INTRODUCTION

When diplomacy and politics fail, war, embargoes, and blockades are usually not far behind. This was certainly the case in the American Civil War, when, after the secession of the southern States into the Confederacy, President Abraham Lincoln called for a blockade of the Southern coast and raised an army to suppress the rebellion. In turn, the Confederacy turned to a de facto embargo of cotton exports, and its King Cotton "diplomacy." 76

The immediate purpose of this paper is to focus on how import and blockade regulations enacted by the Confederacy affected the course of the war in its final days, but the issue of the economic effects of blockades has broader implications. Economic policies have been used as weapons, at least since the times of Pericles' Megaran Decree in 435 B.C., and have probably only grown in importance as economies have grown less autarkic and more interdependent over time. Since 1790, there have been at least four major global wars that have involved prolonged fighting, heavy losses, and severe bouts of inflation: the Napoleonic Wars, the American Civil War, World War I, and World War II. In all four of these conflicts, embargoes and blockades were an important component of the war planning of the eventual victors. 77

In modern times, blockades have had enormous international implications for the conduct of the Cold War, the Berlin blockade, and contemporary sanctions against Cuba. 78 The most prominent recent example of economic sanctions is the U.S.-led U.N. blockade of Iraq. 79 We believe that a careful study of the Union blockade and its Southern reaction offers crucial insights into other historical blockades [Ekelund and Thornton, 1992].
The American Civil War continues to be a source of interest and debate among historians and economists. The specific debate about why the Union defeated the Confederacy is wide-ranging, multifaceted, and probably never-ending, but there is a general consensus in all these views that the Union blockade of the South was necessary, if not the key, to the end result of the war. The importance placed on the blockade is not surprising. Preventing the Confederacy from engaging in international and interregional trade and then comparing the weakened Southern economy and undersupplied Confederate army was the centerpiece of the Union’s “Anaconda” strategy to strangle the Confederacy economically.1

Confederate Armies fought Union Armies to a stalemate throughout much of the war, but the Union blockade continued to grow in coverage and effectiveness (Ecklund and Thornton, 2001). In pioneering work, Loberg (1988) calculated that the blockade increased the cost of shipping by as much as 6,000 percent in real terms, but that blockade running was not as profitable as it appeared when the risks of capture are considered.2 In a noteworthy contribution, Surdam (2001) not only explains the myriad economic effects of the blockade, but also demonstrates that the blockade negatively impacted many important, although often neglected, aspects of the southern economy. The Union victory at Vicksburg in July of 1863 opened up the Mississippi River and effectively cut off the western Confederacy as a source of troops and supplies. The fall of Fort Fisher and the city of Wilmington, North Carolina early in 1865 closed the last major port for blockade-runners, and in quick succession Richmond was evacuated, the Army of Northern Virginia disintegrated, and General Lee surrendered. Thus, most economists give the Union blockade a prominent role in the outcome of the war.3

There is significant disagreement among scholars whether the Union blockade was the prime reason for Confederate defeat.4 Noted historians Frank Owsley (1981) and Frank Vandiver (1947) found the Union blockade to be ineffective, as did Beiringer et al. (1988). This perspective is supported by Price’s blockade running statistics (1948; 1951; 1955), which show that only a small percentage of blockade-runners were captured.

Modern disagreement over the role of the Union blockade pales in comparison to the divergence of views expressed during and after the war itself. On the one hand blockade-runners and entrepeneurs felt that the blockade was the single most important reason for Confederate defeat and felt that the Confederacy did more harm than good when it came to their policy towards the blockade and international trade. On the other hand Confederate officials often expressed the traditional view that blockades were “useless” and that sufficient quantities of goods moved through the blockade. Except for a few minor incidents,5 the Confederacy did little to try and break the blockade, relying instead on coastal defenses, the ability of blockade-runners, and the prospects for European intervention. Only late in the war did the Confederate government take positive action to improve the flow of goods, and even then did not attempt to open the blockade, but only to tightly regulate blockade running.

A more effective form of blockade running was critical to the southern effort for several reasons. First, by opening the Mississippi River the Union cut the Confederacy into two pieces making it more important than ever that the sections be able to supply themselves independently. Second, the faltering domestic economy made in-

The Confederacy continued to supply its armed forces. Third, high prices, low incomes, and shortages of basic commodities, even while “luxury” items remained available for sale, was demoralizing to both the army and the civilian population (Ecklund and Thornton, 1992). As a consequence in February 1864 the Confederate government passed legislation such as the Act to Prohibit the Importation of Luxuries or Articles Not Necessary or of Common Use.

The purpose of this paper is to use economic analysis and empirical evidence to determine the impact of this legislation. The legislation was enacted more than a year before the end of the war giving it sufficient time to affect the flow of goods and prices in the eastern Confederacy. We conduct an empirical investigation of the impact of this legislation on the prices of basic commodities using monthly data on commodity prices and blockade running activity in Wilmington, North Carolina—the major supply port for the Army of Northern Virginia and one of the last "open" ports of the Confederacy. Taking inflation, military defeats, and the general trend of the war into account, our results show that the legislation did not decrease prices as intended, but actually led to an increase in the real prices of basic commodities essential to the war effort. This "unintended consequence" was the result of the legislation's impact on profit opportunities, a finding that improves our understanding of the collapse of the Confederacy and the end of the war. Further, given the prominent role of blockades in history and modern affairs, these results are highly instructive for both researchers and policymakers.

**CONFEDERATE TRADE LEGISLATION**

The Confederate Congress passed a series of legislative prohibitions and regulations more than a year before the war’s end in order to enhance the flow of goods to the Army and improve the chances of winning the war.6 One of the most important of these tontactural trade rules passed in February of 1864 by the Congress of the Confederate States of America was the outright prohibition on many “luxury” goods. Spurred on by local public dissatisfaction over trade, this legislature forbade the importation of a large class of luxury goods and placed price controls on many others (see Table 1 for a sample). Most of these prohibited luxury goods, such as jewelry, lace, and art had high value relative to bulk, but the lists do include some bulkier and heavier items such as carpets or glass. There is a good deal of evidence that before the legislation these goods were routinely getting through the blockade.7 The Act also prohibited beer, spirits, and wine, which, when combined with state prohibitions of alcoholic beverages, created an extreme scarcity of alcohol, which had traditionally served as a highly compact and transportable source of calories for sailors and soldiers. It was also an indispensable medical commodity.8

**Blockading and Blockade Regulations**

The Confederate Congress also authorized the Treasury Department in February 1864 to regulate the export of cotton, tobacco, military and naval stores, rice, and

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1. Ecklund and Thornton, 2001
2. Surdam, 2001
3. Owsley, 1981; Vandiver, 1947; Beiringer et al., 1988; Price, 1948; 1951; 1955
4. Price, 1948; 1951; 1955
5. Beiringer et al., 1988
7. Owsley, 1981; Vandiver, 1947; Beiringer et al., 1988
TABLE 1
Sample of Prohibited Imported Goods

<table>
<thead>
<tr>
<th>Goods</th>
</tr>
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<tbody>
<tr>
<td>Abasities</td>
</tr>
<tr>
<td>Ale, beer and porter</td>
</tr>
<tr>
<td>Anchovies, cedars, and all other fish preserved in oil</td>
</tr>
<tr>
<td>Articles embroidered with gold, silver or other metal</td>
</tr>
<tr>
<td>Bay rum</td>
</tr>
<tr>
<td>Billiard and bagatelle tables, and all other tables or boards on which games are played</td>
</tr>
<tr>
<td>Brandy and other aperitives distilled from grain or other materials</td>
</tr>
<tr>
<td>Cabinet and household furniture</td>
</tr>
<tr>
<td>Carpets, carpeting, hearth-rugs, bed-sides, and other portions of tapestries of every kind and description</td>
</tr>
<tr>
<td>Carriages, and parts of carriages</td>
</tr>
<tr>
<td>Cotton, lace</td>
</tr>
<tr>
<td>Diamonds, cameos, mosaics, gems pearls, rubies and other precious stones, and imitations thereof, when set in gold, silver or other metal, and when not set</td>
</tr>
<tr>
<td>Dolls and toys of all kinds</td>
</tr>
<tr>
<td>Glass, cut; Glass, colored, stained or painted</td>
</tr>
<tr>
<td>Leaf and manufactured tobacco and cigars</td>
</tr>
<tr>
<td>Manufactures and articles of marble, marble paving-tiles, slabs or block, and all other marbles</td>
</tr>
<tr>
<td>Muffs and ushers, and all other manufactures of fur, or of which fur shall be a component part, except caps and hats</td>
</tr>
<tr>
<td>Paintings and stationery</td>
</tr>
<tr>
<td>Paper hangings; Paper for walls; Paper for screens or fireboards</td>
</tr>
<tr>
<td>Paving and roofing tiles and bricks, and roofing slates, and new bricks</td>
</tr>
<tr>
<td>Perfumes and perfumery of all sorts</td>
</tr>
<tr>
<td>Playing cards</td>
</tr>
<tr>
<td>Scyphoid table-lamps, or other articles of furniture</td>
</tr>
<tr>
<td>Thread hangings and insertings</td>
</tr>
<tr>
<td>Velvets of all kinds</td>
</tr>
<tr>
<td>Wines, brandy, champagnes, claret, mediras, port, sherry, and all other wines and imitations of wines</td>
</tr>
</tbody>
</table>


sugar. Shortly thereafter the Congress required half of the outgoing and incoming cargo space to be reserved for the Confederate government. Finally, the Act of February 1864 further instructed the Secretary of the Confederate Treasury, C. G. Memminger, to place strict price controls on "goods manufactured wholly or partly of cotton, flax, wool, or of silk, and designed for wearing apparel" (Confederate States of America, 1974), 10-11. Table 2 provides a sample of the restricted products and their maximum prices.

While we have no direct evidence about the enforcement of these controls, legal penalties for smuggling were high. In addition to all the dangers of capture and loss of life at the hands of the Union Navy, on 12 March 1864 the Treasury Department of the C.S.A. at Richmond decreed that both owner-suppliers and consumers of smuggled goods would be liable for stiff fines. Issued by Memminger, penalties were to confiscate all goods, legal or illegal, owned or shipped by the wrongdoer. According to the statute,

In case any prohibited article shall, after 1 March, 1864, be imported into the Confederate States, or shall, after said date, be put on board any ship or vessel, boat, raft or carriage, with the intention of importing the same into the Confederate States; all such articles shall be forfeited, and also all other articles on board the said ship or vessel, boat, raft or carriage, belonging to the owner of such prohibited articles; and moreover, the owner thereof shall forfeit and pay double the value of the prohibited articles. (Memminger in Regulations prescribed for the government and directions of all offices of the revenue, to carry into effect the provisions of the Act to Prohibit the Importation of Luxuries, or of articles not necessary or of common use, approved 6 February 1864)

The directive was explicitly applied to consumers as well as to shippers (smugglers).

Each of these regulations reduced incentives to trade. The prohibition against luxury goods greatly reduced profit opportunities and incentives to run the blockade because, while they generally made up a small portion of the size and weight of the ship’s cargo, they were critical for the overall revenue of the ship’s owner and made up a substantial portion of the wages of the captain and crew who were allowed to carry a small amount of goods on their own account. The Confederate mandate to allocate 50 percent of all cargo space to the government also reduced profits and therefore the incentive to build and operate blockade-running ships. Price controls, especially during a time of rapid inflation, would also have predictable effects on suppliers. When suppliers cannot operate at a profit, shortages will develop and blockade-runners would certainly not be interested in importing goods when price controls forced them to sell their inbound goods at an economic loss. The shortages in turn led to black markets and even higher-than-market prices. In total, blockade-runners suffered a loss on one-half of the cargo and were highly restricted from importing their most profitable cargo. Given that virtually all outbound cargo was cotton, this legislation greatly constrained the choices available to blockade-runners and significantly reduced their profit opportunities.
Combined with Laborde's [1861] analysis of the profitability of smuggling cotton, it should not be surprising that this legislation had a direct and visible impact on blockade running and the economic viability of the South. Good data on blockade attempts through Carolina ports in 1863 and 1864 carry the presumption that attempted runs sharply diminished between these two years (from 515 in 1863 to 387 in 1864) [Price, 1945, 232 and 236]. The number of runs through the blockade at Wilmington by steam-powered ships was about the same the year before the legislation as the year after. With most other ports occupied or effectively blockaded in 1864 and 1865 and a number of new private and public steamers coming on line over the same period, we would have expected blockade running into Wilmington to have substantially increased, which it did not. Given the number of ports available to blockade-runners, the number of blockade-running ships and the number of runs attempted, blockade-runners must have been far less willing to supply their services to the Confederacy after the regulations were put in place.

Economic theory would suggest that this decrease in supply was the result of Confederate legislation and that the resulting decrease in trade would result in higher prices, particularly of imported goods. Naturally, the effect of the regulation on imports at Wilmington will depend on how tightly the regulations were enforced. We have no formal data on this matter, but the Bureau of Foreign Supplies was in charge of enforcing the new trade regulations. After passage of the regulations, the bureau chief, Thomas L. Bayse, was promoted from Major to Lieutenant Colonel and given $20 million to purchase goods for export and pay off debts. To enforce the regulations he sent bureau agents to at least four ports east of the Mississippi [Wise, 1998, 147]. With the possible exception of Wilmington, these agents would have had little to regulate because of limited blockade running after the regulation and because so many of those who did run the blockade were either government-owned ships or under government contract. There was a flurry of blockade-running activity out of Galveston, Texas after the passage of the regulations and recapture of the port, but apparently an agent was not assigned there. Although blockade runners could avoid the regulations by running into minor ports, the Confederacy could effectively regulate the bulk of the blockade trade simply by concentrating its efforts in Wilmington, where the arrival of a blockade-runner was usually accompanied by Union artillery fire.

Examination of the data from Wise [1988] on the blockade running from Wilmington, North Carolina after the trade regulations were in place supports the claim that the regulations did hinder blockade running. It is true that many of the same blockade-runners continued to run the blockade after the regulation, but the bulk of these blockade-runners were working for Confederate State governments, part of State-sponsored companies, or under direct contract with the Confederate government and therefore largely free from the constraints of the regulations. While some completely private ships continued to run the blockade at Wilmington, most were captured, destroyed, or retired, while some were sold to the Confederate States Navy and used for harbor protection or as obstructions in the Cape Fear River after the fall of Wilmington.

**Monetary Reform and Other Factors**

Determining the extent to which the February import prohibitions of the Confederate Congress affected the price of commodities considered essential to the war effort is complicated by coincident events. Principal of these events was a Monetary Reform Act passed by the Confederate Congress on 17 February 1864, less than one week after passage of the import restrictions (11 February 1864). This Act mandated an exchange of "old" Greyback currency for new currency on a 3:2 basis, effectively reducing the money supply by one third. This reform took effect on 1 April in the East but was delayed in the Western (trans-Mississippi) Confederacy until 1 July due to an inability to get the new currency through Union-held territory. Vicksburg had fallen into Union hands in 1863, splitting the Confederacy in two. The liberalization of monetary reform clearly affected the gold price of currency in Eastern and Western Confederacy differently. [Bardelin and Weidenmier 2001] clearly show that Richmond and Houston gold markets followed a common trend up until April 1864 and then diverged with Greyback prices relatively stable in Richmond for most of 1864 and currency simultaneously depreciating in Houston. In short, monetary reform can be expected to have an independent impact on the prices of goods in the East. Other things equal, the Confederate monetary reform of February 1864 would be expected to have a price-decreasing (currency appreciating) effect after it was implemented. (Depreciation of the currency price of gold would be expected prior to actual implementation as "old" Greyback holders increased the velocity of circulation of the East).

"War news" concerning Northern and Southern prospects for a win also affected the value of the currency (and therefore prices). Weidenmier [2000] developed a new measure of the money supply—one used in the following tests. He uses the new Greyback series for turning points showing significant differences in the impact of war news on currency values in North and South over the course of the war. In particular the two big news items of the week of 22 April 1864 were that currency reform was in effect and that the results of battles at the Wilderness and Spotsylvania had (at least temporarily) slowed Grant's march on Richmond. Weidenmier [2002, 823-4] shows that these events created a major break in the Greyback price series in the East (both events have a currency appreciating/price decreasing effect) and the gold value of the currency encapsulates "war news." In the following empirical analysis we attempt to account for these monetary factors.

**EMPIRICAL EVIDENCE FROM WILMINGTON**

Wilmington, North Carolina was the major source of overseas supply for the Army of Northern Virginia since it was connected to Richmond by railroad. Wilmington provides valuable evidence on the impact of Confederate blockade legislation because it remained open to blockade-runners until very late in the war when Fort Fisher, which guarded the mouth of the harbor, fell to a Union assault. In this section we test the impact of the legislation on the prices of basic imported commodities that were essential to the war effort. To isolate the impact of the legislation, however, factors
TABLE 3
Definition and Source of Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Expected Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>PF</td>
<td>Price of imports: six commodities, sugar, salt, wool, molasses, beef, and bacon. Index constructed from Wilmington and Fayetteville, NC price data.</td>
<td></td>
</tr>
<tr>
<td>PD</td>
<td>Price of 17 domestic commodities: Corn, hay, butter, eggs, chicken liver, turkey liver, turkey (dead), cornmeal, flour (S. F.), potatoes (fresh), potatoes (sweet), table, eye, wheat, hashed, land, flour (family). Index constructed from Wilmington and Fayetteville, NC price data.</td>
<td></td>
</tr>
<tr>
<td>RR</td>
<td>Incoming (successful) runners to the port of Wilmington. Storm only.</td>
<td>?</td>
</tr>
<tr>
<td>REG</td>
<td>Dummy variable for Confederate regulation of February 1864: takes value of one after date, zero otherwise. REG(2)/PF is first difference.</td>
<td>+</td>
</tr>
<tr>
<td>MR</td>
<td>Dummy variable for Confederate monetary reform, passed February 1864, effective in Eastern Confederacy April, 1864: takes value of one after date, zero otherwise. MR(2)/PF is first difference with effect in May.</td>
<td>-</td>
</tr>
<tr>
<td>VIC</td>
<td>Dummy variable for close of Vicksburg as outlet to Western and Eastern Confederacy: takes value of one after July 1863, zero otherwise. VIC(2)/PF is first difference.</td>
<td>?</td>
</tr>
<tr>
<td>MSa</td>
<td>Greyback price of gold. (Monthly average 1869 = 1.0)</td>
<td></td>
</tr>
</tbody>
</table>


such as monetary reform, the value of currency and alternative sources of supply (such as the fall of Vicksburg which potentially cut off Western supply) must be included. To more fully appreciate the effects of the change in regulations on the price of imported commodities, accounting for "other factors," we posit the following generic model

\[ P_t = \beta_0 + \beta_1 BR_t + \beta_2 MSa_{t-1} + \beta_3 REG + \beta_4 MR + \beta_5 VIC + \epsilon_t \]

Table 3 identifies all of the variables used in our initial analysis and in subsequent estimates as well. It provides a description of the variables, their data sources, and their expected signs. The dependent variable in our initial model formulation is \( P_t \), an index of prices that consists of the four imported commodities identified by Lerner [1964, 51]: sugar, salt, wool, and molasses, with the addition of beef and bacon, which had become important imported commodities into North Carolina after the fall of Vicksburg (July 1863). We do not argue, of course, that these products were not produced at all in the South, simply that they were overwhelmingly imported at this time. To provide important information on the relative price of imports, we also computed \( PD \), an index of the prices of 17 domestically produced commodities.\(^{19}\) We employed this variable either in conjunction with or in place of \( PF \) in our initial exploratory analyses. Our variable measuring blockade running activity (\( BR \)) is taken from Wise’s [1888] data on monthly counts of the number of successful outgoing and incoming "runs" by ships powered by steam or sail. His data for Wilmington were adjusted with Price’s [1948] data on the annual ratio of steampowered ships to sail-powered ships into all North Carolina ports to estimate the number of runs by steam-powered boats. Specifically, the number of successful incoming runs is reported in our estimated equations as the variable \( BR \) (Table 3 provides details).\(^{18}\) The explanatory variable \( MSa_{t-1} \) is the weekly Greyback price of a gold dollar reported by Weidner and calculated as a simple monthly average [2002, 886-890]. As usual, we assume that it takes time for money supply changes to be translated into price changes [Jansen, et al. 1964, 372], especially in the case of monthly data. Consequently the money supply measure, \( MSa \) enters our model with a one-period lag. Finally, we attempt to account for three important events during this period through the use of dummy variables. Generically, these variables take on values of zero in periods prior to the event and values of unity thereafter. The variable of particular interest for our study is the impact of the Confederate government’s regulation of February 1864 on blockade running and on the prices reflected in the content of blockade running vessels (\( REG \)). The Monetary Reform Act (\( MR \)), passed by the Confederacy later in that same February, but effective only in April, is also included in our regressions. The third event we consider, the Union capture of Vicksburg in July 1863 and the resulting bifurcation of the Eastern and Western Confederate states (\( VIC \)), is of interest because of its potential impact on import prices. As usual, the \( t \) subscript indicates the time period. Our analysis employs monthly data from the years 1862 through 1864, so that \( t = 1, ..., 36 \) observations.\(^{21}\) \( \epsilon \) is a stochastic disturbance term. Expected signs of the explanatory variables follow ordinary economic behavioral lines. With the exception of the blockade variables and monetary reform, the expected signs are all positive.

The fundamental question of interest to this inquiry, "Did Confederate trade legislation of 1864 result in some 'unintended consequences'?," can be answered most reliably by a statistical analysis of (an appropriate version of) equation (1). However, considerable light can be shed on the question by a simple graphical analysis of several of the key variables. Consider Figure 1, which plots the 36 observations of \( MSa_t, P_t, \) and \( PD \) between 1862 and 1864. Notice that all series move together nicely until the end of 1863. Between October 1863 and January 1864 (prior to the enactment of monetary reform legislation in February), the value of the currency rose by almost 42 percent. Both domestic and imported goods prices rose dramatically from the beginning of 1864, with prices of imports rising more dramatically than the prices of domestic goods. Regulation of luxury imports and the monetary reform described above were announced in the first and second half of February 1864 respectively. These events help explain the dramatic increase in the price of imported goods shown in Figure 1. Announced monetary reform certainly explains the depreciation of Confederate currency in March right up to 1 April (and possibly a bit beyond). Effective monetary reform and appreciation of the currency, moreover, explains the dip in the three series shown in Figure 1 after the regulations and monetary reform took effect.
FIGURE 1
Confederate Prices and Money Supply:
1862-1864 (monthly data)

Figure 1 illustrates a potential problem with estimating an often-used form of equation (1). Typically, macroeconomic studies of "open economy" trade models use the ratio of import to domestic prices (PI / PD) as the dependent variable in the model in an ad hoc effort to short-circuit some potential econometric problems (heteroskedasticity, non-stationarity, etc.). But Figure 1 shows that while money supply changes (MSw) affected both PI and PD, positively over the whole period, monetary reform apparently affected the prices of domestic and imported goods asymmetrically. This result is confirmed in simple ordinary least squares (OLS) estimates of equation (1), where PI and PD alternately appear as dependent variables. In those regressions, monetary reform was found to have a negative (but insignificant) effect on PI and a positive and significant effect on PD. This asymmetry suggests the potential for erroneous inferences concerning the effects of the explanatory variables were we to use the ratio of import to domestic prices as the dependent variable in our analysis (for example, MR would be inferred to negatively affect import prices in the ratio form when the appropriate inference in one of no effect on import prices.) Therefore, we opted to treat only import prices as the dependent variable in our model and to attack any attendant econometric difficulties directly.

We began our statistical analysis by estimating equation (1) using OLS. All variables except BR had the appropriate sign and were statistically significant at least at the 12 percent level. In particular, REG was significant at any reasonable level. However further diagnostics indicated that the estimates were heteroskedastic (having a White’s test statistic value of 6.11) and the model likely misspecified (having a value of Ramsey’s RESET test statistic of 5.7). Consequently, we next estimated a version of equation (1) having the continuous variables expressed in logarithms, that is,

\[ \log(PI_t) = \beta_1 + \beta_2 \log(PI_{t-1}) + \beta_3 \log(MS_{w,t-1}) + \beta_4 \log(MR_{t-1}) + \beta_5 \log(VIC_{t-1}) + \varepsilon_t \]

(2)

In this specification, the estimated coefficients for \( \log(PI_t) \) and \( VIC_t \) were negative and the latter statistically significant at the 5 percent level. The remaining coefficient estimates were positive with \( \log(MS_{w,t}) \) and \( REG_t \) being statistically significant at the 1 percent level. While the logarithmic specification reduced the problem of heteroskedasticity, White’s statistic was computed to be 2.58. There was still a clear indication of model misspecification; RESET was computed to be \( \hat{F}_{12} = 64.8 \).

At this point it became clear that the dynamic nature of market and blocking activity in reacting to information and to "announced" and "enforced" regulations on currency and blockade running must be somehow be taken into account in terms of our econometric specification. To determine how we might accomplish this, we investigated the time series properties of import prices. A regression of \( PI_t \) on its lagged value revealed a coefficient estimate of \( \hat{\rho} = 0.00 \) with an associated t statistic of 27.4, making it clear that \( PI_t \) is non-stationary in its levels. This result coupled with the above noted indication of trend in variance suggested that a first-differenced model of \( \log(PI_t) \) should be reasonable. We obtain such a model by first writing equation (2) for period \( t-1 \):

\[ \log(PI_{t-1}) = \beta_1 + \beta_2 \log(PI_{t-2}) + \beta_3 \log(MS_{w,t-2}) + \beta_4 \log(MR_{t-2}) + \beta_5 \log(VIC_{t-2}) + \varepsilon_{t-1} \]

and then subtracting equation (2) from equation (2) to obtain

\[ \log(PI_{t-1}) - \log(PI_{t-2}) = \beta_2 \log(PI_{t-2}) - \log(PI_{t-2}) + \beta_3 \log(MS_{w,t-2}) - \log(MS_{w,t-2}) + \beta_4 \log(MR_{t-2}) - \log(MR_{t-2}) + \beta_5 \log(VIC_{t-2}) - \log(VIC_{t-2}) + \varepsilon_{t-1} - \varepsilon_{t-2} \]

(3)

Note that in this specification, the coefficients retain their original interpretation. That is, \( \beta_2 \) is the import price elasticity of blockade running, \( \beta_3 \) is the import price elasticity of the money supply, and \( \beta_4, \beta_5 \) and \( \beta_6 \) reflect the percentage change in import prices attributable to trade regulations, monetary reform and the fall of Vicksburg, respectively.

The results from estimating this model are presented in Table 4. The estimates are no longer affected by heteroskedasticity and White’s statistic has a value of 0.79 for this model. Furthermore, specification error is no longer a statistically significant problem; the value of Ramsey’s Reset test statistic is \( \hat{F}_{12} = 0.40 \), indicating that
most other ports were occupied or effectively blockaded in 1864 and 1865 and that a number of new Confederate sponsored steamers had come on line in 1864, we would have expected blockade running into Wilmington to have increased and prices have fallen (in the absence of legislation). While monetary reform had a price suppressing impact on the price of imports (about 15 percent is explained by MR), the institution of blockading regulations (REG) had a dramatic and positive (about 38 percent) impact on PT. In discouraging highly profitable imports through legislation, the Confederate government sharply discouraged all running by private interests and may have inadvertently damaged the prospects of the Southern cause.

THE FAILURE OF CONFEDERATE LEGISLATION

As profit opportunities were sharply reduced by the legislation, supplies of all goods, "luxuries" and goods vital to the war effort, were reduced. The empirical evidence from Wilmington strongly suggests that Confederate legislation had "unintended consequences" that resulted in higher, rather than lower, prices. Anecdotal evidence from blockade-runners themselves provide evidence of reduced blockade running due to legislation and therefore a reduced supply of goods essential to the war effort and the maintenance of the civilian labor force. Shortly after the legislation was put into effect, Captain Roberts, one of the most successful blockade-runners, ceased all blockade running, saying:

The game, indeed, was fast drawing to a close. Its decline was caused in the first instance by the impolitic behavior of the people at Wilmington, who, professedly acting under orders from the Confederate Government at Richmond, pressed the blockade-runners into their service to carry cotton on Government account in such an arbitrary manner, that the profit to their owners, who had been put to an enormous expense and risk in sending vessels in, was so much reduced that the ventures hardly paid. (1867, 51)

Another one of the most famous and successful blockade-runners was Thomas Taylor, who made 28 trips through the blockade. One of his very first recollections in his chronicle of events was the Confederate Government’s 1864 Act to limit freight on private account and its prohibition on imported luxuries [Taylor, 1866, note 2]. Unlike Captain Roberts, Taylor continued to run the blockade—because he had negotiated a secret profit arrangement with the Confederate Commissary-General that compensated him for the 1864 legislation [ibid., 139]. Late in the war, despite his best efforts to the contrary, Taylor accurately predicted the downfall of the Confederacy. As he put it, "had blockade running been...encouraged, instead of having obstacles thrown in the way, I am convinced that the conditions of affairs would have been altered very materially, and perhaps would have led to the South obtaining what it had shed so much blood to gain, viz. its independence" [ibid., 137-8, emphasis ours]. It appears that blockade-runners could adjust to the advances of the Union blockade, but not to the economic constraints of the Confederate legislation.
As Captain Roberts explains, "the enterprise had lost much of its charm; for, unromantic as it may seem, much of that charm consisted in money-making" [1867, 51]. The restrictive legislation caused a reduction in blockade running, a reduction that caused critical shortages and logistical bottlenecks in late 1864 and early 1865 especially at the crucial port of Wilmington. According to Bradlee [1925, 62] the South produced enough meat for its population prior to the war, but most of the meat was produced in Texas and could not be transported effectively during the war to Virginia. Therefore the blockade of the Gulf forced Virginia to rely heavily on meat run through the blockade at Wilmington and through enemy lines [Surdam, 1993].

Did legislation stop or even reduce the flow of goods? From the perspective of the Confederate government, it certainly did not stop blockade running; the flow of goods actually increased since Confederate and state-owned blockade-runners were unaffected by the legislation and private blockade-runners had to turn over half of their capacity and were restricted in what they could import. Naturally, the government officials continued to view the blockade as a "leaky affair." The number of runs made through the blockade, however, is incorrectly the desire of an increase in goods due to an increase in the availability of quality blockade-running vessels. The overall number of runs fell from 1,455 in 1863 to only 806 in 1864, the first year impacted by legislation. Runs diminished again during the first quarter of 1865 when only 204 runs were recorded.9

Another measure of decreased blockade running is in cotton exports. Lebergott [1981, 882] estimated the amount of cotton run through the blockade to have decreased from 382,000 bales in the period before the legislation to only 254,000 bales during the period after the enactment of the legislation. Exports smuggled to Europe fell from 262,000 bales to 202,000 bales while smuggled exports by sea to the North fell from 120,000 bales to 52,000 bales. While the period before the legislation was longer in duration, it was also impacted by an informal embargo, which greatly limited cotton exports during 1861 and 1862 [Wise, 1988, 28; Schwab, 1901; 1969, 250-1]. Furthermore, estimates of what was exported must be placed in the context of what would have been exported through the blockade had the legislation not been enacted. Without resort to luxuries, alcohol, and consumer goods prohibited or restricted by legislation, revenue and profitability were clearly impaired. Some military goods were in greater supply due to the legislation, but the civilian population, the market economy, and possibly even the military were harmed as a result.

CONCLUSION

Economic analysis and empirical evidence supports the contention that Confederate trade legislation played a significant role in the restriction of trade, a rise in prices, and the increased scarcity of goods toward the end of the Civil War. Mandated space restrictions on blockade vessels, price controls and, most especially, prohibitions on the import of "luxuries" and alcohol had a serious and calculable effect on importation of these goods at Wilmington, the last "open" port of the Confederacy. These shortages have their root in the adverse economic incentives placed on blockade-runners by the Confederate government itself and this was an important contribu-

1. The never-ending fascination for the American Civil War is evidenced by the massive number of publications on the subject appearing every year. One main staple of historians, numerous economic aspects of the war in addition to the issue of slavery have come to the fore in quite recent times. See, for example, McPherson and Van Cott (2009), Surdam (2001), Schuckman and Schuckman (1989), and Schuckman (2002). Historians, moreover, have lost interest in military (McPherson 1988; Humphreys 1996).

2. For a recent history of blockades, embargoes, and sanctions see Naylor (2001).

3. Germany imposed a blockade on West Berlin and the United States imposed a blockade on Cuba that has prevented legal American trade with Cuba for over forty years. One estimate found that if the embargo was lifted, 80 percent of Cuban exports and imports would be traded with the United States because of reduced transportation and transactions costs (Mintzberg and Soto 1990). The League of Nations applied economic trade sanctions against Italy in order to remove them from Ethiopia in 1903 and the United Nations has applied numerous trade sanctions against a variety of nations including Afghanistan, Angola, Yugoslavia, Haiti, Liberia, Libya, Rwanda, Sierra Leone, Somalia, South Africa, Southern Rhodesia, Sudan, Iran, and others with varying degrees of success.

4. The U.S. was found to be the primary initiator in about two-thirds of the 146 cases of economic sanctions imposed between 1914 and 1990 (see Hoffman, Schott and Elliott, 1999).

5. General Winfield Scott, head of the Union Army at the beginning of the conflict, devised the "Anaconda Plan" that consisted of four elements: (1) Conducting a naval blockade of the Southern coast; (2) Opening the Mississippi River thereby severing the South into two parts; (3) Applying military pressure and controlling territory along the land border, and ultimately invading the center of the South; and (4) Capturing the Confederate capital. Scott's plans foreshadowed both the course and length of the conflict.
6. Nevertheless, money profits in certain locales could often be quite substantial. Wise [1989, 214] reports that the Zephele which cost $100,000 in gold and which ran the blockade of Galveston in 1864 returned more than $300,000 in gold on its first voyage.

7. A large number of writers have found the network of international trade to be a significant contributing factor in the economic and military collapse of the Confederacy. See, for example, Anderson [1892], Creber [1895], Munsen [1862], Odell [1866], Selden [1868] and Surtie [1966]. No one to our knowledge has shown how the blockade played a role in the Union victory, a role that might have included influencing the Confederate economy and the war effort.

8. Bittman et al. [1966, 85-86] argue that the collapse of the South was the result of internal economic problems and a lack of skill, not the blockade.

9. Charleston was declared an open port for a brief period and the Confederates captured Galveston late in the war when it was considered an open port for a brief period of time.

10. It begins with a proposal on 19th December 1863 by resolution of Mr. Perkins (a Louisiana representative and chairman of the Committee on Foreign Affairs) who asked for a resolution on blockade running to ensure that articles imported were necessary for the support of the Army. After debate, secret sessions, proposed amendments, reconsideration and with significant "vote switching" throughout December and January, the bill passed in February. The vote on the passage of the legislation was sixty-vote to eleven. The eleven who voted against the legislation represented eight different states. They tended to be a fairly average group with marginally more of them being southerners (six unionists) and Democrats (vs. Whig). Dissecreters, moreover, were shareholders of average size coming from average areas of blockade running and were therefore of average size coming from average areas of blockade running.

11. The only characteristic that stands out is that ten of the eleven representatives came from districts not occupied or threatened by the Union Army with the lone exception being the notorious Henry Foote (Confederate States of America, 1964; Landon, Jackson, and Thornton, 2002).

12. Prior to the 1864 legislation many of the captains, officers, and crew of blockade runners were allowed to bring in a small amount of goods on their own account in order to enhance their pay and the prospects of a successful voyage, recognition of the incentives involved. They almost always imported luxury goods that gave them the greatest return.

13. Most states had passed prohibitory laws during 1862 and as a result the "price of whiskey jumped skyward" (Robinson, 1981, 84-85). In addition to industrial uses, the War Department used considerable amounts of whiskey in hospitals and to produce medicines (Frank, 1955). Whiskey was also a preservative of food and a staple for the troops. The war was being a more durable, transportable, and versatile grain product, especially under battlefield conditions. General Joseph E. Johnston, for example, decided to use whiskey to make up deficiencies in the meat rations of his men (Musick, 1987). This unprecedented man-o-war runs safely through the blockade, and soon lit up the New England coast with its cargoes, which consisted of two ships, four brigs, four barks and twenty schooners. About the same time another fast double-screw propeller called the结局, ran into Wilmington, North Carolina and the Navy department requiring her services, bought her and gave to use the name of Chickamauga. When ready for sea, she was commanded to run the blockade under the light rays of the full moon. Strangely to say, usually short and uneventful neither hoist nor hailed her (1861, 846-95).

14. The historical record of the effects of price controls is surprisingly rich. An analysis of such effects over the four period, when they have been employed in the United States in the 20th century is found in Bockstael (1981).

15. Higher prices that were the result of an increase in demand would suggest that the number of runs would have increased.

16. Galveston was blocked by Confederate forces under General John Bankhead Magruder on New Year's Day 1863 and Union forces were spectacularly unsuccessful in halting blockade running into and out of the island after that (see Cohens [1809, 106-125]). To pass through the blockade required a 1000-ton ship in a period of 2-3 days. The blockade runners were sophisticated vessels and the blockade runners were sophisticated vessels and were generally more than 1000-ton ships. The blockade runners were sophisticated vessels and required a 1000-ton ship in a period of 2-3 days. The blockade runners were sophisticated vessels and were generally more than 1000-ton ships. The blockade runners were sophisticated vessels and were generally more than 1000-ton ships.

17. The blockade runners were of two main types, mostly built in Wilmington and Fayetteville (100 miles up the Cape Fear River from the port of Wilmington). Where two types for a particular community were available a simple average was used.

18. These commodities are corn, hay, butter, eggs, chicken (live), turkey (live), turkey (dead), cornmeal, flour (S. F. 1, pintose (Irish), potatoes (sweet), tallow, eye, wheat, flour, beef, flour (family).

19. The data does permit alternative specifications of blockade running activity. In the following tests, we ran alternative specifications, such as the use of both incoming and outgoing runners. All results were similar and we use our calculation of incoming runners as a measure most directly affecting export prices.

20. In early formulations we used the older series calculated by Schwab [1961]. While both series produce similar results, the Weidzenier series produces more robust estimates in all formulations.

21. The blockade running series has some missing data (4 - 8 observations). Were estimated out values by reducing the observations having the missing data and with them replaced with predicted values. In both cases, the results were similar, but they appear stronger when predicted values are used. Thus, the results reported in the paper are those employing predicted values for the missing observations.

22. We do not report the results of our initial and intermediate statistical analyses. While we outline some of those findings in the narrative, they are not terribly reliable since those estimates assume several econometric difficulties. We report only estimates of our final model. Readers interested in the initial and intermediate results may obtain them upon request from the authors.

23. The blockade and Union control of the Mississippi did make it difficult to move large quantities of Texas beef to the East. But in fact the federal capture of Vicksburg and New Orleans actually made it easier to trade goods North and South, and even between the eastern and western Confederacy. The federal government established trade routes and permits which encouraged the trade of cotton and other southern products for northern goods. With the armies at logistics trade was difficult, but with the entire Mississippi open, international and international trade expanded whether it was of the legal variety (with official permits) or of the illicit variety.

24. The performance of the Union Navy in enforcing the blockade around Wilmington in 1864 would appear to add support to the conclusion that additional blockade running could have proceeded with success. Data provided in Browning (1866, 277) indicates that capture rates at Wilmington either remained the same or declined somewhat in 1864 at the same time that Union blockade vessels increased in size. While Confederate gunboats must have been bored by Union blockade and ordinary Confederate vessels, some evidence of activity by the Confederate Navy suggests some ineffectiveness of the Wilmington blockade. No less than one observer as shown above notes that "the men of July 1864-a new twin screw propeller called the Atlanta, of 200 tons burthen, was purchased by the Secretary of the Navy and fitted out in the harbor of Wilmington, North Carolina, for a cruise against the coast of the Confederacy. The captain of the Charlotte, a regular component of an officer's residence, as recommended by the Surgeon General. The regular issue of whiskey to be suspended in 1863 because of a short supply. According to Durkin (1854, 1857, 328) the Secretary of the Navy Stephen B. M. even tried to establish a distillery near New Bern with Carolina to produce whisky for Navy use."

25. Taylor wrote to his superior on 15 January 1865 that, "I never saw things look so gloomy, and I think spring will finish them unless they make a change for the better" (223-45). His notes that he had successfully delivered all of the Whiteman guns to Fort Fisher and said "enough to fall Lee's army for a month" (248-45).

26. It has been suggested that Taylor was the real life model for Margaret Mitchell's character of Rhett Butler, it is interesting to note that even Rhett Butler withdrew from blockade running during the period after the 1864 legislation.

27. Browning (1866, 173-79) found that, despite a tremendous increase in the number of blockade runners off Wilmington, the number of blockade runners captured each month stayed about the same. Another wrinkle in the data is the increased land trade in cotton with the North late in the war (Surtie, 1966).

28. In 1863 there were 821 runs by steam powered ships and 652 by sail powered ships. In 1864 there were 1000 runs by steam and 360 by sail, while in 1865 there were 1028 by steam and 68 by sail. For summary of Prato data see Lasbrot (1861, 97-98).

29. Obviously caution has to be exercised in the use of this data because of the great difficulty in estimating what actually ran through the blockade. Surtie (2001), for example, estimates that cotton exports from major ports increased slightly between 1863 and 1864. The amount of cotton smuggled by snipers is heavily weighted to Wilmington, which represents more than 70 percent of the total when Wilmington also exported some tobacco and turpentine. Also, the legislation was not
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