

# THE "UNINTENDED CONSEQUENCES" OF CONFEDERATE TRADE LEGISLATION

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## 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."<sup>1</sup>

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 432 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 victor.<sup>2</sup>

In modern times, blockades have had enormous international implications for the conduct of the Cold War, the Berlin blockade, and contemporary sanctions against Cuba.<sup>3</sup> The most prominent recent example of economic sanctions is the U.S.-led U.N. blockade of Iraq.<sup>4</sup> 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].

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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 intraregional trade and then conquering the weakened Southern economy and undersupplied Confederate army was the centerpiece of the Union's "Anaconda" strategy to strangle the Confederacy economically.<sup>5</sup>

Confederate Armies fought Union Armies to a stalemate throughout much of the war, but the Union blockade continued to grow in coverage and effectiveness [Ekelund and Thornton, 2001]. In pioneering work Lebergott [1983] calculated that the blockade increased the cost of shipping by as much as 5,000 percent in real terms, but that blockade running was not as profitable as it appeared when the risks of capture are considered.<sup>6</sup> 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.<sup>7</sup>

There is significant disagreement among scholars whether the Union blockade was the *prime* reason for Confederate defeat.<sup>8</sup> Noted historians Frank Owsley [(1931)/1959] and Frank Vandiver [1947] found the Union blockade to be ineffective, as did Beringer et al. [1986]. 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 entrepreneurs 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 "leaky" and that sufficient quantities of goods moved through the blockade. Except for a few minor incidents,<sup>9</sup> 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-

creasing the supply of imported commodities and munitions and increasing income by selling more cotton vital. 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 [Ekelund 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.<sup>10</sup> One of the most important of these tentacular 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 vocal public dissatisfaction over trade, this legislation 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.<sup>11</sup> 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.<sup>12</sup>

### *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

**TABLE 1**  
**Sample of Prohibited Imported Goods**

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Absynthe
Ale, beer and porter
Anchovies, sardines, and all other fish preserved in oil
Articles embroidered with gold, silver or other metal
Bay rum
Billiard and bagatelle tables, and all other tables or boards on which games are played
Brandy and other spirits distilled from grain or other materials
Cabinet and household furniture
Carpets, carpeting, hearth-rugs, bed-sides, and other portions of tapestry of every kind and description
Carriages, and parts of carriages
Cotton laces
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
Dolls and toys of all kinds
Glass, cut; Glass, colored, stained or painted
Leaf and manufactured tobacco and cigars
Manufactures and articles of marble, marble paving-tiles, slabs or block, and all other marble
Muffs and tippets, and all other manufactures of fur, or of which fur shall be a component part, except caps and hats
Paintings and statuary
Paper hangings; Paper for walls; Paper for screens or fireboards
Paving and roofing tiles and bricks, and roofing slates, and fire bricks
Perfumes and perfumery of all sorts
Playing cards
Scayliola table-tops, or other articles of furniture
Thread lacings and insertings
Velvets of all kinds
Wines, burgundy, champagne, claret, madeira, port, sherry, and all other wines and imitations of wines

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Confederate States of America, *An Act to Prohibit the Importation of Luxuries or of Articles Not Necessary or of Common Use*, (Maximum Foreign Prices). New Haven, CT.: Confederate Imprints 1861-1865 Research Publications, 1974.

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.<sup>13</sup>

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,

**TABLE 2**  
**Sample of Items Subject to Price Controls**

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(Cotton) Drawers, ready made, knit or woven, not to exceed \$1 per pair;
(Cotton) Gloves, not to exceed 25 cents per pair;
(Cotton) Hosiery, women's, not to exceed 35 cents per pair;
(Cotton) Shirts, ready made, knit or woven, not to exceed \$1 each;
(Wool) Hats, women's, not to exceed \$4 each;
(Wool) Hats, men's, not to exceed \$2 each;
(Wool) Shawls, not to exceed \$7.50 each;
Dress Silk, not to exceed \$1 per yard;
Sewing Silk, not to exceed \$5 per yard.

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See the source in Table 1, 10-11.

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 Lebergott's [1981] 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, 1948, 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.<sup>14</sup> 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. Bayne, was promoted from Major to Lieutenant Colonel and given \$20 million to purchase cotton for export and pay off debts. To enforce the regulation 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.<sup>15</sup> 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 or 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 bifurcation of monetary reform clearly affected the gold price of currency in Eastern and Western Confederacy differently.<sup>16</sup> Burdekin and Weidenmier [2001] clearly show that Richmond and Houston gold markets follow a common trend up until April 1864 and then diverge 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" Grayback holders increased the velocity of circulation of them in the East).

"War news" concerning Northern and Southern prospects for a win also affected the value of the currency (and therefore prices). Weidenmier [2002] developed a new measure of the money supply—one used in the following tests. He tests the new Grayback 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 Spottsylvania had (at least temporarily) slowed Grant's march on Richmond. Weidenmier [2002, 882-4] 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**

Variable	Definition	Expected Sign
<i>PI</i>	Price of imports: six commodities, sugar, salt, wool, molasses, beef, and bacon. Index constructed from Wilmington and Fayetteville, NC price data.	
<i>PD</i>	Price of 17 domestic commodities: Corn, hay, butter, eggs, chicken (live), turkey (live), turkey (dead), cornmeal, flour (S. F.), potatoes (Irish), potatoes (sweet), tallow, rye, wheat, flaxseed, lard, flour (family). Index constructed from Wilmington and Fayetteville, NC price data.	
<i>BR</i>	Incoming (successful) runners to the port of Wilmington. Steam only.	?
<i>REG</i>	Dummy variable for Confederate regulation of February 1864: takes value of one after date, zero otherwise. <i>REGDIFF</i> is first difference.	+
<i>MR</i>	Dummy variable for Confederate monetary reform, passed February 1864, effective in Eastern Confederacy April, 1864: takes value of one after date, zero otherwise. <i>MRDIFF</i> is first difference with effect in May.	-
<i>VIC</i>	Dummy variable for close of Vicksburg as <i>entrepot</i> between Western and Eastern Confederacy; takes value of one after July 1863, zero otherwise. <i>VICDIFF</i> is first difference.	?
<i>MSw</i>	Greyback price of gold. (Monthly average).(1860 = 1.0).	-

Price index calculated from price data in Eugene Lerner [1954, 132-149]; blockade data from Wise [1988, 233-250] and Price [1948, 228, 232, 236]; gold price index from Weidenmier [2002, Appendix, 886-890].

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 of course for "other factors," we posit the following generic model

$$(1) \quad PI_t = \beta_1 + \beta_2 BR_t + \beta_3 MSw_{t-1} + \beta_4 REG_t + \beta_5 MR_t + \beta_6 VIC_t + \varepsilon_t$$

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 *PI*, an index of prices that consists of the four imported commodities identified by Lerner [1954, 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).<sup>17</sup> 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.<sup>18</sup> We employed this variable either in conjunction with or in place of *PI* in our

initial exploratory analyses. Our variable measuring blockade running activity (*BR*) is taken from Wise's [1988] 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 steam-powered 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).<sup>19</sup> The explanatory variable *MSw*<sub>*t*-1</sub> is the weekly Greyback price of a gold dollar reported by Weidenmier and calculated as a simple monthly average [2002, 886-90].<sup>20</sup> As usual, we assume that it takes time for money supply changes to be translated into price changes [Jansen, et al. 1994, 372], especially in the case of monthly data. Consequently the money supply measure, *MSw* 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.<sup>21</sup>  $\varepsilon_t$  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 *MSw*, *PI*, 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)**

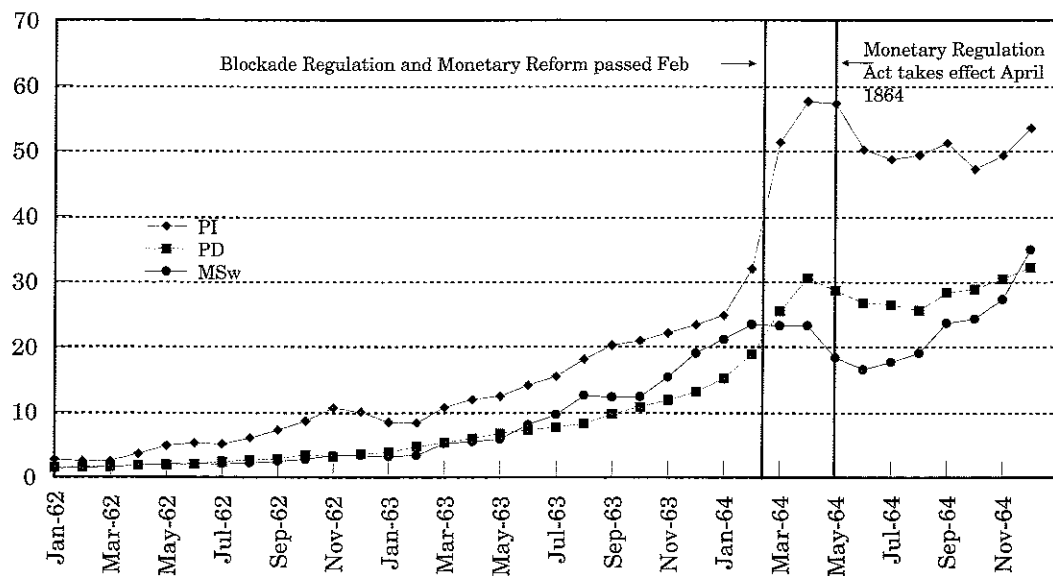


Figure 1 illustrates a potential problem with estimating an often-used form of equation (1). Typically, macroeconomic studies of "open economy" trade models use the ratio of import to domestic prices ( $PI_t/PD_t$ ) as the dependent variable in the model in an *ad hoc* effort to short-circuit some potential econometric problems (heteroskedasticity, non-stationarity, etc.). But Figure 1 shows that while money supply changes ( $MSw_{t-1}$ ) affected both  $PI_t$  and  $PD_t$  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  $PI_t$  and  $PD_t$  alternatively appear as dependent variables. In these regressions, monetary reform was found to have a negative (but insignificant) effect on  $PI_t$  and a positive and significant effect on  $PD_t$ . 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,  $MR_t$  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.<sup>22</sup> All variables except  $BR_t$  had the appropriate sign and were statistically significant at least at the 12 percent level. In particular,  $REG_t$  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 (hav-

ing 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,

$$(2) \quad LOG(PI_t) = \beta_1 + \beta_2 LOG(BR_t) + \beta_3 LOG(MSw_{t-1}) + \beta_4 REG_t + \beta_5 MR_t + \beta_6 VIC_t + \varepsilon_t$$

In this specification, the estimated coefficients on  $LOG(BR_t)$  and  $VIC_t$  were negative and the latter statistically significant at the 5 percent level. The remaining coefficient estimates were positive with  $LOG(MSw_t)$  and  $REG$  being statistically significant at the 1 percent level. While the logarithmic specification reduced the problem of heteroskedasticity, White's statistic was computed to be 2.35. There was still a clear indication of model misspecification; RESET was computed to be  $F_{3,27} = 34.8$ .

At this point it became clear that the dynamic nature of market and blockading 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  $\rho = 1.00$  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  $t-1$ :

$$(2') \quad LOG(PI_{t-1}) = \beta_1 + \beta_2 LOG(BR_{t-1}) + \beta_3 LOG(MSw_{t-2}) + \beta_4 REG_{t-1} + \beta_5 MR_{t-1} + \beta_6 VIC_{t-1} + \varepsilon_{t-1}$$

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

$$(3) \quad [LOG(PI_t) - LOG(PI_{t-1})] = \beta_2 [LOG(BR_t) - LOG(BR_{t-1})] + \beta_3 [LOG(MSw_t) - LOG(MSw_{t-2})] + \beta_4 [REG_t - REG_{t-1}] + \beta_5 [MR_t - MR_{t-1}] + \beta_6 [VIC_t - VIC_{t-1}] + (\varepsilon_t - \varepsilon_{t-1})$$

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  $F_{3,24} = 0.40$ , indicating that

**TABLE 4**  
**Determinants of the Log First Difference Prices of Imports**  
**in Wilmington (monthly data, 1862-1864)**

Variable	Coefficient	Std. Error	t-stat
C	0.0669	0.0230	2.9109
$LOG(BR_t) - LOG(BR_{t-1})$	-0.1001	0.0517	-1.9352
$LOG(MSw_t) - LOG(MSw_{t-2})$	0.2799	0.1384	2.0223
REGDIFF	0.3789	0.0203	0.0528
MRDIFF	-0.1527	0.0458	-3.3340
VICDIFF	-0.0288	0.0328	-0.8764
R <sup>2</sup>	0.441159		
RESET	0.40 (0.75)		

For data sources, see Table 3.

the null hypothesis of no specification error can be rejected even at the 90 percent level of significance. The estimates in Table 4 and the corresponding *t* statistics can therefore be reasonably viewed as valid.

All of the results, save those of *VICDIFF*, are of the expected signs and significant at the 7 percent or better levels. A 10 percent increase in successful incoming blockade-runners tends to lower import prices by about 1 percent. The disappearance of luxury goods after February 1864 would have broken the significant and negative link between the amount of blockade-running-for-profit activity and the price of imports. Also, as indicated above, the implementation of Confederate government runners at the same time private "profiteering" was severely limited would not be inconsistent with a higher price of imports—indeed it would help explain it. (This effect is negative and insignificant in unreported regressions on log differences of PD). As suggested in Figure 1, differences in *MSw* positively affect *PI* over the entire period. Indeed, a 10 percent increase in *MSw* tends to increase import prices by about 2.8 percent. Further, as again suggested in Figure 1, the impact of differences in the dummy variable measuring monetary reform had negative and highly significant impacts on import and all commodity prices, on the order of about a 15 percent reduction, after implementation of the reform in April of 1864. The fall of Vicksburg, moreover, had no statistically discernable impact upon *PI* in Wilmington during the last part of the war. Our results suggest that commercial intercourse between the Western Confederacy and Wilmington was not as severely constrained by the bifurcation as might be supposed. Our results appear to support the analysis of some historians who have argued that trade continued between the two regions. Coulter [1919, 377-95] argued that the capture of Vicksburg and the Union opening of the Mississippi River made it more difficult, if not impossible, to move large Confederate Armies east and west, but it did not stop the trade of goods.<sup>23</sup>

The chief variable of interest for this study (*REG*) is robust and positive in all formulations (including the unreported ones mentioned above). This suggests that Confederate regulations over the content of blockading vessels substantially increased the real price of imported commodities into the Confederacy through Wilmington as the war drew to a close, in the magnitude of about a 38 percent price rise. Given 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).<sup>24</sup> 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 *PI*. 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 behaviour 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 out 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, 1896, 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.<sup>25</sup> 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].<sup>26</sup> It appears that blockade-runners could adjust to the advances of the Union blockade, but not to the economic constraints of the Confederate legislation.<sup>27</sup>

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, clearly decreased at a time when the desire was clearly for an increase and when there was a greater availability of quality blockade-running vessels.<sup>28</sup> The overall number of runs fell from 1,453 in 1863 to only 806 in 1864, the first year impacted by the legislation. Runs diminished again during the first quarter of 1865 when only 204 runs were recorded.<sup>29</sup>

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 cotton embargo, which greatly limited cotton exports during 1861 and 1862 [Wise, 1988, 28; Schwab, (1901) 1969, 250-1].<sup>30</sup> 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 vital goods towards 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 contrib-

uting factor to the timing of, or as the most famous and successful blockade-runner Thomas Taylor suggested, *the very outcome* of the Civil War. Even if it appears that the impact of the legislation was only to hasten the end of the war, the results here do shed some light on the final outcome of the war. It certainly helps close the gap between those who see the blockade as the most important reason for the outcome of the war and those who emphasize the land war and view blockade as only a "leaky affair."

Finally, as noted in the introduction, regulatory impositions such as those imposed by the Confederate government in the Civil War have many historical and modern analogies.<sup>31</sup> Similar results and concerns have been witnessed in the U.S. blockade of Iraq to enforce the U.N. sanctions that "have produced a humanitarian disaster comparable to the worst catastrophes of the past decades" [Bossuyt, 2000, 16].<sup>32</sup> Like the blockade of the Confederacy, access to basic necessities like food has been greatly diminished while "luxury" goods remain available at "reasonable" prices. In fact, a Sub-Commission on Human Rights of the United Nations labels the results "adverse consequences" and has recommended the adoption of "smart sanctions" which target military goods, the financial assets of the ruling elite, and "[i]mports of luxury goods and other goods generally only consumed by the ruling elite" [Bossuyt 2000, 15]. Given the importance of the role of the blockade in military history and modern affairs, investigation of the effects of the U. S. Civil War blockade provides insights for both academic researchers and public policy makers.

## NOTES

We would like to thank Dr. DuBose DeLorme and an especially helpful referee for excellent suggestions on this paper, although we are completely responsible for content.

1. The never-ending fascination for the American Civil War is evidenced by the massive number of publications on the subject appearing every year. Once mainly the province 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 a small example, McGuire and Van Cott [2002], Surdam [2001], Burdekin and Weidenmier [2001], and Weidenmier [2002]. Historians, moreover, have not lost interest [McPherson 1988; Hummel 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 and travel 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 [Montenegro and Soto 1996]. The League of Nations applied economic trade sanctions against Italy in order to remove them from Ethiopia in 1935 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 116 cases of economic sanctions imposed between 1914 and 1990 [see Hufbauer, Schott and Elliott, 1990].
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 planning foreshadowed both the course and length of the conflict.



6. Nevertheless, money profits in certain locales could often be quite substantial. Wise [1988, 214] reports that the *Zephine* 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 constriction of international trade to be a significant contributing factor in the economic and military collapse of the Confederacy. See for example, Anderson [1962], Coulter [1950], Massey [1952; 1965], Roland [1960], Soley [1883] and Surdam [1993]. No one to our knowledge claims that the blockade played no role in the Union victory.
8. Beringer et al. [1986, 58-59] argued that the collapse of the South was the result of internal economic problems and a lack of will, 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 began with a proposal on 10 December 1863 with resolution by 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, reconsiderations and with significant "vote switching" throughout December and January, the bill passed in February. The vote on the passage of the legislation was sixty-one to eleven. The eleven who voted against the regulation represented eight different states. They tended to be a fairly average group with marginally more of them being secessionists (vs. unionists) and Democrats (vs. Whig). Dissenters, moreover, were slaveholders of average size coming from average-sized slaveholding districts and were of average means coming from counties of average wealth. 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*, 1904; Ekelund, Jackson, and Thornton, 2002].
11. 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.
12. Most states had passed prohibitory laws during 1862 and as a result "the price of whiskey jumped skyward" [Robinson, 1931, 51-53]. 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 practical substitute or supplement for bread and in fact surpassed bread in 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 for deficiencies in the meat rations of his men. Alcohol was a regular component of a sailor's rations, as recommended by the Surgeon General. The regular issue of whiskey had to be suspended in 1863 because of a short supply. According to Durkin [(1954), 1987, 329] the Secretary of the Navy Stephen R. Mallory even tried to establish a distillery in South Carolina to produce whiskey for Navy use.
13. 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 20<sup>th</sup> century is found in Rockoff [1981].
14. Higher prices that were the result of an increase in demand would suggest that the number of runs would have increased.
15. Galveston was retaken 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 Cotham [1998, 168-75 *et passim*]). We can find no evidence that the trade regulation of February 1864 had any effect on blockade running in Galveston.
16. The conversion was more complicated in the West, where until 1 January 1865, Grayback holders could opt to purchase Confederate, relatively illiquid bond certificates, a less appealing alternative to currency. As Burdekin and Weidenmier report [2001, 1627] failure of the new currency to reach circulation by 1 July 1864 led to increased velocity of circulation in the Western confederacy such as that which occurred up to the deadline in the East in April of 1864.
17. Our index combines all import prices reported monthly in Wilmington and Fayetteville (100 miles up the Cape Fear River from the port of Wilmington). Where two reports for a particular commodity 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.), potatoes (Irish), potatoes (sweet), tallow, rye, wheat, flaxseed, lard, 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 import prices.
20. In early formulations we used the older series calculated by Schwab [1901]. While both series produce similar results, the Weidenmier series produces more robust estimates in all formulations.
21. The blockade running series had some missing data (4 - 8 observations). Models were estimated both excluding 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 encounter 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 rules and permits which encouraged the trade of cotton and other southern products for northern goods. With the armies at loggerheads trade was difficult, but with the entire Mississippi open, intranational 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 [1980, 177] indicate that capture rates at Wilmington either remained the same or declined somewhat in 1864 at the same time that Union blockading vessels increased threefold. While Confederate gunboats must have been feared by Union blockers more than ordinary runners, some evidence of activity by the Confederate Navy suggests some ineffectiveness of the Wilmington blockade. No less an observer than Jefferson Davis notes that "In the month of July 1864 a swift twin-crew propeller called the *Atlanta*, of 600 tons burden, was purchased by the secretary of the Navy and fitted out in the harbor of Wilmington, North Carolina, for a cruise against the commerce of the Northern States. . . . This extemporaneous man-of-war ran safely through the blockade, and soon lit up the New England coast with her captures, which consisted of two ships, four brigs, four barks and twenty schooners. About the same time another fast double-screw propeller of 500-and-85 tons, called the *Edith*, ran into Wilmington, North Carolina and the Navy department requiring her services, bought her and gave to her the name of "Chickamauga". . . . When ready for sea, he [the commander] ran the blockade under the bright rays of the full moon. Strange to say, usually alert sentinels neither hailed nor halted her" [1881, 264-65].
25. Taylor wrote to his superiors 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" [137-8]. He notes that he had successfully delivered all of the Whitworth guns to Fort Fisher and food "enough to feed Lee's army for a month" [ibid.]
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 [1980, 175-79] found that, despite a tremendous increase in the number of blockading vessels off Wilmington, the number of blockade-runners captured each month stayed about the same.
28. Another wrinkle in the data is the increased land trade in cotton with the North late in the war [Surdam, 1999].
29. In 1863 there were 821 runs by steam-powered ships and 632 by sail-powered ships. In 1864 there were 526 by steam and 280 by sail, while in 1865 there were 138 by steam and 66 by sail. For summary of Price data see Lebergott [1981, 879].
30. Obviously caution has to be exercised in the use of this data because of the great difficulty in estimating what actually was run through the blockade. Surdam [2001], for example, estimates that cotton exports from major ports actually increased slightly between 1863 and 1864. The amount of cotton smuggled by steamers 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

passed and in effect for several months of 1864 so that much of the 1864 total was exported pre-legislation.

31. Another interesting example from the 19<sup>th</sup> century concerns French policy during the Napoleonic War. The British instituted a sea blockade against France and the French responded, when access to wheat flour became precarious and difficult, with legislated maximum prices for grain and a requirement that farmers sell one-third of their supplies. Disaster and starvation followed. According to Bourne "There was distress and discontent in the towns, and especially in Paris. Under the circumstances more maximum laws, rather than none at all, were the demand of the hour. And so price-fixing became one of the characteristic features of the Reign of Terror" [1919, 94].
32. According to the U.N. report "There is broad controversy and little hard evidence concerning the exact number of deaths directly attributable to the sanctions; estimates range from half a million to a million and a half, with the majority being dead children" [Bossuyt, 2000, 16].

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