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**WARFARE AND WELFARE?**

**Understanding 19<sup>th</sup> and 20<sup>th</sup> Century  
Central Government Spending**

**Jari Eloranta**

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# **WARFARE AND WELFARE? Understanding 19<sup>th</sup> and 20<sup>th</sup> Century Central Government Spending**

Jari Eloranta  
Marie Curie Fellow  
Department of Economics  
University of Warwick (UK)  
Coventry, CV4 7AL, UK  
e-mail: [Jari.Eloranta@warwick.ac.uk](mailto:Jari.Eloranta@warwick.ac.uk)

## **Abstract**

This paper evaluates theories aiming to explain the size and growth of government spending, develops a framework inclusive of the so-called guns vs. butter tradeoff effect, and offers insights especially for the period 1870-1938. There were differences between the excessive and responsive government explanations, and between the long-run and short-run explanations, as well as cross-section and time series approaches. Here central government spending, conditioned by the regime characteristics, is proposed to be analyzed on the basis of the demand characteristics of military spending and social spending, their interaction, public debt constraints, as well as institutional constraints and other environmental variables.

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## Introduction

The purpose of this paper is to offer a critical assessment some of the theories and models aiming to explain either the size of government or its growth, and to advance an alternative framework for empirical testing. More precisely, I will be interested in those applications that explicitly address central government expenditures or can be applied to the analysis of central government spending. This selective review will enable us to create a more suitable theoretical framework for analysis, especially in the formation period for the welfare states, namely from circa 1870 to 1938. This paper is divided into five parts. The introduction will be followed by brief glance at the data and the various puzzles that arise. Thirdly, I will provide an overview of the theoretical solutions offered so far. The fourth section of the paper will focus on constructing a framework for the analysis of central government spending in the said period. The paper will then be concluded by a discussion of the key issues in the paper as well as further challenges.

First of all, this paper aims to build a framework for answering the following question: What explains the demand for central government spending in the crucial formation period for the modern welfare states, namely in 1870-1938? This sample period will conveniently feature major global crises (*global war*: the First World War; *economic crisis*: the Great Depression) as well as extensive variability in the underlying regime characteristics, both across cross-sections and in time series terms. Moreover, what are the forces that explain the growth of government spending before the next expansion phase, the post-Second World War era? Did this growth set the foundation for the spending behavior of the welfare states? As argued here, the key to understanding this phenomenon lies in the analysis of the external environment of countries, their regime type, income and debt as constraints, tradeoff between military and social spending, and certain institutional features in the political markets. Regime is here argued to be decisive in determining especially the military and social spending behavior of countries. Moreover, the possibility of a tradeoff between these two public goods has not been researched comprehensively so far. The purpose is *not* to focus on the local-level (local, municipal) public goods production and the relevant decision-making processes, although certain externality and crowding-out effects will be explored briefly. Even though this distinction may not be altogether possible for all the data to be analyzed, it will make the analytical framework less complicated. The definitional issues related to this type of study, especially as far as the data are concerned, are not discussed here beyond certain starting points.<sup>1</sup> The core sample of countries here consist primarily of, due to both data and other selection criteria in this author's other works, Belgium, Denmark, France, Italy, the Netherlands, Portugal, Spain, Sweden, Switzerland, UK, and USA. These countries have the most uniform data for the time period in question. They will also form a comprehensive panel data sample, since they include some of the most important international players of the period. Also, differences between regime types and other political factors will emerge from the comparisons, especially since also other selections

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<sup>1</sup> For more on discussion of the data for the period concerned, see especially Lindert 1992 and 1993 as well as Eloranta 2002.

of countries (Japan, Germany, Russia, Austria, Finland, Norway)<sup>2</sup> will be used in some of the broader statistical comparisons (for example, social spending).

In terms of data, I want to focus on both the determinants of the size and the growth of central government (as a spending share of GDP). Firstly, here I will utilize central government spending figures (Central or Federal Government Expenditures = *CGE*) arising from various historical statistics collection efforts, growth accounts, and other databases, including figures on sub-categories of *CGE* – on military spending (Military Expenditures = *ME*) as well as on social spending (Social Expenditures = *SE*) – and other indicators. Both are essentially consistent with the OECD and growth accounting criteria for decomposed parts of central government spending. Following Peter Lindert, social transfers equal expenditures on welfare and unemployment compensation, pensions, and health subsidies. Moreover, *SE* comprises social transfers plus government subsidies to education.<sup>3</sup> The definition of military expenditures utilized here follows Frederick L. Pryor's (1968) definition, with certain minor differences.<sup>4</sup> In certain isolated cases it is possible to employ an economically more precise definition, arising out of national accounting procedures.<sup>5</sup>

Finally, we should provide a working definition of one of the key terms in this type of study: the welfare state. Naturally this can be a difficult task. Broadly the welfare state can be said to describe the state's activities in four broad areas: 1) cash benefits; 2) health care; 3) education; 4) food, housing, and other welfare services.<sup>6</sup> There is usually considerable overlap between the governmental redistributive programs, insurance programs, and income-maintenance (welfare) programs. Other problematic issues in the analysis of the welfare state include the fact that sources of welfare often transcend the limits of state activity, the modes of delivery vary greatly, and the boundaries of the welfare state are in a constant state of flux. As a generalization, welfare states can perhaps be broadly split into *residual* (USA) and *universal* (Nordic countries).<sup>7</sup>

How did central government spending patterns develop in this period? Military spending and social spending (in addition to public debt commitments arising from them) were the key components in the budget. Social spending, which started from nearly zero in most countries in late 19<sup>th</sup> century, began to exert a continuous upward pressure on central government spending. Military and social expenditures are argued not to have been perfectly interchangeable, i.e. only an imperfect *tradeoff* could have occurred. Overall spending levels before the First World War, however, did not increase substantially

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<sup>2</sup> See e.g. Lindert 1992 and 1993 and Eloranta 2002 for further details.

<sup>3</sup> Lindert 1996, 1. See also Lindert 2004.

<sup>4</sup> Pryor 1968, 85—86. See also Eloranta 2002a.

<sup>5</sup> On classifications of government consumption, see Clement 2000, 22—35. Here I will not focus on these issues; see above-mentioned sources for more on definitions and data.

<sup>6</sup> Barr 1992, 742. Thus, social spending will focus on four types of uses of government funds: 1) welfare and unemployment compensation; 2) pension subsidies, 3) health subsidies; 4) housing subsidies. Of these, the last is the least progressive, and the first the most. See Lindert 1994, 2-3.

<sup>7</sup> Lindert 1992, 2; Barr 1992, 743. On different types of welfare states and especially the Scandinavian “model”, see e.g. Esping-Andersen 1984. One could argue that the “warfare state” preceded them and also persisted throughout the 20<sup>th</sup> century.

perhaps due to the incremental nature of the increases. In turn, military spending levels decreased temporarily in the 1920s and increased again in the 1930s. SE and B (=borrowing and its costs) contributed to central government spending totals as well, especially due to the huge rebuilding efforts of the 1920s. Equally, many new social spending programs were introduced.

The framework advanced in this paper maintains that there were essentially two constraints on central government spending: 1) the aggregate income; and 2) institutional (and other endogenous revenue) constraints. The choice of the public goods in these countries, for example the demand for security against external or internal threats, was essentially conditioned by the political system. For democracies, the threshold of tax resistance would be reached, with abrupt increases in government spending often caused by exogenous shocks, leading to even broader utilization of public debt and more progressive taxation for revenue purposes in the interwar period. For autocracies, the primary constraint would be income, i.e. the rational autocrat would not push extraction rates beyond a level at which he would begin to compromise his future extraction. Beyond the implications of the political system and the subsequent tradeoff pattern, one should look at public debt constraints as well as the institutional constraints affecting their spending patterns, including for example laws affecting the budget's composition. Finally, also external influences, not just shocks, such as threats and spillover effects from other countries should be investigated. Countries in this sample represent the spectrum between democracies and autocracies quite well, thus providing a good basis for the more in-depth subsequent testing of the overall framework advocated here.

### **Central Government Spending 1870-1938: Some Data Puzzles and Implications**

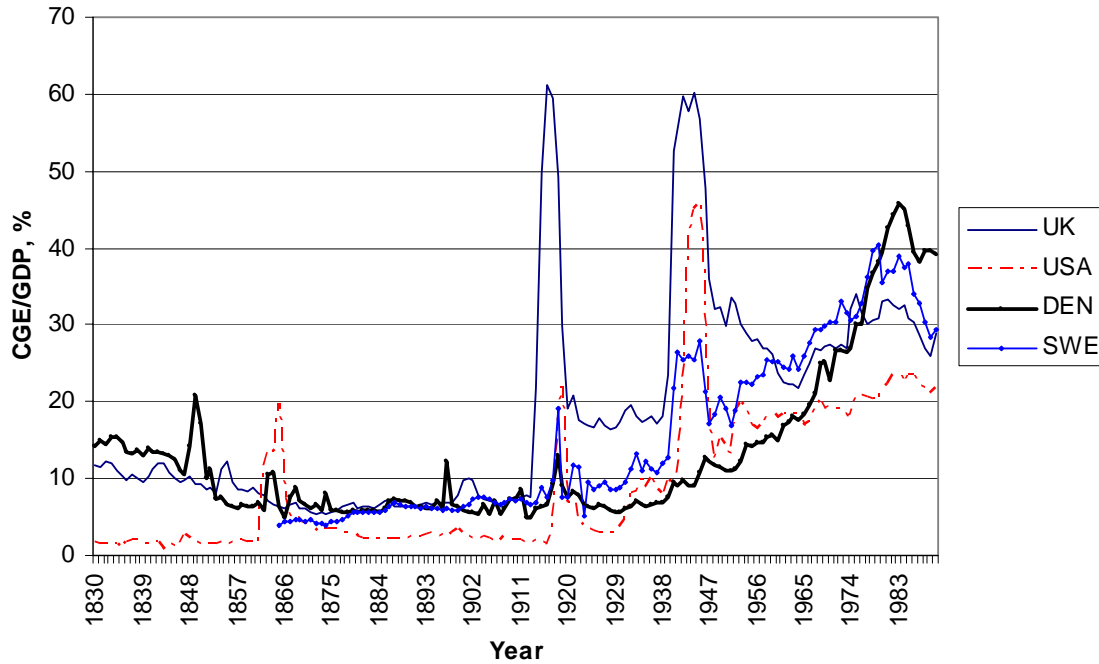
When one inspects the long-term central government spending patterns of Western states, it seems that there have been four separate “phases” in the 19<sup>th</sup> and 20<sup>th</sup> centuries. As seen in Figure 1 below, central government spending levels were fairly devoid of any growth trend until the First World War, although there were obvious differences between the spending patterns of the various Great Powers.<sup>8</sup> Subsequently, government spending started to increase in the interwar period, especially in the 1930s. After the Second World War, the effect of the emerging welfare state can be observed until the 1980s. The last phase seems to be the leveling off stage or decline for the modern welfare states.<sup>9</sup> What happened before and after the First World War to lead to such distinct patterns?

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<sup>8</sup> See Eloranta 2003 for more.

<sup>9</sup> See Lindert 2004. Cyclical elements, manifesting in frequent spikes, should be studied in more detail. Here I wish to only comment on the broad patterns. The choice of four countries is mainly dictated by the availability of reliable long-term data.

**Figure 1. Ratio of Central (or Federal) Government Spending to GDP, Percentage, 1830-1990**



**Sources:** see Eloranta 2002 and Eloranta 2003 for details. Further details available from the author.

First of all, the gradual change began earlier than this global conflict. The 19<sup>th</sup> century introduced fiscal reforms for Western states such as reliance on balanced budgets, innovations in public debt management, and direct taxation. These reforms were supported by the industrial revolutions and rising productivity levels, as well as accompanied by an industrialization of war and armaments production from the mid-century on. The economic challenges posed by these changes differed. In the French case, the mean defense share (=ME, ratio to central government expenditures, CGE, %) fell to 8.9 per cent in 1870—1913 compared to the early 19<sup>th</sup> century level, circa 35 per cent, whereas its military burden (=ME, ratio to GDP, %) rose modestly to 3.7 per cent. So, the French CGE increased, as a total, faster than its military spending, possibly due to its debt commitments arising from the Franco-German war of 1870-1871. In the British case, the mean defense share in 1870—1913 declined slightly to 37.5 per cent, whereas the strength of the British industrial economy also enabled a slight military burden decline to 2.6 per cent, a similar figure incurred by Germany in the same period. For most countries the period leading to the First World War meant comparatively higher military burdens than in the early 19<sup>th</sup> century. Furthermore, the military burdens of the Great Powers were higher and varied more than those of the small and medium powers on the average. Interestingly, the United States, the new economic leader, incurred a meager 0.7 per cent average military burden, similar to the interwar period.<sup>10</sup>

<sup>10</sup> Eloranta 2003.

Social spending, as Peter Lindert has pointed out, varied greatly across nations as well. For example, the social spending of Great Powers and smaller states alike at the national level was almost non-existent until the industrialization wave of the 19<sup>th</sup> century. Nonetheless, the pace and the levels that these countries chose in terms of their social spending differed greatly. In fact, neither Germany nor the UK played a key leadership role in this respect before the First World War, rather than the Scandinavians, especially Denmark. Weimar Germany did emerge as a strong contender in the interwar period. Social transfers, nonetheless, were quite rare in 1880, when traditional forms of poor relief still persisted, although they became much more common by the turn of the century. One big watershed in this respect was the First World War, which extended the voting franchise dramatically and increased the demand for SE in most Western countries.<sup>11</sup>

In the interwar period, especially in the 1920s, central government spending was often static by nature, due to turbulent domestic politics. Upward pressure was exerted especially by the ballooning of public debts due to the war and its consequences as well as by the new focus on social spending programs. However, although among democracies defense shares dropped noticeably, their respective military burdens stayed either at similar levels than before the war or even increased in 1920-1938: For example, the mean French military burden rose to 7.2 per cent. The brief respite in the armaments race in the 1920s was a rather halfhearted effort. Also in Great Britain the defense share mean dropped to 18.0 per cent, yet the military burden mean actually increased. For these countries, the mid-1930s marked the beginning of serious rearmament, yet their authoritarian challengers had begun even earlier.<sup>12</sup> Similarly, the Great Depression formed another watershed in terms of social and military spending, although this dimension has been studied less so far.

In fact, what does the data tell us? Here I will take a preliminary look at the income levels, military spending, social spending, and democracy levels in the 16 countries (minus Finland) mentioned in the introduction, with the premise that multivariate analysis will be necessary to check the validity of these impressions. As seen in Figure 2 below, there seems to have been a slight negative correlation between the military burdens and the income levels throughout the period 1870-1938, with the exception of the cross-section for 1870. Overall it seems that the richer countries spent relatively less on their military needs than the poorer ones. This relationship is corroborated by the quantitative analyses undertaken by this author earlier.<sup>13</sup> Why? Most likely it was due to the reluctance of the richer, usually more democratic regimes to invest, in relative terms, in further armaments and military manpower.

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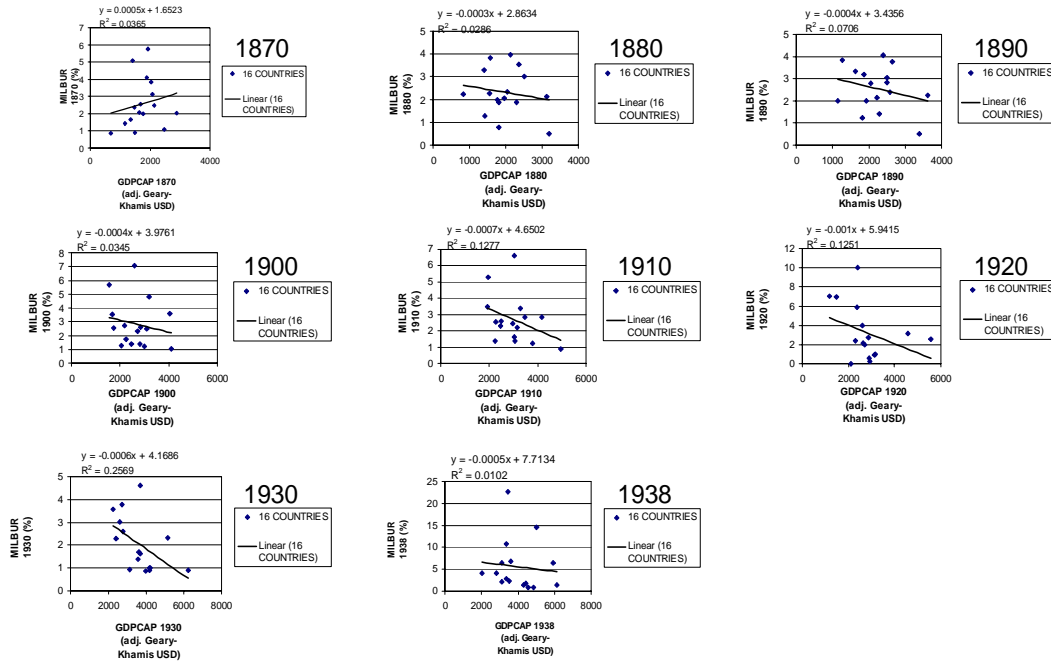
<sup>11</sup> Lindert 1994.

<sup>12</sup> See e.g. Eloranta 2002.

<sup>13</sup> Eloranta 2002; Eloranta 2003.



**Figure 2. Military Burdens (=Ratio of ME to GDP, %) Plotted Against GDP per Capita Levels, 1870-1938**



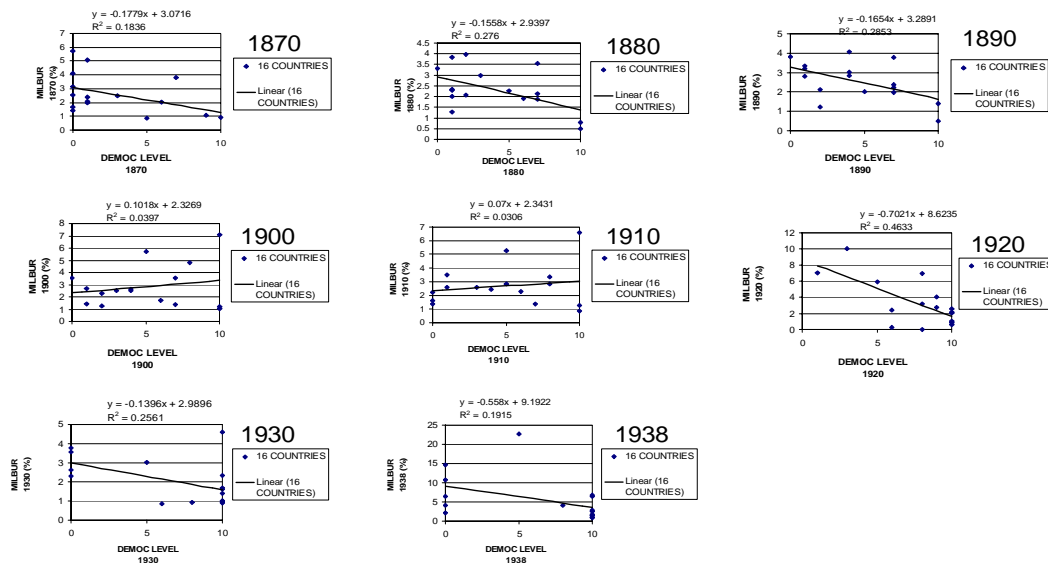
**Sources:** see Eloranta 2002 and Eloranta 2003. On definitions, see Eloranta 2002. *Countries included:* Austria, Belgium, Denmark, France, Germany, Italy, Japan, the Netherlands, Norway, Portugal, Russia/USSR, Spain, Sweden, Switzerland, UK, and USA.

Moreover, with the exception of the cross-sections for 1900 and 1910, higher levels of democracy seemed to exert a negative pressure on the military spending of these 16 nations (see Figure 3). This is again consistent with earlier findings that more democratic nations, *everything else being equal* (especially external factors such as threats and spillovers), spent less on their military than centralized, autocratic nations.<sup>14</sup> Social spending, in turn, was also sensitive to changes in income and democracy levels in this period. In fact, much of the rise of social transfers from 1880 to 1930 was primarily a response to the aging of the populations and the diffusion of democratic attributes.<sup>15</sup>

<sup>14</sup> Eloranta 2002.

<sup>15</sup> Lindert 1994.

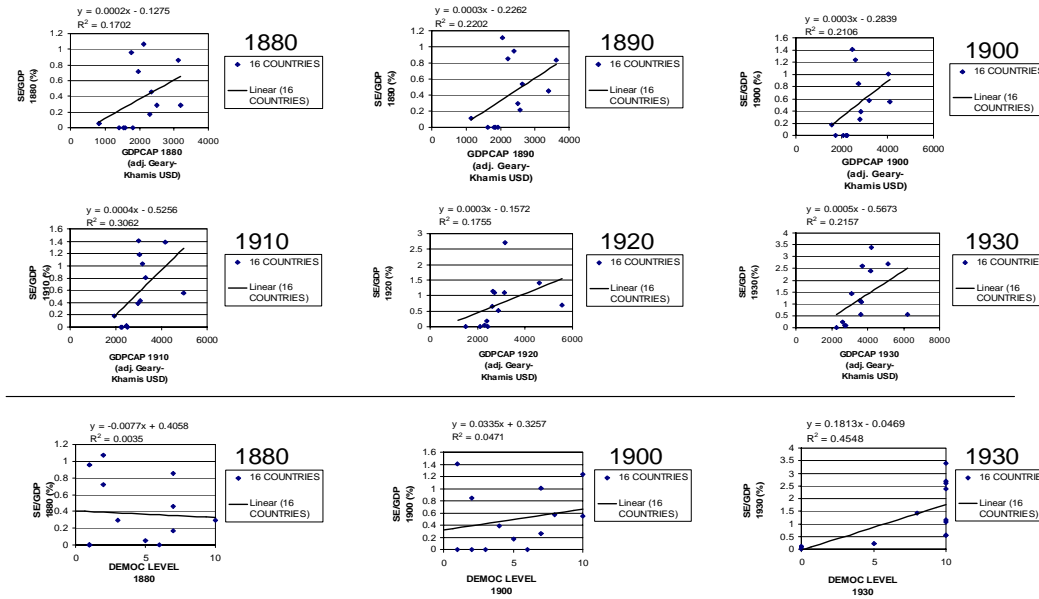
**Figure 3. Military Burdens (=Ratio of ME to GDP, %) Plotted Against Democracy Levels (0-10), 1870-1938**



**Sources:** see Eloranta 2002 and Eloranta 2003. Democracy scale used is the so-called Polity IIID scale, 0 indicating an autocracy, 10 indicating a “perfect” democracy. For the choice of countries, see Figure 2.

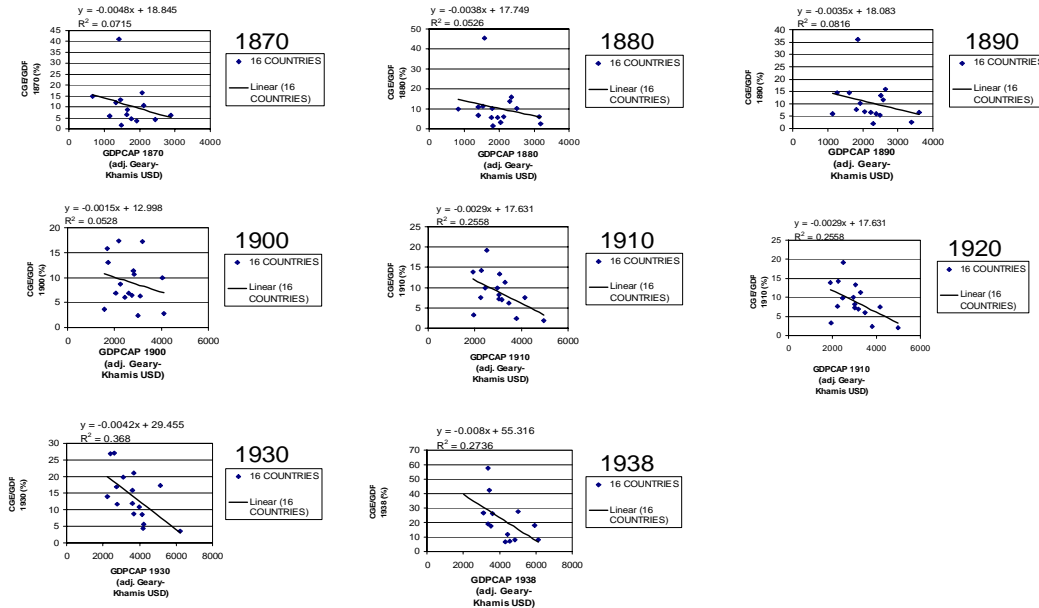
As seen in Figure 4 below, richer countries preferred more social spending than the poorer ones, and democracies spent relatively more on SE than the autocracies (with the exception of year 1880). Thus, it seems that the demand structures of the autocracies and democracies, as the two opposite poles among regimes, were by and large different. Pure democracies or autocracies did not, of course, exist, so the states in the sample represented a sliding scale (using the Polity IIID indicators) between the extremes.

**Figure 4. Ratio of Social Spending to GDP, Percentage, Plotted Against GDP per Capita (Upper Part) and Democracy (0-10, Lower Part) Levels, 1880-1930**



**Sources:** Lindert 1992 and Lindert 1993. The Lindert studies do not include data for the years 1870 or 1938 (as in the ME comparisons). Countries included are the same as in Figure 2, with the exception of Germany, Switzerland, and Russia.

**Figure 5. Ratio of Central Government Spending to GDP, Percentage, Plotted Against GDP per Capita, 1870-1938**



**Sources:** see Eloranta 2002 and Eloranta 2003 for details. Same countries as in Figure 2, with some data gaps for the 1920s and 1930s.

Moreover, in terms of aggregate central government spending, higher relative income levels seem to have led to lower relative central government spending levels throughout the period. Thereby, the impact of deficits and the growing stock of public debt (especially in the interwar period) must have been substantial, directly linked to big exogenous shocks such as wars and international economic crises. Furthermore, the negative correlation increased in the interwar period, seen in Figure 5 above.

Overall, it thus seems that countries differed in their central government spending behavior on the basis of, at least, their income and democracy levels. Firstly, democracies and more wealthy countries had a higher demand for social spending than autocracies. Similarly, the level of democracy (leading to higher franchises and stronger executive branch accountability especially after the First World War) constrained, everything else being equal, their military spending aspirations. Secondly, wealthier countries seemed to have been able to maintain smaller relative central government spending levels than the poorer ones. Thirdly, it might be plausible, as seen later, that the relationship between these variables changed due to the First World War. Yet, the possibility of other exogenous shocks, especially international economic crises, playing a role needs to be analyzed further. Finally, the role of public debts, and deficit spending in general, and the possibility of ME-SE tradeoffs should be investigated in more detail.

### **Theories of the Size and Growth of 19<sup>th</sup> and 20<sup>th</sup> Century Governments**

In the following I will provide an overview of the numerous explanatory frameworks of the increased economic role of the state among the 19<sup>th</sup> and 20<sup>th</sup> century polities. By default this review is not exhaustive and certain subjective categorizations will be used. Nonetheless, this section will illustrate how this topic has been studied before and how it might be studied further. There are certain key findings that permeate this section: 1) the variance between rigid theoretical exercises and, correspondingly, somewhat *ad hoc* statistical explanations as two extreme poles; 2) the difference between excessive and responsive government (or normative and positive) explanations; 3) the differences between long-run models and short-run explanations, as well as cross-section and time series approaches; 4) the differences between theories predicting either a monotonic rise in the role of government, an end to this rise, reversal of this rise, and other more conditional (perhaps history-dependent) approaches. Furthermore, we can say that it is possible to compile many competing hypotheses for testing the demand-side influences, yet many supply-side influences may be crucial for understanding these processes as well. Finally, it is the emphasis here that many of the frameworks advocating single-cause explanations and utilizing too aggregated indicators should be abandoned to make way for more disaggregated, multivariate analysis of the components driving the demand for central government spending.

There is a plethora of frameworks available for the study of government spending. The first of the newer theories emerged at a time when government spending increases coincided with sharp increases in aggregate income at the end of the 19<sup>th</sup> century. Most of the 19<sup>th</sup> century classical economists advocated minimal state involvement, thereby leaning on the tenets of Adam Smith and others. Even though Smith for example was an

advocate of state provision of education, state activities were mostly limited to national defense, policing, and administrative functions. Due to challenges brought to fore by Marxists, institutionalists, and the so-called German school of economics (for example Wagner), the redistribution of wealth was added to the “normal” functions of governments.<sup>16</sup> Thus the battle lines were set: The defenders of tax-funded social programs have come to praise such programs as high-return investments that benefit the society as a whole, whereas the opponents have focused on the incentive-gap built into these measures.<sup>17</sup>

There are essentially two different problems for a researcher to focus on: How to explain the *size* of governments, and how to explain the *growth* of governments, measured with whatever indicators or proxies. In fact, the size of public sector is quite an ambiguous concept and there are different ways of measuring it. For example Cullis-Jones (1987) pointed out at least six possible numerators and eight possible denominators when estimating the public sector’s share in the economy.<sup>18</sup> In essence the size or the growth of governments, usually vis-à-vis the economy, are commonly estimated either by fairly conventional statistical demand models or by utilizing normative welfare economics theories of market failure, such as the theory of public goods. Supply side influences are in turn brought in via various public choice models, in which median voters, interest groups, and the analysis of bureaucracies form the analytical core.<sup>19</sup>

One way of grouping these explanations is to follow the lead of William Berry and David Lowery. They divide the explanations on the size of the public sector into two categories: *the excessive government view* and *the responsive government view*. The former sees the institutions of government as fundamental to understanding the growth of the public sector, and the demand for expansion is perceived as originating from within the government organizations themselves.<sup>20</sup> Another variant of this explanation, advocated especially by Mancur Olson, is that the pressure from outside the government by embedded special interests will drive this excessive growth process. Firms, either on their own or more commonly through joint trade organizations and ultimately their national peak association, attempt to obtain benefits from governments via different rent seeking strategies such as campaign funding and political networking.<sup>21</sup> As argued by Gordon Tullock<sup>22</sup>, rent-seeking behavior is said to occur when the profits exceed the opportunity costs for the owners of resources in the political markets, with the costs of these actions entailing a waste of social resources. In turn, the responsive government view considers governments as reacting more passively to external demands on public sector activity, and the pressure activity on decision-making is assumed to indicate public preferences, in essence acting as a thermostat of sorts. If the level of policy differs from the level the public prefers, the public favors a corresponding change in policy until the change is made. This signal will induce election-maximizing politicians to respond accordingly. Of

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<sup>16</sup> Tanzi-Schuknecht 2000, 3-5.

<sup>17</sup> Lindert 2004, 1-2.

<sup>18</sup> Cullis-Jones 1987, 67-71.

<sup>19</sup> Breton 1989, 718-719; Brennan-Pincus 1982, 351; Drazen 2000.

<sup>20</sup> Berry-Lowery 1987, 401. See also Lowery-Berry 1983.

<sup>21</sup> See especially Olson 1965. On application to military spending analysis, see Eloranta 2002.

<sup>22</sup> Tullock 1967; Tullock 1980.

course, this variant of the responsive government view relies on democratic institutions being in place.<sup>23</sup>

Another way of categorizing the explanations of government spending, size or growth, and the rise of the welfare state is to look at what they imply in terms of the continuity of this growth process. Following Lindert, these competing theories can be divided into five categories: 1) theories implying a monotonic rise of the government spending share; 2) theories implying an end to the rise; 3) theories implying an eventual reversal; 4) more conditional predictions; 5) history-dependent hypotheses testing. The first of these includes such well-known explanatory frameworks as the *Wagner's Law* and *Baumol's Disease*<sup>24</sup>, which essentially argue that government spending has an income elasticity of more than one.

Wagner's Law is based on the notion that government expenditure increases at an even faster rate than output due to three forms of state activity: maintenance of external and internal order, participation in material production, and the provision of such economic and social services as postal, education, and banking services. The key ingredient in it is industrialization and the changes it imposes on the state's role. It is to be noted, however, that Wagner himself expected this to hold in his near future, not necessarily in the long run.<sup>25</sup> This notion has been tested extensively by economists and other social scientists, usually by utilizing different proxies for economic development and government share in the economy. For example Rati Ram has undertaken testing of the various indicators, based on both time series and cross sections, for 115 countries. He found support for the Wagner's Law between some of the time series, but overall this relationship seems to be overly simplified as a useful hypothesis.<sup>26</sup> Baumol's Disease refers to the notion that the rise of government is an inelastic response to the secular rise in the relative price of services, with this price being tied to the real wage rate. Wage increases brought on by labor unions, despite small or nonexistent productivity improvements in the public sector, are said to be driving this process. Similar to the Wagner's Law, Baumol's Disease can be criticized on the basis of its automated nature, often said to imply a permanent government growth path.<sup>27</sup> Indeed, as Alan Peacock and Jack Wiseman asked already in 1961: Is it realistic to expect the character or the determinants of government behavior to remain constant over any long period of time?<sup>28</sup>

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<sup>23</sup> Berry-Lowery 1987, 402; Wlezien 1995, 982. See also Lindert 2004 on the importance of democratic institutions on government spending responses.

<sup>24</sup> Others include William Niskanen's theory of bureaucratic growth (see Niskanen 1971), Mancur Olson's institutional arteriosclerosis hypothesis (see especially Olson 1982; on subsequent applications, see for example Gray-Lowery 1988), Wilensky's Law (based on surpluses of economic development being invested for social purposes), and the Peacock-Wiseman displacement hypothesis (more on this in the text). See Webber-Wildawsky 1986, 569-580.

<sup>25</sup> Peacock-Wiseman 1961, 16-18; Lowery-Berry 1983, 667-669.

<sup>26</sup> Ram 1987, 194-195; Singh-Sahni 1984, e.g. 631; Lindert 1994, 21. Many authors in fact denounce Wagner's Law as a useless explanatory framework due its simplicity and difficulties involved in the measurement of this relationship. Its automatic nature, similar to other such frameworks, is also often criticized. See e.g. Tanzi-Schuknecht 2000, 1, 15, 23.

<sup>27</sup> Cullis-Jones 1987, 84-85. For more, see Lindert 1994; Lindert 1996.

<sup>28</sup> Peacock-Wiseman 1961, 15.

Consequently, they developed another famous hypothesis for the analysis of long-term growth paths of government expenditures, later known as the *Peacock-Wiseman displacement hypothesis*. Peacock and Wiseman divided the explanatory forces on government spending into two groups: 1) permanent influences on government expenditures (income, population growth, prices, level of employment, and the “political nature of the society concerned”; 2) displacement effects and the concentration process, i.e. the idea that wars (and other large economic shocks) may be the driving force behind changes in government spending patterns. The basic idea is that governments are forced to respond to the challenges posed by such shocks, i.e. the commitments arising from debt commitments, war pensions, and other similar issues. At the same time, increased wartime taxation would induce a change in the public’s tolerance for taxation. Finally, the social programs introduced either on the basis of these conflicts or merely coincidentally would be path dependent.<sup>29</sup> These changes can bring forth a permanent change or a temporary shock in government spending levels. As Karen Rasler and William Thompson have argued, it may be that only global wars (or other global economic shocks) have this effect on government spending. They discovered support for this finding especially in connection with the Napoleonic wars and the two world wars. Lata Chatterjee and Syed Abu Hasnath in turn found support for a displacement pattern in U.S. public construction expenditures in the long run, yet they deduced them to have been the result of counter-cyclical policies.<sup>30</sup> Overall, this hypothesis – like many of the other single-cause, permanent change models – is difficult to prove conclusively.

It is possible to link some of these single or multiple cause explanations to theories implying an end to the growth of governments and even a reversal. Often they are based on the notion of deadweight costs and governance structures. In essence, national deadweight costs of redistribution, i.e. the rise of redistribution will be curbed because of the soaring costs, economic and political, involved. Thus, the expansion would check itself eventually due to stopped development. Respectively, democracy is similarly invoked as the key mechanism that will channel the controlling responses of the majority to the decision-makers. Reversal could, since most successful states have relied on long-term credit in order to survive endogenous and exogenous shocks, be the result of a decline in the social transfer share via a fiscal crisis. Hence, for example, Spain’s decline in the 17<sup>th</sup> century can be linked to the lack of long-term credit as well as poor fiscal management.<sup>31</sup> The harmful effect of the deadweight costs can be theorized to emerge as result of change in the influence balance between different interest groups and the subsequent tax distortions. As Gary Becker has maintained, deadweight costs stimulate efforts by taxed groups to lower taxes, but discourage efforts by subsidized groups to raise subsidies.<sup>32</sup> In their extreme form these deadweight costs may impose their own “momentum” on public spending paths, either due to external or internal growth tendencies.<sup>33</sup>

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<sup>29</sup> Peacock-Wiseman 1961, 21-31; Lindert 1994; Lindert 1996; Webber-Wildawsky 1986.

<sup>30</sup> Rasler-Thompson 1989, 106-109, 121; Rasler-Thompson 1985; Chatterjee-Hasnath 1991, 42, 51.

<sup>31</sup> Lindert 1994, 5-6; Eloranta 2003; Webber-Wildawsky 1986.

<sup>32</sup> Becker 1983, 372-373. See also Hartley 1987; Hartley 1991; Eloranta 2002 for applications of public choice notions in military spending decision-making.

<sup>33</sup> Lindert 1996, 5. See also Downs 1967 on the possible intra-bureau utility maximization. In addition, see Kraan 1996 on budgetary processes.

The most convincing investigations of the determinants of government spending – be it local, municipal, or central (or all of them combined) – have focused on long-term, usually multivariate analysis. This means the inclusion of more conditional predictions by utilizing independent variables that need not have secular trends, such as the age of the population and various institutional proxies. The case has been made repeatedly for analysis going beyond the usual post-Second World War period obsession. This type of analysis will enable a deeper investigation of the different initial takeoffs by countries as well as provide a more varied sample in terms of the institutional characteristics (for example, the different aspects of democratization) of these countries.<sup>34</sup> As Albert Breton has argued succinctly, there are essentially two ways of analyzing government spending: 1) by focusing on long-term time trends; 2) by focusing on comparisons between countries through cross-sectional analysis. Indeed, it may be difficult not to violate significant *ceteris paribus* assumptions in cross-sectional analysis. The more comprehensive studies usually also emphasize the need for both cross-section *and* time-series analysis, with particular attention being paid to the issue of endogeneity and exogeneity among the variables.<sup>35</sup> It seems that none of the dominant single-factor explanations seem capable of beginning to account for even the post-Second World War changes in the government spending roles.<sup>36</sup>

Based on Table 1 below, it may be possible to summarize some of the commonalities in the choices for independent variables among a limited sample of studies of government spending. Firstly, it seems that many of them include typical demand variables, based on the theory of public goods, such as income, prices, preferences, and various externality and crowding-out effects. Secondly, many also include changes in the political system – including indicators on democracy, elections, the relative position of various interest groups, bureaucracy, ideology and parliamentary competition, and other institutional changes – as key variables. Thirdly, many equally prefer to include other indicators of economic change, going beyond the single-factor emphasis on income growth, such as the age distribution, income distribution, population growth, and public debt. Finally, some of the studies argue for the inclusion of exogenous shocks – especially wars and subsequent commitments arising from the conflicts, toleration of higher taxation due to such shocks, as well as changes in the public support and perception of specific policies – as explanatory variables.

Two examples illustrate the need for comprehensive panel data analysis, the importance of disaggregating the analysis, and the significance of understanding the political economy behind the decision-making processes. Dennis Mueller and Peter Murrell, for example, have emphasized the role of political economy variables in their analysis. By utilizing different indicators of the size of government, they sought to explain this phenomenon on the basis of median income, tax prices, mean income, population growth, ethnic fractionalization, number of interest groups, political fractionalization,

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<sup>34</sup> For an overview of the social spending patterns and explanatory frameworks relating to them over several centuries, see Lindert 2004.

<sup>35</sup> Breton 1989, 719; Lindert 1994, 6-7; Ram 1987.

<sup>36</sup> Berry-Lowery 1987, 402.



**Table 1. Examples of Models Suggesting Multiple Explanatory Variables for Explaining Government Spending, Either Implicitly or Explicitly**

<i>AUTHOR(S)</i>	<i>PHENOMENON EXPLAINED</i>	<i>INDEPENDENT VARIABLES</i>
Abizadeh-Gray 1985	Size of government	Time, income, agricultural share in the economy, energy consumption per capita, trade openness, financial intermediaries
Berry-Lowery 1987	Size of government, disaggregated	(Among others): Party control in the parliament, share of persons under 18 in the population, number of households, public debt, tax system, unemployment, elections, size of specific population groups, producers as interest groups
Breton 1989	Growth of government	Preferences, income, given tax or pseudo-prices, other variables (based on theories of public goods, externalities, median voters, bureaucracy)
Cullis-Jones 1987	Size of government	Tax prices, income, complementarity and substitutability (private vs. public sector), preferences and tastes, population size and structure
Meltzer-Richard 1981	Size of government	Changes in the franchise, changes in the economic position of the median voter
Mueller-Murrell 1985	Size of government	Median income, tax prices, mean income, population growth, ethnic fractionalization, number of interest groups, political fractionalization, skewness of income distribution, degree of enfranchisement, size of bureaucracy, start of modernization
Offer 2002	Growth of public sector	Wars and subsequent public debt servicing, electoral preferences, economic opportunities, ideology
Peacock-Wiseman 1961	Growth of government (spending)	Income, population growth, prices, level of employment, public debt, other displacement effects
Rasler-Thompson 1989	Size of government	Global wars and their permanent impact on both military and non-military expenditures
Tanzi-Schuknecht 2000	Growth of public spending	Urbanization, economic development, aging of population, political system and changes in it

**Sources:** the studies listed in the table.

skewness of the income distribution, degree of enfranchisement, size of bureaucracy, and start of modernization.<sup>37</sup> Even though their results are undermined by their small sample size, they do come up with relevant findings: 1) The number of interest groups is positively related to the relative size of government; 2) An increase in population leads to a less than proportionate increase in the size of government, exhibiting basic public good characteristic; 3) There is some support for median voter hypothesis; 4) The number of parties and number of interest groups have a complementary, positive impact on government size.<sup>38</sup>

These results may or may not hold in the long run. William Berry and David Lowery in turn utilize multiple, multivariate equations to determine the validity of hypotheses arising from the previously mentioned excessive and responsive government explanations. They emphasize strongly the need to disaggregate the analysis, since the forces affecting government purchases of goods and services versus transfers are theoretically different. Certain purchases may be, for example, more prone to rent seeking. They include, among others, the following variables as explanatory forces: party control in the parliament, share of persons under 18 in the population, number of households, public debt, tax system, unemployment, elections, size of specific population groups, and producers as interest groups. On the basis of a post-war U.S. sample and multiple equations, they find more support for the responsive government view, yet external influences, especially interest groups, seem to have played a role as well.<sup>39</sup> Yet, as Peter Lindert argues, many “puzzles like these call for a deeper historical inquiry”.<sup>40</sup>

### **Warfare and Welfare: Towards an Explanatory Framework**

Based partly on the preceding review, it seems crucial to utilize comprehensive multivariate framework in order to analyze central government spending adequately. Firstly, however, one has to make sure the analytical framework is suitable for the period in question. Yet, it is argued here, somewhat in a similar fashion as in Peacock-Wiseman (1961), that there are “permanent” forces that are relevant for the analysis of most periods. Moreover, it is also the contention here that there are both variables and conditions that are time-period specific and that certain conditions will vary drastically from one period to another, changing their degree of relevance for the analysis at hand. Thus, it is important to start with a broad set of hypotheses. Thereby we may be able to identify the most relevant forces, static and dynamic, in the long-run development of central government roles. Analysis of the period 1870-1938 will be instrumental in order to provide new ideas for the quantitative analysis of the post-Second World War welfare states, especially in exploring the mechanics of the limits imposed on welfare states in the recent decades, as well. Secondly, it is crucial to move beyond the focus on obscure macro-level analysis of (mostly) single-factor hypotheses. It is imperative to disaggregate

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<sup>37</sup> On other multivariate analysis based on somewhat similar variables and proxies, see e.g. Lindert 1994; Lindert 1996 for social expenditures and Eloranta 2002 for military expenditures.

<sup>38</sup> Mueller-Murrell 1985, 22-31.

<sup>39</sup> Berry-Lowery 1987. On similar testing of Olson’s institutional sclerosis argument, see Gray-Lowery 1988.

<sup>40</sup> Lindert 2004, 20.

the analysis of, for example, central government spending to the level of its most important components (here: military and social expenditures, as well as public debt commitments). Disaggregation in the analysis of government spending has already produced new results and further hypotheses of its consumption and investment functions.<sup>41</sup> Thirdly, both time series and cross section analyses should be necessary for the understanding of central government spending. The preferred approach here is to analyze panel data samples at first in a VAR-framework (to determine causal relationships between the variables) and then, similar to Lindert (1996) and Eloranta (2002), by utilizing simultaneous equations approaches (Two-Stage Least Squares, SUR etc.). And, it will be necessary to resolve the underlying issues of endogeneity within these approaches. Finally, the framework utilized here will draw from the theory of pure and impure public goods as well as other competing theories in order to arrive at a credible overall explanatory framework.

Following the Samuelsonian tradition<sup>42</sup>, in current research pure public goods are usually defined as having two essential features: 1) Nonexcludability of benefits; 2) Nonrivalry of benefits.<sup>43</sup> Furthermore, there are also different types of "publicness" among public goods, depending on the extent of congestion in consumption and the costs of excluding the good from others.<sup>44</sup> Goods may possess merely elements of publicness, to varying degrees, and may therefore possess characteristics of nonprice exclusiveness or nonrivalness in consumption.<sup>45</sup> These goods that stand in-between, whose benefits are partially rival and/or partially excludable, are often referred to as impure public goods, which is the term preferred here. Activity by individuals and/or groups to pursue such goods may give rise to joint products — private, public, and impurely public.<sup>46</sup> Similarly, following Avner Offer, goods can be divided into visceral goods (such as alcohol and entertainment), which provide immediate satisfaction, and prudential goods, which involve large sunk costs in advance and their delivery may be remote (such as defense, infrastructure, education, health, social insurance).<sup>47</sup> Moreover, it can be, in fact, argued that ME and SE are impure public goods, offering characteristics of partial excludability or rivalry. This in turn means both the pure and impure public good demand elements have to be taken into account in the analysis.

Firstly, however, if we attempt to represent central government spending in a public good demand framework, it is possible to isolate several factors influencing this process from macroeconomic perspective. Based on the utility maximization of an individual between a private good and a public good<sup>48</sup>, we can write the demand for a public good for agent  $i$  in period  $t$  as:

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<sup>41</sup> See e.g. Kormendi 1983; Lindert 1994; Berry-Lowery 1987.

<sup>42</sup> Samuelson 1966a, 1223. See also Samuelson 1966b. In addition, see Drazen 2000 for an overview.

<sup>43</sup> Sandler-Hartley 1995, 4; Hummel-Lavoie 1990, 38. Origins of these distinctions can be found in Olson-Zeckhauser 1966.

<sup>44</sup> Hjerpe 1997, 14—15; Barro-Sala-I-Martin 1992, e.g. 650-651.

<sup>45</sup> Cullis-Jones 1987, 20—21.

<sup>46</sup> Cornes-Sandler 1996, 9; Sandler-Hartley 1999; Brennan-Pincus 1983. See also Olson-Zeckhauser 1966.

<sup>47</sup> Offer 2002, 2-3.

<sup>48</sup> For the appropriate derivation of this demand function, see Sandler-Hartley 1995, 53—60, and Cornes-Sandler 1996, 484—487.

$$q_t^i = q_t^i(I_t^i, p_{q_t}, \tilde{Q}_{t-1}^i, E_t) \quad (1)$$

in which  $q$  stands for the public good,  $I$  represents income,  $p$  equals the price of the public good,  $\tilde{Q}$  signifies lagged spillins (assuming that an agent responds to the preceding period's spillins), and  $E$  denotes environmental factors affecting the demand for the public good. These will roughly correspond with the demand factors listed in the previous section.

Among economics and political science there have been fewer attempts to model the demand for military spending in terms of impure public good elements, namely decision-making opportunities and constraints. Macro-models of public expenditures, arising out of the assumption of a particular type of rationality on the part of an individual and respectively the military spending decision-making, attempt to explain the development of public goods in terms of a range of aggregate macro-level independent variables. In contrast, a second class of models can be labeled microeconomic or decision-process models, which are strongly rooted in the public choice tradition and institutional economics. In these models, the underlying characteristics of the decision-making process are seen as crucial in the analysis of the demand variations.<sup>49</sup>

The macro and micro perspectives can partially be linked by taking into account the dynamics of the decision-making system in question. The political game will be conditioned by the underlying political system; i.e., it will determine the boundaries and the activities in the political markets. The importance of the regime has been well illustrated by Martin McGuire and Mancur Olson. They work essentially with three kinds of regimes in order to determine their importance for the incentive structure and public goods production. In a *consensual democracy* every voter wants the same, socially efficient amount of the collective good, and it is feasible for the government to collect more taxes than are needed to finance public goods. Redistribution would occur on the basis of Lindahl shares, i.e. redistribution would be equitable. Its opposite regime type, an *autocracy*, is ruled by an autocrat with a short (roving bandit) or long time horizon (stationary bandit), wishing to redistribute the maximum available to himself. Only the stationary bandit will have an interest in the provision of public goods, albeit at a limited scale. The more realistic intermediary form would be a *redistributive democracy*, in which the encompassing interests of the majority are still the driving force behind public goods production on the basis of three fundamental tendencies: 1) competition for votes; 2) redistribution of income according to the majority's interests; 3) decision-making on the basis of external (interest groups) and internal stimuli.<sup>50</sup>

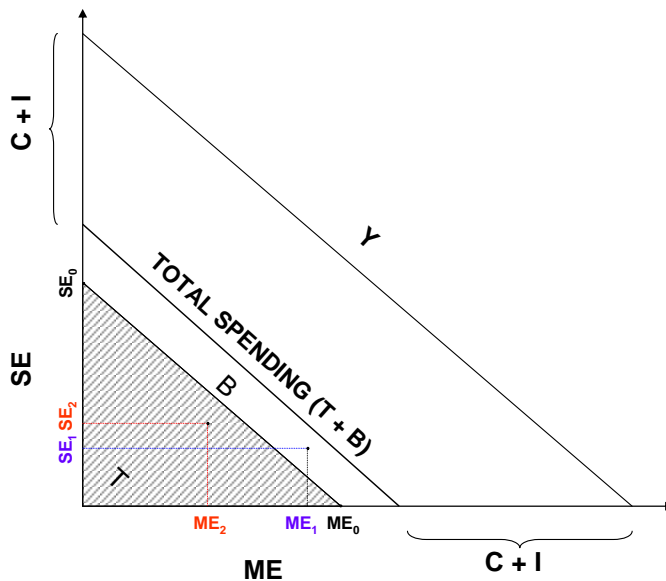
As such, the overall framework offered in this paper is analogous to the McGuire-Olson model, and thus the regime characteristics are seen as crucial in determining the public good demand structure in a given polity. Firstly, countries' overall spending (financed by taxes,  $T$ , marked by the shaded area in the figure, and borrowing,  $B$ ) would essentially be

<sup>49</sup> See more Brown-Jackson 1978; Buchanan 1968.

<sup>50</sup> McGuire-Olson 1996; Olson 1993.

constrained by the aggregate income ( $Y$ ) and certain institutional constraints. In addition, the *tradeoff* between the two main public goods,  $ME$  and  $SE$  would have implications for the spending behavior. This tradeoff pattern is portrayed in Figure 7. The budget would consist of solely military spending ( $ME_0$ ), in a “perfect” autocracy, or exclusively social spending ( $SE_0$ ), in a “perfect”, non-threatened democracy – and they would be, at least in the absence of a major crisis, averse to borrowing. Nonetheless, neither of these ideal types can expropriate all income for these purposes. Thus, one should investigate whether: **1)** Military spending and social spending are the central components in the central government spending of this period (in addition to the public debt commitments,  $B$ , related to these items); **2)** When  $T + B$  becomes large enough or rises abruptly due to exogenous threats or crises, tax resistance (resistance to decreasing consumption,  $C$ , and investment,  $I$ ) is forthcoming – the more so the more democratic the regime is (in addition, public debt increases would most likely follow to finance the spending, creating larger budgets in the future); **3)** The tradeoff between guns and butter ( $ME \leftrightarrow SE$ ) will ensue when  $T + B$  becomes large enough or rises abruptly – this tradeoff would not be perfect due to budgetary and other difficulties in interchanging these expenditures for one another; moreover, this tradeoff would be less applicable to autocratic regimes.

**Figure 7. Guns-Butter Tradeoff and Its Impact on Central Government Spending**



**Note!**  $SE$ =Social Expenditures;  $ME$ =Military Expenditures;  $T$ =Taxes;  $B$ =Borrowing;  $C$ =Consumption;  $I$ =Investment;  $Y$ =Aggregate Income.

In Figure 7, similar to the period 1870-1913,  $SE$  is hypothesized to increase from zero to  $SE_1$ , yet military spending might not decrease by the same amount, dropping to  $ME_1$  from  $ME_0$ . In this situation we would expect budgetary deficits to emerge as  $CGE$  tends to increase. Moreover, if military spending was cut by a sizable amount, similar to the 1920s, to  $ME_2$ , social spending would increase less than the  $\Delta ME$  would suggest. Budgetary surpluses would follow. Thus, firstly, central government spending and especially its subcategories tend to be “sticky” vis-à-vis changes. Secondly, once a

*threshold level* of spending is reached, the tradeoff between these two “public” goods and its consequences (increased B, both stock and flow, especially) may develop into a fiscal constraint for the state in question. Even in other periods, as it is maintained that this tradeoff takes place in some form all the time, this mechanism should be investigated in terms of explaining central government spending among various types of regimes. So far, the research of government size and growth has not investigated the guns vs. butter relationship as a possible significant explanatory factor.

Thus, it is argued here that the demand for ME and SE would differ based on the underlying regime characteristics. As emphasized by Lindert, Olson and others, the underlying regime type will be a crucial starting point for the analysis of central government spending as a group of impure public goods. What kind of public goods did the different regimes, ranging from actual democracies to outright totalitarian states in the period 1870-1938, have an interest in producing? First of all, we need to disaggregate the demand for central government spending into several smaller categories: the demand for military expenditures, the demand for social expenditures, and the propensity to engage in deficit spending. We can further divide the motivation for producing these “public” goods into: 1) protection of existing assets (of the majority or the autocrat); 2) more efficient use of the assets (stationary bandits and democracies); 3) acquisition of more assets, by force if necessary (mainly autocracies); 4) financing the public goods production. First we shall focus on the demand for military spending. What functions does military spending serve?

For example, it is possible to outline some general hypotheses to be tested subsequently concerning the military spending behavior of different regime types. Peace researchers have analyzed the impact of regime type on how war-prone these states are at the monadic (state), dyadic (two states), and system levels. They consistently agree, as specified for example by R.J. Rummel or Bruce Russett, that democracies rarely if ever fight each other.<sup>51</sup> They disagree, however, on whether democracies are inherently less warlike than other regime types. These researchers have not, nonetheless, taken the analysis to the level of military spending, rather than in terms of, e.g., composite indicators of national capabilities. As the findings of Eloranta (2002) indicate for the interwar period, it seems that democracies and totalitarian nations do differ in their military spending behavior, in relation to economic growth. However, it was discovered that less centralized, authoritarian nations such as Spain in the 1920s did not necessarily act differently from the democratic sample nations. The reasons that democracies might behave differently in their external security framework include: 1) the political culture of democratic states, referring to nonviolent norms; 2) the democratic political structure and its decision-making constraints (divided political power, legislative approval, bureaucracies, interest groups, and public opinion).<sup>52</sup>

One of the first important distinctions to be made in the analysis of the demand for any public good is the *level of analysis* — i.e., whether one wishes to analyze the demand for

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<sup>51</sup> Rummel 1997; Russett 1993.

<sup>52</sup> See e.g. Rummel 1997; Geller-Singer 1998.

a public good at the level of a state or within a particular group of nations, such as an alliance. An alliance — as opposed to the “public” in a state — is usually treated as providing a public good for its members in the form of deterrence against aggression, yielding either purely or impurely public benefits, although the latter dimension of the analysis has not been explored as much in the literature. A purely public good cannot be denied from the nonpayers (or agents who pay less for it), and thus the agents who value the good will overprovide for it. Others can free ride to a certain extent at the expense of the said agents.<sup>53</sup> A key notion supporting the idea of NATO providing a pure public good deterrence hinges on the weapons technology and the strategic aspects of the post-Second World War period. When it is possible for a state to retaliate on behalf of its allies in a way that produces devastating damage and this retaliatory threat is deemed automatic and credible, the conditions for a purely public good alliance (nonrivalry, nonexcludability) are in place. For example, in the case of nuclear deterrence there is no reason to limit the size of the group sharing the good if the above conditions are met. NATO’s strategy of Mutual Assured Destruction (MAD) in 1949—1966 indeed provided such conditions, yet since and before then alliances have rarely possessed the required pure public good qualities.<sup>54</sup>

For example, at the level of a system (=group of states, including the most prominent global or regional players), it could be argued that an increase in the aggregate military spending or in the total resources held by the democracies would represent increased systemic stability for the participants of the system, thus reducing the individual country military spending. Competing hypotheses could be tested for the influence of autocracies in the system, again on the aggregate. For example, does increased aggregate military spending or total resources held by autocracies represent a systemic threat? In the empirical applications, the definitions of regime type will be crucial task. Furthermore, these types of arguments can also be taken to the level of a state, which will be the focus in the forthcoming larger study. For example, it could be maintained that the more democratic a regime was, the less of a military burden it would prefer. Of course, contrary arguments could be made about authoritarian regimes. These assumptions would essentially be consistent with the McGuire-Olson model introduced previously and the evidence reviewed earlier. Table 2 below summarizes the results achieved in Eloranta (2002) for the interwar sample.

Overall, it seems that variables that are relevant for the analysis of the demand for military spending include the more common demand variables, some of the systemic variables, and certain proxies relating to the political markets. In general, the demand for ME would be higher the more autocratic the state in question is, since the autocrat is mainly interested in redistributing income to himself and to finance further conquests. Conversely, in democracies the more encompassing interests would guarantee that

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<sup>53</sup> Olson-Zeckhauser 1966, e.g. 267—271.

<sup>54</sup> Olson-Zeckhauser 1966; Sandler-Hartley 1999, 29, 37—38. See also Bruce Russett’s early seminal contribution on alliances, Russett 1971.

although redistribution occurs, it will be more equitable. Therefore, democracies would have a higher demand for SE than autocracies.<sup>55</sup>

**Table 2. Determinants of the Demand for Military Spending, 1920-1938**

<i>DEPENDENT VARIABLE</i>	<i>INDEPENDENT VARIABLES (STATISTICALLY SIGNIFICANT)</i>
<b>Military burden</b> (=percentage of military expenditures to GDP)	<p><u>SYSTEM</u>: Changes in the system's military and economic balance; changes in the military resources held by democracies; changes in the military and economic resources held by autocracies; military spending behavior of system's economic leaders; total resources held by the United States</p> <p><u>PUBLIC GOOD RESPONSES</u>: Prices; income; spillins (from friendly nations); country-specific threat responses,</p> <p><u>INSTITUTIONS AND POLITICAL MARKETS</u>: Great Depression dummy; lagged military spending (bureaucracy); parliamentary fragmentation; country-specific responses to industry as an interest group</p>
<b>Defense share</b> (=percentage of military expenditures to central government expenditures)	<p><u>SYSTEM</u>: Changes in the system's military balance; changes in the military resources held by autocracies; military spending behavior and military resources held by the system's economic leaders</p> <p><u>PUBLIC GOOD RESPONSES</u>: Prices; income; limited spillins and threats</p> <p><u>INSTITUTIONS AND POLITICAL MARKETS</u>: Great Depression dummy; lagged military spending (bureaucracy); parliamentary fragmentation</p>

**Source:** Eloranta 2002. Based on a panel of 11 European states (=Belgium, Denmark, Finland, France, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the UK), utilizing seemingly unrelated regressions (SUR).

It shall by no means be argued here that the two periods, 1870—1913 and 1920—1938 (the war period will be discussed separately), had the same economic and political decision-making environments. The first period was characterized by a fairly settled balance-of-power system (including alliances) in terms of security; extensive international monetary and financial cooperation (e.g., the Gold Standard); slow

<sup>55</sup> For further theoretical arguments of the democracies' more encompassing interests, see McGuire-Olson 1996.



introduction of the income tax; budgetary stability; limited access to political power, i.e. through elections; increasing (albeit slow) democratization; globalization; and Western hegemony in the international arenas.<sup>56</sup> As seen earlier, the social spending levels were quite low (or even zero) in the beginning of the period 1870-1913, not really nudging the countries towards the tax resistance threshold. ME would thus form the main component driving the central government spending practices, at least in the beginning period, with most countries coming close to something like  $ME_1$  in the preceding Figure 7. In the interwar period, also SE levels and B increased dramatically (with ME declining in the 1920s), it is likely that the ME and SE would encounter the tradeoff threshold in the interwar period.

What about social expenditures – what has driven their demand in the long run? First of all, social expenditures served mostly different functions than military expenditures. In terms of public goods production and regime characteristics, social spending can satisfy a multitude of interests. It can certainly be used to protect the existing assets of a state as well as provide a more efficient use of the existing assets. The first point relates to the maintenance of societal peace and the second to the economy, especially human capital formation. As the McGuire-Olson model implies, the democratic majority party has a more encompassing interest in the productivity of the society than an autocratic president. Another motivation for social spending relates to issues that are more difficult to analyze: ideology and power sharing. Both, at least in terms of social expenditure decisions, are more facets of democracies. As Lindert remarks, electoral variables and other indicators of the responsiveness of the political markets towards the enfranchised raised government spending in general. Thus, the level of democracy could be expected to boost social spending as a whole and perhaps also increase its share in the central government budget. In terms of changes in the income and population structure, it seems that in general an increase in the share of elderly in the population increased tax-based spending on social welfare and government spending as a whole. Eventually, as predicted by some of the pressure group models, there will be negative returns per recipient from rent seeking by a population group or a special interest group.<sup>57</sup>

As Table 3 below shows, the demand for social expenditures has exhibited both the persistence of explanatory forces as well as a change in the demand structure over time. It seems that democracy, the aging of the population, income, as well as possibly religion were the most significant variables in explaining social spending in 1870-1938. In addition, one should note that the revenue extraction possibilities of autocracies and democracies differed greatly. It is maintained here that autocracies would have more limited possibilities of borrowing, both domestically and abroad, due to the higher risk of expropriation of assets and fiscal mismanagement. Thus an autocrat would mainly rely on T to finance his aggregate spending. Income would of course be the ultimate constraint for an autocrat, and he would have to take into account  $C + I$  in order not to overburden his subjects. The autocrat therefore has to optimize his tax extraction rate and the level of public good provision (mainly ME). Democracies in turn would encompass broader interests in the economy, providing the possibility of financing spending via borrowing,

<sup>56</sup> See Eloranta 2002; Huntington 1997.

<sup>57</sup> McGuire-Olson 1996, 72-73; Lindert 1994; Lindert 2004.

which was vital for the long-term survival of many Great Powers such as Great Britain, and taxation, constrained by the government's sensitivity to the tax resistance (C + I). Here it is acknowledged that countries may have utilized social spending and certain labor market compromises as a tool in competing for the most qualified labor, although this goal was surely dwarfed by their desire to pacify the emerging labor market organizations as well as cater to the demand elements outlined above.<sup>58</sup>

**Table 3. Determinants of the Demand for Social Spending, 1880-1981**

<i>DEPENDENT VARIABLE</i>	<i>TIME PERIOD</i>	<i>INDEPENDENT VARIABLES</i>
<b>Severall</b> (social spending or its sub-categories), as shares of GDP	1880-1930	Democracy; aging of population; income level; religion
<b>Severall</b> (social spending or its sub-categories), as shares of GDP	1930-1960	Democracy; aging of population; income level
<b>Severall</b> (social spending or its sub-categories), as shares of GDP	1962-1981	Aging of population; income level; program momentum; income skewness; voter turnout

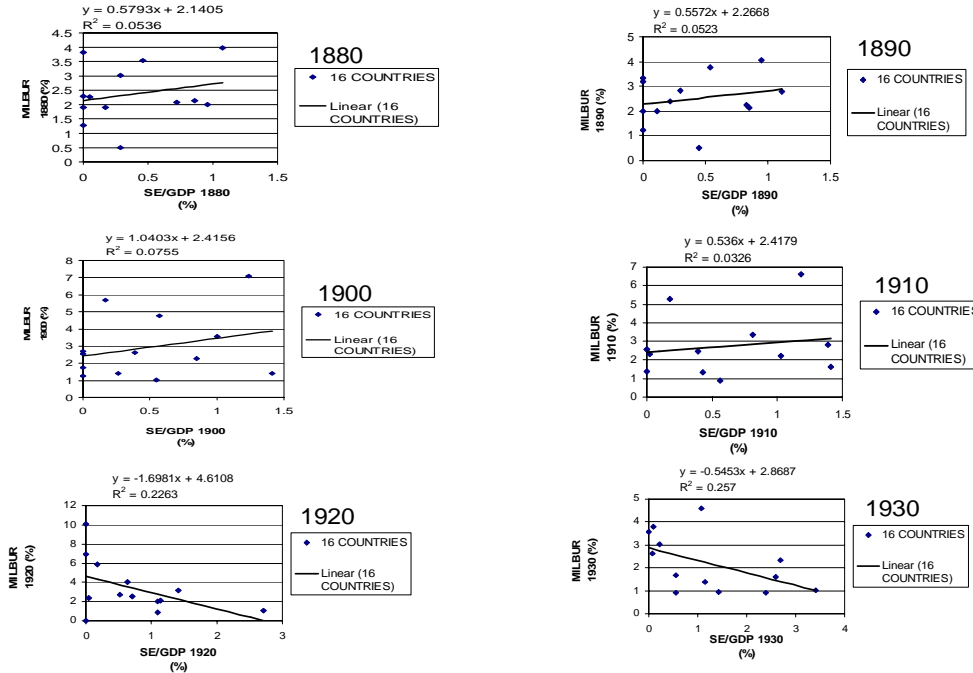
**Sources:** Lindert 1993; Lindert 1992. He utilizes different country samples for different periods, with the OECD countries forming the core for the statistical tests. The statistical analysis for the period 1880-1930 (30 countries) is based on tobit regressions (due to a lack of time series data), whereas the other analyses are grounded on simultaneous equation methods (2SLS).

In terms of impure public good qualities of ME and SE, one has to also take into account the domestic political markets and the role played by various institutions in imposing budgetary constraints among these nations. As such, this approach (see Eloranta 2002) should be applicable by and large to the analysis of central government spending as a package of impure public goods. The three top levels are: the international community, the international (armaments) markets, and the individual states. The actors within a state, the focus of the institutional analysis in this framework, usually consist of the following groups: 1) Voters/consumers, assuming a limited role besides influencing the strength of the political parties; 2) Political parties, influenced by competition within the parliament and myopic survival perception (as well as strong ideological convictions); 3) State agencies, especially the various bureaucracies attempting to maximize their perceptions of the required spending levels (utility maximization instead of narrow profit maximization); 4) Economic and political interest groups, attempting to influence the level of public goods provision as well as the ensuing government acquisition policies. The key characteristics of the game for central government spending, as a basket of various impure and pure public goods, will be outlined for the selected states, although very

<sup>58</sup> This applies essentially to the period before the First World War, whereas the interwar period represents a different period, e.g. in terms of migration, globalization, and tariff protection. For the pre-First World War period, see especially Huberman-Lewchuk 2003 on social spending and labor market organizations; Hatton-Williamson 2002 on migration patterns (also in the long run); and Williamson 2002.

detailed analysis should prove too time consuming. These influences could be investigated via various political market proxies.

**Figure 9. Guns (=ME) Versus Butter (=SE) Tradeoff Explored, 1880-1930**



**Sources:** see previous figures. *Note!* These relationships (military burdens plotted against SE-to-GDP ratios, both percentages) are only suggestive, pending multivariate analysis of the hypotheses reviewed here.

As argued here, the growth of central government spending may have resulted, in addition to other explanatory forces, from the interaction (or more likely, the “stickiness” of this interaction process) between military spending and social expenditures. The guns versus butter hypothesis in the context of central government budgets implies either that these two expenditure categories have no impact on the overall budget (i.e., there is an equal size tradeoff response between them) or that this interaction somehow drives central government growth tendencies. Often a reduction in military spending is said to incur a peace dividend in the form of increased, more productive economic activity. On the other hand, it seems that on the whole domestic and economic incentives involved in military acquisitions, as well as institutional constraints in changing for example conscription laws, tended to sustain military spending or at least limited its decline even under public pressure. Moreover, there seems to be little evidence of an automatic budgetary tradeoff between these two types of spending. For example, a military retrenchment may mean a smaller overall budget rather than more welfare programs, even if the preferences for defense spending are negatively related to preferences for social spending for the individual taxpayers.<sup>59</sup> Thus, it seems more plausible that the

<sup>59</sup> Chan 1995; Ward et al. 1995; The economics of World War II (1998). On spending preferences and their substitutability, see Wlezien 1995.

influences shaping the demand for these two types of central government spending are interrelated, yet molded partially by different factors. This would also be consistent with the theoretical tenets introduced earlier. Does an initial assessment of the data bear out these propositions?

As seen in Figure 9 above, there seems to have been a slight positive correlation between ME and SE before the First World War, i.e. they had a small positive influence on one another. In fact, this lack of a tradeoff seems to have boosted central government spending levels slightly, although the increase was proportionally quite small per one unit of increase in one of the goods. Yet, the overall effect on central government spending would also be contingent on the lagged public debt effect, i.e. the burden of past spending, and economic development. In addition, the arms race preceding the war raised the spending levels before this unexpectedly long and bloody conflict. Respectively, after the war, the situation changed. A bit stronger negative correlation emerged, indicating a partial tradeoff between these goods, i.e. they were partially substitutes. Yet, as argued before, this tradeoff was not perfect, leading to higher spending levels. One needs to investigate other explanatory variables in connection with this tradeoff (or the lack of it) effect. Public debt as well as budgetary practices and institutional (both formal and informal) influences, in addition to the usual suspects arising from the earlier military and social spending analyses (as seen in previous tables), would also have to be explored. Furthermore, in line with the Peacock-Wiseman displacement hypothesis, did the interwar spending levels represent a new spending “equilibrium” or were they just mirage brought on by the soaring public debts caused by the war and the reconstruction efforts?

As Avner Offer has pointed out, unlike other prudential goods, wars have been paid mostly in arrears by servicing the debts and honoring the implicit obligations arising from them by extending the welfare entitlement. A current-period tax reduction financed by issuing government debt shifts the timing of tax collection from the current period to the future.<sup>60</sup> An increase in public debt may impose significant path dependence on central government budgeting, especially if balanced budgets are the norm. In general, budgets are mechanisms for making economic and political choices, susceptible to all the forces that we have been reviewing so far. Thus, the balance between central government revenue and expenditure in a given year, i.e. flow of public debt (the impact of deficits and debt servicing), and the stock of public debt (for example, as a share of GDP) may be decisive in the short or the long run, depending on the size of the debt. However, one must be cautious in the estimation of public debt, since for example sole reliance on pure flow concepts of fiscal accounting can be misleading and inadequate for analytical purposes.<sup>61</sup> Moreover, according to Webber-Wildawsky (1986), the relative size of spending is a function of the regime type, namely, the relative strength of hierarchies and sects versus markets. Thereby variables such as budgeting practices and changes in the various aspects of the political markets of the countries to be compared will have to be included in the analysis.<sup>62</sup> Most likely the impact of the significant exogenous shocks, the

<sup>60</sup> Offer 2002, 11; Kormendi 1983, 994.

<sup>61</sup> Blejer-Cheasty 1991, 1644-1645, 1675-1676. On path dependence as a concept, see e.g. North 1994; Liebowitz-Margolis 1990; Eloranta 1997. In terms of military budgeting analysis, see Eloranta 2002.

<sup>62</sup> Wildawsky 1986, 359.

First World War and the Great Depression, would also feature prominently in the explanatory framework. Overall, as in Equation 1, one would have to include not only the regime characteristics, tradeoff effects, and pure and impure public good influences, but also take into account  $\tilde{Q}$ , E, and yet other preferences in order to estimate the demand for central government spending.

**Table 4. Independent Variables Needed for Comprehensive Analysis of Central Government Spending (Growth and/or Size)**

<i>Name of Independent Variable Group</i>	<i>Proposed Independent Variables</i>
<b>1. EXTERNAL ENVIRONMENT AND EXOGENOUS SHOCKS</b>	Alliance impacts; openness (trade); competition for labor (SE); individual country threats (ME); individual country spillovers (ME); size of the country; openness of the country (trade); behavior of the systemic leaders (ME and SE); wars and conflicts (ME in the short run, SE possibly in the long run); recessions (ME and SE)
<b>2. REGIME TYPE</b>	Country's level of democracy or autocracy, indices; sub-categories of these indices; extent of the franchise; central or federal type of regime (dummy); political voice variables (see Lindert 2003 for details)
<b>3. INCOME AND DEBT</b>	Income per capita (Y); T(=average income tax rate) x Y; population; aging of population; prices; lagged public debt (B); changes in the trend of B (breakpoint dummies); current and lagged budget deficits
<b>4. ME-SE TRADEOFF</b>	ME-SE tradeoff, current; changes in the trend of the tradeoff
<b>5. INSTITUTIONS AND POLITICAL MARKETS</b>	Changes in budget practices (dummy); changes in revenue accumulation practices, public debt and taxation (dummies); political fragmentation; parliamentary fragmentation; interest group proxies; efficiency of taxation (proxies)

**Source:** constructed by the author. *Note!* Different lag structures should be explored for all variables. The various proxies will be elaborated on in subsequent papers by this author.

Table 4 above offers an approximation of what kind of variables one should include in a multivariate analysis of central government spending in this period. Inclusive of the variables and mechanisms discussed already, it is divided into five groups of variables. All of these would be conditioned by the underlying regime type. The first group includes essentially environmental influences, such as competition and reaction to the other

nations' behavior as players (either individually or in a group (for example, alliance), and exogenous shocks (wars, recessions). In regards to the environmental variables, I will utilize data both on dyadic ME and SE relationships as well as alliance data. In addition, as suggested by Michael Huberman and Wayne Lewchuk (2003), the size and openness of a country may influence its government spending patterns.

The second group consists of variables relating to the characteristics of the regime in question. In addition to utilizing Polity-type indices, one should disaggregate these characteristics to include for example the extent of the franchise to achieve more precision in the analysis.<sup>63</sup> Here it is maintained that regime characteristics, described well by their political voice characteristics, are the key to understanding the different CGE demand structures, although the differences in demand structures are hypothesized as becoming less distinctive in the middle spectrum of regime types. The third group of variables would capture the income and debt effects, emphasizing the possible constraint function imposed by both. In addition, the following applications will first have to resolve the mechanics of what determined stock and flow of deficits. The obvious endogeneity problems would also have to be addressed in the econometric applications. Fourthly, one should include the possibility of the interaction (or the lack of it) between military and social spending vis-à-vis the total spending practices. The fifth group includes the so-called institutional and political market variables, mostly proxy variables and dummies, aimed at capturing the influence of the domestic political markets. Indeed, a key question in any public good analysis is the identity of the decision-maker, i.e. how much influence "the public" has, including: 1) how extensive the franchise is; 2) how many actually vote; 3) how much control there is on the executive branch; 4) how well do public preferences actually filter on to the policy level. For example, in 19<sup>th</sup> century elite democracies "public" preferences may have been irrelevant, whereas the economic and political elites mattered and were well informed. These notions should be tested quantitatively (in a panel of countries), utilizing various econometric and theoretical tools available, as well qualitatively (by analyzing especially the budgetary constraints of the countries).

## DISCUSSION

The purpose of this paper has been to offer a critical assessment of some of the theories and models aiming to explain either the size of government and/or its growth, and to advance an alternative, comprehensive framework for answering the key question: What explains the demand for central government spending in the crucial formation period for modern welfare states, namely in 1870-1938? Firstly, the numerous models that were reviewed in this paper offered numerous common themes to build on, i.e.: 1) the variance between rigid theoretical exercises and, correspondingly, somewhat *ad hoc* statistical explanations as two extreme poles; 2) the difference between excessive and responsive government (or normative and positive) explanations; 3) the differences between long-run models and short-run explanations, as well as cross-section and time series approaches; 4) the difference between theories predicting either a monotonic rise in the

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<sup>63</sup> See e.g. Lindert 2003, 6-8.

role of government, an end to this rise, reversal of this rise, and other more conditional (perhaps history-dependent) approaches. Moreover, it seems possible and even fruitful to compile competing hypotheses in order to test the demand-side influences, yet many supply-side influences may also be crucial for understanding these processes. Finally, it is the emphasis here that many of the frameworks advocating single-cause explanations and utilizing too aggregated indicators should pave the way for more disaggregated analysis of the components driving the demand for central government spending.

The framework advanced in this paper maintained that there were essentially two constraints on central government spending: 1) the aggregate income ( $Y$ ); and 2) institutional (and other endogenous revenue) constraints arising from the political system. Furthermore, military spending and social spending (in addition to public debt commitments arising from them) were the key components in the budget. Social spending, which started from a nearly zero level in most countries in the late 19<sup>th</sup> century, began to exert an upward pressure on central government spending. Military ( $ME$ ) and social expenditures ( $SE$ ) are argued not to have been perfectly interchangeable, thus only an imperfect tradeoff could have occurred. Overall spending levels, however, did not increase substantially perhaps due to the incremental nature of the increases and the lower public debt ( $B$ ) commitments arising from strong economic growth. For a democracy, with a stronger preference for  $SE$  than autocracies, the threshold of tax resistance would be reached - with abrupt increases in government spending due to exogenous shocks - leading to even broader utilization of public debt and more progressive taxation for revenue purposes. For autocracies, with a stronger preference for  $ME$ , the primary constraint would be income, i.e. the rational autocrat would not push extraction rates beyond a level at which he would begin to compromise his future extraction. Beyond the implications of the political system and the subsequent tradeoff pattern, this paper suggested looking at the public debt constraints as well as the institutional constraints affecting their spending patterns. Also external influences, not just shocks, such as threats and spillover effects from other countries should be investigated. All in all, the subsequent quantitative analyses will focus on five groups of variables representing: 1) the external environment and exogenous shocks; 2) regime type; 3) income and debt; 4)  $ME$ - $SE$  tradeoff; 5) institutions and political markets.

The future challenges, both for this researcher and for analysis of government spending in general, include a better integration of supply and demand influences in a comprehensive analytical framework, better inclusion of time specificity in the models (in terms of permanent and fluctuating explanatory influences), and the combining of careful qualitative historical analysis with credible quantitative analysis. The application of institutional theories, similar to Eloranta (2002), will also pose numerous challenges. As far as the data are concerned, one will have to resolve numerous issues relating to the definitions of indicators, the issue of choosing suitable quantitative methods for the analysis, institutional measurement problems, as well as resolving the issue endogeneity for the variables that are used in the analysis.

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## REFERENCES

- Abizadeh and Gray (1985), 'A pooled time-series, cross-section comparison'. *National Tax Journal*, Vol. 38, No. 2.
- Barr, Nicholas (1992), 'Economic Theory and the Welfare State: A Survey and Interpretation'. *Journal of Economic Literature*, Vol. XXX.
- Barro, Robert J. & Xavier Sala-I-Martin (1992), 'Public Finance in Models of Economic Growth'. *The Review of Economic Studies*, Vol. 59, Issue 4.
- Becker, Gary S. (1983), 'A Theory of Competition Among Pressure Groups for Political Influence'. *Quarterly Journal of Economics*, Vol. 98, No. 3.
- Berry, William D. & David Lowery (1987), 'Explaining the Size of the Public Sector: Responsive and Excessive Government Interpretations'. *The Journal of Politics*, Vol. 49, Issue 2.
- Blejer, Mario I. & Adrienne Cheasty (1991), 'The Measurement of Fiscal Deficits: Analytical and Methodological Issues'. *Journal of Economic Literature*, Vol. 29, Issue 4.
- Brennan, Geoffrey & Jonathan J. Pincus (1983), 'Government Expenditure Growth and Resource Allocation: The Nebulous Connection'. *Oxford Economic Papers*, Vol. 35, Issue 3.
- Breton, Albert (1989), 'The Growth of Competitive Governments'. *The Canadian Journal of Economics*, Vol. 22, No. 4.
- Brown, C.V. & P.M. Jackson (1978), *Public Sector Economics*. Oxford.
- Buchanan, James M. (1968), *The Demand and Supply of Public Goods*. Chicago.
- Chan, Steve (1995), 'Grasping the Peace Dividend: Some Propositions on the Conversion of Swords into Plowshares'. *Mershon International Studies Review*, Vol. 39, Issue 1.
- Chatterjee, Lata & Syed Abu Hasnath (1991), 'Public Construction Expenditures in the United States: Are There Structural Breaks in the 1921-1987 Period?'. *Economic Geography*, Vol. 67, Issue 1.
- Clement, Piet (2000), *Government Consumption and Investment in Belgium 1830—1940. The Reconstruction of a Database*. Studies in Social and Economic History, Vol. 29. Leuven.
- Cornes, Richard & Todd Sandler (1996), *The theory of externalities, public goods, and club goods*. Second edition. New York.
- Cullis, John G. & Philip R. Jones (1987), *Microeconomics and the Public Economy: A Defence of the Leviathan*. Oxford.
- Downs, Anthony (1967), *Inside Bureaucracy*. A RAND Corporation Research Study. Boston.



- Drazen, Allan (2000), *Political Economy in Macroeconomics*. Princeton, New Jersey.
- Eloranta, Jari (1997), 'Julkista ja yksityistä — maanpuolustuksen taloudelliset reaali-teetit 1920—1939'. In *Uusi institutionaalinen taloushistoria — Johdatus tutkimukseen*. Jyväskylä.
- Eloranta, Jari (2002), *EXTERNAL SECURITY BY DOMESTIC CHOICES: Military Spending as an Impure Public Good among Eleven European States, 1920-1938*. Doctoral dissertation defended at the European University Institute on July 2, 2002. European University Institute.
- Eloranta, Jari (2003), 'Reassessing the pre-First World Military Spending: The Role of the Great Powers in the International System, 1870-1913'. Mimeo.
- Esping-Andersen, Gösta (1984), *From poor relief towards institutional welfare states: the development of Scandinavian social policy*. Stockholm.
- Geller, Daniel S. & J. David Singer (1998), *Nations at War. A Scientific Study of International Conflict*. Cambridge Studies in International Relations: 58. Cambridge, UK.
- Gray, Virginia & David Lowery (1988), 'Interest Group Politics and Economic Growth in the U.S. States'. *The American Political Science Review*, Vol. 82, No. 1.
- Hartley, Keith (1987), 'Reducing Defence Expenditure: A Public Choice Analysis and a Case Study of the UK'. In *Peace, Defence and Economic Analysis*. Proceedings of a Conference held in Stockholm jointly by the International Economic Association and the Stockholm International Research Institute. Ed. By Christian Schmidt and Frank Blackaby. London.
- Hartley, Keith (1991), *The Economics of Defence Policy*. London.
- Hatton, Timothy J. & Jeffrey G. Williamson (2002), *What Fundamentals Drive World Migration?* National Bureau of Economic Research (Cambridge, MA), Working Paper 9159.
- Hjerppe, Reino (1997), *Provision of Public and Merit Goods: Towards an Optimal Policy Mix?* The United Nations University, WIDER. Research in Progress 10. February 1997. Helsinki.
- Huberman, Michael & Wayne Lewchuk (2003), 'European economic integration and the labour compact, 1850-1913'. *European Review of Economic History*, Vol. 7, Issue 1.
- Hummel, Jeffrey Rogers & Don Lavoie (1990), "National Defense and the Public-Goods Problem". In *Arms, Politics, and the Economy. Historical and Contemporary Perspectives*. Ed. by Robert Higgs. Independent Institute. New York.
- Huntington, Samuel P. (1997), *The Clash of Civilizations and the Remaking of World Order*. New York.
- Kormendi, Roger C. (1983), 'Government Debt, Government Spending, and Private Sector Behavior'. *The American Economic Review*, Vol. 73, Issue 5.
- Kraan, Dirk-Jan (1996), *Budgetary Decisions. A public choice approach*. Cambridge University Press, Cambridge.
- Liebowitz, S. J. & Stephen E. Margolis (1990), 'The Fable of the Keys'. *Journal of Law and Economics*, Vol. XXXIII.
- Lindert, Peter H. (1992), *The Rise of Social Spending, 1880-1930*. Agricultural History Center, University of California, Davis. Working Paper Series No. 68.
- Lindert, Peter H. (1993), *What Limits Social Spending?* Agricultural History Center, University of California, Davis. Working Paper Series No. 71.

- Lindert, Peter H. (1994), 'The Rise of Social Spending, 1880-1930'. *Explorations in Economic History*, 31.
- Lindert, Peter H. (1996), 'What Limits Social Spending?'. *Explorations in Economic History*, 33.
- Lindert, Peter H. (2003), *Voice and Growth: Was Churchill Right?* National Bureau of Economic Research (Cambridge, MA), Working Paper 9749.
- Lindert, Peter H. (2004). *Social Spending and Economic Growth Since the Eighteenth Century*. Two volumes. Vol. 1. The Story. Cambridge University Press. Cambridge. Forthcoming.
- Lowery, David & William D. Berry (1983), 'The Growth of Government in the United States: An Empirical Assessment of Competing Explanations'. *American Journal of Political Science*, Vol. 27, Issue 4.
- McGuire, Martin C. & Mancur Olson, Jr. (1996), 'The Economics of Autocracy and Majority Rule: The Invisible Hand and the Use of Force'. *Journal of Economic Literature*, Vol. 34, Issue 1.
- Meltzer, Allan H. & Scott F. Richard (1981), 'A Rational Theory of the Size of Government'. *The Journal of Political Economy*, Vol. 89, Issue 5.
- Mueller, Dennis C. & Peter Murrell (1985), 'Interest Groups and the Political Economy of Government Size'. In *Public Expenditure and Government Growth*. Ed. by Francesco Forte and Alan Peacock. Oxford.
- Mueller, Dennis C. (1990), 'Public Choice: A Survey'. *The Theory of Public Choice — II*. Ed. by James M. Buchanan and Robert D. Tollison. Reprint. University of Michigan.
- Niskanen, William A. Jr. (1971), *Bureacracy and Representative Government*. Chicago.
- North, Douglass C. (1994), *Institutions, Institutional Change and Economic Performance. Political Economy of Institutions and Decisions*. Reprint. Cambridge, NY.
- Offer, Avner (2002), *Why has the Public Sector Grown So Large in Market Societies? The Political Economy of Prudence in the UK, c. 1870-2000*. University of Oxford, Discussion Papers in Economic and Social History, Number 44. March.
- Olson, Mancur & Richard Zeckhauser (1966), 'An Economic Theory of Alliances'. *The Review of Economics and Statistics*, Vol. 48, No. 3.
- Olson, Mancur (1965), *The Logic of Collective Action: Public Goods and the Theory of Groups*. Cambridge, Mass.
- Olson, Mancur (1982), *The Rise and Decline of Nations. Economic Growth, Stagflation, and Social Rigidities*. New Haven.
- Olson, Mancur (1993), 'Dictatorship, Democracy, and Development'. *The American Political Science Review*, Vol. 87, Issue 3.
- Peacock, Alan T. & J. Wiseman (1961), *The Growth of Public Expenditures in the United Kingdom*. Princeton University Press, Princeton.
- Pryor, Frederick L. (1968), *Public Expenditures in Communist and Capitalist Nations*. London.
- Ram, Rati (1987), 'Wagner's Hypothesis in Time-Series and Cross-Section Perspectives: Evidence from "Real" Data for 115 Countries'. *The Review of Economics and Statistics*, Vol. 69, Issue 2.

- Rasler, Karen A. & William R. Thompson (1985), 'War Making and State Making: Governmental Expenditures, Tax Revenues, and Global Wars'. *The American Political Science Review*, Vol. 79, No. 2.
- Rasler, Karen A. & William R. Thompson (1989), *War and State Making. The Shaping of the Global Powers*. Studies in International Conflict, Vol. 2. Boston.
- Rummel, R.J. (1997), *Power Kills. Democracy as a Method of Nonviolence*. New Brunswick.
- Russett, Bruce (1993), *Grasping the Democratic Peace. Principles for a Post-Cold War World*. With the collaboration of William Antholis, Carol R. Ember, Melvin Ember, Zeev Maos. Princeton, New Jersey.
- Russett, Bruce M. (1971), 'An Empirical Typology of International Military Alliances'. *Midwest Journal of Political Science*, Vol. 15, No. 2.
- Samuelson, Paul A. (1966a), "The Pure Theory of Public Expenditure". In *The Collected Scientific Papers of Paul A. Samuelson*. Vol. II. (Originally in The Review of Economics and Statistics, November 1964). Cambridge, Mass.
- Samuelson, Paul A. (1966b), "Diagrammatic Exposition of a Theory of Public Expenditure". In *The Collected Scientific Papers of Paul A. Samuelson*. Vol. II. (Originally in The Review of Economics and Statistics, November 1955). Cambridge, Mass.
- Sandler, Todd & Keith Hartley (1995), *The Economics of Defense*. Cambridge Surveys of Economic Literature. Cambridge, UK.
- Sandler, Todd & Keith Hartley (1999), *The Political Economy of NATO. Past, Present, and into the 21<sup>st</sup> Century*. Cambridge.
- Singh, Balvir & Balbir S. Sahni (1984), 'Causality Between Public Expenditure and National Income'. *The Review of Economics and Statistics*, Vol. 66, Issue 4.
- Tanzi, Vito & Ludger Schuknecht (2000), *Public Spending in the 20<sup>th</sup> Century. A Global Perspective*. Cambridge University Press, New York.
- The economics of World War II* (1998). *Six great powers in international comparison*. Ed. by Mark Harrison. Cambridge.
- Tullock, Gordon (1967), 'The welfare costs of tariffs, monopolies, and theft'. *Western Economic Journal*, No. 5.
- Tullock, Gordon (1980), 'Efficient rent seeking'. In *Towards a Theory of Rent Seeking Society*. Ed. by J. M. Buchanan, R.D. Tollison, G. Tullock. College Station.
- Ward, Michael D., David R. Davis & Corey L. Lofdahl (1995), 'A Century of Tradeoffs: Defense and Growth in Japan and the United States'. *International Studies Quarterly*, Vol. 39, Issue 1.
- Webber, Caroly & Aaron Wildavsky (1986), *A History of Taxation and Expenditure in the Western World*. New York.
- Wildavsky, Aaron (1986), *Budgeting. A Comparative Theory of Budgetary Processes*. 2<sup>nd</sup> Revised Edition. New Brunswick.
- Williamson, Jeffrey G. (2002), *Winners and Losers over Two Centuries of Globalization*. National Bureau of Economic Research (Cambridge, MA), Working Paper 9161.
- Wlezien, Christopher (1995), 'The Public as Thermostat: Dynamics of Preferences for Spending'. *American Journal of Political Science*, Vol. 39, Issue 4.