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Abstract

Sugar growers continue to benefit from favorable economic conditions provided by the U.S. government. Yet empirical data reveal a decrease in the aggregate support for sugar legislation in recent years. In 1978, there were 9,187 full or part owners of sugar cane and sugar beet farms, compared to 7,799 farms in 1987. The level of sugar subsidy allocated to the farmers, however, has increased and even favored certain sugar growers disproportionately over others. Such empirical findings suggests that politics, as much as economics, affect the level of sugar subsidy. This paper examines why an increasingly smaller number of sugar farmers receive a steadily larger government subsidy.

Anne Peterson
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to 7,799 farms in 1987. The level of sugar subsidy allocated to the farmers,
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disproportionately over others. Such empirical findings suggests that politics,
as much as economics, affect the level of sugar subsidy. This paper examines
why an increasingly smaller number of sugar farmers receive a steadily larger
government subsidy.

Mainstream economics cannot explain the unusual linkage between sugar
producers and subsidy levels. While traditional, neoclassical economists
cultivate elegant models that explain economic phenomena, they fail to
characterize correctly the relationship between voters, their elected
representatives, and the political institutions which shape the policies.

Consequently, an accurate model must combine what we know from
mainstream economics and political economy. Before outlining the theoretical
framework, however, the following section reviews the history of the sugar
subsidy.

History of Sugar Subsidy
The Jones-Costigan Act, created the modern sugar program as part of
the New Deal package of agricultural legislation in 1934. The program
included domestic production controls and direct payments to farmers, as
well as import restrictions that addressed the declining ratio of farm to non-
farm incomes of the preceding decade (Harper, 1990). The first major
transformation of the U.S. sugar program resulted from the U.S. trade embargo
of Cuba's exports to the U.S. in 1963. Throughout the following years, the
United States government imposed a series of price supports, import quotas,
and loans to protect U.S. producers from lower-priced foreign grown sugar
as well as to encourage domestic production of sugar (Rendelman, 1989).
Many farmers in the U.S. began to supplement the dearth of sugar left by the
embargo and exploit the "protected market" conditions provided by the U.S.
government subsidy.

Despite the federal aid granted to sugar growers, not all sectors of
agriculture devoted to growing sugar derivatives flourished. Domestic
production of sugar cane increased steadily from 1982 onward, while sugar

beet production stagnated (Knutson, 1985). Through time, the largest number of sugar beet farmers were concentrated in a specific West/Midwest region of the U.S. (Minnesota, North Dakota, Idaho) while sugar cane farmers were found in the Southeast, specifically Louisiana and Florida. Farmers in a majority of states, then, did not receive positive economic or political incentives from the sugar subsidy.

Perhaps more important, the number of farmers who received a subsidy for sugar cane and sugar beet derivatives decreased over time, while the level of subsidy increased. By 1995, the program peaked at over $500 million dollars in loans to U.S. sugar growers. The welfare cost to consumers has also increased over the years to over $1.9 billion dollars. Corn, the derivative of high fructose corn syrup, emerged as a strong competitor in the domestic sweetener market. While sugar held 72% of the domestic sweetener market in 1975, that share had fallen to 40% by 1987, suggesting that the number of farmers who could vote to support sugar legislation (i.e. the political clout of sugar growers) had significantly diminished (Harper, 1988).

Ironically, producer of such alternative sweeteners can increase the prices of their products according to the protected market price for sugar, resulting in high profit margins (Irving, 1988). Hence the producers of high fructose corn syrup have become active supporters of the sugar program (Monahan, 1992).

In order to prevent excess domestic sugar from being dumped onto the world market at an economic loss to sugar growers, representatives of sugar refineries and constituencies that benefit from the sugar program have vigorously lobbied the Agriculture Committee of the House of Representatives to maintain a high domestic price support (see Graph 1). Since the current sugar program began in 1981, the sugar industry has contributed more than $11 million to campaigns of selected politicians in order to maintain the economic benefits of the sugar program (*Chicago Tribune*, 1995: 30 April).

Despite the efforts of the sugar industry to maintain the level of sugar subsidy, the rising budget deficit is forcing the Republican-led Congress to reassess its support of a number of the major agricultural programs. Representative Dan Miller (R-Fl.) vowed to kill the federal sugar subsidy program that provides a $1.9 billion annual windfall to U.S. sugar growers (Regan, 1995).

Graph 1

Price Support for U.S. Sugar

1965-1992
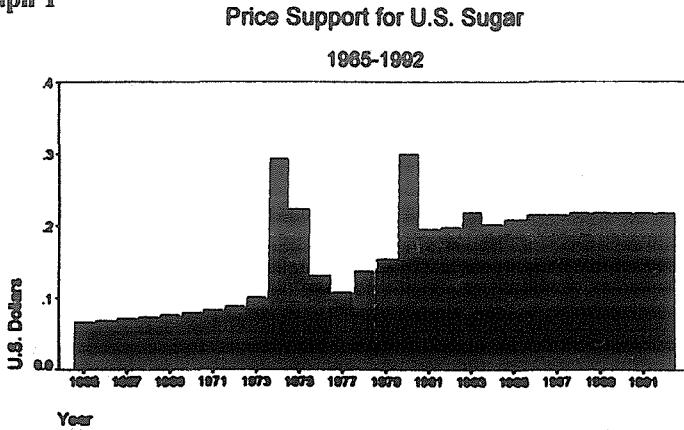
Concerned taxpayers and manufacturers who demand sugar for consumption and production purposes are pressing the U.S. government to end the subsidy program for sugar growers and force them to join the competitive ranks of the world market. These groups who generate a demand for sugar feel the economic brunt of the sugar subsidies in a substantive way. They are shut out from the inexpensive world market price of sugar and instead find their tax dollars funding the price supports and interest free loans which guarantee the profit of sugar growers. Consumers are left to buy U.S. sugar at a price greater than fifty percent of world market prices, spurring politicians such as House Majority Leader Richard Armey (R-Tex.) to declare that the sugar program was "the most costly cartel to American consumers since OPEC" (Regan, 1995).

Literature Review

Public Choice theory concentrates on translating voter preferences into policy choice. A majority of their scholarly work rests on the utility-maximizing, rational actor, who, by assumption, makes all decisions for policy outcomes on the basis of a range of idealized properties. These properties include perfect knowledge, stable goals, and zero transaction costs[1] (Moe 1985). With such favorable conditions, policy outcome is simply a "black box that produces optimal choices automatically as a function of any given environment" (Moe, 1985).

A number of economists who were puzzled by the failure of regulatory and tariff policies to validate the normative economic theory attempted to explain the deviations through rational choice models of the legislative process. These economic theories "had treated policymakers as largely inert public interest maximizers who would faithfully implement the economists' canons" (Hayes, 1981). Public Choice scholar Mueller (1979: 3) attempts to

define the determinants and theoretical motivations of policy choice within different political systems (federal, state, and local).

> The public choice approach to non-market decision making has been
> ... to make the same behavioral assumptions as general economics
> (rational, utilitarian man), often to depict the preference revelation
> process as analogous to the market (voters engage in exchange, via
> ... reveal[ing] their demand schedules....

But such a framework assumes "rational" decisions are made in a frictionless universe.

Moreover, many economists argue that the weakness of rational choice theory lies in its failure to enhance the general knowledge of how human nature and organization interact under political constructs (Shapiro and Green, 1994). Consequently, when many rational choice models are subjected to empirical testing, their validity is often called into question. Ironically, Mueller and others defend public choice theory because "the use of the simplified models of political behavior is justified so long as they outperform the competitors in explaining political behavior" (Mueller, 1979). Downs (1957), for example, argued that in a more realistic theory of the policy process policymakers, like firms and consumers, would be viewed as self-interest maximizers.

This paper argues that the public choice literature often ignores the independent impact of political institutions on policy choice. In order to find economic theories that incorporate the effect of political institutions on economic performance, one must turn to literature concentrated in political economy. Douglass North (1992) introduces the autonomous nature of political systems into the neoclassical economic paradigm through his analysis of institutions and their role in determining policy choice. Political scientists recognize that North's "transaction-cost analysis is a decided extension of the view of politics as merely a series of exchange of benefits" (Browne, 1995). Unlike previous economic theories that suggest institutions are solely designed to achieve efficient outcomes and play no independent role in economic performance, North argues that institutions provide the structure for exchange which in turn determines the cost of political and economic exchange.

Theoretical Framework

Institutions directly impact economic outcomes, such as subsidy payments over time by altering the costs of political exchange between voters and representatives. Empirical evidence tends to support North's theory; Congress has continued to support a policy that benefits a small group of

farmers at the expense of so many because they are influenced by the political system and the relative power of interest groups (Sturgiss, 1990).

These interest groups, such as the political action committees (PACS) continuously lobby legislators and the Executive Branch to influence sugar policy making (Sturgiss, 1990). Accordingly, the more money PACs contribute to congressional campaigns, the greater the amount of subsidy allocated to sugar growers. PACs, however, are not alone in influencing sugar policy making.

The power of congressional committees in the U.S. political system allows sugar interests to influence policy making by developing relationships with only a few key legislators (Monahan, 1992). In order to account for the level of sugar subsidy, as Monahan suggests, it is important to note what legislators come from sugar producing states and how many sit or chair the salient committees in Congress. Politicians who serve on the agriculture committee and represent areas with a level of sugar production would be expected to increase the level of sugar subsidy granted to domestic growers.

Institutions are not necessarily created to be socially efficient, but are created to serve the interests of those with the bargaining power to devise new rules. Whereas a strict neoclassical view of economics asserts that institutions induce the actors to acquire the essential information that will lead to "efficient policy choices," North argues that individuals will often act on incomplete information due to the cost of accurately measuring the worth of the good, services, or performance of an agent and will instead use subjectively derived models that are frequently erroneous.

In the case of the sugar subsidy, political institutions provide a bartering system where voter preferences are distorted by a number of groups or institutions. Other political scientists, such as Barry Weingast, corroborate North's theory through their research. Weingast found that legislators act in their own self-interest by establishing norms and forming institutions which further their goals although they may not meet any economic cost/benefit criteria (Weingast, 1979).

One norm under which legislators often operate is party identification. Since 1965, a Democratic House supported the development of the current sugar subsidy program. As the number of Democratic senators and representatives declined over time, it is important to test what, if any, effect this political shift has had on the level of sugar subsidy over time. Democrats have traditionally supported a more liberal approach to government influence in economic market systems. Because of this, it is expected that as the number of Democrats decrease in either chamber, the level of sugar subsidy would decrease.

When attempting to gauge the effect of political variables upon the level of sugar subsidy, it is important to realize that political institutions, as North

suggests, are operated through formal constraints.[2] Formal constraints include political and economic rules and contracts and define the hierarchical structure of the polity, its basic decision structure and the explicit characteristics of agenda control. Formal constraints are the driving force behind the creation of policy. For instance, there are a myriad of subcommittees, committees, and votes in both houses that a policy such as the sugar subsidy must go through before it can be implemented on a large scale. This would also lead to the assumption that party identification would also impact the level of sugar subsidy granted to farmers.

The level of import quotas and domestic price supports have negatively impacted the sugar market. Scholars have found that U.S. sugar policy consistently undermines the U.S. foreign policy goal of assisting Third World economic development. Yearly decreases in U.S. sugar imports contributed to the collapse of sugar industries of the poorest countries in the world (Sturgiss, 1990). In tracking the level of sugar subsidies granted to farmers, it is important to monitor the amount of sugar production by foreign markets. Moreover, this decline in import quota levels indirectly warrants increasing price supports for domestic sugar growers who must supply the U.S. with sugar (see Graph 2).

Graph 2

Sugar Import Quotas 1965-1992
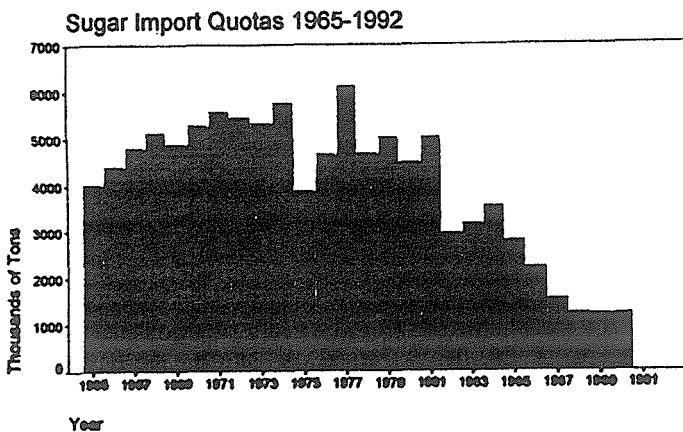
This graph shows the direct effect of Congress' initiatives to protect the domestic sugar market. The level of sugar allowed into the United States peaked in 1977 at 6,138,000 short tons and has steadily decreased to a low of 1,200,000 short tons in 1989.

Empirical data also reveals that the U.S. is an inefficient and high cost sugar producer when compared to many Third World sugar exporting countries

(Ives, 1988). Although U.S. growers claim that their industry is one of the most efficient in the world because of its high yields per acre, the U.S. falls near the middle in international cost comparison rankings (Landell Mills, 1990). From this chain of events, it can be construed that the level of sugar subsidy granted to domestic producers is causally linked to the viability of foreign sugar production. Conversely, the international price of sugar would also be affected by economic protectionism of the U.S. sugar market. As the world price increases, the level of sugar subsidy would decrease because there would be a greater economic incentive to utilize domestic sugar and the need for artificial supports would be minimal.

In an attempt to reconcile such damaging effects on the foreign sugar industry, a bill was introduced in the House of Representatives in March 1989 that would have provided a minimum floor on import quotas for countries within the Caribbean basin. The Bush administration, however, declared the bill's preferential nature to the Caribbean inconsistent with U.S. trade philosophy. The bill lost momentum and ultimately failed (Monahan, 1992),

This paper will also test how the level of domestic sugar production compares with total domestic agricultural production (see Graph 3).

Graph 3

Ratio of Sugar Production to
Total Agriculture Production
1985-1992
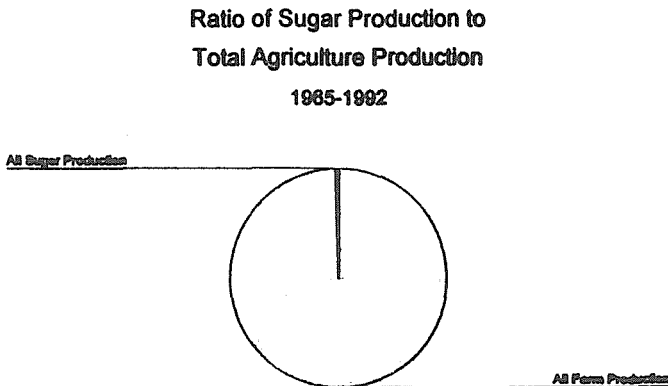
Using basic supply and demand theory, if the ratio between domestic sugar production and total domestic agricultural production of sugar increases, the level of subsidies would decrease due to the already established high demand for sugar in the United States. Consequently, there would be less incentive for the government to create artificial supports for a commodity

that is selling well on its own. As Graph 3 shows, the ratio has remained consistent over time.

There are other important economic variables to test in this research model. As Americans have decreased their consumption of sugar since the 1960s, one would expect the level of subsidies to increase in order to offset a lower equilibrium price due to the lack of domestic demand for sugar.

Hypotheses

This paper will test the impact of the following economic and political variables upon the level of sugar loans allocated to sugar farmers. This study posits the following hypotheses.

Consumption of Sugar (CONSUME) Hypothesis: -
As the amount of sugar consumed increases, the amount of loans granted to sugar growers decreases due to the increased consumer demand for sugar.

Ratio of domestic sugar production
to total agricultural production (RTSGPAGP) Hypothesis: -
If this ratio increases, the amount of sugar loans will decrease because of the increased consumer demand for sugar.

Ratio of domestic sugar production
to total world sugar production (WORLD) Hypothesis: -
If this ratio increases, the amount of sugar loans will decrease because of the increased demand for domestic sugar on the world market

International Price of Sugar (INT.$SUG) Hypothesis: -
As the world price increases, the level of loans will decrease because of the decrease in price differential between U.S. sugar and world sugar prices.

Number of Senate Agricultural
committee members that are from
sugar producing states (SENCOMM) Hypothesis: +
As the number of senate members from sugar producing states increases, the level of loans will increase because they want to meet the financial requests of their constituents.

Number of House Agricultural
committee members that are from
sugar producing states (HOSCOMM) Hypothesis: +
As the number of house members from sugar producing states increases, the level of loans will increase because they want to meet the financial requests of their constituents.

Number of Democrats in Senate (NUMDEMS)   Hypothesis: +
As the number of Democrats in the senate increase, the amount of loans
will increase because they advocate government support of farm programs.

Number of Democrats in House (NUMDEMH)   Hypothesis: +
As the number of Democrats in the house increase, the amount of loans
will increase because they advocate government support of farm programs.

Results

The data presented in these models were collected from a combination
of sources. All of the political variables tested (number of Democrats in the
House and Senate, the number of agricultural committee members from sugar
producing states) were gathered from the *Congressional Quarterly Almanac*
through 1965 to 1992. World sugar production data came from the *United
Nations Statistical Tables 1992.* Data regarding the number of sugar beet
and sugar cane farms came from selected volumes of the *U.S. Agriculture
Census, 1978-1987.* The remaining economic indicators were found in the
United States Statistical Abstracts from 1965-1992. Lobby data was obtained
from the *Federal Election Commission* files covering the years of 1977-1992.

Sugar loans

The independent variables listed in the on the following page are tested
against one of the dependent variables that comprise the sugar subsidy;
specifically government loans to sugar producers. The level of loans granted
to sugar growers varies significantly between 1965-1992. In order to gain a
better sense of the findings, the economic variables that are tested against
the amount of loans are presented first, then followed by the regression results
which incorporate the political variables. Both models present reported
significance levels. The t-statistics follow and are presented in parentheses.

	Model 1	Model 2
	U.S. Loans to Sugar Growers Against Selected Economic Variables	U.S. Loans to Sugar Growers Against Selecte Economic and Political
INT.$SUg	.1107 (-1.688)	.003** (-3.709)
RTSGPAGP	.8070 (-.248)	.4158 (.843)
WORLD	.6977 (.395)	.0883* (-1.855)
CONSUME	.4834 (.718)	.8175 (-.236)
NUMDEMS		.6592 (.452)
NUMDEMH		.6570 (-.455)
SENCOMM		.0004** (-4.881)
HOSCOMM		.6670 (.441)
CONSTANT	.8258 (-.224)	.0076 (3.200)
R-SQUARED	.38699	.75022

* Significant at .10 level; **Significant at .01 level

Discussion

Model 1, which contains only economic variables, explains approximately 39% of the variance for the amount of sugar subsidy loans. Although no independent variable proved to be statistically significant in this particular model, it only indicates that economic forces alone do not

determine the level of sugar subsidy loan that is granted to sugar growers. Model 2 explains 37% more of the variance than Model 1 and a total of 75% of the variance in the level of loans allocated to sugar growers.

Despite the fact that the ratio of sugar production to total agricultural production increased from .09 in 1965 to .12 in 1992, no significant correlation with the level of sugar subsidy loans is reported. Likewise, domestic consumption of sugar does not affect the level of sugar subsidy loans. Consumption of sugar has decreased over time, beginning at 97 pounds per capita, reaching a high of 103 pounds per capita in 1972 and 1973, and then rapidly decreasing to 64.9 pounds per capita in 1992. The reported significance level is .8175, strongly indicating that no correlation between the two variables exists. One possible reason why domestic demand does not affect the level of sugar loans lies in the U.S.'s tendency to dump excess sugar onto the world market. Canada is one of the prime markets that receives sugar from the United States. Both the international price of sugar and the ratio of U.S. sugar production to world sugar production are statistically significant in this model.

Although the percent of U.S. sugar production to world production (WORLD) or the international price of sugar (INT.$SUG) are statistically insignificant in the first model which included only economic variables, the inclusion of political variables render them statistically significant. When the impact of one independent variable depends on the value of another independent variable, an interaction effect exists. When testing for an interaction effect, it was found that joint effect of SENCOMM and INT.$SUG as well as SENCOMM and WORLD are statistically significant. One possible explanation for the linkage between these political and economic variables is that the senate committee on Agriculture, Nutrition, and Forestry uses economic data such as the international price of sugar, and the percent of U.S. sugar production to world sugar production when they decide not to support an increasing sugar loan rate. The manner in which the Senate committee makes policy decisions is an area for more in-depth research in the future.

Some of the results for the political variables were surprising; as the number of Democrats who sit on the Senate Agriculture Committee and represent sugar producing states increases, the level of sugar subsidy decreases. Although this inverse relationship may appear surprising, the structure of the Senate committee helps to explain their apparent lack of support of their constituents' desire to receive sugar loans.

Senators, unlike the Representatives, serve on many committees and represent a broad cross section of economic interests. They also enjoy a higher level of independence in what they want to pursue politically (Reiselbach 1994). The structure of the Senate committee demonstrates the

medley of interests a senator is free to pursue. Unlike the House of Representatives, the Senate does not have a committee that solely addresses sugar. Instead, the committee addresses three very broad domestic arenas; namely agriculture, nutrition, and forestry. Moreover, out of a possible 14 seats, only two senators from sugar producing states sat on the Agriculture, Nutrition, and Forestry committee in 1965. Although the number of senators who sat on the committee increased to nineteen in 1992, those from sugar producing states have never filled more than three seats at any given time between 1965-1992.

The Senate committee's lack of support of sugar loans is exacerbated by the fact that since 1971, the chair of the Senate agricultural committee was not from a sugar producing state. Although the power of full committee chairs declined since the Legislative Reorganization Act of 1974, their influence is not to be overlooked. With such a small ratio of senators from sugar producing states who sit on the Agriculture, Nutrition, and Forestry committee, their ability to influence sugar legislation could be drastically diminished. Another potential reason is that these senators do not find it necessary to increase the level of sugar loans because this issue is not as significant to the future political viability. Hence, they do not make it their priority to champion this type of legislation.

Representatives, on the other hand, more often represent specific constituencies that may directly benefit from the loans for sugar. A representative's tenure in Congress is only guaranteed for two years, and often they occupy only one committee seat. Their ability to bring "pork" like sugar loans back to their constituents determines the tenure of their career. Stigler (1974) posits that industries will actively seek regulation in an effort to shore up cartels, restrict market entry, and avoid anti-trust prosecution. In return, they offer political support to legislators in the form of money, votes, and campaign activity. Sugar PACs are a classic example of such activity, and as a recent study by the center for Public Integrity shows, these lobby organizations have given over 2.6 million dollars to congressional campaign committees between 1985 and 1990 (*Wall Street Journal*, (1970: 26 July).

Graph 4

PAC Money Donated to House Agriculture
Members from Sugar Producing States
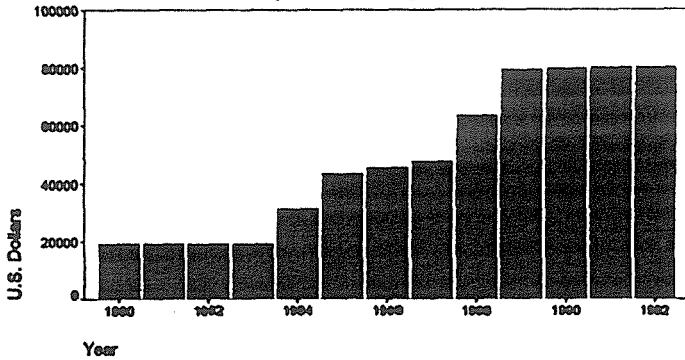
As shown in Graph 4, major sugar PACs increased their contributions to House Agricultural members who represent sugar producing states from a little under fifteen thousand dollars in 1974 to over eighty thousand dollars in 1992.

As sugar PACs know, there are strong political motivations behind the representatives who sit on the agricultural committee. Members motivated by constituency-oriented concerns seek committees with jurisdictions salient to their constituents (Smith, 1990). Such an orientation is not surprising because the jurisdiction of these committees is limited. Sugar is a prime example of a policy that affects a narrow jurisdiction of states, specifically those in the southeast and midwest U.S. but indirectly creates widely dispersed costs in the form of higher consumer prices.

Although sugar subsidy loans do not cost the taxpayer a penny, they can still be viewed as pork because federal tax dollars are being directed to the legislators' constituency. This phenomena however, was not evident in the multiple regression, possibly due to the increasing power of subcommittees.

Democratization vis-a-vis 1970s Congressional reforms increased the subcommittee members' opportunity to participate in congressional activity at the expense of the full committee. Since 1981, the House of Representatives formed the Cotton, Rice, and Sugar subcommittee, which quickly became the most salient committee in Congress regarding government support of the domestic sugar industry. [3] The long-time subcommittee chairman represents a major sugar producing state (Louisiana), and roughly one half of the thirteen to fourteen members of the subcommittee come from sugar producing states. Due to the limited number of years that this subcommittee has existed, it is difficult to test its influence on the amount of sugar loans in a multiple regression. The influence of such a committee should be considered, however, in any analysis of what impacts sugar policy making.

Although Democrats have traditionally supported farm subsidies in both chambers of Congress, the number of Democrats in either the House or Senate did not come out as statistically significant in Model 2. This in part could be due to the way in which democratic support was measured in the regression. Due to the changing political atmosphere of Congress, Republicans are setting the agenda for committees such as the House Agriculture committee. As witnessed by Representative Dan Miller's seemingly brash move to not back the sugar subsidy program although it directly benefits his constituency, House and Senate Republicans are moving U.S. agriculture toward the free market (*Congressional Quarterly Almanac,* 1995). Since 1977, the sugar program has been a part of the omnibus farm bill which includes provisions for more powerful and significant agricultural commodities such as corn, wheat, and milk. The farm bill is a prime target for Republicans because it is a bureaucratic monolith that costs taxpayers billions, and it also ignores market realities and encourages destructive farm practices (*Christian Science Monitor,* 1995).

Overall, many of the political variables which were supported with theoretical foundations did not emerge as statistically significant in these models. This does not mean, however, that all political institutions tested in this model do not directly affect the level of sugar loans; rather this reflects upon the simplicity of the models and the complex nature of political transactions.

Loans are not the only means of politically crafted economic support for sugar growers. Price supports and import quotas have also undergone sweeping changes since 1965 when the U.S. began to cultivate domestic production as its major source of sugar. From 1965 to 1974, Congress devised artificial price supports for sugar on the basis of its world market price. Yet, in 1974, Congress allowed the 40 year old sugar price support program to cease to exist due to heavy consumer pressures on Congress and partly to lobby overkill by domestic and foreign producers (*Congressional Quarterly Almanac,* 1974)

Graph 5

U.S. and World Price of Sugar
1965-1992
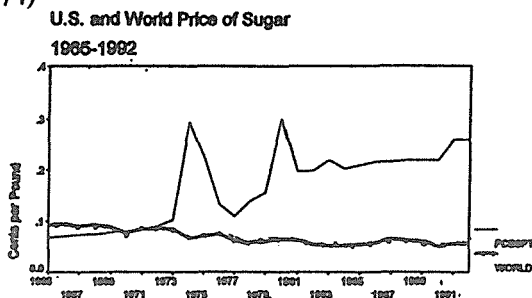
Graph 5 shows how the domestic price support system began to outpace the international price of sugar at an increasing rate between 1965 and 1992.

The price support system capped out at 26 cents a pound in 1991 (*Congressional Quarterly Almanac*, 1991). The international price, however, bottomed out at 4 cents a pound in 1985 and did not recover substantially from this decrease. By restricting U.S. consumer and sugar user purchases of world market sugar, the U.S. sugar program reduced the demand and diverted the supply on the world market, thereby helping to depress world market sugar prices (Congressional Budget Office, 1987). Third world countries, as mentioned earlier, are devastated by the U.S.'s economic manipulation of the world sugar market.

In order to understand what are some of the political forces behind the level of domestic price support over time, a bivariate correlation was employed using the amount of sugar PAC money[4] contributed to House Agricultural members who represent sugar producing states and the price differential between domestic price supports and the world market price of sugar. The results of the correlation are a coefficient of 2.749 and a significance level of .0423, suggesting that there is a direct link between rising price supports and the increased amount of contributions sugar PACs give to House agriculture members.

Import Quotas are often utilized as a political means to stimulate or repress foreign sugar industries. The U.S. imposes trade embargoes on countries with controversial political systems such as Cuba, and also gives some foreign countries first priority in fulfilling the small niche of imported sugar that they allow to pass through their borders. Sugar import quotas fall at some point under the jurisdiction of the House Agriculture Committee and the Senate Agriculture, Nutrition, and Forestry Committee. A bivariate correlation between senators from sugar producing states who sit on the Agriculture, Nutrition, and Forestry Committee and the level of import quotas yields a significance level of .011 and a coefficient of -.2515. This suggests that as the number of senators from sugar producing states who sit on these salient committees increases over time, the amount of imported sugar that is allowed to pass through the U.S. decreases. Such findings would support the policy of protectionism which the U.S. has maintained regarding their sugar industry.

U.S. law mandates that the U.S. import at least 1.25 million tons of sugar a year in order to meet trade obligations and ensure that foreign suppliers receive a share of the domestic market. When the domestic sugar market is not in danger of drought, the U.S. currently does not import much more than 1.25 million tons (*Congressional Quarterly Almanac*, 1995).

As price supports and loan rates face extinction under the Republican chopping block, lawmakers are still wrangling over setting the import tonnage level at a level where sugar growers would still be able to forfeit sugar to the government for a guaranteed price (*Congressional Quarterly Almanac*, 1995).

Without a price floor, sugar growers would have to compete against world markets and would not benefit from a quota system.

Conclusion and Policy Implications

Both economic and political forces, as the analysis shows, directly affect the U.S. sugar subsidy program. Although the data regarding sugar loans did not show many statistically significant correlations with political institutions, the political variables included in Model 2 explained about 50% of the total variance of loans, lending support to North's theory that political institutions autonomously affect policy outcome. As the structure of many political institutions changes, so does the support of the sugar subsidy. With a higher number of Republicans controlling the salient agriculture committees and committing themselves towards the party line which prioritizes the budget bill over constituency interests, the process of the political exchange was at times different than expected. Nevertheless, sugar loans, price supports, and import quotas are all manipulated by political actors.

The rate at which domestic price supports increased over the world price of sugar is a revealing example of how inefficient the sugar industry operates. Basic supply and demand theory is set aside for the pursuit of political ends as witnessed by how PAC money plays a role in defining the economic outcome of sugar policy.

Import Quotas act as a weighty political tool for the U.S. to wield when it wants to affect the economic viability of a foreign country. Perhaps a more economically efficient approach towards the U.S. sugar subsidy program is to create a more uniform and comprehensive policy that brings domestic policy into line with U.S. international trade policy (Monahan, 1992).

A gradual reduction in the loan rate will bring the differential between U.S. sugar prices in line with world prices (Graph 4). This will naturally spur inefficient producers to drop out of the domestic market, allowing foreign sugar industries to revitalize and capture some of the lost market share in both the world and U.S. sugar market.

By splitting the sugar program into three different sectors, it is difficult to modify one without affecting another; consequently, as the Republicans shift agricultural policy towards a free market, all aspects of the sugar policy will be affected. The political repercussions of this shift in desired policy outcome, however, is yet to be observed. This sugar subsidy program deserves continued attention in the spring as the both the budget bill and omnibus farm bill are put into action and the politicians campaign for constituency support in the next election.

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[1] Transaction costs, which are more clearly articulated in the theoretical framework section, involve the costliness of acquiring, evaluating, and measuring the information needed for economic actors to make perfectly informed decisions.

[2] Informal constraints are the constructs which guide socially transmitted information through human interaction. Due to the subtle and complex nature of quantifying informal constraints, this paper will empirically address only formal constraints.

[3] The Subcommittee on Cotton, Rice, and Sugar of the House Committee on Agriculture is the key policy-making body because the Senate Committee on Agriculture, Nutrition, and Forestry has no members from any of the major sugar producing states.

[4] Sugar PAC money refers to the American Sugarbeet Organization, the American Sugar Cane League Political Action Committee, and the Sugar Cane League of the USA. These are three of the largest sugar PACs.