>-.645</td>
<td>.571</td>
<td>-1.13</td>
<td>.265</td>
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<tr>
<td>Savings</td>
<td>.004</td>
<td>.002</td>
<td>1.71</td>
<td>.093</td>
</tr>
<tr>
<td>ODA Aid</td>
<td>.051</td>
<td>.038</td>
<td>1.35</td>
<td>.184</td>
</tr>
<tr>
<td>Current Acct</td>
<td>-.012</td>
<td>.007</td>
<td>-1.74</td>
<td>.088</td>
</tr>
<tr>
<td>Gov Consump</td>
<td>-.016</td>
<td>.007</td>
<td>-2.36</td>
<td>.022</td>
</tr>
<tr>
<td>Asia</td>
<td>.240</td>
<td>.099</td>
<td>2.42</td>
<td>.019</td>
</tr>
</tbody>
</table>

| N     | 56       |
| Adjusted R²| .1957 |
### Appendix 4:
**Linear Regression of “GDP Growth” Model 2**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>T</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>2.153</td>
<td>.684</td>
<td>3.15</td>
<td>.003</td>
</tr>
<tr>
<td>Traditional Weberian</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laws</td>
<td>-1.646</td>
<td>.630</td>
<td>-2.61</td>
<td>.011</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>-.048</td>
<td>.059</td>
<td>-.82</td>
<td>.414</td>
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<tr>
<td>Primary Education</td>
<td>.003</td>
<td>.004</td>
<td>.82</td>
<td>.414</td>
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</table>

N = 61

Adjusted $R^2 = .0853$

### Appendix 5:
**Model Comparison, Linear Regression of GDP Growth**

<table>
<thead>
<tr>
<th>Variable</th>
<th>“Best” Model</th>
<th>Imitation Model</th>
<th>Evans and Rauch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.123 (.598)*</td>
<td>2.153 (.684)***</td>
<td>(Not reported)</td>
</tr>
<tr>
<td>Weberianness Index(^a)</td>
<td>-.645 (.571)</td>
<td>-1.646 (.630)**</td>
<td>.615***</td>
</tr>
<tr>
<td>Savings</td>
<td>.004 (.002)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ODA Aid</td>
<td>.051 (.038)</td>
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<td></td>
</tr>
<tr>
<td>Current Acct</td>
<td>-.012 (.007)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gov Consump</td>
<td>-.016 (.007)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asia</td>
<td>.240 (.099)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP per capita(^a)</td>
<td>-.048 (.059)</td>
<td></td>
<td>-.317</td>
</tr>
<tr>
<td>Education Levels(^a)</td>
<td>.003 (.004)</td>
<td></td>
<td>.307</td>
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</tbody>
</table>

N = 56

Adjusted $R^2 = .1957$

Adjusted $R^2 = .0853$

Notes: \(^a\) Precise definition of variable varies across models; Dependent variable is 20-year GDP growth; Figures represent unstandardized coefficients; Robust standard errors in parentheses except where unavailable; * p<.10, ** P<.05, ***p<.01
Appendix 6:
Linear Regression of “GDP per capita”

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>T</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>2.982</td>
<td>.610</td>
<td>4.88</td>
<td>0.000</td>
</tr>
<tr>
<td>Modified Weberianness</td>
<td>3.213</td>
<td>.714</td>
<td>4.50</td>
<td>0.000</td>
</tr>
<tr>
<td>Savings</td>
<td>.012</td>
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<td>Current Acct</td>
<td>.067</td>
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<td>Gov Consump</td>
<td>.047</td>
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<td>0.000</td>
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<tr>
<td>Primary Educ</td>
<td>.013</td>
<td>.005</td>
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<td>0.016</td>
</tr>
<tr>
<td>Population</td>
<td>-.003</td>
<td>.0008</td>
<td>-3.53</td>
<td>0.001</td>
</tr>
<tr>
<td>Latin America</td>
<td>.868</td>
<td>.229</td>
<td>3.78</td>
<td>0.000</td>
</tr>
<tr>
<td>Europe</td>
<td>.774</td>
<td>.242</td>
<td>3.20</td>
<td>0.002</td>
</tr>
</tbody>
</table>

N: 55
Adjusted R²: .7349

Appendix 7:
Variable Definitions, Stage 2

Bureaucratic Quality
An index that measures whether a bureaucracy has the strength and expertise to govern without drastic changes in policy or interruptions in government services. Strong bureaucracies tend to be somewhat autonomous from political pressure and to have an established mechanism for recruitment and training.

Globalization Index
A weighted index of economic integration with the following breakdown:

i) Actual Flows (50%)
   - Trade (percent of GDP) (19%)
   - Foreign Direct Investment, flows (percent of GDP) (20%)
   - Foreign Direct Investment, stocks (percent of GDP) (24%)
   - Portfolio Investment (percent of GDP) (17%)
   - Income Payments to Foreign Nationals (percent of GDP) (20%)

ii) Restrictions (50%)
   - Hidden Import Barriers (22%)
   - Mean Tariff Rate (28%)
   - Taxes on International Trade (percent of current revenue) (27%)
   - Capital Account Restrictions (22%)

Bureau X Global
The interaction term of bureaucratic quality and the globalization index, produced by multiplying together the two variables.
Appendix 8:  
Time-Series Cross-Sectional Fixed Effects Panel Analysis of GDP per capita

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1918.95 (216.34)**</td>
<td>6600.64 (156.73)**</td>
<td>2585.40 (54.99)**</td>
</tr>
<tr>
<td>Bureaucratic Quality</td>
<td>585.86 (229.81)*</td>
<td>209.39 (84.06)*</td>
<td></td>
</tr>
<tr>
<td>Globalization Index</td>
<td>92.93 (11.47)**</td>
<td>33.14 (6.03)**</td>
<td></td>
</tr>
<tr>
<td>Bureau X Global</td>
<td>61.99 (11.10)**</td>
<td>12.98 (4.10)**</td>
<td></td>
</tr>
<tr>
<td>Current Acct Balance</td>
<td>18.60 (13.09)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FDI</td>
<td>34.73 (13.38)*</td>
<td></td>
<td>-4.07 (6.89)</td>
</tr>
<tr>
<td>Savings (% of GDP)</td>
<td>2.41 (3.11)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ODA (% of GDP)</td>
<td>-13.66 (4.48)**</td>
<td></td>
<td>-5.66 (2.93)</td>
</tr>
<tr>
<td>Trade (% of GDP)</td>
<td>5.06 (2.79)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N | 1344 | 2077 | 1393
R² | .2154 | .6268 | .4417

Notes: Dependent variable is GDP per capita; Figures represent unstandardized coefficients; Robust standard errors in parentheses; * p< .05, ** P< .01

Appendix 9:  
Prais—Winsten Regression of GDP per capita

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-1990</th>
<th>Post-1990</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>6710.51 (262.95)***</td>
<td>7101.68 (253.89)***</td>
</tr>
<tr>
<td>Bureaucratic Quality</td>
<td>2811.85 (270.92)***</td>
<td>1684.57 (263.08)***</td>
</tr>
<tr>
<td>Globalization Index</td>
<td>143.50 (12.64)***</td>
<td>100.51 (13.42)***</td>
</tr>
<tr>
<td>Bureau X Global</td>
<td>80.73 (7.30)***</td>
<td>54.03 (9.87)***</td>
</tr>
</tbody>
</table>

N | 501 | 1576
R² | .6028 | .3636

Notes: Dependent variable is GDP per capita; Figures represent unstandardized coefficients; Panel-corrected standard errors in parentheses; * p< .10, ** P< .05, ***p<.01