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To Draft or Not to Draft? An Alternative View

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Abstract

The paper reconsiders the relative efficiency of the draft versus the professional army in the case where countries belong to different risk classes. We refute the earlier result that the welfare with a draft is always lower than with a professional army. The welfare comparison is shown to depend on the national security determined by the risk class of the country. The existence of the reserve strengthens the case for the draft army. We use Israel, Finland, and Sweden as examples of countries which belong to different risk classes with different approaches to the optimal national defense.

JEL Classification: H20, H57, I21, D63

Keywords: national security, draft, professional army, education

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1 Introduction

In their earlier paper, Poutvaara and Wagener (2007), PW subsequently, introduced a proposition that the utility level in the steady state of an economy with a draft system always falls short of the utility level of an economy with a professional army. This conclusion is based on the following crowding-out mechanism: the effort into human capital formation through education and, consequently, the output and the consumption as well as the maximally obtainable utility level with a draft system always falls short of the utility level of an economy with a professional army.

The mission of the current paper is to challenge this result for two reasons. First, the result is derived in a context where the level of military output is exogenously fixed at some arbitrary level. Endogenizing the size of the military output makes the stated result fail. Second, and more dramatic, the PW-analysis is derived in a context where the social welfare criterion fails to capture the proper valuation of national security as a public good. Their model abstracts from the trade-off between the consumption of market output as a private good and national security as a public good. In the PW-model, investment in defense capacity is simply waste of money with zero social return. The PW-approach appears valid only in a world with everlasting peace. From a broader perspective, national security has two dimensions, the internal and the external one. In most if not in all countries, the policy force is run by the public sector through hirings from the labor market. The provision of internal security thus appears an area where the PW result quite generally holds.[1] In the case of the external threat, the PW result is not robust. It fails to capture the insecurity in terms of a military threat on the welfare of the citizens.

A draft and a tax-financed professional army are alternative institutional arrangements to address the national security.[2] By introducing the national security into the realm of the economic policy, we derive the conditions under which the draft system is economically more efficient than the professional army and when it is not. One of the limitations in the economic model of PW is that they abstract from the value of reserve in the draft system. No corresponding reserve is available in the case of a professional army. By allowing for the reserve effect, the optimal tax problem introduced by PW is changed in a fundamental way. The tax distortion in the private investment in education is compensated by its effect on the national security. In the case of a military attack, the defense capacity is greater in the case of the draft army than in the case of the professional army . This influences fundamentally the military threat ex ante and the national security, to be modelled in this paper. We provide numerical illustrations for our results. We also highlight numerically the role of the reserve

[1] In some cases, the social order is strengthened or fully provided privately by private clubs like the mafia.

[2] Both are also the subject of opportunism in terms of non-participation and free riding. Casual thinking suggests that the risk of opportunism is, however, by far greater in the case of a professional army than in the case of the draft where the motivation is built on non-monetary values of being available for the service of the country.

in the generation of the national security.

As illustrative examples of countries in different risk classes, one may refer to the cases of Israel, Finland and Sweden.[3] I all these countries, the draft has played the major role in the (implicit) social cost-benefit analysis of the national security. Such an equilibrium cannot be explained by the PW approach. On the other hand, the European countries which have abolished the draft have found another solution on the national securiry: relying on NATO as a joint venture. Another example is Sweden. It is a country which has abolished the draft but failed to build a professional army. The country is effectively counting on her Eastern neighbor, Finland, as a buffer state in the north and the NATO Baltic states in the south.[4]

Our paper is structured as follows. In Section 2, we introduce the basic model. In Section 3, the proper social welfare function in an uncertain world is introduced. The welfare results in the draft system and in the case of a professional army are reported and the optimal tax rate determining the size of the army is derived. Numerical examples illustrate. Section 4 concludes.

2 Model of an insecure world

2.1 The basic model

The basic architecture of the model follows that of PW but with some key adjustments to capture the national security in an insecure world. There are two overlapping generations of size one each of which consists of identical individuals. Apart from the educational investment, a two-period model is needed here for an additional reason absent from that of the PW-model: the fundamental role played by the reserve in the draft system. In the case of the professional army, no such reserve is available! The national security is assumed to depend both on factors exogenous to the country, like her history and location dictating the risk class of each country and on the defense strategy of the country. In our model, there are high-risk countries and low-risk countries.

In each of the two periods of their life, the individuals have available a certain time endowment normalized to one. When young, a fraction α will be spent on education. The human capital, hence the productivity $w(e)$ is conditional on the educational investment e. The productivity is strictly increasing in e. There is a strictly increasing and convex utility cost, $c(e)$, associated with education.

Under the draft system, each individual when young, is trained with no remuneration for national defense lasting $d < 1$ of their time endowment. When

[3]The Finnish neighbor Russia lost its status as a super power associated with the collapse of communism but hopes to exert her power on her neighboring countries. As a recent example, in the spring 2013, the commander of the Russian army, general Nilolai Makarov viewed still Finland as belonging to the Russian sphere of interest.

[4]In March 29, 2013, the Russian air force used two Backfire bombers and four fighters close to the Swedish Gotland to test the preparedness of the Swedish air base to meet foreign military aircrafts. The Swedish airforce did not send its airforce in the air as the pilots were having their leisure. The NATO fighters from an air base in Lithuania got, in stead, into the air to check the Russian aircrafts approaching Sweden.

old, the generation makes up the reserve army, to be denoted by R. This is an important adjustment into the PW model which fails to recognize the key role of the reserve in the draft system.[5]

The rest of the time, $1 - d - \alpha = l_1$ is used for working when young; the working time $l_2 = 1$ when old. Output in the private sector is produced by employing labor in a linear production technology. Labor demand is perfectly elastic at the market wage. Under the draft system, the private output in each period hence is

$$y^d = (1 - d - \alpha)\, w(e^d) + w(e^d_{-1}). \tag{1}$$

The life-time income of individuals in the draft system is

$$Y^d = w(e^d)\,[\Gamma - d] \tag{2}$$

where $\Gamma = 1 + (1 + r)^{-1} - \alpha$ as in PW with r denoting the discount rate. For the subsequent analysis, we point out that Γ may be smaller or greater than 1.

Under the professional army, the individuals make their career choice. The government hires $n < 1$ of them in each period to be trained for national defense serving for two periods. Solving for the optimal n is a matter of an optimal tax problem. Then, the labor input in the privates sector falls to $(1 - n)l_1 < l_1$ in period 1 and to $((1 - n)\, l_2 < l_2$ in period 2. There are $1 - n$ who acquire education.

The private output in each period therefore is

$$y^p = (1 - n)(1 - \alpha)\, w(e^p) + (1 - n)w(e^p_{-1}). \tag{3}$$

The earned income both by the workers and the professionals in the military are the subject of an income tax to generate revenue to finance the professional army. Let τ denote the tax rate. In the case of the professional army, the value of the life-time net income of each civilian individual is

$$Y^p = (1 - \tau)w(e^p)\Gamma. \tag{4}$$

We denote the earnings per period of the military by $w(m)$. By arbitrage, the life-time income of the military personnel

$$Y^m = (1 - \tau)\,(\Gamma + \alpha)\, w(m) \tag{5}$$

has to be equal to that of the civilian labor force[6]. Solving,

$$w(m) = \frac{\Gamma}{\Gamma + \alpha} w(e^p) < w(e^p).$$

[5]Should a military conflict outbreak, the relative *initial* loss inflected on the draft army with reserve is smaller than is the loss inflicted on the professional army. This follows from the substantial size difference of the defense troops. It also means that after the initial loss, the strategy based on the guerilla war is available in the case of the draft system while no such option is available under the professional army. These differences amount to a drastic difference in the ex ante incentives to initiate an attack by a potential enemy.

[6]Below we introduce the disutility from the education investment. We assume for simplicity that the disutility from the professional military training is the same as in education. Furthermore, we assume that even "a high risk country" is able to recruit the military at an arbitrage wage without a risk premium; an assumption which is better suited for countries with a low risk of external threat.

The earnings difference arises from the absence of civilian education in the case of the professional army.

In each period, the tax revenue T amounts to

$$T = \tau \left[y^p + 2nw(m) \right]. \tag{6}$$

Inserting, the steady state tax revenue is

$$T^* = \tau \left[2 - \alpha - na \right] w(e^p), \tag{7}$$

where

$$a = 2 - \alpha - \frac{2}{b}, \quad b = \frac{\Gamma + \alpha}{\Gamma}.$$

This revenue is used to finance the professional army. The (gross) earnings of each soldier per period is thus $T^*/2n$. As is is equal to $\Gamma w(e^p)/(\Gamma + \alpha)$ by arbitrage, the size of the professional army, $2n$, can be solved as

$$M = 2n = \frac{\tau \left(2 - \alpha \right) 2b}{2 + \tau ab} \tag{8}$$

We notice that the tax rate determines the size of the army in a non-linear fashion. Increasing the tax rate generates more tax revenue but at a decreasing rate,

$$\frac{\partial M}{\partial \tau} > 0, \ \frac{\partial^2 M}{\partial \tau^2} < 0 \ .$$

For those who have studied evolutionary biology, conflicts between populations in all areas of life are a natural phenomenon with Darwinistic origins and derive from genetic conflicts. Personal safety cannot thus be overlooked as it is part of everyone's utility and welfare.[7] In those countries which feel safe from an outside threat, the citizens can pay little attention to the national security. This is different in countries with insecurity and a potential threat. An outside threat in terms of pressure or even a military threat is present. We introduce the national security, s, as a public good. In the absence of saving, the utility of individuals is given by

$$u = u(Y(e) - c(e), s), \tag{9}$$

with $u_1 > 0, u_{11} < 0, u_2 > 0, u_{22} < 0$. The private good and the public good in u are taken to be complementary in consumption. The provision of the national security is typically delegated to the national government. Each individual undertakes her education investment taking the value of the public good s as given.[8]

[7] The bloody history of humans including the recent wars even within the European territory should make us abstain from the naive beliefs of an eternal peace.

[8] Voluntary contributions to public goods including national safety are not easily provided and people tend to free ride. Yet, many countries have voluntary defense training and activity, home security troops etc. In Finland, a voluntary defense organization existed in 1918-1944. Its purpose was not only to strengthen the security against an outside threat but also to help the public servants when needed. Subsequently, it has been suggested that the home security troops should be re-established in Finland. In Switzerland, each man is required by law to have a gun at home.

2.2 Individual decisions

The basic argument by PW is that there is underinvestment in education in the draft system when compared with the country with professional army; and therefore lower welfare. As a general result, the PW proposition is counter-intuitive as both approaches to the national defense distort the education decision. There is the distortion caused by the draft and there is the distortion caused by the income tax. We re-examine their result in our framework and show that it fails. The utility maximization of each individual requires

$$\frac{\partial u}{\partial e} = u_1 \left(\frac{\partial Y(e)}{\partial e} - \frac{\partial c(e)}{\partial e} \right) = 0 \tag{10}$$

The subsequent analysis of the education decision and the social welfare becomes most illustrative when using isoelastic functional forms. With little loss of generality and with no qualitative importance, we introduce parametrizations

$$c(e) = \frac{e^{1+\varepsilon}}{1+\varepsilon}, \quad 0 < \varepsilon < 1. \tag{11}$$

$$w = \phi e, \quad \phi > 0. \tag{12}$$

The first-order condition in the maximization of the life-time utility in the draft system is

$$-e^{\varepsilon} + \phi\,(\Gamma - d) = 0,$$

with an education choice

$$e^d = \sqrt[\varepsilon]{\phi\,(\Gamma - d)}. \tag{13}$$

With the professional army, the first-order condition is

$$-e^{\varepsilon} + (1-\tau)\,\phi\Gamma = 0,$$

with an education choice

$$e^p = \sqrt[\varepsilon]{(1-\tau)\phi\Gamma}. \tag{14}$$

The PW proposition holds only if

$$\sqrt[\varepsilon]{(1-\tau)\phi\Gamma} > \sqrt[\varepsilon]{\phi\,(\Gamma - d)},$$

i.e. if

$$\tau < \frac{d}{\Gamma}. \tag{15}$$

Their proposition is thus not generally valid. We report

Proposition. *The relative impact of the draft system and the professional army on the education decision is ambiguous and depends on the tax cost of financing the professional army and the time cost of the draft period.*

Below, we solve for the optimal tax rate under the professional army. PW do not carry out such an analysis.

3 Welfare and national security provision

3.1 Social welfare function

PW measure the social welfare by the utility of the representative individual by their net income adjusted for the cost of education. In the social valuation, they abstract from national security. Neither does the PW model explain why the defense capacity is in their model in the first place. In their model, the money is in a sense wasted having zero social return.

In a model of delegated security provision, the public sector provides the national security of the citizens. The simplest way to account for such an effect is to adopt a social welfare criterion

$$W = W(u, s) \tag{16}$$

where u is the welfare of each citizen whether working in the private sector or in the professional army and $s =$ national security as defined above.[9] Such a welfare function captures the trade-off between private goods and the national safety as a public good arising from the draft and the professional army, respectively.

The national security is determined by an outside threat and internal defense capacity. The location of the country and the historical factors play a decisive role in the determination of the outside threat. Consequently, we denote $H =$ a country with a high risk of a military conflict (attack) and $L =$ a country with a low risk of a military conflict (attack).[10]

The defense capacities, q^d, q^p are determined by the two options of the draft and the professional army. The national security of a country of type i is then conditional on her defense capacity, q^j

$$s^i = s^i(q^j), \qquad i = H, L; \quad j = d, p, \tag{17}$$

which is a strictly increasing and strictly concave security function.

For the same defense capacity q, the national security is always strictly lower for the high-risk country when compared with the low-risk country,

$$s^H = s^H(q) < s^L = s^L(q).$$

Further constraints are available for the welfare function. Positive consumption is not possible when the national security is lost. Moreover, national security has no value if the consumption opportunities vanish. In order to make both private consumption and national security necessities, we work out the social welfare using a multiplicative social welfare function

$$W = us. \tag{18}$$

[9] Without a risk of confusion and for notational simplicity, we abstract from the s-variable in u.

[10] Membership in the NATO as a joint venture makes many European - but not all - countries low risk countries. They are able to free ride on the resources of the joint venture.

Introducing a logarithmic transformation,

$$v = \log W = \log(u) + \log(s). \tag{19}$$

Inserting,

$$v^d = \log\left[Y^d - c(e^d)\right] + \log\left[s^i(q^d)\right], \quad i = H, L. \tag{20}$$

$$v^p = \log\left[Y^p - c(e^p)\right] + \log\left[s^i(q^p)\right], \quad i = H, L. \tag{21}$$

The defense capacity q is determined by the number of trained soldiers consisting in the draft system from the young in the training process and the old as a reserve, R. In the case of the professional army, no reserve is available.[11] Instead, the military serves for two periods. We, however, generalize this approach with a natural qualification, the quality of the reserve. Allowing for the depreciation of skills, we introduce the idea that the high-risk country cares for the quality of her reserve by ex post military training more than the low-risk country which makes less those investments. Such an effect is measured by parameters $\lambda^H > \lambda^L$.We want to allow for the depreciation of the quality of the reserve for an important reason. We do not want to have a model where the size of army dictates the outcome of the welfare analysis. Nothing prevents the professional army from being bigger than the quality-adjusted draft army in our model. In the case of the professional army, its size is matter of the choice of the welfare- maximizing government and can exceed the size of the quality-adjusted draft-reserve army.

Therefore, the steady state defense capacities under the two defense options are

$$q^d = 1 + \lambda^i R;\ i = H, L, \quad 0 < \lambda^L < \lambda^H \leq 1; \quad q^p = M. \tag{22}$$

We the introduce a simple additive parametrization for the national security function,

$$s^i = \beta^i + q^j, \quad i = H, L,\ j = d, p. \tag{23}$$

The location effect and the investment in the defense capacity are thus viewed as substitutes. Take two examples. Israel can be viewed as a small $\beta-$country with a highly disadvantageous location. Therefore, she has to rely on her defense capacity as the major source of national security. Take Sweden as another example. She has an advantageous location. Therefore, she can afford of relying on a limited defense capacity.[12]

[11] The military has to be trained prior to any conflict. There may be differences in the training process. More important than the quality of training is, however, the motivation. A number of examples including the Vietnam war witness that highly motivated fighters are more successful than a less motivated army even equipped with a better equipment.

[12] The last time Sweden participated in a war was its war against Norway in 1814. Sweden was able to keep herself outside the war both in the First and in the Second World War. Moreover, during the Cold War, Sweden was able to stay neutral.

3.2 Welfare under draft

In the draft system, no public optimization takes place: every citizen when young is trained for the public defense. All needed to be done is to calculate the value of the social welfare. Inserting the education investment solved above, the individual income is

$$Y^d = (\Gamma - d)\phi \sqrt[\varepsilon]{\phi\,(\Gamma - d)}.$$

In the draft system, the national security is

$$s^i = \beta^i + (1 + \lambda^i R), \quad i = H, L.$$

Then, the social welfare in the draft system for the high-risk and low-risk countries is given by

$$v^d = \log\left[(\Gamma - d)\phi \sqrt[\varepsilon]{\phi\,(\Gamma - d)} - \frac{\left(\sqrt[\varepsilon]{\phi\,(\Gamma - d)}\right)^{1+\varepsilon}}{1+\varepsilon}\right] + \log\left[\beta^i + \lambda^i 2\right], \quad i = H, L. \tag{24}$$

3.3 Welfare under professional army

In the case of the professional army, the public sector optimizes the size of the army, M. The government chooses the tax rate τ to maximize the social welfare. Inserting the education investment solved above, the individual income is

$$Y^p = (1 - \tau)\Gamma\phi \sqrt[\varepsilon]{(1 - \tau)\phi\Gamma}.$$

As the national security is

$$q^p = M = \frac{\tau\,(2 - \alpha)\,2b}{(2 + \tau ab)},$$

the social welfare is

$$v^p = \log\left[(1 - \tau)\Gamma\phi \sqrt[\varepsilon]{(1 - \tau)\phi\Gamma} - \left(\frac{1}{1+\varepsilon}\right)\left(\sqrt[\varepsilon]{(1 - \tau)\phi\Gamma}\right)^{1+\varepsilon}\right] + \tag{25}$$

$$\log\left[\beta^i + \frac{\tau\,(2 - \alpha)\,2b}{(2 + \tau ab)}\right], \quad i = H, L.$$

Evaluating $\partial v^p/\partial\tau$, one finds that it consists of two conflicting effects

$$\frac{\partial v^p}{\partial \tau} = -\frac{1+\varepsilon}{(1-\tau)\,\varepsilon} + \frac{4b\,(2-\alpha)}{(ab\tau + 2)\,(4b\tau + 2\beta^i - 2b\alpha\tau + ab\beta^i\tau)} \tag{26}$$

The first provides the (logarithmic) utility loss from the income tax. The second provides the (logarithmic) security gain from the tax-financed army. Evaluating the derivative $\partial v^p/\partial\tau$ at $\tau = 0$, it is

$$\frac{\partial v^p}{\partial \tau} = \frac{b\,(2-\alpha)}{\beta^i} - \frac{1+\varepsilon}{\varepsilon}.$$

This is positive only for countries in a high-risk class with a sufficiently low β. As a numerical example, take $\alpha = 0.2$, $\Gamma = 1$, and $\varepsilon = 0.5$. Then $a = 0.133\,33, b = 1.2$ and $\partial v^p/\partial\tau > 0$ at $\tau = 0$ only if $\beta < 0.72$. For the countries in a low-risk class with $\beta > 0.72$, the optimal tax rate can never be positive. We can thus make the following remark: *for countries with strong basic security, there is no case for a military army.*

At the point $\tau = 1$, the derivative is -∞. Studying the second derivative at the above numerical values, it is east to be convinced that it is everywhere negative. Thus there is unique local tax optimum at $0 < \tau^* < 1$ for countries with a professional army for countries satisfying $\beta^i < b(2-\alpha)\varepsilon\,(1+\varepsilon)^{-1}$. It is obtained as the positive real root of the first-order condition $\partial v^p/\partial\tau = 0$ (the other one is negative) and is

$$\tau^* = \varphi_o\,(\sqrt{\varphi_1} - \varphi_2) \tag{27}$$

where

$$\begin{aligned}
\varphi_O &= \frac{2}{ab\,(\varepsilon+1)\,(-2\alpha + a\beta^i + 4)} \\
\varphi_1 &= (2-\alpha)\left(\left(8 - 4\alpha + 4ab + 2a\beta^i + a^2 b\beta^i - 2ab\alpha\right)\varepsilon\,(1+\varepsilon)\right) + (2-\alpha)^2 \\
\varphi_2 &= (2-\alpha)\,(1+2\varepsilon) + a\beta^i\,(1+\varepsilon)\,.
\end{aligned}$$

The solution for the optimal tax rate is intuitively appealing as it (obviously) satisfies

$$\frac{\partial \tau^*}{\partial \beta^i} < 0.$$

This is indeed confirmed by a numerical calculation. To give an illustrative example of the optimal tax rate and hence of the size of the army in the case the country has chosen the professional army instead of the draft army, we pick some numerical values. Assume $\varepsilon = 0.5, \beta^H = 0.1, \beta^L = 0.5$ and $\alpha = 0.2$. Then, $a = 0.13333, b = 1.2$. For a high-risk country with low β, the optimal tax rate turns out to be $\tau^{H*} = 0.24197$. For low-risk country with high β, the optimal tax rate is lower, $\tau^{L*} = 0.18391$. *For low risk-countries (high $\beta-$countries), the optimal tax rate is low while it is high for high risk countries.*

3.4 Welfare comparisons numerically

The mission of our paper is to show that the results of PW are not robust once the national security is properly introduced. To challenge their welfare results, it is sufficient to resort to numerical values to provide a counter example. We evaluate the welfare levels using numerical values $\Gamma = 1, \phi = 1, \varepsilon = 0.5, \beta^H = 0.1, \beta^L = 0.5$, $\alpha = 0.2$. We recall $a = 0.13333, b = 1.2, \tau^{H*} = 0.24197$ and $\tau^{L*} =$

0.18391. To provide a "fair" welfare comparison, we let the time cost of the draft be alternatively $d = 0.1$ and $d = 0.4$. Without the national security effect, $\log(s)$, we find that *with a low time cost of the draft* $(d = 0.1)$, *the welfare with the draft army is greater* $(-0.316\,08)$ *than the welfare under the professional army both in the high-risk country* $(-1.\,889\,5)$ *and in the low-risk country* $(-1.\,352\,5)$. However, *with a greater time cost of the draft,* $(d = 0.4)$, *the welfare of the country with a draft army* $(-1.\,532\,5)$ *is lower than the welfare of the country with a professional army.*[13]

To evaluate the welfare levels adjusted for the natioanal security effect, we need to introduce two more parameters to capture the quality of the reserve under the draft army. We assume that the high-risk country keeps up the quality of her reserve at a higher level by ex post military training than the low-risk country the latter making less those investments. Such an effect is measured by parameters $\lambda^H = 0.4, \lambda^L = 0.1$, say.

Given our parametrization, under the draft with a low time cost $(d = 0.1)$, the welfare levels are -1.0092 for the high-risk country and -0.94469 for the low risk country. Under the draft with a higher time cost $(d = 0.4)$, the welfare levels are lower, -2.2256 and -2.1611 for the high-risk country and the low-risk country, respectively. The welfare levels under the professional army are $-2.\,4229$ for the high-risk country and $-1.\,8333$ for the low-risk country.

These numerical examples which include the security effect speak for themselves rejecting the PW proposal. With the chosen parametric values, *the welfare levels of both low-risk countries and high-risk countries under the draft with a low time cost are greater than the welfare levels of countries with professional army.*

3.5 The security gain from the reserve under draft

To illustrate the role of the reserve under the draft army, we use the above numerical values. Recall that under the draft army with a reserve, the security gain arising from the reserve is given by $\lambda^i 2, i = H, L$. Under the professional army, the security gain is given by $[\tau\,(2-\alpha)\,2b]\,(2+\tau ab)^{-1}$. Inserting the numerical values, we obtain that the (logarithmic) security gain from the reserve in the country in a high-risk class with a draft army is $0.336\,47$ and in the low-risk class it is $0.095\,31$. In the case of a professional army with no reserve, the security gains from the army are smaller. For a high-risk country it is -0.95932 while it is -0.69609 for a low-risk country. These illustrations highlight the role of the reserve in the generation of the national security.

3.6 Graphic illustration

Our results provides counter examples to the earlier PW result showing that theirs is not robust. There are countries where their result may hold (Sweden) but there are also countries where it may not (Israel, Finland). Figure 1

[13] The negative signs of course arise from the logarithmic transformation.

illustrates the welfare comparison.[14]

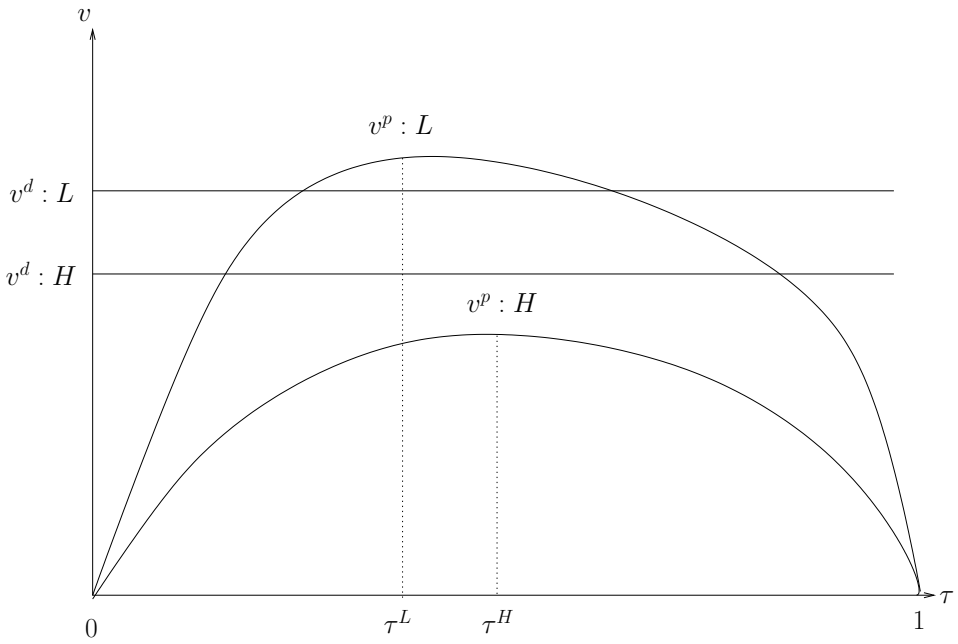

Figure 1: The welfare comparison between a draft army and a professional army in various risk-classes of countries.

4 Conclusion

The proposition of Poutvaara and Wagener concerning the superiority of a professional army over a draft army may hold as an optimal solution for internal threat in the society to be controlled by a policy force and hired from the labor market. In the case of an outside threat, we have shown that their analysis fails in that the threat to the national security is not properly introduced and that the role played by the draft as a reserve in the subsequent period is overlooked. Once such an extension is carried out, their result turns out not to be robust. We also suggest that the empirical evidence referred to by PW is probably inappropriate as no allowance is made on the distinction between high-risk and low-risk countries neither is there an allowance for the alliance effect allowing for the opportunism option. Throughout the paper, we have assumed that the relevant no-arbitrage military salary is not affected by the risk for external intervention. In high risk countries there, is a non-negligible risk for an early death in duty, which should be reflected in a premium military salary. In a

[14] While the reported welfare levels are negative we have located the welfare levels above the horizontal axis.

draft army, on the other hand, the safety provision is the duty of every citizen. This further strengthens the case for a draft army in high-risk countries.

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