

Filling the ranks: The Remplacement Militaire in post-revolutionary France

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Many economists have analyzed the efficiency of a volunteered army relative to a conscripted army. However, they have rarely studied the working of real-world alternative, market-based, military institutions where exemptions from military service are traded among the citizens. This paper fills this gap by studying the rise and fall of the Remplacement Militaire in the eighteenth and the nineteenth century France. This system endured for more than three quarters of a century until the French government progressively moved toward universal conscription after 1872. At times of military expansion, the State regulated the replacement market. We argue that the goal of such regulations was to limit the increase in fraud and avoid a deterioration in the quality of the soldiery associated with increases in the price of replacements.

‘Well, mother, yesterday I enlisted in the Spahis,’ added the young man, lowering his eyes with a certain feeling of shame, for even he was unconscious of the sublimity of his self-abasement. ‘I thought my body was my own, and that I might sell it. I yesterday took the place of another. I sold myself for more than I thought I was worth,’ he added, attempting to smile; ‘I fetched 2000 francs.’

‘Then these 1000 francs—’ said Mercédès, shuddering.

‘Are the half of the sum, mother; the other will be paid in a year.’

Mercédès raised her eyes to heaven with an expression it would be impossible to describe, and tears, which had hitherto been restrained, now yielded to her emotion and ran down her cheeks.

‘The price of his blood!’ she murmured.

—Alexandre Dumas, *The Count of Monte Cristo*.

1. Introduction

In the 1960s and 1970s, the American involvement in the Vietnam war spurred interest into the efficient provision of military services. A general consensus soon emerged among economists that the draft was an inferior method than a volunteer army for the provision of defense services.¹ Milton Friedman was among the first to make this argument. In *Capitalism and Freedom*, Friedman (1962, p. 36) writes that “[t] here is no justification for not paying whatever price is necessary to attract the required number of men. Present

¹ See Henderson (2005).

arrangements are inequitable and arbitrary, seriously interfere with the freedom of young men to shape their lives, and probably are even more costly than the market alternative." With some important exceptions,² economists interested in the issue of military conscription have paid relatively little attention to the development of a positive theory of alternative military arrangements. Even more strikingly, very little has been done to provide historical evidence of the employment of "market-based" solutions to the problem of staffing an army. This paper provides a basic framework for the analysis of this system. Our focus is on the transaction costs associated with the transfer of freedom from conscribed military service under a replacement system. If transaction costs were zero,³ replacement will ensure that the composition of the army under initial conscription will be identical to the one that would emerge under a purely voluntary system (Demsetz 1967). However, in the real world, transaction costs are never zero, and the "invisible hand" will lead those exchanging property rights to ignore the ruler's preferences with respect to army composition and fraud may be significant. This will lead the ruler to introduce regulations of the market for freedom from conscription as well as to efforts, by his subjects, to get around these regulations and act opportunistically. This framework produces several empirical predictions, which we test against the first large experiment of the employment of market forces in matters of domestic military services: the Remplacement Militaire that emerged during Ancien Régime France, generalized in post-revolutionary France in 1799, and continuously employed until its abandonment in 1872.

Our paper contributes to two existing bodies of literature in the social sciences. First, it contributes to the social scientific literature on military institutions. Recent contributions include Lee and McKenzie (1992), Mulligan and Shleifer (2005), and Asal *et al.* (2017), all focusing on the relative efficiency of conscription-based and all-volunteer armies. Closest to our own approach are Allen's (1998, 2002, 2017) study of pre-modern British military institutions and Piano and Rouanet's (2019) study of desertion in early nineteenth century France. Second, we contribute to the literature on the "Remplacement Militaire" system in the eighteenth and the nineteenth century France. Historians contributed the most to the study of the system. Schnapper (1968) gives the most complete overview of the replacement system between 1818 and 1872 and studies in detail its working in the department of Gironde. Bohigas (1964, 1968) and Villemin (1987) give valuable information about the role of insurances and intermediaries in the system of military replacement. Legrand (1906), Vallée (1928), and Désert (1965) study the working of this system, mostly for the pre-1815 period, in the departments of Aisne, Charente, and Calvados, respectively. Darquenne (1970), Crépin (1990), and Seignan (1998), in their dissertations on conscription during the Consulate and First Empire, also analyze the system of military replacement during this period.⁴ Finally, Jauffret (1982) studies military replacement in the department of Eure between 1870 and 1872.

Our paper distinguishes itself from those two literatures because of its emphasis on fraud and the impact of military replacement on the quality of the soldiery. Historians and political scientists have focused on the role of ideology and the extension of the franchise to explain changes in conscription regulation (Levi 1998). None has provided detailed evidence about whether or not replacements were "worse" than regular conscripts. To investigate the issue

² See, for example, Lee and McKenzie (1992), Ross (1994), and Mulligan and Shleifer (2005).

³ We use Allen's (1991) definition of transaction costs according to which transaction costs are the costs of defining and enforcing property rights.

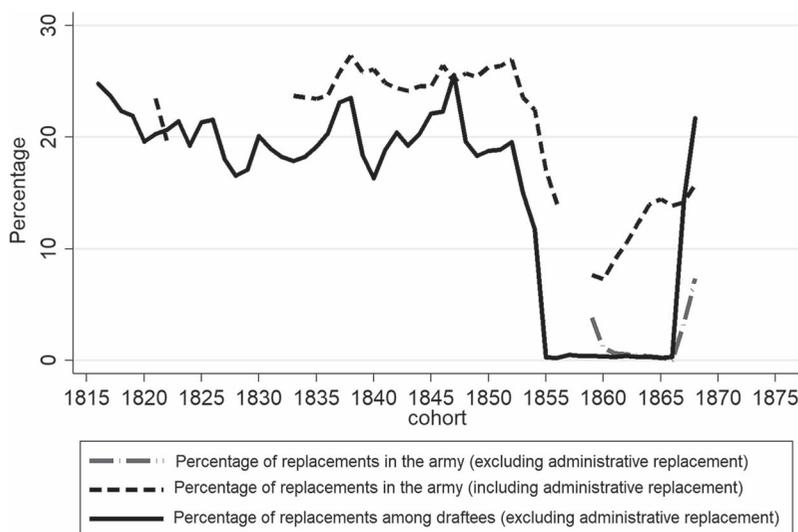
⁴ Other studies on conscription give us data concerning military replacement. For instance Bois (1976) with respect to Maine-et-Loire.

of replacement, we rely on a combination of archival records and primary sources. First, we use the annual reports on military justice (*Compte Général de l'administration de la justice militaire*. Bibliothèque nationale, Lf/194/31) and the annual report on military recruitment (*Compte Rendu sur le Recrutement de l'Armée*. Bibliothèque nationale, Lf/194/26 and *comptes présentés en l'exécution de la loi du 10 mars 1818 sur le recrutement de l'armée* available on Google books.). We also draw information from the French National Archives in Pierrefitte (boxes F/9/290 and F/9/209). The first box was exclusively composed of documents (administrative and private) on intermediaries. The other box contained information about conscription in the department of Lozere between 1797 and 1830. The accounts of the political debates on the issue of replacement are from the Archives Parlementaires. Details on regulatory changes are from a variety of sources: (1) the 1811 *Instruction générale sur la conscription*, (2) the *Bulletin des Lois*, and (3) the Archives Parlementaires. We also draw from secondary sources like Schnapper's (1968) account of political debates and legislative changes. Finally, we rely on accounts made by doctors and other military recruitment professional during the nineteenth century. Most specifically, we used information found in medical dictionaries and textbooks as well as in specialized military reviews and journals.

Although France was not the only country to employ some form of military replacement of commutation, it was the country in which this system was perfected and most accessible to large swaths of the population. In addition, most countries who adopted military replacements were countries that had been occupied by France during the revolutionary and Napoleonic wars. But unlike France, those countries mostly relied on centralized and bureaucratically administered versions of military replacement (Legoyt 1863). In rare cases such as Piedmont (later the Kingdom of Italy) and the Ottoman Empire, over-the-counter exchanges co-existed alongside administrative replacement but were often substantially restricted. Belgium, a country that most closely resembles the French case, ended the *Remplacement Militaire* only in 1909. The United States also used military replacement during the Civil War going back to the war of independence (Lerwill 1954). However, no country comes close to France in terms of the prevalence of military replacement. In Italy, for example, only 3.7 percent of all conscripts between 1863 and 1867 bargained their way out of the army (Rovinello 2013, p. 485). In the USA, administrative and over-the-counter replacement systems coexisted but the number of draftees and replacements never exceeded 10 percent of all soldiers (Costa and Kahn 2010, p. 56). In France, before the introduction of administrative replacement in 1855, the number of replacements in the army was systematically above 20 percent (figure 1). Despite the move toward universal conscription in 1872, the persistence of military replacement for almost 200 years and its economic significance makes it a valuable case study of the relative efficiency of alternative military arrangements.

2. Historical background

The system of military replacement first developed spontaneously within the scope of the provincial militia, a paramilitary force created to supplement the French line army in 1688. French subjects from the countryside, most of them peasants, found participation in the militia particularly cumbersome and costly. Recruitment for this force was done by lot at the local level. Each male villager of age would pick a piece of paper from a hat. If the piece of paper was blank, he had dodged the draft. If the piece of paper read "soldat provincial", then the man would have to join the militia. One contemporaneous observer described the



Sources: Comptes rendu sur le recrutement de l'armée. 1831-1873. BnF, Lf/194/26.

Figure 1. Evolution of replacement rates in the French army

“young men appalled at the sight of the note which places them among the defenders of the country, as they would be at the sight of the tortures, of the parents who pierce the air with cries of despair, what a wicked picture for a people!” (Mention 1900, p. 97). The uncertainty associated with the lottery made it difficult to get a well-paid job and desertion rates were extremely high (Molis 1971). Unsurprisingly, the lottery would sometimes result in violent riots.

In 1788, on the eve of the Revolution, the *Cahiers de Doléances*⁵ contained a long list of complaints against conscription and the militia. Its abolishment was one of the first reforms introduced by the revolutionaries. In 1789, France was in great financial and military needs. As the government was on the brink of bankruptcy, the parliament engaged in radical reforms to increase the productive power of the French economy: markets were liberalized, guilds suppressed, internal tariffs eradicated, and feudal privileges nullified. While the new regime was engaged in these major political and economic reforms, the major European powers coalesced against France. In order to address these challenges, the regime had to expand its military personnel to unprecedented numbers. On July 21, 1789, the French army consisted of 162,111 men. Between 1789 and 1792, more than 583,000 men were levied, raising the armed forces to more than half a million men (Avril 1824).

While at first hostile to the draft, which it perceived as incompatible with basic human rights, the government eventually succumbed to its needs and introduced it with the Jourdan Law of September 5, 1798. The law's opening statement claimed that “[e]very Frenchman is a soldier and must defend the country”. The purported universality of this obligation quickly clashed against reality. Not only was conscription not universal but also the French citizenry rapidly started to contract their way out of it by informal means. Less than a year after the enactment of the Jourdan Law, a ministerial instruction of April 16, 1799, endorsed the

⁵ The *Cahiers* were a collection of complaints and grievances from across France collected just before the revolution.

already widespread use of military replacement.⁶ It was now allowed for conscripts selected by lot to seek a replacement among their fellow citizens, provided that the latter be of at least eighteen years of age. One year later, the parliament legalized the use of military replacement.

Two factors nudging the French government toward this policy changes were (1) the increasing toll imposed by the military efforts on the French economy and (2) the recognition that fraudulent attempts to avoid military service would be costly to prevent and discourage. On March 14, 1800, during a speech to the general assembly in Antoine Delpierre, member of the *Tribunat*, claimed in a speech before the parliament that the replacement system “puts everything in its place: without diminishing the number of soldiers, it increases their strength, it leaves free course to the projects of the families; it mixes their affections; it favors the progress of the useful arts, and preserves the peacefulness of the state in the midst of its efforts which he is obliged to make to ensure its existence and its glory.”⁷

Delpierre also noticed that military replacement leads conscripts seeking to dodge the draft to substitute corruption with the buying of a replacement:

The ability to be replaced pours gold into poor families. Personal service has made it spread in the class of health officers and clerks, for whom the issuance of certificates of infirmities, provisional exemptions, and absolute leaves, has been, for the last five years, a fertile mine of which they have exploited all the veins.⁸

Many administrators and politicians saw military replacement as a way to reduce resistance against the draft by offering a substitute for desertion.⁹ In a report to Napoleon dated April 5, 1806, the *préfet* of the Department of Lozère proposed to deregulate the replacement market to fight desertion. According to the *préfet*, military replacement had this advantage that it engaged the responsibility of two individuals instead of one (the replacement and the conscript replaced). If the replacement deserted, the replacee had to join the army. Hence, he argued that “the easiness of military replacement should be granted above all to the departments where the success of conscription meets obstacles.”¹⁰

During the First Empire (1804–1815), the number of military replacements remained relatively low. This was probably in part due to the higher probability of dying in service during one of Napoleon’s many military adventures. Schnapper (1968, p. 26) estimates that, between 1807 and 1811, the share of substitutes in the French army fell to a low of 4.3 percent. Soult, as minister of war, declared in 1843 that in 1806, of over 500,000 men only one eighth were substitutes.¹¹ Schnapper finds that, in 1806, there were 23,907 replacements in France. In 1809, again according, this number was of 23,688, that is 3.38 percent of the whole army. During the nineteenth century, as the probability of being drafted decreased, the share of draftees buying a replacement increased to around 20 percent (figure 1).

The large number of citizens conscripted during the Napoleonic wars resulted in a significantly higher price for freedom and a lower replacement rate. The departmental

⁶ The levies of soldiers before the Jourdan Law were often accomplished by means of coercion. Replacement was tacitly allowed as exemplified by the decree of December 13, 1792 (Schnapper 1968, p. 17).

⁷ *Le Moniteur Universel*, Ventôse 23, Year VIII, n° 173, p.693.

⁸ *Le Moniteur Universel*, Ventôse 23 Year VIII, n° 173, p.693.

⁹ For instance, during the session of March 6, 1800 at the *Tribunat*, François de Jaucourt argued that “(w)hen military works overburden languishing bodies, and revolt unruly spirits; when an army has more slaves than soldiers, it is then that diseases and desertion, multiplying the calamities, add to the devouring consumption of war. The replacement we offer you can reduce this scourge” (*Le Moniteur Universel*, Ventôse 29, Year VIII, n° 179, p.718).

¹⁰ *Archives Nationales*, F/9/209.

¹¹ *Le Moniteur*, 11 January 1843, p.45.

Table 1. *The evolution of the price of replacement*

Period	Contingent size	Replacement rate	Price of a replacement
1816–1824	40,000	21% (1816–1817 missing)	800 Francs
1824–1830	60,000	18.9%	1,100 Francs
1830–1853	80,000	20%	1,400 Francs
1853–1854	140,000	14.8%	2,500 Francs
1854–1855	140,000	11.6%	2,900 Francs

Source: Humbert (1867).

contingent for Calvados was around 5,000 per year for the 1811–1813 period and fell to around 660 between 1821 and 1824. Between the two periods, the share of replacements went from around 2.4 percent for the 1811–1813 period to more than 20 percent, and the mean price of replacement went from more than 5,360 francs in 1812 to 1,400 francs in 1822 (Désert 1965). This relationship held at the national level during subsequent periods (table 1).

Despite its relative stability, the price of replacement changed with economic, political, and geopolitical conditions. For example, the war for the colonization of Algeria, started in 1830, propped-up the price of replacement. Similarly, the start of the Crimean War in 1853, which was associated with a significant increase in the contingent of men demanded, led the price of a replacement to jump from around 1,400 francs to 2,500—an 83 percent increase. An increase in the demand for conscripts resulted in an increase in the price of military replacement. This, in turn, would have accentuated the problem of fraud in the replacement market were it not for the additional regulations which were systematically imposed to maintain the good quality of conscripts as the contingent increased.

3. A theory of military replacement

Consider the decision of King Henri, the rational ruler of Hexagonia. Henri's income is a function of his ability to defend Hexagonia from foreign aggression and domestic challenges as well as his ability to expand his control to new territories. Hence, Henri needs an army. Let the optimal size of this army, s , be exogenously determined. To man his forces, the ruler of Hexagonia relies on conscription by random lot.¹² By definition, this process leaves each one of Henri's subjects with the same exact probability, s/n , of being drafted, where n is the size of Hexagonia's male population. However, not every subject will be a perfect substitute for another. In general, Henri would like his soldiers to conform to a set of physical, moral, and psychological characteristics (taller, stronger, fearless, calm, etc.). Thus, he will introduce a series of regulations and standards to ensure that the system filters out those individuals who diverge the most from the characteristics above.

The introduction of a sorting mechanism creates incentives for opportunistic behavior on the part of the subjects. The latter differ among themselves in their disutility from conscription. Many factors may enter one's disutility from conscription, including the wage available to him outside of the army, ideological factors (such as adherence to a pacifist religious group), and so forth. Once drafted, an individual may use resources to make himself appear to be unfit for military service, including lying or even self-mutilating.¹³ Henri can

¹² The other alternative, a volunteer army, is beyond the ruler's opportunity set due to fiscal constraints.

¹³ Desertion is also an option (Piano and Rouanet 2019).

reduce the magnitude of such fraudulent activities by investing in measuring and monitoring draftees and punishment technology.¹⁴

Alternatively, the ruler may give draftees another option. Once selected, a subject may find himself a replacement to serve in his stead. This leads to the emergence of a market for freedom from military service in which the equilibrium price adjusts as to select into the ruler's army anyone whose disutility is fully compensated for by the equilibrium wage.

Two features of this market are relevant for our discussion. First, in the market for freedom from military service, supply and demand have no reason to take Henri's preferences into consideration.¹⁵ Due to these external economies, a laissez-faire approach will generally result in a "pool" of soldiers different from the ruler's preferred one.¹⁶ Hence, the ruler will introduce and enforce restrictions on the ability of his subjects to operate freely in the market for freedom from conscription, so as to minimize the discrepancy with his favorite army configuration. Second, keeping the expected punishment for fraudulent behavior constant, a draftee will behave opportunistically the higher the equilibrium price in this market. The higher the "price of freedom", the more tempted the draftee will be to bribe public officials, forge medical records, or hire a "lemon" as a replacement instead.¹⁷ A wide array of variables may influence the equilibrium price in this market. For example, higher rural and urban wages would increase the willingness to pay on the demand side and the reservation wage on the supply side. The death rate on the battlefield would work in a similar way. The optimal level of s/n , the share of the population drafted into the army, will too influence the dynamics in this market. As more Hexagonians are drafted into the army, the demand for freedom from conscription will shift outward. The very same mechanism will lead to an inward shift in supply. With those two forces, the price of the replacement market will increase in s/n .

The discussion above identifies a fundamental tradeoff in Henri's choice of how to best man his army. When the equilibrium price in the market for freedom from conscription is low (compared to the Hexagonians' disutility from conscription), the market works as a substitute for the ruler's measurement and enforcement efforts to discourage opportunism.¹⁸ As the ruler raises the share of subjects drafted into the army, however, the market price for a replacement also increases. Facing a higher cost of avoiding military service within the confines of the law, draftees are more tempted to do so by illicit means. Similarly, as potential replacements expect higher payments from their services, more fraud will entail. Some who are unfit for service may deceive draftees into hiring them. Others may attempt to sell their services to more than one "buyer". In these cases, market forces stop being a substitute for measurement, monitoring, and enforcement by the ruler. In fact, as the price goes up, Henri may have to expend more resources in order to prevent and discourage fraud such that the market for freedom from conscription will generate more costs than benefits.

This situation is analogous to the agency problem one finds in the employment of private contractors in the provision of some public services when the agent's input and output quality

¹⁴ We thank one anonymous referee for forcing us to focus our theoretical discussion on the determinants and consequences of fraudulent behavior in the design of a military system.

¹⁵ For a similar point, applied to the selection of the officers of the English army, see Allen (1998).

¹⁶ This argument is similar to Barzel's (1989, p. 100–102) who argues that relying on blood donations instead of purchasing blood may be an efficient way to avoid incentivizing those carrying diseased blood to sell it.

¹⁷ Akerlof (1970) makes essentially the same case with respect to loans, arguing that moneylenders setting a higher interest rate may attract bad borrowers, hence reducing their profits. Andolfatto (2002) makes a similar argument that price often has an adverse selection effect, in which case limiting the scope of property rights may be efficient.

¹⁸ This market has one more advantage: it minimizes the distortions in the allocation of labor services associated with a conscription-based system (Ross 1994).

are hard to measure (Barzel 2005; Hart *et al.* 1997; Lucas *et al.* 2018).¹⁹ As the wage for replacements increases, so does the incentive to act opportunistically. In order to prevent the progressive “dilution” of his armed forces, the ruler will have to expend increasing amounts of resources in order to prevent fraud. Above some threshold level of s/n , the costs associated with laissez-faire will outweigh the outlays from a regulated or centrally administered system.

Several empirical predictions follow from this analysis. First, we should expect the replacement system as a response to constraints on the ruler’s finances. Second, the ruler will let the market for freedom from conscription operate unfettered when the share of draftees out of the relevant population is relatively low, and therefore the equilibrium wage in this market will similarly be low. Third, as the share of draftees increases, so will the price of replacements and with it the incentive to act opportunistically; hence, the extent of fraud will be increasing in the share of draftees. Fourth, the ruler will introduce increasingly strict restrictions on the market for replacements as he drafts larger shares of the population. Finally, above some threshold level of s^*/n , the ruler will vertically integrate the process and administer the system directly.

4. Fraud

The state will want to retain control over certain attributes of the draftees (for instance height, strength, and “good morality”) whenever these are more valuable to itself, net of transaction costs, than to the contracting parties (i.e., draftees and replacements). The measurement of these attributes, however, is costly to perform, which leaves room for opportunistic behavior. Draftees could affect the value of state-owned attributes of his body by cutting his finger or pulling out his teeth to dodge the draft. In some other cases, fraud might involve committing fraud by presenting a replacement in front of the conseil de révision who does not fulfill the requirements stipulated by the State or by directly forging a required certificate.²⁰

During the first few decades of the system, public opinion perceived replacements as individuals of questionable morality. Over time, the judgment became less harsh (Schnapper 1968; Villemin 1987) as the system of military replacement democratized. Nonetheless, critics of military replacement continued to point to the “poor quality” of replacements. In 1837, an article in *Le National* claims that “replacements are taken from the poor class and the men this class furnishes are for the most part prone to laziness and debauchery” (Rey 1839, p. 34). Another article complained that replacements “make up an army of outcasts”.²¹ These complaints identify three factors that led to the deterioration of the army: medical fraud, lack of discipline and criminality of replacements, and administrative fraud.

5. Medical fraud

One common form of opportunistic behavior in the recruitment process was medical fraud. While unlucky young men who had been picked by lot tried to appear unhealthy to avoid being drafted, the opposite was true for many of those who aspired to be replacements. This is apparent from an examination of contemporary medical records, dictionaries,

¹⁹ In the case at hand, the draftees act as the ruler’s agents and are tempted to shirk in measuring all the relevant (to Henri) features of their replacements.

²⁰ The *conseil de révision* was the institution in charge of verifying the quality of draftees. They would declare draftees and replacements as either fit or unfit for service.

²¹ *Le Spectateur Militaire*, 1836, vol. XXII, p.655.

and instructions to recruitment doctors that systematically warned against the fraudulent attempts made by potential replacements to conceal physical attributes, which made them unfit for service. For instance, Percy and Laurent (1819) in their dictionary of medical sciences write that “replacements of conscripts conceal their infirmities to be received, while the latter simulate them to be dispensed of military service”. Coche (1829) complains that replacements “populate infirmaries for minor diseases”. Laurillard-Fallot (1836), a senior medical officer in the 1830’s, dedicates an entire section of his book to the dissimulation of diseases by replacements. Finally, Maillot and Puel (1842) and Bégin (1835) study in great detail the sort of diseases that were concealed by replacements and how to detect fraud. Maillot and Puel (1842, p. 37) wrote,

Replacements, as a rule, must be subject to a more rigorous [medical] visit than other recruits because having an interest in being admitted, even though they have disabilities, they often hide them so that they can later claim them in order to be reformed. Moreover, their admission must be made more severe than for the class of conscripts or volunteers, because this category is inclined to bad-will, and we notice that it supplies hospitals with many patients every year.

The records from Bégin (1835) and Maillot and Puel (1842) suggest that the French regime was particularly concerned with nine main diseases and conditions that were easily hidden by replacements: (1) severe hair loss, (2) otorrhea, (3) strabismus, (4) bad dentition, (5) goiter, (6) hernias, (7) varicocele, (8) varicose veins, and (9) hemoptysis.

Severe hair loss could be a cause of dismissal because it made it difficult to wear the military hat. Hence, conscripts would simulate hair loss by plucking their hair out. On the other hand, replacements would hide hair loss by wearing toupees. Wearing a hairpiece was also a way for replacements to conceal ulcers or ringworm (Bégin 1835, p. 170).

Otorrhea (ear drainage due to chronic otitis), could also be faked by conscripts to avoid the draft. Many would simulate otorrhea by introducing honey or old cheese inside their ear canal. Maillot and Puel (1842, p. 54) notice that the conseil de révision needs to examine in more detail replacements to be sure that their eardrum is not perforated—young men with perforated eardrums were more likely to get otitis. Bégin (1835, p. 178) mentions that, in addition to those suffering from otorrhea, some deaf young men serving as replacements tried to fool public officials by hiding their condition.

While mild goiter (swelling of the neck resulting from an enlarged thyroid gland) was not enough for conscripts to be dismissed, replacements had to have “the neck examined with great care” because “the goiter is often concealed” (Maillot and Puel 1842, p. 73). More specifically, iodine could be used at low cost to temporarily reduce the size of the thyroid gland (Bégin 1835, p. 181).

Hernias almost always led to a dismissal. While it was relatively hard to simulate a hernia, it was fairly easy to hide one from conscription doctors. As Maillot and Puel (1842, p. 88) wrote, “In order to conceal a hernia [. . . replacements] push it in, remain in bed for some time, apply before the dilated opening cold and astringent topicals, and then come to the hospital visit, the tumor appearing neither spontaneously nor even by the effect of a cough, which the concealers are careful not to make very strong”. Bégin (1835) also mentions several attempts by replacements to conceal hernias.

Varicocele (the abnormal enlargement of the pampiniform venous plexus in the scrotum) could too lead to dismissal. Draftees would use a variety of strategies to fake this condition, for example. Replacements who had this condition, on the other hand, would apply cold water on the same area in order to hide the varicocele (Maillot and Puel 1842, p. 91). By the same token, one could also provoke or amplify the appearance of varicose veins (superficial veins

that have become enlarged and twisted) by stopping the blood flow to the leg. Replacements and volunteers, on the other hand, could conceal varicose veins by compressing them for a long time and remaining relatively still during the medical examination. To avoid those kinds of fraud, doctors were advised to make potential replacement do some physical exercise during the examination. Standing on one leg while compressing the relevant artery was also a way to detect this kind of fraud (Maillot and Puel 1842, p. 105).

Finally, anyone coughing up blood (formally known as hemoptysis) was exempt from service. Predictably, draftees would simulate it. Replacements, on the other hand, had all the incentives to hide it. It was possible to conceal hemoptysis by inflating their chest and pulling their shoulders back. The doctors, therefore, needed to pay attention to potential replacements whose abnormally academic posture seemed suspicious (Bégin 1835, p. 185).

In general, doctors were more severe in their examinations with volunteers and replacements than with regular conscripts. For instance, while strabismus was not enough for a draftee to be dismissed, it was generally a reason for being refused as a replacement. Similarly, Maillot and Puel (1842, p. 70) emphasize that doctors during the recruitment process needed to be very strict with potential replacement about the state of their dentition. Indeed, having a bad dentition meant that soldiers were unable to bite the paper cartridge in order to get their bullets and rendered them almost completely useless to infantry regiments.

Medical fraud was a critical problem especially because the individuals hiring replacements were liable for them only for one year. This was an additional source of profit for unhealthy replacements who could dissimulate their hernia or goiter in front of the conseil de révision and, one year after their incorporation into the army, be dismissed for bad health (Bégin 1835).

6. Bad conduct

Several factors may have led replacements to be more likely to engage in crime and bad behavior. First, the army was composed of “low-civilian-opportunity cost” individuals. Consequently, many of the punishments against bad behavior in the military, such as prolongation of service, had only limited deterrence. Second, those for whom the probability of being caught shirking is the lowest will also be those, everything else being equal, for whom the benefits of supplying their freedom on the replacement market are the greatest. Finally, good morality was costly to measure. As the minister of the interior wrote on June 30, 1821,

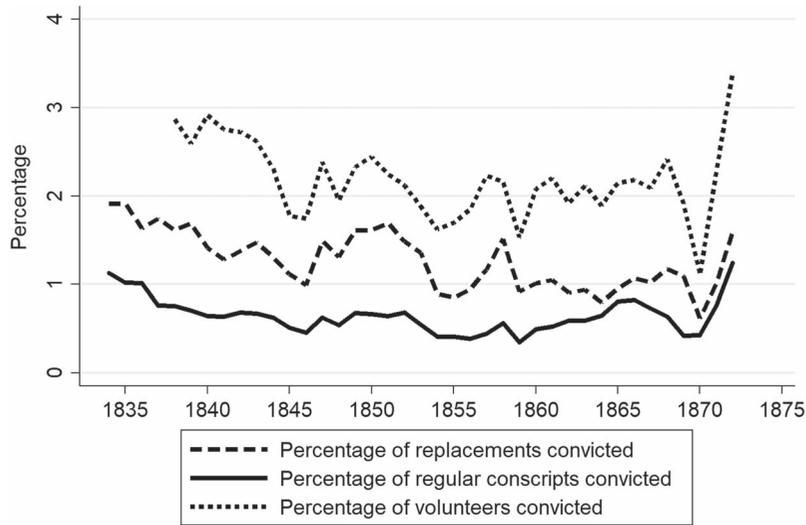
The minister of war indicated to the councils of revision the precautions to take in order to admit as replacements only men of healthy and robust constitutions and for which their past conduct is a sufficient guaranty for their future conduct. But while those precautions may be effective with respect to health [...] they can only offer weak guarantees relatively to moral qualities.²²

Parliamentary debates show that the issue of criminality among replacements was a major motivation to reform the system. On June 18, 1835, the French minister of war argued that “replacements and volunteers are the least disciplined soldiers in the army”.²³

Data from the annual reports on the military justice system between 1833 and 1867 confirm that replacements were systematically more likely to commit crimes in the army (Figure 2). Volunteers were convicted even more often for bad behavior than replacements. This was

²² *Rapport au Roi. Archives Nationales, F/9/290, p. 3.*

²³ *Archives Parlementaires, s.2, t.97: 588.*



Source: *Compte Général de l'administration de la justice militaire, 1833-72*. BnF, Lf/194/31.

Figure 2. Conviction rates, 1833–1872

so because volunteers were generally individuals who had failed to sell their services on the replacement markets because they were too likely to be rejected by the conseil de révision (Rey 1839).

7. Administrative fraud

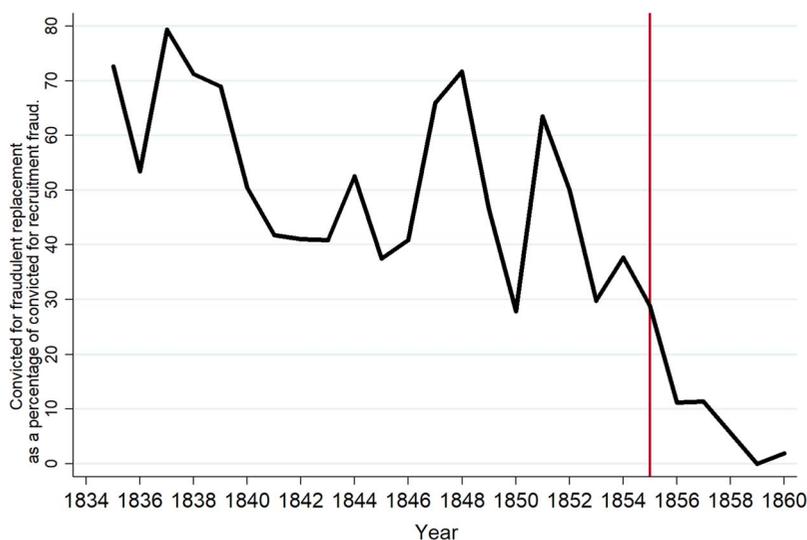
To maintain the quality of its armed forces after an increase in contingent size, the state needed to impose additional restrictions on who could serve as a replacement. The military, however, found these reforms of limited effectiveness. On August 10, 1804, Napoléon Bonaparte wrote to general Lacuée,

People complain that replacements are deserting. They give two reasons: one, that when they have their money they run away. [...] People complain that instead of taking replacements from their cohort, they are taken from any age and from any country, which is still the fault, not of the recruiting captain, but of the council of revision. (Bonaparte 1862, p. 463).

Some individuals would sell their services in a department, leave with the money, and resell their services in another department, repeating the operation multiple times (Bohigas 1968, p. 346). Others would falsify the documents and sell their services to several conscripts at the same time. To reduce the likelihood of these forms of opportunism, most contracts specified that a large percentage of the agreed-upon sum be paid at the end of the draft period, which was up to six years after the signing of the contract (Vallée 1928).

Military experts complained about the “vices and abuses of replacement” and “the bad quality of its product”.²⁴ One target was “the ease with which certificates are issued, and the means of corruption which succeed only too often, make the measures followed, in

²⁴ *Le Spectateur Militaire*, 1838, vol. XXVI, p. 653.



Source: *Compte rendu au Roi sur le recrutement de l'armée, 1831-1860*. Bibliothèque nationale, Lf/194/26.

Figure 3. Fraud and military replacement, 1838–1860

the examination of replacements, insufficient to know the men who are to be refused”.²⁵ Fraudulent certificates were indeed a common problem.²⁶ Although it is hard to quantify the extent of fraud caused by military replacement, the annual reports on conscription tend to confirm that it accounted for a proportion of recruitment fraud much greater than the proportion of replacements in the army. Figure 3 shows the share of individuals tried for fraudulent behavior related to replacement out of all recruitment fraud trials. The vertical red line identifies the year of the introduction of the law of 1855. According to the figure, the introduction of this law resulted in a rapid decline in the prevalence of replacement-related fraud in France. Replacements and their patron, however, were not the only ones engaging in opportunistic behaviors. Replacements were supposed to get a certificate of good conduct from the mayor of their hometown in order to be fit for service. Mayors would often grant these quite liberally, especially to “problematic” individuals in order to get rid of them (Rey 1839, p. 138).

8. Regulation

8.1. *Regulating military replacement*

Our theory predicts that as the demand for soldiers by the ruler increases, a laissez-faire approach to military replacement will become costlier. Consequently, the ruler will introduce increasingly strict restrictions on the market for replacements as he drafts larger shares of the population. Although no causal inference can be made from the evidence collected, the

²⁵ *Le Spectateur Militaire*, 1838, vol. XXV, p. 296.

²⁶ Villemain (1987) gives a number of examples of fraud drawn from administrative correspondence from the Moselle department.

historical account is consistent with our predictions. As the demand for military personnel grew rapidly during the Napoleonic wars, the French government introduced a series of restrictions on the market for freedom from conscription. Replacement was geographically limited to the departmental level and a draftee's liability over his replacement was extended from one to two years.²⁷

The law of March 8, 1800, allowed French citizens who had already joined the army to hire a replacement.²⁸ This law, however, affirmed that replacement was no longer a right but simply tolerated for those who were "recognized to be more useful to the State by continuing their work or studies"²⁹ and those "incapable of bearing the fatigues of war". The legal draft dodger needed to ask for permission to the sous-préfet to be replaced. The new provision also required the substitute to be taller than 1.65 meters and in "good health". The draftee was considered as having completed his service if his substitute served the number of years required, had died in service, or was freed from his service by cause of injury.³⁰

Contrary to the Law of March 8, 1800, which restricted replacement to those considered useful to the State, the law of July 29, 1802, was much more liberal. Consistent with our theory, this liberalization of the market for draft exemptions occurred only four months after the signature of the Treaty of Amiens, which concluded peace with England for the first time in ten years, that is when the demand for draftees by the State became lower. After 1806, replacement could now only be practiced inside the same department and the substitute had to be between twenty-one and twenty-six years old. Those restrictions occurred at a time of growing geopolitical instability with the formation of the third and fourth coalitions against France.

Conditions became even stricter in the 1810s as the war intensified and the Instruction générale sur la conscription of November 1, 1811, stipulated very strict conditions on who could serve as a replacement. A replacement was now required to be from the same department and age cohort as the draftee who hired him. He could not have been previously convicted of desertion or have been in prison for more than a month and had to "demonstrate good conduct and good morality". To this effect, the mayor of their town had to produce a certificate confirming the replacement's good mores. Replacements also needed to be younger than thirty and be at least 1 meter and 649 millimeters tall—more than the height requirement for regular conscripts. If the conscript demanding replacement was already incorporated in the army, then his replacement needed to be at least as tall as himself.³¹ When he joined his regiment, the replacement had to pass a review and could still be sent back home.

After 1815, significant changes in the probability of being drafted continued to coincide closely with the introduction of new legislation regulating military replacement (figure 4). The main pieces of legislation were passed in 1818, 1832, 1855, 1868, and 1872.³²

The Remplacement Militaire was temporarily abandoned alongside the draft after Napoléon's fall in 1814, only to be reestablished by the law Gouvion de Saint-Cyr of

²⁷ *Instruction générale sur la conscription*, November 1st, 1811.

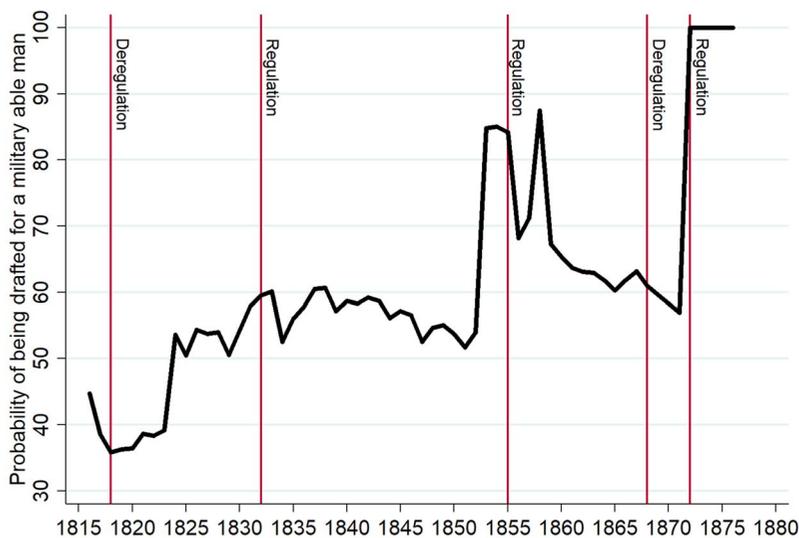
²⁸ *Bulletin des Lois*, 17 ventôse an VIII. Règlement relatif à l'armée de réserve.

²⁹ *Ibid.*

³⁰ *Ibid.*

³¹ *Instruction générale sur la conscription*, November 1st, 1811, article 325. Article 322 of the same law forbade Jews from hiring replacements.

³² Because the draft was based on a random lot and since the *conseil de révision* would interview young men until the contingent demanded by the government was met in full, the probability of being drafted is equal to the number of young men interviewed by those *conseils* divided by the total population of the cohort for each year. Bondy (1841) uses the same method to get the probability of being drafted for a later period.



Sources: Comptes présentés en exécution de la loi du 10 mars 1818. Annuaire statistique de la France (1886).

Figure 4. Probability of being drafted and major policy reforms, 1816–1877

March 10, 1818, which were to provide the foundations for the organization of military recruitment in France throughout the following five decades. The law of 1818 was extremely liberal with respect to military replacement. It introduced provisions that allowed the hiring of a replacement from any region of France, did not significantly restrict incentives for intermediaries to match supply and demand in the market for draft exemptions, and led to the emergence of insurance contracts against the risk of being drafted. Its introduction came after the rapid decline in the probability of conscription that followed the end of the First Empire. As we show in figure 4, in 1818, this probability was at its minimum value over the period under consideration. All that was required by the law was that the replacement be younger than thirty years old (thirty-five years old if he had previously served in the military). This attitude was reinforced by a circular from the war ministry ordering that the administration “refrain from any restrictive measures as to the stipulations of the parties between them and will not have to consider whether the replacements are the result of the arrangements of the parties, individual or collective” (Schnapper 1968, p. 46).

After the probability of conscription had increased by more than fifty percent over the previous eight years, a new law, introduced on March 21, 1832, established stricter conditions with respect to military replacement. It established, for instance, administrative provisions which required that replacements had not been discharged in the past and that they needed a certificate of good mores from the mayor of their town. If the replacement was in the military, he needed an additional certificate of good conduct.

Despite some reforms of the replacement system in the 1830s and 1840s, it was commonly accepted among military officers and politicians alike that the military needs of the country could not be satisfied without military replacement. Intense debates nonetheless took place during this period and many of those complaining about the poor performance of the replacements also advocated for restrictions over the trading of exemptions from conscription. General Gouffé, for instance, suggested the introduction of a minimum height requirement

of 1.65 meters tall (5 ft. 1) as well as the requirement that replacements be from the same department as the replacees.³³ Chatelain wanted to weaken the civilian nature of the councils of revision by replacing one of their counselors by the military sub-intendant.³⁴ Others wanted that only former soldiers be allowed to serve as replacements. The system went through three more rounds of reform before its abandonment in 1872. First, with the law of April 26, 1855, which severely restricted private military replacement and instead encouraged administrative replacement. With the start of the Crimean War in 1853, the probability of being drafted had increased dramatically, from 54 percent to 85 percent. At the same time, the price of a replacement jumped from 1,400 to 2,500 francs (Humbert 1867). Just two years later, the State restricted the private market for draft exemptions by limiting it to family members. With the same piece of legislation, it also introduced the alternative of administrative replacement, according to which the selection of the replacements was done directly by the state.

The law of March 17, 1858, relaxed some of the restrictions introduced in 1855, for example by allowing private military replacement between family members up to the sixth degree but did not fundamentally change the law passed in 1855. Finally, the Niel Law of February 1, 1868, fully re-established private military replacement as it existed before 1855. The probability of being drafted had decreased steadily until the late 1860s. The new law re-established the right to privately contract between conscripts, got rid of price controls in the market for military draft exemptions, and deregulated the industry of private intermediaries, thus entirely reinstating the regime that had emerged after that of 1832 (Schnapper 1968, p. 255).

After the military defeat against Prussia in 1870, military replacement survived for two more years. This defeat had persuaded the French elite that universal conscription was the most suitable way to recruit the army. In the debates leading to the law of July 27, 1872, no one openly defended military replacement (Schnapper 1968, p. 276). For the first time since the French Revolution, conscription could not be avoided either by private arrangement or administrative replacement. Because every able-bodied Frenchman was automatically drafted into the French military, there were simply no benefits to employ a system of military replacement, which was (unsurprisingly) abandoned once and for all.

8.2. Liability

To maintain quality, the government introduced liability to mitigate the principal-agent problem in measuring the properties of the replacement. Whenever measurement is costly, liability is costly to assign. A replacement deserts the army. Did he desert because the replacee carelessly chose his replacements or because his officer was physically abusive? A replacement is sick. Is it because of the carelessness of the replacee, the incompetence of the health officer or because of a weeklong march in the cold winter? If the government assigns liability to those hiring replacements for things they are not responsible for, military replacement will become less attractive and its benefits will diminish. If the government does not assign liability, on the other hand, the quality of the soldiery will decline.

Under the system of *remplacemant militaire*, draftees were liable for the behavior of their replacements during the first year or two after their engagement. The replacements had an incentive to design contracts and enforcement mechanisms so as to minimize the probability

³³ *Le Spectateur Militaire*, 1836, vol. XXII, p. 655.

³⁴ *Le Spectateur Militaire*, 1838, vol. XXV, p. 307.

of such opportunistic forms of behavior as desertion. From an analysis of replacement contracts, it appears that a primary concern faced by conscripts was that their replacements would not be accepted by the council of revision because they did not meet the physical or legal requirements. Another concern was that the replacements would desert the army within the period where they remained responsible for their behavior. Either occurrence would be extremely costly to the draftee, as he would have had to either find another replacement within two weeks or join the army himself (Legrand 1906; Désert 1965; Vallée 1928; Darquenne 1970; Seignan 1998).

The extent to which draftees were responsible for their replacements also increased as the demand for men by the state increased. The Napoleonic period, for instance, was characterized by a much higher level of liability assigned to those hiring replacements. The 1811 instructions stipulate that, in the case where the replacement was discharged due to infirmities or any other reasons within six months of his incorporation or if he deserted within two years of service, the draftee was to provide another replacement or join the army himself within fifteen days.³⁵ After 1818, the period during which draftees were liable for the behavior of their replacements was reduced from two to one year. Similarly, in 1811, the law determined that any conscript who knowingly presented a replacement who did not meet the legal criteria lost his right to be replaced. This regulation was also abandoned after 1818.

8.3. *Restrictions on intermediaries*

During the Napoleonic wars, the use of intermediaries was considered illegal and violators were sent to French Guyana (Schnapper 1968). This state of affairs changed with the law Gouvion Saint-Cyr of March 10, 1818, which had not specified the status of intermediaries on the military replacement market.³⁶ Rapidly, some entrepreneur seized the opportunity of this loophole to create intermediaries, matching supply and demand on the replacement market, but also by creating insurances against the draft. Sometimes, insurances were also working as intermediaries. By 1820, most departments had formal replacement businesses and many times more informal ones. Very quickly, the central government became increasingly worried that those intermediaries would alter the quality of the army.

Reports were written to the King and to high civil servant noticing the deleterious effects of intermediaries on the composition of the army. Government officials remarked that intermediaries were a major source of fraud and opportunism and were thus “harmful to the good composition of the army”.³⁷

Another worry was that the certificates of good conducts could easily be falsified and that the intermediaries would bribe public servants to illegally smuggle their replacements into the army. This worry seems to have been a real problem. When the central government asked the prefects, what were their opinions relative to intermediaries, the prefect of the department of Gard declared that replacement companies “seriously impaired recruitment operations, deceived the credulity of families and spread seduction among the health officers”. The prefect of Lozère “reminds that he already had signaled to the government the abuses of those replacement companies” while many other prefects notice that those institutions can only

³⁵ *Instruction générale sur la conscription*, November 1st, 1811.

³⁶ As one anonymous referee noted correctly, this suggests that intermediaries were not able to limit the extent of fraudulent behavior in the market for freedom from military obligation.

³⁷ *Rapport au Roi. Archives Nationales*, F/9/290. p. 1–2.

impact negatively the composition of the army.³⁸ While regulated, intermediaries maintained legal status throughout this period: starting in 1821, all intermediaries had to obtain a special authorization from the King.³⁹

8.4. Geographical regulations

From the point of view of the state, some private contracts (for instance inter-regional trading of freedom from the draft) were exceedingly expensive to enforce because it was harder to detect fraud. When the government wants to restrict military replacement, it will first forbid the contracts on the replacement market which are costliest to maintain.

This is consistent with the evidence. While draftees could only hire replacements from the same region during Napoleon's rule, the 1818 law allowed conscripts to "import" replacements from other regions. In some departments, the trade of replacements represented a major economic activity. In 1831 in Meurthe, 10 percent of the contingent—that is 110 men—were replacements even though the prefect of this department had issued 764 certificates of good conduct for replacements exported to other departments (Schnapper 1968, p. 83). As the probability of being drafted increased, the law of 1855 required the draftee to pick his replacement from among his own family members. Restricting replacement contracts to the family was also a way to reduce the enforcement cost of the state. Annual reports on military justice confirm that after 1855, private replacements, which could now only be a draftee's family member, were as likely as regular draftees be convicted of crimes.⁴⁰

8.5. Administrative replacement

The 1855 law restricted once more the capacity to engage in over-the-counter military contracts. Instead, military replacement came under the direct control of the central state, to which individuals could pay a fixed amount of money to exit the draft. This money was then used to incentivize draftees, who had developed some human capital specific to military activities, to re-engage for up to seven years in the army.

Reengaged soldiers consisted of the group with the lowest rate of conviction in the army. They did not desert very often and their conviction rates were extremely low. Administrative replacement was therefore presented by its proponents in front of the parliament as "moralizing" replacement and improving the composition of the army.⁴¹ The idea was not new. In 1833, an article in *Le Spectateur militaire* complained that "most convicted men are replacements" and proposed that "replacement being allowed, the government should monopolize it" so as to incentivize soldiers to re-engage at the end of their service.⁴²

One reason put forward for the introduction of this new system during parliamentary debates was that it was likely going to reduce the amount of resources expended in finding replacements. The new law, declares Général Meslin's speech in front of the Corps Législatif on March 28, 1855, "will give to fathers by sparing them the numerous and expensive trips

³⁸ *Analyse des opinions des préfets sur les entreprises de remplacement à l'armée. Archives Nationales, F/9/290.*

³⁹ *Instruction sur l'exécution de l'ordonnance royale du 14 Novembre 1821, concernant les entreprises de remplacement pour l'armée. Archives Nationales, F/9/290.*

⁴⁰ *Compte Général de l'administration de la justice militaire pour l'année 1867. Bibliothèque nationale, Lf/194/31.*

⁴¹ *Le Moniteur Universel*, 24 March 1855, p. 331.

⁴² *Le Spectateur Militaire*, 1833, vol. XV, p. 294–296.

always occasioned by the replacement of their sons”.⁴³ Nonetheless, the main declared goal of the law of 1855 was to “give the army [...] more strength and a better organization by introducing a greater number of older soldiers, trained and experienced with the toils of war”.⁴⁴

9. Conclusion

In this paper, we offer the first economic treatment of a real-life case of a system of military recruitment that relied on market forces: the Remplacement Militaire in the eighteenth and the nineteenth century France. Three lessons, we believe, can be drawn from this historical case study. First, following the logic of the Coase theorem, the costs usually associated with military conscription in the economic literature would be much reduced if the draft were combined with a market for freedom from conscription. Second, such a system is not merely a theoretical possibility but a historical reality, as illustrated by the French case. Finally, we provide further support to the hypothesis (advanced by [Lee and McKenzie 1992](#); [Ross 1994](#); and [Mulligan and Shleifer 2005](#)) that a society’s choice of its system of military recruitment is partly determined by the economic benefits and costs of the alternatives available to it.

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⁴³ *Le Moniteur Universel*, 30 March 1855, p. 354.

⁴⁴ *Le Moniteur Universel*, 23 March 1855, p.326.

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