

The Economics of US Civil War Conscription

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US conscription in the Civil War is analyzed. Conscription was designed to gain federal control of enlistments, leaving state and local governments much of the fiscal and administrative responsibility for raising troops. Due to the hiring of substitutes, the payment of a fee to avoid service (*commutation*), and community-provided funds, only 2% of those who served were conscripted. Theory suggests that federal pay and local government bonuses increase as the marginal opposition by citizens to the number of reluctant draftees increases, and commutation *could* have lowered social cost. Instead, commutation was a binding ceiling on the price of substitutes. (*JEL* N11, N41, J45)

1. Introduction

Military conscription—the draft—ended in the US more than 30 years ago. However, since then, whenever the US enters a conflict, elected officials and other commentators speculate about whether there should be a return to conscription.¹ Economists tend to be critical of the draft.² Our Civil War (CW) experience has been used as an example of problems with a draft (Lindsay, 1968b; and Rafuse, 1970). In addition to the standard kinds of difficulties associated with the draft (e.g., misallocation of resources because

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1. See, for example, Rangel (2002).
2. For a recent brief elucidation of the problems with a draft, see Oi (2003).

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the “wrong” people are enlisted, and increased turnover and draft avoidance costs), CW conscription resulted in widespread violence and opposition. Also, CW conscription supposedly was highly inequitable: the rich could hire substitutes or buy their way out, and the average man had no choice (if not exempt) but to be inducted or evade the draft.

Five times the US used military conscription during wars: in the CW, World War I, World War II, The Korean War, and in the Vietnam War.³ In the four twentieth-century wars in which conscription was used, the percentages of those who served during each war who were draftees⁴ were (beginning with World War I) 59, 61, 27, and 21. The same percentage for the CW is 2. It seems reasonable to wonder if a system in which draftees represented such a small percentage of those who served had a different purpose than did twentieth-century drafts, and whether the apparent opposition to the draft (manifested in riots) was actually opposition to a draft *per se*.

As will be discussed, contemporary elected officials and twentieth-century historians concur: Civil War conscription (CWC) was not designed to directly attract volunteers.⁵ A weak federal government used conscription to shift the private (payroll) cost of military personnel to state and local governments—in contrast to twentieth-century conscription which involved shifting the tax burden to individual draftees.⁶ To minimize the number of reluctant draftees, individuals could hire a substitute, and, in the first two (of four) draft calls, could pay a *commutation* fee of \$300, enabling them to avoid service. Through bounties raised by states and communities, and the availability of draft insurance, even relatively poor individuals were able to avoid service.⁷

3. As discussed in Section 2, conscription was also used in Colonial America and in the American Revolutionary War.

4. These percentages were derived from *The Report of the President's Commission on an All-Volunteer Armed Force* (1970), and from the web sites of the Department of Defense and the Selective Service System. Others report different percentages. For example, Rostker (2006, p. 25) claims 72% of those who served in World War I were drafted.

5. See, for example, McPherson (1988).

6. World War I conscription appears to have had, at least in part, a somewhat different purpose than did the other twentieth-century drafts. It exempted highly skilled individuals in occupations deemed important for the war effort (Oi, 1996), apparently to prevent such individuals from volunteering.

7. Murdock (1964) found no discernible difference in commutation rates between rich and poor counties in New York.

Although historians are aware that CWC had a different purpose than conscription that followed in the US, no formal analysis of the objectives of the federal government (and local governments) exists. Also, historians have criticized features of CWC—such as substitution, commutation, and bounties⁸—when such criticism may not be warranted. The main contributions of this paper are in the analysis of the potential efficiency of commutation, the inefficiency of how commutation was used, and the inefficiency of substitution when it is costly to find substitutes. Thus, the goal of this paper is to provide analysis, including a theoretical model, of the objectives of CWC. A better understanding of the first use of conscription by the US—what its objectives were and how it functioned—may be of value in future discussions regarding the merits of a draft.

In the next five sections, the following will be presented: an analysis of antecedents to CWC, how CWC worked, the bounty system, draft opposition, and the purposes of CWC. Sections 7 and 8 contain a formal model of the draft when there is substitution but no commutation. Commutation is considered in Sections 9 and 10, and conclusions are offered in Section 11.

2. Antecedents to CWC

The CW was not the first time a draft was used in the US. Except for Pennsylvania, all of the colonies had similar militia laws: substitution was allowed, and some colonies permitted one to pay a fee to avoid service, what was known as commutation in the CW. Conscription was used to encourage volunteers (Levi, 1997). Decentralized militia drafts were used in Indian wars, in the Revolutionary War, and in the War of 1812 (Hummel, 2001). States used militia drafts in the late 1770s to maintain the Continental Army, and substitution was permitted (Chambers, 1987). During the Revolutionary War, annual recruiting began in 1777. The Continental Congress assigned a quota to each state, which assigned quotas to towns. A militia commander then called for volunteers in a town. Generally a few were obtained, and then the state, town, or private citizens (and sometimes all three) offered

8. Murdock (1967) suggests that problems with these features of CWC resulted in their abandonment in drafts in the US after the CW.

bounties to fill the quotas. One's term of service ended in December each year.⁹

Although there was no national conscription in the War of 1812, several proposals for conscription were advanced. These plans were offered separately by James Monroe (Secretary of War) and George Troup (Chairman of the House Committee on Military Affairs), but were very similar and will be discussed together. One version of these plans was close to being enacted when the war ended.

The Troup/Monroe plans essentially involved shifting some of the burden of financing the military to individual classes of 25 men, each class to consist of individuals of approximately equal wealth. If a member of a class could not be induced to volunteer, the class would pay a tax based on the wealth of its members. Lindsay (1968a) argues that these plans did not really involve conscription, since no one would be forced into the military, and those with less wealth would pay a lower tax if no one in their class was induced to volunteer. Indeed, Lindsay (1968a) and Rafuse (1970) claim that these plans were similar to the then proposed, and now existing, volunteer military in the US. In Section 6, it will be argued that the CW draft was designed with the same objective as the proposed drafts in the War of 1812: to shift some of the tax burden to the local level without taxing only draftees or compelling anyone to enter military service.

3. The Draft and Volunteers in the CW

Early attempts to raise troops by the Union were left to the states. Recruiting declined in the summer of 1862. With increasing civilian opportunities along with, at some point, a realization that the war would be bloody and long, one would expect a decrease in the supply of volunteers. The demand for men rose, and the number of men enlisted in the army increased significantly (if not monotonically) during the war. In January 1862, there were 575,917 men in the army; one year later there were 918,121; in January 1864, there were 860,737; and in January 1865, there were 959,460 (Livermore, 1957).

9. See Royster (1979, pp. 65–6).

Initially, the militia system was used to provide and finance troops. A variety of states appropriated funds in 1861 to pay for recruiting and equipping the militia. For example, New York raised \$3,000,000 and Rhode Island raised \$500,000 (Shannon, 1965, Vol. 1). Prior to the militia law of July 1862, calls for troops were voluntary; the states were supreme, and the federal government could merely request troops be provided. The Militia Act of 1862 was the beginning of the transition to federal authority in raising an army. The act provided for a draft of the militia if a state did not fill its quota of three-year volunteers. Exemptions and substitutions were allowed. It was now established that the federal government had the authority to raise and support an army without state assistance (Geary, 1986). The prospect of a draft met with riots in many states. The draft was rescinded, and the use of bounties, along with the threat of a draft, enabled states to meet their quotas.¹⁰

The limitations of the militia system were clear as far back as Colonial America when the tradition of local defense meant that the militia would often not cross state and national borders. Regular British units were required to fight the French and Indians (Rafuse, 1970). Other problems with the militia were the popular election of officers and relatively short terms (Murdock, 1967). Thus, a system that may have been of value in local defense for limited conflicts was probably not well suited for a conflict of larger scope and longer duration.¹¹

The Enrollment Act of 1863 completed the transition to federal control of recruitment and national conscription. Male citizens, and those who had filed for citizenship, within the age group of 20–45 were to be enrolled. Enrollment was similar to draft registration in recent history, except that it was conducted as a census; individuals were sought out to be enrolled. Initially two classes of enrolled men existed. Class 1 consisted of all men aged 20–35 and unmarried men aged 35–45, and Class 2 was comprised of

10. The quotas were for 300,000 nine-month militia and 300,000 three-year volunteers. See Billings (1968, pp. 335–36), and McPherson (1988, p. 601). Prior to the Civil War, militia service had become voluntary throughout the US. With the Militia Act, compulsory militia service was restored, but states ignored it and filled quotas with volunteers by using bonuses (Cutler, 1923, p. 171).

11. However, Hummel (2001, p. 43), argues that problems with the militia actually were the result of those militiamen who were drafted, which is ironic given conscription was part of the system that replaced the use of the militia.

married men aged 35–45. Those in Class 2 were not to be drafted until all those in Class 1 had been called; this apparently almost never happened.¹²

Enlistment quotas were assigned to each Congressional district by its *pro rata* share of the number called by the president, minus the number of previous enlistees from the district. After 50 days, a lottery would be held to obtain the remainder of a district's quota. Thus some districts might have drafts while others did not. The draft calls were in October 1863, March 1864, July 1864, and December 1864.¹³

One could furnish a substitute and avoid service for 3 years in all four drafts. Also, in the first draft, one could pay a \$300 commutation fee and be excused from service for 3 years. In the second draft, commutation bought one out of service only for that draft. In July 1864, President Lincoln signed a bill eliminating commutation except for conscientious objectors. Effectively, commutation ended after the second draft (see Table 1). Until February 24, 1864, a substitute could come from those who were enrolled; after that date, a substitute could only come from those exempt from military service. Thus, for the last three drafts, substitutes consisted of those under the age of 20, honorably discharged veterans with two or more years of service, alien residents, and (later) black citizens.¹⁴

Due to re-enlistments and incomplete records, the number of individuals who served in the Union Army is not clear. Estimates range from 1.5 million to over 2.5 million (Geary, 1991). Chambers (1987) uses 2.1 million. Since this figure is roughly the midpoint of the numbers generally claimed, it will be used herein. Draftees represented about 2% of all who served in the Union Army. Approximately 92% of those who served in the Union Army were from volunteer units (Chambers, 1987). The remaining 8% were comprised of draftees, some substitutes, and those who also volunteered—for the regular army.¹⁵ In the CW, the term “volunteer” did not mean what it

12. McPherson (1988, pp. 600–1, footnote 20). The two classes were combined in February 1864 (Murdock, 1971, p. 81).

13. A call might mean a series of requests for volunteers within a short period of time, so the precise date of a draft is somewhat ambiguous. Draftees served for 3 years or until the end of the war (Rostker, 2006, p. 22).

14. See Murdock (1967, p. 14), Geary (1986, p. 217), and Levi (1997, p. 98).

15. Some hired substitutes before a draft (see footnote 18 for a discussion). Some of these individuals likely served in volunteer units. Also, some draftees and substitutes hired by those called in a draft apparently may have been placed in “volunteer” units. What is of importance is that few served in the regular army or as draftees.

Table 1. Draft Statistics from the US Civil War¹

Draft No.	No. Called ²	No. Reporting	No. Discharged ³	No. Examined	No. Exempted	No. Held to Service	No. Commuted	No. Hiring Subs.	No. Drafted
1	292,441	253,026	460	252,566	164,395	88,171	52,288	26,002	9,881
2	113,446	86,253	1,296	84,957	39,952	45,005	32,678	8,911	3,416
3	231,918	165,759	27,223	138,536	82,531	56,005	1,298	28,502	26,205
4	139,024	110,547	64,419	46,128	28,631	17,497	460	10,192	6,845
All	776,829	615,585	93,398	522,187	315,509	206,678	86,724	73,607	46,347

¹Source: Murdock (1971), p. 13.²These are the numbers called in a draft after volunteers were obtained. The government calls for men were, as best as can be determined, 500,000, 200,000, 500,000, and 300,000, respectively (Geary, 1991, p. 81).³These individuals apparently were discharged because their districts had met their quotas.

does today. Soldiers in volunteer units were recruited, trained, and led by local men. All officers (except generals) were commissioned by governors. Upon approval by a regular army officer, a volunteer unit would be enrolled in federal service (Chambers, 1987).

The regular army was authorized to have 42,000 men, but it never approached that number.¹⁶ As will be discussed in Section 6, the strong attachment of an individual to his state, and the antipathy to federal control, both manifested in the relatively small regular army, are important phenomena in understanding the objectives of CWC.

4. Substitution, Commutation, and the Bounty System

Under the Enrollment Act, the four CW drafts allowed districts 50 days to meet their enlistment quotas. Most districts waited until the last week or so to fill their quotas. Meetings occurred—similar to religious revival meetings—in which individuals—particularly those who were draft-eligible—were exhorted to contribute funds to hire volunteers or substitutes.¹⁷ Not surprisingly, few volunteered prior to districts raising funds, since individuals correctly anticipated the bounties they would receive. Substitutes were paid a price by individuals who were called (if a call occurred, which only happened if the quota was not met with volunteers), and received some, but not all, federal bounties. Volunteers received all of the available bounties in addition to the regular pay for soldiers (see footnote 34). Since those not eligible for the draft could go as either volunteers or substitutes, their movement between these categories would tend to equate the full compensation received by volunteers and substitutes. Thus, there was essentially no difference between substitutes and volunteers.¹⁸

16. Shannon (1965, Vol. 1, p. 47).

17. Later in the war, real estate taxes were used to raise funds. See Murdock (1971, pp. 154–55).

18. Randall and Donald (1969, p. 314) suggest that conscripts received the same federal bounty as volunteers. However, this was true only for the \$100 federal bounty paid throughout the war. Beginning in June 1863, an additional federal bounty of \$300 was paid to re-enlistees, and this was extended to all volunteers by the fall of 1863. These bounties were to be financed with commutation revenue. In April 1864, just after the end of commutation, the \$300 federal bounty was eliminated. In July 1864, a new federal bounty of up to \$300 was instituted (\$100 for each year of enlistment, up to 3 years).

Government at all levels offered bounties. The total amount paid in federal bounties was approximately \$300 million, with over 1.7 million recipients.¹⁹ Local bounties were estimated at \$285 million.²⁰ These bounties were sometimes paid directly to volunteers and substitutes, but could be paid to men who had been called in order for them to hire a volunteer or a substitute.²¹ An example (not necessarily typical) of the bounties available: in New York City, in the fall of 1863, a volunteer could receive \$300 from the county and \$75 from the state, the \$100 federal bonus available to all who entered service, and the additional federal bonus of \$100–\$300 (for 1–3 years of enlistment), for a total possible bounty of \$775. Thus, one at that time and place who entered the army for 3 years would be indifferent to entering as a substitute (receiving only the basic \$100 federal bonus) and a volunteer if the price received for being a substitute equaled \$675.²²

The bounty system was rife with problems and has been criticized by CW historians. For example, Murdock (1967) claims that the problems with bounties, substitution, and commutation resulted in future drafts without these features. The main problem with state and local bounties was that they were paid in advance in order to maximize enlistments (Murdock, 1967), resulting in frequent bounty jumping. Apparently, bounty men could show

See Murdock (1963, p. 9). From Table 1, almost 74,000 men hired substitutes in the CW. Others report that 116,000 substitutes were hired (Warner and Asch, 2001, p. 173, footnote 7). The difference in these numbers is due to more than 42,000 substitutes who were hired after a call for volunteers, but *before* a draft call. Murdock (1971, p. 190) notes that communities could hire substitutes before a draft, but does not explain why they would do so. One explanation is the following. Suppose a quota of one hundred men had to be filled and sufficient funds were obtained from the community to hire 90 volunteers or substitutes. A draft would then be held for 10 men. If some of the draft-eligible men had not contributed to the community's funds, as a way to reward those who did, substitutes could be hired for particular men, even though they had not been called. Thus, these individuals would not be exposed to the subsequent draft.

19. Rafuse (1970, p. 19). Levi (1997, p. 64) reports federal bounties of \$217 million, with 1.4 million recipients, but the higher figures are the ones usually cited.

20. Rafuse (1970, p. 19). Army pay is estimated to have been about \$500 million for the Civil War (Rostker, 2006, p. 23).

21. In Brooklyn, when commutation was in effect, an individual who was called was given \$300 to commute, hire a substitute, or keep if he entered military service (Murdock, 1967, p. 21).

22. Substitute prices reached as high as \$1,500 in 1864 in some areas (Chambers, 1987, p. 74).

up at a rendezvous point, collect a bonus, be counted toward the district's quota, and then desert before reaching a training camp.²³

The weakness of the federal government may have been the reason why the timing of bounties was not changed until late in the war. Had bounties been delayed, the expected return to bounty men would have decreased (with a lower gain from bounty jumping), decreasing their supply, and causing state and local governments to pay more to attract a given number of volunteers. The federal government was reluctant to place restrictions on the states' role in attracting troops, and apparently did not want to increase opposition from state and local governments by making them pay more to attract volunteers.²⁴

One of the criticisms of CWC is that only the wealthy could afford to commute or hire a substitute.²⁵ The commutation fee was approximately the average annual earnings in manufacturing in 1860.²⁶ Murdock (1964) suggests that commutation was feasible for most working men. Only 2% of those who served in the Union Army were draftees, and, of those who were called in a draft, only 6% were forced to enter service (Table 2). The low percentages of those drafted reflect the lack of difficulty for individuals who were called to pay for a substitute or to commute (when the latter was available).²⁷ Individuals could afford to commute or hire substitutes because

23. The federal government attempted to address this problem in December 1964 when Provost Marshal General Fry ordered all funds in excess of \$20 to be taken from recruits and to be returned later (Shannon, 1965, Vol. 2, p. 85). One wonders how many recruits would have been foolish enough to show up with more than \$20.

24. "The sovereign rights of the states to regulate their own recruiting... had, at all costs, to be protected" (Shannon, 1965, Vol. 2, p. 81). Federal bounties were initially paid upon discharge. By 1862, \$25 of the \$100 federal bounty was paid in advance. Later, with the additional \$300 federal bounty, payments of bounties were made fairly evenly over one's enlistment period (Shannon, 1965, Vol. 2, pp. 54–5 and 62–3).

25. Lindsay (1968b, p. 133) claims that \$300 was an unattainable amount for a laborer or farmer, and it implied a tax of that amount on those called who could not otherwise avoid service. He ignores the substantial bounties provided by local communities and the availability of draft insurance. See footnote 28 for examples of the latter.

26. Long (1975) uses the census of manufactures to derive average annual earnings in manufacturing of \$297 and \$384 in 1860 and 1870, respectively. During the Civil War, civilian wages rose. Geary (1986, p. 214) claims that a common laborer could earn about \$300 per year in 1860, rising to over \$400 in 1864.

27. It also reflects the relative ease that individuals had to simply not report when called. From Table 2, 20% of those called did not report, which should not be surprising in an era of little in the way of personal identification.

Table 2. Various Draft Percentages¹

Draft No.	% Called Who Reported	% Reported not Discharged	% Examined Held to Svc.	% Held to Svc. Who Were Drafted	% Called Who Were Drafted
1	87%	100%	35%	19%	3%
2	76%	98%	53%	8%	3%
3	71%	84%	40%	47%	11%
4	80%	42%	38%	39%	5%
All	80%	85%	40%	22%	6%

¹Source: Table 1.

of the substantial state and local bounties that defrayed the amounts they had to spend, and because both informal and formal draft insurance existed with a price substantially below \$300.²⁸ Thus, it does not appear that most individuals found it difficult to avoid being drafted in the CW.

5. Opposition to the Draft and to Commutation

In anticipation of the forthcoming (first) draft, rioting occurred in many US cities in 1863. A particularly violent riot occurred over several days in July in New York City, resulting in the deaths of as many as 1,200 individuals (Lindsay, 1968b). Opponents of the draft focused on the \$300 commutation fee, ignoring the possibility of even more expensive substitution absent commutation (see Sections 8–10 below). Lincoln was perplexed by the opposition to commutation; he believed that substitution would be more expensive than \$300, should commutation be abolished.²⁹

Why was there opposition to commutation and the draft when the former would tend to lower the price of avoiding service, which as argued in Sections 3 and 4, did not appear to be difficult to do? Lincoln believed that substitution was not opposed because, unlike commutation, it was “. . . an old and

28. Enrolled men formed “mutual protective associations” to which each contributed funds. In Cleveland in February 1864, each man paid \$10. In other areas of Ohio, the fee was \$10–\$20. After commutation ended, the fee was \$50 in Cleveland’s second ward, and \$25–\$50 near Toledo (Murdock, 1963, pp. 12–17). Late in the war, firms in Illinois and Indiana sold explicit draft insurance. Draftees who purchased insurance had substitutes hired for them (Murdock, 1971, p. 172).

29. *Opinion on the Draft, Never Issued or Published*, August 1863. Reprinted in Nicolay and Hay (1905, Vol. 9).

well-known practice in the raising of armies. . . .”³⁰ However, commutation was not new; payment of a fee to avoid military service was a feature of colonial militia drafts.

Consider several alternative (and nonmutually exclusive) reasons for opposition to commutation and the draft. First, Chambers (1975) suggests that the apparent opposition to commutation was really opposition to the taxes (and coerced contributions) required to pay for volunteers, substitutes, and commutation. Opponents wanted the wealthy to pay for bounty funds. Thus, the riots may have partly expressed antitax sentiments. Since commutation placed a ceiling on the price of a substitute, it would have been natural for anti-tax sentiment to be expressed via anticommution rhetoric. Second, since the riots occurred before the first draft call, it is possible that citizens were not aware of the bounties that would be raised to help them pay for commutation or substitution.³¹ At some point, individuals became aware of their legal options to avoid the draft (Levine, 1981). By the second draft, riots had subsided, even though commutation remained. Third, as with the proposed draft under the Militia Act (1862), riots simply expressed the antifederal government sentiments of many citizens, which were inflamed by the prospect of a federal draft.³² Fourth, because the commutation fee was set too low (see Section 10), the number of men who would have to be called in a draft would have to increase (because commutation funds would be insufficient to hire substitutes). Individual opposition to the draft may have increased because of the greater risk of being drafted.³³

30. Lincoln, reprinted in Nicolay and Hay (1905, Vol. 9, p. 78).

31. Of course, the riots likely communicated to state and local elected officials the depth of opposition to the draft, thereby providing the impetus to raise bounties.

32. Draftees were often viewed by the public as less worthy than other soldiers. “A stigma was placed upon the person drafted though not at all upon the person who volunteered solely to escape draft or upon the mercenary recipient of enormous bounties or substitute fees” (Shannon, 1965, Vol. 2, p. 57). Another reason for opposition to the draft was the belief by many Irish immigrants that the US government had encouraged Irish immigration in order to provide a supply of potential draftees. The Enrollment Act provided for drafting foreigners who had declared their intention to become citizens. See Bruce (2005, pp. 352–56).

33. I owe this point to an anonymous referee.

6. Why the Draft?

In July 1862, after a weak response to a federal call for volunteers (Murdock, 1967), Congress authorized the president to use militia drafts. The next year, the Enrollment Act (March 1863) was passed, which contained provisions for drafting outside the militia system. Chambers (1987) argued that the draft was imposed in 1863 because, after 2 years of indecisive fighting, some assertion of federal power was required to prevent disunion. Additionally, although many volunteered without the draft, again in 1863 the quantity of volunteers supplied was less than the quantity demanded (Oi, 1996). A simple answer was for the federal government to raise military pay,³⁴ and the \$300 million offered in federal bounties during the CW suggest that some pay increases occurred.

Although Chambers (1987) may be correct in the view that the draft was an attempt to assert federal power, it was also a reflection of the weakness of the federal government. Conscription gave the federal government more control over the total number of enlistees, leaving the states much discretion in providing the troops and some of the cost of doing so. As McPherson argued, essentially the draft was “. . . a clumsy carrot and stick device to stimulate volunteering. The stick was the threat of being drafted and the carrot was a bounty for volunteering.”³⁵ The threat of the draft induced communities—whose members were suspicious of the centralized authority and opposed to coercion by the federal government—to provide sizable bounties to attract volunteers, so that the draft would be used as infrequently as possible.

Evidence that the goal of conscription was not to forcibly compel individual service is in the facts that individuals could hire a substitute or pay a fee to avoid service, and communities were given every chance to fill their quotas with volunteers (Murdock, 1967). Thus, contrary to the case with twentieth-century US conscription, the CW draft appeared to have roots in the various conscription plans developed (but not adopted) in the War of 1812, which were designed to shift the tax

34. Rafuse (1970) claims that a union private earned \$6.40 per month in 1864. Lonn (1928) says, pay was \$13 per month at the beginning of the war, rising to \$16 per month by May 1864. Shannon (1965, Vol. 2) says, pay was \$11 per month at the outset of the war.

35. McPherson (1988, p. 605).

burden of the military from the federal government to local governments and not to drafted individuals (Section 2 above). A more formal analysis of the optimal choice of military compensation is found in the next section.

7. A Model of Conscription with Community Bonuses

7.1. The Market for Substitutes

Consider a world in which there are N individuals, all of whom are draft-eligible. Since volunteers and substitutes are essentially the same, the former are ignored. One who is picked in a draft lottery will be referred to as having been *called*; one who is called and enters the military will be referred to as having been *drafted*. The federal government calls m individuals in a random lottery, $m < N$, and offers compensation of W_M to all who enter the military. After observing W_M , local government pays a bonus of B to each individual who enters the military. Commutation is ignored for now; it will be considered in Sections 9 and 10. Those who are called may either enter the military, with total compensation equal to $W_M + B$, or may hire a substitute at a market-determined price, P . Those not called may go as substitutes, receiving total compensation equal to $W_M + B + P$. Assume that the supply of labor to the military is uniformly distributed with a density of 1 on the interval $[0, N]$. Inverse labor supply to the military is then $W = L$ for $L \leq N$, where W is the reservation wage for individuals and L is the quantity of labor supplied. All those with $W > W_M + B + P$ will prefer to hire a substitute if called, and the number who would hire if called equals $N - W_M - B - P$. Others will enter the military as draftees. Thus, the price of a substitute is determined by setting demand and supply equal. The probability someone is called equals $\frac{m}{N}$, and $\frac{N-m}{N}$ is the probability someone is not called. Setting the demand for substitutes equal to the supply, we have

$$\frac{m}{N}(N - W_M - B - P) = \frac{(N - m)}{N}(W_M + B + P), \quad (1)$$

$$P = m - W_M - B. \quad (2)$$

Assuming that $W_M + B < m$, so the federal and local governments do not compensate draftees sufficiently so that all would be happy to enlist in the military, we have $P > 0$. Since those with

$W < W_M + B + P$ will not hire if called, and will go as substitutes if not called, using Equation (2), all those who enter the military have $W \leq m$. Thus, only those with the lowest reservation wages enter the military (Warner and Asch, 2001). There is no resource misallocation due to the “wrong people” entering the military, which would occur if substitution were not allowed. However, there are private and social costs of the military that would not exist if a voluntary military were employed. These costs result because reluctant draftees exist; they are reluctant because the total compensation for draftees is less than m .³⁶ Unlike those who enter as substitutes, reluctant draftees would not have entered the military voluntarily. All those with

$W_M + B < W \leq W_M + B + P$ are reluctant if drafted. The number of reluctant draftees, D , is then

$$D = \frac{m}{N}P = \frac{m}{N}(m - W_M - B). \quad (3)$$

Social costs due to reluctant draftees include costs associated with higher turnover and draft evasion (Warner and Negrusa, 2005).³⁷ The focus herein is on the cost to government from the political opposition to having anyone compelled to enter the military.

If individual reservation wages are positively related to ability, substitution or commutation could lead to too low an ability level in the military, resulting in reduced military effectiveness and increased casualties. Berck and Lipow (2008) consider a model in which civilian and military productivities are positively correlated. Consequently, they argue that the draft may involve lower social cost than a volunteer military. However, they find that the draft may result in too many high-ability individuals inducted into the military. They suggest that this problem may be ameliorated by allowing

36. Becker (1957) argues that a voluntary military and a draft with substitutes are essentially the same thing. That would be the case if draftees were allowed to go as substitutes, and if there were no costs of finding substitutes. On the latter, see Section 8.

37. Some have argued that the draft could be cheaper than a volunteer military due to the deadweight cost of taxation. See Johnson (1990); Lee and McKenzie (1992); and Ross (1994). For a contrary view, see Warner and Asch (1996).

substitution, commutation, or the deferment of those accepted to high-quality universities. Berck and Lipow's analysis treats labor quality as exogenous, thus ignoring costs associated with unmotivated reluctant draftees. They also ignore (as is the case herein) the problems of higher turnover and too low a capital labor ratio with a draft.³⁸

7.2. Draft Insurance

If draft insurance were allowed, the price of fair insurance would equal the probability of being called times the price of a substitute, $\frac{m}{N} P$. However, unless individuals are risk-averse or budget-constrained, so that they could afford to pay $\frac{m}{N} P$ but not P , draft insurance would have no impact on the market for substitution. Only the individuals who would hire a substitute without insurance would purchase insurance. Budget constraints could occur if a large part of one's reservation wage, W , did not reflect alternative earnings, but represented a high level of disutility from military service. Neither risk aversion nor a budget constraint for individuals is particularly germane to the issues of concern herein, so draft insurance will not be considered further.

7.3. The Local Government

In Section 7.1, it was assumed that the local government paid B to each individual who entered the military. Now consider how B might be determined. Although it was argued above that few individuals were actually drafted in the CW, the model herein does not force this result. It simply considers the trade-offs to the local and federal governments when both prefer fewer reluctant draftees, other things equal.

The local government may have incurred a fixed cost, F , due to conscription in order to raise funds to hire volunteers and substitutes, and to locate and contract with such individuals. Communities levied new taxes and organized the citizenry to contribute funds.³⁹ Ignoring contributions by the citizenry for simplicity, the local government budget constraint is

38. Mulligan (2008) considers taxation in kind, with conscription as one example. He assumes that a factor of production is either fit or unfit, with the likelihood of either independent of productivity. He finds that commutation can result in an efficient sorting of individuals between the private and public sectors.

39. Some of the local government's costs of conscription may have been variable, but these are ignored. Fixed costs are discussed because Mulligan and Shleifer (2005)

$Bm + F = T$, with T the amount collected in taxes. Assume that the local government faces opposition, ϕ , based on D , the number of reluctant individuals who are drafted, and T , the amount collected in taxes. Thus $\phi = \phi(D, T)$, and it is assumed that $\frac{\partial \phi}{\partial D}$ and $\frac{\partial \phi}{\partial T}$ are both positive and $\frac{\partial^2 \phi}{\partial D \partial T}$ is zero. The local government chooses B to minimize ϕ , given Equation (3). The first- and second-order conditions for a minimum are

$$\frac{\partial \phi}{\partial B} = m \left(\frac{\partial \phi}{\partial T} - \frac{1}{N} \frac{\partial \phi}{\partial D} \right) = 0, \tag{4}$$

$$\frac{\partial^2 \phi}{\partial B^2} = m^2 \left(\frac{\partial^2 \phi}{\partial T^2} + \frac{1}{N^2} \frac{\partial^2 \phi}{\partial D^2} \right) > 0. \tag{5}$$

From the first-order condition, the local government trades off the increased opposition from higher taxes with the reduced opposition from fewer reluctant draftees when it raises B . A one unit increase in B causes taxes to rise by m , and thus results in increased opposition *equal* to $m \frac{\partial \phi}{\partial T}$. The same change in B reduces D by $\frac{m}{N}$, causing opposition to decline by $\frac{m}{N} \frac{\partial \phi}{\partial D}$. Given the intensity of the opposition to a draft in the CW, it is reasonable to believe that $\frac{\partial^2 \phi}{\partial D^2}$ is positive. One might also expect that $\frac{\partial^2 \phi}{\partial T^2}$ is positive, and, although that is not necessary for a minimum of ϕ (provided $\frac{\partial^2 \phi}{\partial D^2}$ is positive and sufficiently large), it will be necessary for a minimum of the federal government’s cost.⁴⁰

Totally differentiating the local government’s first-order condition with respect to B, W_M , and F , we have

$$\frac{dB}{dW_M} = \frac{-\frac{\partial^2 \phi}{\partial D^2}}{\frac{\partial^2 \phi}{\partial D^2} + N^2 \frac{\partial^2 \phi}{\partial T^2}} < 0, \tag{6}$$

$$\frac{dB}{dF} = \frac{-\frac{\partial^2 \phi}{\partial T^2}}{\frac{m}{N^2} \frac{\partial^2 \phi}{\partial D^2} + m \frac{\partial^2 \phi}{\partial T^2}} < 0, \tag{7}$$

have emphasized the importance of such costs for the federal government. In the Civil War, fixed cost may have been important for states and municipalities.

40. A less popular war has opposite effects on the bonus paid by local government, B . Increased unpopularity of a war should result in a larger marginal effect of reluctant draftees, D , on opposition, thus increasing B . However, taxpayers should now be more opposed to funding volunteers or substitutes. The marginal effect of T on ϕ should increase, causing a reduction in B .

using the second-order condition for the local government and the assumption that both $\frac{\partial^2 \phi}{\partial D^2}$ and $\frac{\partial^2 \phi}{\partial T^2}$ are positive. With $\frac{\partial^2 \phi}{\partial T^2} > 0$, $\frac{dB}{dF} < 0$ and $|\frac{dB}{dW_M}| < 1$. A higher fixed cost means higher taxes and a higher $\frac{\partial \phi}{\partial T}$; thus B is reduced as F increases. Also, a one dollar decrease in W_M will induce the local government to increase B by less than one dollar.

In Section 7.4, it will be of interest to consider an exogenous change in the marginal opposition to an increase in D . Thus, suppose $\phi = \frac{k_D}{2} D^2 + \frac{k_T}{2} T^2$, and $k_D, k_T > 0$. Consider the effect of a change in k_D . Total differentiation of the local government's first-order condition yields $\frac{dB}{dk_D} > 0$. Unsurprisingly, an increase in the marginal opposition to a larger number of reluctant draftees will induce the local government to increase the bonus paid. Next, we will see how the federal government would respond to a change in k_D .

7.4. The Federal Government

The federal government is assumed to trade off its payroll cost, mW_M , with opposition it receives from constituents. Local government has a cost in opposition from its constituents of ϕ . Suppose the opposition by constituents to the federal government is proportional to ϕ . In particular, assume that the federal government's cost, C , is $C = \lambda\phi + (1 - \lambda)mW_M$, with $0 < \lambda < 1$. The federal government chooses W_M to trade off ϕ and mW_M . The first-order condition yields⁴¹

$$\frac{\partial C}{\partial W_M} = \lambda \frac{d\phi}{dW_M} + m(1 - \lambda) = 0. \tag{8}$$

We have

$$\frac{d\phi}{dW_M} = \frac{\partial \phi}{\partial B} \frac{dB}{dW_M} + \frac{\partial \phi}{\partial W_M} = \frac{\partial \phi}{\partial W_M}, \tag{9}$$

41. It is not necessary for an interior solution for the federal government's choice problem to have C increase at an increasing rate in either of its arguments, ϕ and mW_M , as long as $\frac{\partial^2 \phi}{\partial D^2}$ and $\frac{\partial^2 \phi}{\partial T^2}$ are positive.

using the Envelope Theorem ($\frac{\partial \phi}{\partial B} = 0$). Since, using Equation (3), $\frac{\partial \phi}{\partial W_M} = \frac{\partial \phi}{\partial D} \frac{\partial D}{\partial W_M} = -\frac{m}{N} \frac{\partial \phi}{\partial D}$, we can rewrite the first-order condition as

$$\frac{\partial C}{\partial W_M} = m(1 - \lambda) - \frac{m\lambda}{N} \frac{\partial \phi}{\partial D} = 0. \quad (8')$$

The federal government balances the additional payroll cost from by W_M with the reduction in opposition from constituents as D is decreased, with these effects weighted by $1 - \lambda$ and λ , respectively. The second-order condition for the federal government is

$$\frac{\partial^2 C}{\partial W_M^2} = \frac{m^2 \lambda}{N^2} \frac{\partial^2 \phi}{\partial D^2} \left(1 + \frac{dB}{dW_M} \right) > 0, \quad (10)$$

which requires⁴² $|\frac{dB}{dW_M}| < 1$.

Totally differentiating the first-order condition for the federal government yields

$\frac{dW_M}{d\lambda} > 0$: as one would expect, the larger the weight, λ , for opposition from constituents in C , the higher the military wage set by the federal government. When higher payroll is more costly to the government (λ is smaller), because of the difficulty in raising taxes, the optimal level of W_M falls. Again, using $\phi = \frac{k_D}{2} D^2 + \frac{k_T}{2} T^2$, totally differentiating the federal government's first-order condition yields

$$\frac{dW_M}{dk_D} = \frac{m - B - W_M}{k_D \left(1 + \frac{dB}{dW_M} \right)} > 0, \quad (11)$$

since the denominator is positive for a minimum of the federal government's cost, and

$m > B + W_M$ or there would be no reluctant draftees. Thus, both the local and federal governments will increase what they pay to enlistees (B and W_M , respectively) if there is an increase in the marginal opposition from constituents from reluctant draftees ($dk_D > 0$), so there should be an unambiguous reduction in D in this case. A large enough marginal

42. From Equation (6), if $\frac{\partial^2 \phi}{\partial T^2} \leq 0$, then $|\frac{dB}{dW_M}| \geq 1$, and the second-order condition for the federal government would not hold.

opposition from constituents, k_D , from D could mean that there would be few reluctant draftees in equilibrium.

In sum, the model in this section suggests that the fixed cost to the local government of raising funds negatively affects the optimal choice of bonuses—by increasing the marginal opposition to taxes; the local government raises bonuses as federal pay decreases, but by less than \$1 for each dollar decrease in federal pay; and both federal pay and local government bonuses increase as the marginal opposition by the citizens to the number of reluctant draftees increases.

8. Costly Substitution

In the previous section, the usual results (e.g., Warner and Asch, 2001) were found when substitution is allowed with conscription: only individuals with the lowest opportunity cost enter the military, and the additional social cost with conscription (versus a volunteer army) is due to reluctant draftees. However, the previous analysis ignored any cost to individuals of finding substitutes. Such costs add directly to social cost, but also may indirectly increase social cost if they cause an increase in the number of reluctant draftees or result in resource misallocation because the wrong people are enlisted in the military.⁴³ Commutation may have allowed individuals to avoid costs of finding substitutes.

Levi (1997) suggests that commutation may have been of particular value in rural areas where it was more costly to find a substitute. The use of brokers might reduce the cost of finding substitutes.⁴⁴ Brokers existed in New York as early as August 1862. However, using intimidation and the ignorance of potential volunteers and substitutes, these brokers were notorious for their dishonesty, essentially stealing a significant portion of the bounties and substitution prices owed to volunteers and substitutes.⁴⁵ Thus, brokers

43. Mulligan and Shleifer (2005) consider fixed costs associated with the draft, and argue that civil-law countries—which have a significant regulatory apparatus in place, so that incremental *fixed cost* with a draft would be lower than in common-law countries—are more likely to have a draft, as are more populous countries because they have lower fixed cost per person.

44. I thank Todd Cherry for this point.

45. Shannon (1965, Vol. 2, pp. 53, 70, 84–5, and 93). Individuals often erroneously believed that the use of a broker was necessary to obtain bonuses as a volunteer or a substitute.

may have raised substitute prices because their fees were so high. Also, to the extent local governments, and not individuals, incurred costs of finding volunteers/substitutes, commutation may have still have lowered the social cost of finding these individuals. Some areas may have avoided recruitment entirely by paying the commutation fee for the number of individuals in their quotas. Presumably, more populous areas would have provided the volunteers/substitutes (subsidized with commutation revenue). Since some of the cost of finding troops is independent of the number of men recruited, the total cost of recruitment would be reduced if fewer areas had to recruit.

The cost of finding a substitute may be direct (out-of-pocket expenditures), indirect (time costs), or both; the analysis is essentially the same whether the cost is direct or indirect. Suppose an individual with reservation wage W has only a time cost of finding a substitute and this cost equals sW , $0 < s < 1$, with s independent of W . Now one will hire a substitute if called if

$$W - sW - P > W_M + B,$$

$$W > \frac{W_M + B + P}{1 - s} \equiv W''.$$
 (12)

Let $W' \equiv W_M + B + P$. The quantity of substitutes demanded is the number called who have $W > W'$. The quantity of substitutes supplied is the number *not* called who have $W \leq W'$. Setting supply of and demand for substitutes equal yields

$$P = \frac{(1 - s)mN}{N - s(N - m)} - W_M - B.$$
 (13)

It is easy to show $\frac{\partial P}{\partial s} < 0$, with $P = m - W_M - B$ if $s = 0$. Using P ,

$$W' = \frac{(1 - s)mN}{N - s(N - m)},$$
 (14)

$$W'' = \frac{mN}{N - s(N - m)}.$$
 (15)

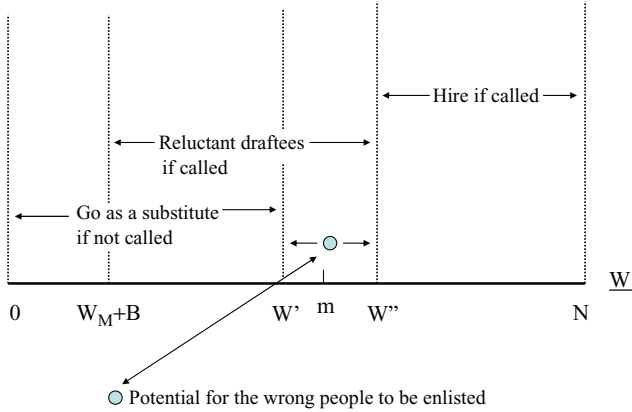


Figure 1. Costly Substitution.

Note that $\frac{\partial W'}{\partial s} < 0$, and $\frac{\partial W''}{\partial s} > 0$. The number of reluctant draftees is m/N times the number who have $W_M + B < W < W''$. Using Equation (15), we have

$$D = \frac{m}{N} \left[\frac{mN}{N - s(N - m)} W_M - B \right]. \tag{16}$$

Now $\frac{\partial D}{\partial s} > 0$, and when $s = 0$, $D = \frac{m}{N}(m - W_M - B)$, as was found in the last section.⁴⁶ Figure 1 illustrates what now occurs. Suppose $s = 0$. In this case, $W' = W'' = m$. As s increases, the demand for substitutes falls, lowering P . Thus, W' falls and W'' rises. The increase in W'' means that the number of reluctant draftees has increased, and along with the decrease in W' , means that we now have the potential for resource misallocation because the wrong people are enlisted in the military. Given the likelihood one is called, m/N , the loss from this resource misallocation is positively related to the difference between W'' and W' . For those with $W' < W < W''$, if called, they will not hire a substitute, and if not called, they will not go as volunteers. Consider two individuals, x and y , with respective reservation

46. From the first-order condition for the local government (Equation (4)), a larger D as s increases should cause an increase in B , and it can be shown that there should also be an increase in W_M by the federal government. Since such changes reflect higher private cost for the local and federal governments, they are ignored herein in order to focus on the effects of s on private and social costs, given B , W_M , and m .

wages W_x and W_y , with $W' < W_y < W_x < W''$. If x is called and y is not called, x will enter the military and y will not do so, and society loses

$W_x - W_y$ in foregone output.

Thus, if there are costs of obtaining a substitute, it is no longer the case that there is no resource misallocation due to the wrong people going into the military when substitution is allowed. The extent of this resource misallocation and the costs associated with the number of reluctant volunteers both are positively related to the cost of obtaining substitutes.

9. What Could Commutation Do?

If there are no costs of obtaining a substitute, allowing individuals to pay a fee to avoid service—*commutation*—is no different than allowing substitutes (Warner and Asch, 2001). By setting the commutation fee equal to the price of a substitute if substitution were allowed, the same people who would have hired a substitute commute. If the commutation revenue is paid to volunteers, then volunteers receive the same compensation they would have if they had gone as substitutes.

If there were substitution, the cost of hiring a substitute would equal sW . Consider what commutation could do in the absence of substitution. Each individual may commute by paying z , and each volunteer receives $W_M + z$ from the federal government and B from the local government. As before, draftees receive $W_M + B$.

Proposition 1. Setting z equal to the price of a substitute with no cost of finding a substitute, Equation (2), would lower social and private costs and result in m individuals being enlisted, given W_M and B .

Proof. Let z be set equal to what P would be if s were zero, $z = m - W_M - B \equiv z^*$. As shown with costless substitution in Section 7, those with $w > m$ would commute if called; those with $w \leq m$ would be drafted if called and would go as volunteers (as opposed to substitutes) if not called.

To compare P with hiring costs to z^* , use Equations (2) and (13),

$$z^* - P \equiv \Delta = \frac{sm^2}{N - s(N - m)}, \quad (17)$$

with $\Delta > 0$ for $s > 0$, and $\frac{\partial \Delta}{\partial s} > 0$. For one who, with substitution and no commutation, would just be indifferent to hiring or being drafted, $W = W'$ (Equation (15)). For such an individual, the cost of finding a substitute is $sW' = \frac{smN}{N-s(N-m)} > \Delta$; for all others who would hire a substitute, $sW > sW'$. If $z = z^*$, the amount by which the commutation fee exceeds what P would equal with substitution is less than the cost of hiring a substitute, which is why more will commute— $\frac{m}{N}(N - m)$ —than would hire— $\frac{m}{N}(N - W')$ —with $W' > m$. ■

Thus, using commutation and not substitution, and setting z equal to what P would be if s were zero, means *social cost* will be reduced for the following three reasons:

- (1) costs of obtaining substitutes are avoided;
- (2) there are fewer disgruntled draftees (Equation (3) versus Equation (16)), so the costs associated with draft avoidance and turnover (neither modeled herein) are reduced; and
- (3) there is no misallocation of resources due to the wrong people entering the military.

Of course, the *fiscal cost* for the local and federal governments, ϕ and C , respectively, is also reduced with commutation.

10. What *Did* Commutation Do?

With costs of finding a substitute, it has been demonstrated that commutation could lower private and social costs when conscription is used, provided the commutation fee is set correctly, which requires the commutation fee exceed what the price of a substitute (absent commutation) would equal. However, there is no indication that the \$300 commutation fee was chosen to reduce the private or social cost of the military. Lincoln clearly stated that commutation was intended to be a binding ceiling price on substitutes,⁴⁷ and it appears to have been just that. Even before the elimination of commutation (except for conscientious objectors) had gone into effect, the price of substitutes had risen to \$600 in New York City (Murdock, 1967). In 1862, with the militia

47. "Without the money provision, competition among the more wealthy might, and probably would, raise the price of substitutes above three hundred dollars. . ." (Lincoln in Nicolay and Hay, 1905, vol. 9, p. 79).

system of attracting men for the military, the price of substitutes had reached \$1000.⁴⁸

Proposition 2. If z is set equal to what P would be if there were costly substitution and no commutation, Equation (13), too many would commute and commutation revenue would not enable the federal government to attract m individuals (draftees plus volunteers), given W_M and B .

Proof. Intuitively, given $W_M + B$, setting $z < z^*$ would increase the number who commute, decrease the number who are drafted, and produce too few volunteers.⁴⁹ ■

As noted above, with an inefficiently low commutation fee, and a desire to induct m individuals into the military, the number of disgruntled draftees is increased as too many commute.

It appears that federal officials knew that they had imposed a binding price ceiling.⁵⁰ The problem, as considered in the previous section, was not the fact that commutation brought only funds, but was due to the commutation fee being so low that too few dollars were earned via commutation to induce a sufficient number to volunteer.⁵¹ Although federal officials understood that commutation brought insufficient revenue, the elimination of the \$300 federal bounty to volunteers (funded with commutation revenue) on April 4, 1964 (just after the end of commutation) suggests a failure to understand bounties and substitution prices were too low (but see the next paragraph). The insufficiency of military compensation may have become apparent soon

48. Shannon (1965, Vol. 2, pp. 61–2) provides information on substitute prices in various areas in 1863. Prices as low as \$50 (in Philadelphia) and as high as \$500 (in parts of New York state) were found. In general, substitute prices were around \$300, which is to be expected, since this was when one could pay the \$300 commutation fee and avoid service for 3 years—the same as if one had furnished a substitute. Substitute prices below \$300 may have occurred because some with low opportunity costs were unsure whether they would be hired as substitutes or bounty men. Afraid they would miss out, they may have accepted low prices as substitutes. Substitute prices in excess of \$300 may reflect the aversion to being part of a draft (see footnote 32), and the fact that one could hire a substitute before a draft occurred (after a troop call).

49. See the appendix for a formal proof $z < z^*$ will cause fewer than m individuals to be enlisted.

50. Becker (1957) discusses the problem with setting the commutation fee too low.

51. After the first two drafts, Senator John Sherman expressed the general view of why commutation would end, which is commutation was too widespread, bringing funds and not troops (Geary, 1986).

thereafter because, on July 19, 1864, a new federal bounty of up to \$300 was instituted (Murdock, 1963).⁵²

The Lincoln administration understood the critical importance of attracting sufficient forces as quickly as possible. Also, the effects of a binding price ceiling were well known to economists.⁵³ However, even with the knowledge that too few individuals might be attracted, the political expediency of setting the commutation fee too low may have been irresistible to federal officials who wanted to reduce the opposition of those who were drafted.

11. Summary

Compared to the US in the twentieth century (particularly after the 1930s), the federal government had much less power during the CW. With roots in the conscription plans considered in the War of 1812, CWC was not intended to compel individual service. Instead, CWC appears to have been a second-best plan to shift some of the tax burden of the military from the federal government to state and local governments. Draft riots did not reflect difficulties in avoiding being conscripted. The time allowed state and local governments to provide volunteers (and avoid the draft) after a federal call for enlistments, along with substitution and commutation, meant that few individuals were actually drafted—about 2% of all who served. Theoretical analysis suggests that federal pay and local government bonuses would increase as the marginal opposition by citizens to the number of reluctant draftees increases.

Had the commutation fee been set appropriately—higher than the price of a substitute absent commutation—social and private costs associated with the military *could* have been lowered, but the commutation fee was set too low—so it could function as a binding ceiling on the price of substitutes. With too many commuting, and insufficient funds received from commutation to pay volunteers, commutation was essentially abandoned after two (of four) federal drafts.

52. This bounty was for \$100 per each year for which one enlisted, up to 3 years.

53. In this period, Mill's *Principles of Political Economy* (first published in 1848) "...was the undisputed bible of economists" (Blaug, 1985, p. 179). Mill discussed how a price ceiling would result in a shortage (Mill, 2004, pp. 843–8).

Those who today advocate for a draft to spread the burden of military service among various social and economic classes should understand that the first use of the draft by the US had no such goal. Only in the twentieth century has the US implemented a draft to directly produce enlistments.⁵⁴ The unique conditions—strong attachment to states and a weak central government—of the 1860s no longer exist, nor does even a second-best argument to justify a draft.

12. Appendix

Proof $z < z^*$ will induce fewer than m to enlist, given W_M and B .

With $z^* = m - W_M - B$, suppose $z = z^* - \varepsilon$, $\varepsilon > 0$. All those called with $W > W_M + B + z$ will commute, so

$$\# \text{ who commute} = \frac{m}{N}(N - m + \varepsilon), \quad (\text{A1})$$

$$\text{commutation revenue} = \frac{m}{N}(m - W_M - B - \varepsilon)(N - m + \varepsilon). \quad (\text{A2})$$

Let the total compensation of each volunteer equal \hat{W} . Thus $\frac{(N-m)}{N}\hat{W}$ volunteers will be attracted. Since the number of draftees is $\frac{m}{N}(m - \varepsilon)$, in order to have m enlistees,

$$\frac{(N - m)}{N}\hat{W} = m - \frac{m}{N}(m - \varepsilon),$$

$$\hat{W} = \frac{m(N - m + \varepsilon)}{N - m} = m \left(1 + \frac{\varepsilon}{N - m} \right), \quad (\text{A3})$$

$$\# \text{ of volunteers} = \frac{m}{N}(N - m + \varepsilon), \quad (\text{A4})$$

54. The proposed conscription plans in the War of 1812 have a modern counterpart. Consider the description of the Tibetan army (faced with a possible attack from China in the early 1950s). "Tibet had a standing army, to which every district contributed its quota in proportion to the number of the inhabitants. . . A man called up for service can buy a substitute. . . New regiments were formed and the national assembly decided to call on the richer classes to furnish and equip another thousand men. It was left to them to enlist in person or to find substitutes" (Harrer translated by Graves, 1954, pp. 259–60). I thank Fred Wallace for this reference.

which simply means that the number of volunteers equals the number who commute. Since $\hat{W} = W_M + B + b$, where b is the federal bonus to volunteers required to induce m enlistees,

$$b = \hat{W} - W_M - B = m - W_M - B + \frac{m\varepsilon}{N - m}, \quad (\text{A5})$$

using Equation (A3). Using Equations (A2), (A4), and (A5), the amount that must be paid in federal bonuses to induce m enlistees exceeds commutation revenue if

$$m - W_M - B + \frac{m\varepsilon}{N - m} > m - W_M - B - \varepsilon, \quad (\text{A6})$$

which holds for $\varepsilon > 0$. ■

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