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## **Military expenditure as a proxy for state power**

### **The case of France**

Etymologically, “power” is the capacity to do and to reach one’s goals. The main power of a state is to offer a good level of security to its citizens, i.e. the ability to satisfy their main needs, free of any threat. Political power introduces the idea of a control, ascendancy or command of a public entity on others. As everybody knows since Adam Smith, “*The first duty of the sovereign, that of protecting the society from the violence and invasion of other independent societies, can be performed only by means of a military force*” (A. Smith, 2007, p.536). Said otherwise, a power is able to assure the integrity of the interests of the nation – independency; territory; style of government; life of people... - against any threat. This was true at the time of Smith and it remains true today.

Since 1990, the systemic antagonism long evoked to explain the Cold War is no longer on the agenda with the collapse of the Soviet Union and Warsaw Pact. For the proponents of the theory of globalization such as Ohmae, Krugman, Fukuyama or Sachs (Fontanel, 2004), growing economic interdependence tends to reduce government intervention in the economy because the generalization of market rules is a factor of solidarity and peace. The idea of an inevitable pacification of international relations allowed by international trade takes us back to the origins of liberal theory, where increasing economic interdependence based on market principles increases the economic prosperity of each nation participating in beneficial exchange, while leading to the reduction of the economic role of the state. In this logic, policy should gradually give way to economic imperatives, on the basis of scientific results not polluted by short-term political concerns.

But the “end of history”, mentioned by Francis Fukuyama (1999) in the post Cold war, has not been subsequently validated<sup>1</sup>. Democracy and economic liberalism, then presented as key requirements to establish a permanent and global peace, still does not seem to be on the world agenda. Indeed, this analysis forgets the “political” objectives pursued by states through their policies, including the desire to increase their power on the international scene. In contrast, in a “neo-mercantilist” perspective, the international economy is increasingly the result of complex national strategies, each state seeking to promote its own interests on the world stage. In this regard, world economical and technological competition is fierce, not only among private companies, but also among states and regions<sup>2</sup>.

Wars still exist. The territories of Afghanistan and Iraq are still at risk, like Ukraine, Syria, Israel, Yemen, Lebanon, Chad, Mali or Nigeria. Threats of war are important in the China Sea and in the East Centre of Africa. Predation remains an important factor of potential conflicts. With the discovery of new sources of energy or raw materials, states may be engaged in strategies to obtain, by force or threat, substantial economic benefits. In this case, the comparative importance of military forces is often decisive. There are weapons everywhere and the arms trade is efficient as well with major armament as well as “small arms and light weapons”. And the problem with availability of weapons is that states have the temptation to use them against those that are in their way (Hartley, 2012). However, in Rwanda, tools such as hammers and machetes killed a million people in three months. Above all, nuclear weapons are not disarmed: France, for example, continues accepts to go on expending 0,15% of its GDP to remain a nuclear nation. However, nuclear armaments are powerful instruments of deterrence and they are not so costly compared with their strategic importance, especially with the signature of TNP (Treaty of Non-Proliferation of Nuclear Weapons).

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<sup>1</sup> At the end of USSR, Fukuyama argues that, the Western liberal democracy becomes the endpoint of the socio-cultural evolution of Humanity, the final form of governments in the world.

So the threats against the interests of the nation are still present if they are not worse today than yesterday, and the “Prince” has still to build up, maintain and, if necessary, make use of a “military force”. “*But the expense both of preparing this military force in time of peace, and of employing it in time of war, is very different in the different states of society, in the different periods of improvement*” (A. Smith, p.536). So there is a greater meaning behind the simple accounting of military expenditures. Maybe it is why until now military expenditures have been identified as a good indicator of military power and through that a good *proxy* of state power. Two questions can be raised: how to measure correctly military power and how to go further to give a good analysis of state power. The answers will be expressed by application to the case of France, using 2016 provisional budgetary data. In 2007, referring to the French new law on budgetary accounting (Loi organique sur les lois de finance), NATO wrote: “*The defence data relating to France are indicative only. According to the new budgetary reform and the financial law, from 2006 on, defence expenditure and strength figures are calculated with a new accounting methodology*” (NATO, 2007). This methodology says only that public policy means *missions* to accomplish; these missions are build with *programs*, themselves being formed by *actions*. One ministry can have several missions, and two ministries or more can share one mission. This organization by functions is, as it is common, crossed with a classification by nature: personnel, equipment, infrastructure and so on.

But before that, one has to be clear upon the real meaning of the objective: the indicator has to be measurable through time. That means a predefined list of elementary budget articles upon which there is then no decision to take, no assessment to make. Of course, an assessment can be made from time to time, to take into account some organizational changes, so that some articles are discarded from the list and some others added, but this has to remain marginal if one wants to save the homogeneity of the series. It is certainly the main problem today, with the deep modification of the useful armament for the future (Bellais, Droff, 2017). Military expenditure remains an interesting indicator of the state power, but it is still in competition with economic factors and national defence strategies.

## **I - Military expenditures (ME) as an indicator of military power**

The first attempt to find an exportable concept of military expenditures seems to be the one made by NATO at the beginning of the 1950s. The aim was to get a tool to measure the contributions of the different member states to the financing and strength of the alliance: “*National defence budgets cover essentially three categories of expenditures: personnel expenses and pensions; research, development and procurement of defence equipment; and, lastly, operations, exercises and maintenance. Budget allocation is a national, sovereign decision...*” One remembers that this attempt was also, and consequently, the beginning of a controversy without end upon the equity of burden sharing within the organization (Olson and Zeckhauser, 1966). A first publication of the results was made in 1963 for the period 1949-1963 (NATO, 1963). But one owes to the Stockholm International Peace Research Institute (SIPRI) to have given a scientific guarantee to NATO methodology and a “neutral” database to every researcher.

Nor could the United Nations ignore the question of military expenditure, especially because of their objective to encourage general disarmament and to create a fund fed by the product of this disarmament for financing development (Fontanel, 1980). But because of the UN typical decision process, one had to wait until 1981 before the database could function, on a state free declaration basis. But because of the great detail of the questionnaire – not less than 48 cells to fill – the return was unsatisfactory: 14 complete reports for 193 states in 2014 (Fontanel, 2015).

And finally, for European researchers it would be a mistake not to mention the work of the European defence agency (EDA) in this field, affording data and comparisons of military

expenditure concerning EU nations, since 2005 (<https://www.eda.europa.eu/info-hub/defence-data-portal/Definitions>). The data basis is interesting considering indicators related to deployed, deployable or sustainable troops, military R&D, operation or maintenance expenditures.

Taking SIPRI for guide, these attempts can be a convenient basis for the present reasoning. Expenditures are accounted on a functional basis: “defence ministries and other government agencies engaged in defence projects”<sup>2</sup>. This is interesting because there can be military oriented expenditures elsewhere than in the “military” administrations. The problem is, for instance, to include paramilitary or peacekeeping forces, in order to build a matrix able to develop all the expenditures referring directly or indirectly to military activity.

It is not to say that this is an automatic process: choices have to be made in line with the aim to estimate military power. For SIPRI, paramilitary forces have to be included in military expenditures when they are trained and equipped for military operations. In 2004, for NATO, that was not enough: “*In such cases, expenditure should be included only in proportion to the forces that (...) can, realistically, be deployed outside national territory in support of a military force*” (NATO, 2016). One can only approve this addendum if one wants to be sure that behind expenditure there are real military capacities and power. For instance, for the French Gendarmerie nationale, the rate of deployability was given officially as 2.2% for 2016<sup>3</sup> (Aben, 2016). Nevertheless this position suffers a lack of coherence because nothing proves that in the country where paramilitary troops are not deployable, the real military forces are deployable either<sup>4</sup>. Military forces are accounted by NATO because they are military by nature, not because they are efficient. No country has been excluded from the alliance because of the non-deployability of its troops. So SIPRI and UNODA were coherent with their own “burden related” position in not following NATO, all the more as this would mean the breaking of the coherence of the time series<sup>5</sup>.

A second problem arises with “Retirement pensions of military personnel”. First of all, unlike UNODA, NATO includes the “civilian employees of military departments... regardless of whether these payments are made from the budget of the MoD or other ministries”. This solution is without effect when the retirement pensions of all the state’s civil servants are paid by the same agency, without distinction of origin, which is the case in France. On the same ground, SIPRI explicitly rejects “veterans' benefits” when NATO and UNODA ignore them. And this goes on with “destruction of weapons, equipment and ammunition...” accepted by NATO, rejected by SIPRI and ignored by UNODA. Regarded from the point of view of power, it seems logical to reject all these items because, if they are an inevitable burden, they provide no capacity to the military system. These organizations are right in including all the costs related to military – and paramilitary – forces, which increase the defence burden, but they would be wrong if they had capacity or power in mind.

There is little to say about the other items of the list, which are not only expenses but also military output producing: “*military research and development*”<sup>12</sup>; *military infrastructure spending (...)*; *military aid*”. Under R&D there is the question of dual research. But if one excludes a conscious concealment, this especial expense is necessarily borne by the defence budget. In the French defence budget, dual research represents hardly 0,6% of the military expenditure without pensions: not something to be bothered by. Another point is that, in France, military aid is not afforded by the MoD but by the Foreign affairs ministry, with a special budgetary program: “Coopération de sécurité et de défense” (Cooperation for security

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<sup>2</sup> SIPRI doesn’t precise what is a defence project. However, any project launched by a ministry or an agency of defence is considered as a defence project (weapon designing, military training evolution, budgetary reform, alliance negotiation...).

<sup>3</sup> In fact it is a rate of effective deployment, which is of course, easier to measure.

<sup>4</sup> It is very difficult to know exactly the deployability of an army, because data are not really available. However, it is an important factor of power.

<sup>5</sup> For instance, the removal of France’s Gendarmerie nationale – decided by French authorities, in fact because of the transfer of GN to the Home ministry – represented a reduction of more than 8 billion €.

and defence) which does not make the difference between military cooperation and police cooperation.

Considering the French view upon defence, there is another expense that has to be taken into account: the action in favour of the “spirit of defence”, named in budgetary language: “*Liens entre la Nation et son armée*” (Links between the nation and the armed services). With this addition, the figures for the French case are presented in Table 1.

<b>Table 1 - Military expenditure as an index of military power</b>			
<i>Budgetary aggregates</i>	<i>b€</i>	<i>%GDP</i>	<i>%State budget</i>
Mission “Défense” (Defence expenditure strictly speaking)	31.4	1.4	10.2
Programme “Liens entre la Nation et son armée” (Spirit of defence)	0.6	...	...
Programme “Coopération de sécurité et de défense” (Military aid)	0.1	...	...
<b>Total</b>	<b>32.1</b>	<b>1.45</b>	<b>10.4</b>
<i>Caption: these figures are based upon 2016 provisional French budgetary data (Ministère de la défense, 2016)</i>			

Even if an agreement is found on the previous issues, there remain some open questions about practical accounting and use of the indicator. As a specialist noted years ago “*Still, one cannot assume that the data by SIPRI are problem-free because data on defense spending like all forms of data are subject to inaccuracies resulting from measurement errors, the conversion to other currencies, and manipulation for political and security reasons.*” (Khaliffa-Al-Youssif, 2002). At least two questions justify further analysis. The first one comes from the necessity to build military expenditures time series, so as to cope with the evolution of defence labour prices and commodity prices: the so-called “military inflation” (Hartley, 2016 ; Hartley & Salomon, 2016). It was trendy in the 1970s to assert: “*military inflation is always superior to general inflation by at least one point*”<sup>6</sup>. But after correction of the “quality effect” - when *Rafale* replaces *Mirage 2000*, for instance - this is not proven (Aben and Dures, 1988). Anyway, the general price indexes are used everywhere when it comes to protecting the purchasing power of military expenditures through time. Consequently there is, in practice, no problem to find price indexes for deflating national military expenditures.

It is the same for the comparisons between countries. There is an almost general agreement to use the purchasing power parity (PPP) rates of change, rather the market ones, to compare military expenditures, even if “*PPP is a misleading pretentious doctrine*” (Samuelson, 1964, p.153). First the PPP rates are significantly less erratic than the market ones, they satisfy a natural need for stability; then there is at least a theory to sustain the choice, which satisfies the scientific need of rationality. There is also a United Nations’ request for allowing a better perception of military expenditures in developing countries, otherwise undervalued by the weakness of their currency (Coulomb and Fontanel, 2003). This proves that a principle of realism leads the specialists to use PPPs computed by the World Bank and OECD (Organization for Economic Co-operation and Development). The figures produce information on “the real burden” of military expenditure for the citizens in terms of purchasing power.

At the end of this section several goals have been reached. It seems quite possible to delimit the “military expenditures” accounting concept from the definitions of NATO, UNODA and SIPRI, so that the only expenses taken henceforth into account are those having a military or security output, therefore giving an index of state military power. And this index can be corrected for inflation and exchange rates variations, so that historical as well as

<sup>6</sup> Mr François Léotard, French deputy, during the budgetary session of 1983.

geographical comparisons are possible. It remains to know if this index conceals congenial defects.

## II – Military expenditure as an unbiased indicator of state power?

One can immediately evacuate the problem of the imperfection of data collection in estimates of military expenditure (Perlo-Freeman, 2015). There is no doubt that the less a country is democratic and developed, the less reliable are its accounts. But this is true for all their statistics, not only for military expenditure. So, every time, the researcher is confronted with a Hamlet like question: “to do or not to do”, when too few rigorous data are available in order to interpret the world.

The first question to examine is if the military expenditure aggregate is an unbiased indicator of *military* capacity. This is a paradoxical question because SIPRI, at least, give a warning to their followers: their indicator is only “*a measure of the scale of resources absorbed by the military*”. It would be easy to reinforce this warning with all the remarks upon the “Danaids’ barrel” constituted by defence budgets everywhere in the world. If “*Cedant arma togae*” (military people follow political power), one has also to write “*Impellunt arma togam*” (military people influence political power), that is to say, that the political power knows the seriousness of threats and risks only through the description made by the military apparatus, under the confidentiality condition.

But even excessive by nature, military expenditure has every reason to progress with the military efficiency of its components: badly paid soldiers are easily disloyal and seditious ones; even if weapons are traditionally “gold plated”<sup>7</sup> a more efficient weapon has a chance to be more expensive: “*Per qualche dollaro in più*” the Maginot line would have been completed and general Guderian would have been unable to go through; maybe a military function kept under public control is more expensive than if outsourced to a private company, but it is also more reliable, because of old-fashioned determinants like patriotism. Nevertheless it has also to be accepted that military efficiency suffers an inertia effect because if the expenses are immediate, the military capability is delayed from some months or years for personnel, to many years for equipment.

Military expenditure as an aggregate was conceived in the 1950s. But things have changed somewhat since this Cold War period: new weapons were born, new strategies have been introduced, and today it is trendy to be enthusiastic about Star Wars or Cyber Wars. But it would be extremely naïve, even contemptuous, to imagine that the military experts are not aware of these evolutions, that the military planners do not program expenses in these fields and eventually that the military apparatus is definitely unable to cope with these threats or aggressions. And if, as supposed, the military people follow the evolutions, these expenses are incorporated in the military expenditure concept.

It would be easy to infer that if these strategic expenses were substituted by other ones less appropriate, the military expenditure aggregate would be unable to tell it. The structure of military expenditure is certainly as crucial as its global value. One can find a proof in the NATO instruction not only to spend 2% of GDP for defence, but also to devote 20% of this sum for equipment expenses: machetes are lethal but inappropriate against battle tanks. And it is necessary to go further because organizations know how to buy new equipment, but they are less at ease with maintenance operations: the first task of general de la Billière when arriving in Arabia in 1990 was to increase drastically the rate of operational availability of his Challenger tanks (la Billière, 1992, p.150). It is interesting to take account of the detailed structure.

The final argument in this line is that the power of the city is neither in its walls nor in

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<sup>7</sup> It is well known that the first French atomic « bomb » was effectively gold plated so that it could be shown to public authorities before its explosion without risk of being rusted.



its vessels, but in the spirit of its citizens. But, reciprocally, with the same spirit, a city well-armed and military prepared is nearer victory than another one. This means that it is unrealistic to pretend to make a comparison with several variables simultaneously. It is necessary to set a *ceteris paribus* condition, so that the only studied variable is military expenditure. So it is reasonable to conclude that, of course, military expenditure is an imperfect indicator of military power, but it is not really a *biased* one, because it fluctuates more or less erratically around the line of military output.

This postulate being accepted, it is possible to go further. Nobody can imagine that the military apparatus is the only means for the state to express its will of getting effects upon the rest of the world.

### III – From Military expenditure to Power expenditure

But one could also try to enlarge the “military expenditure” concept, so that it would be more and more representative of the ability to provide general security to a state’s citizens. Already UNODA express, among its 14 functional expenditure categories, “Emergency aid to civilians”. Of course this category is also present in NATO and SIPRI aggregates, even if implicitly. It is certainly a military expense, because even if it is a civil security mission, military people or paramilitary ones take it on. And one can add that this activity does not reduce the military capability or military output of the armed force, because the means used in that case were first designed for a military mission.

A first step in this enlarging can find its roots in the Max Weber’s definition: “*The state is a political community if and only if its direction claims successfully the monopoly of legitimate physical force to implement order*”<sup>8</sup> (Weber, 1922). That means the coercion capability of the state can be found elsewhere than in the sole military apparatus. Long ago<sup>9</sup>, the French administration had to face this problem when it enacted its “general organization of defence”: defence had to be global, that is to say against all sorts of aggression. In 2008, “defence” was relegated to military aggressions only, while a concept of “national security” or of “continuum defence-security” was put forward. The result was that, in the White paper on Defence and National Security of 2008, a concept of “National security global effort” was proposed in comparison of the traditional “Defence effort” (equivalent to “military expenditure”). The principal addition was the important mission “*Sécurités*” (programs “*Police*”, “*Gendarmerie*”, “*Sécurité civile*” and “*Sécurité routière*”)<sup>10</sup>. To that it seems logical to add a special budgetary action: “*Coordination de la sécurité et de la défense*” (coordination of security and defence). Indeed it is the result of the will of Charles de Gaulle to globalize defence policy, under the authority of the Prime Minister. So a General secretary of national defence was seconded to the Prime Minister, with the responsibility to coordinate all the activities of the different ministries in the field of national (global) defence. The result appears in Table 2.

<b>Table 2 - National Security Global Effort as an index of state power</b>			
<i>Budgetary aggregates</i>	<i>billion €</i>	<i>%GDP</i>	<i>%State budget</i>
Military expenditure (brought forward)	32.1	1.45	10.4
Mission “ <i>Sécurités</i> ”	18.7	0.8	6.1
Action “ <i>Coordination de la sécurité et de la défense</i> ”	0.3	...	...
<b>Total</b>	<b>51.1</b>	<b>2.3</b>	<b>16.5</b>
<i>Caption: these figures are based upon 2016 provisional French budgetary data (Ministère de la défense, 2016)</i>			

<sup>8</sup> “Staat soll ein politischer Anstaltsbetrieb heißen, wenn und insoweit sein Verwaltungsstab erfolgreich das Monopol legitimen physischen Zwanges für die Durchführung der Ordnungen in Anspruch nimmt”

<sup>9</sup> At the beginning of the 5<sup>th</sup> Republic, when the *Ordonnance 59-147 du 7 janvier 1959 portant organisation générale de la défense* was promulgated.

<sup>10</sup> *Sécurité civile*: emergency services; *Sécurité routière*: road safety department.



So the change for “national security” would mean a jump from 1.45% to 2.3% of GDP or from 7.8% to 12.5% of the state’s general budget). If one reasons in terms of the part of GDP or general budget dedicated to the means of power, this is a very significant increase.

But to get effects upon the state’s defence does not mean only the unilateral use of coercion or violence. It is the reason why, in the French “*code de la défense*” (defence code) four ministers, and not only two, are in charge of defence: Defence and Internal Affairs, of course, plus Foreign Affairs and Finance; several other ones are in charge of “resources” (Telecom, Transports, Agriculture...) – but, curiously, Justice is the great absentee from this list.

For a minister, to be “in charge” of global defence, does not mean that the whole administration of their ministry works for defence. So it is necessary to reason in functional terms, at the level of “missions” and “programs” at least. In the case of the ministry of Foreign Affairs, the program “*Coopération de sécurité et de défense*” has already been accounted. But there are two other areas which can reasonably be added in a perspective of power: “*Action de la France en Europe et dans le monde*” (France’s action in Europe and in the world) and “*Diplomatie culturelle et d’influence*” (Diplomacy for culture and influence). This is the core of a foreign policy, i.e. to participate in the “Concert des nations” and to influence the decisions of other states in order to magnify its own action.

It is surprising that the economic defence<sup>11</sup>, that is the civil action aiming at the protection of national production, and consequently standard of living, had not been included in the concept of National Security Global Effort (NSGE), in contradiction with the letter of the Defence code (title IV). So it is time to examine the different missions or programs shared by the ministries of economy and budget to find those that could enter into an enlarged power concept. The programs “*Conduite et pilotage des politiques économiques et financières*” (Leadership and piloting of economic and financial policies), “*Développement des entreprises*” (developing enterprises) and “*Stratégies économique et financière*” (Economic and financial strategies) seem to be ideal candidates: these policies try to make the national economy less vulnerable to “economic war”. It is the same with “*Facilitation et sécurisation des échanges*” (Easing and securing commerce), because it represents essentially the action of custom services. It seems logical to complete this list with “*Statistiques et études*” (Statistics and studies), because there is no policy without a knowledge of its field.

Justice also was forgotten by the NSG; however it is obvious that in a democracy the police activities are to be under its control and partially at least, at its service. So it is time for it to be joined. “*Justice judiciaire*” (by opposition to “*Justice administrative*”) and “*Administration pénitentiaire*” (Penal administration) seem perfectly to describe the participation of Justice in the coercion power of the state.

Research is not a monopoly of the state. But it has to organize, finance or promote research for orienting the evolution of the technological patrimony of the nation - especially concerning “sovereign technologies” (Coadour, Droff, Bellais, 2015) -, which is the basis of its power. Almost all the ministries have a research policy, so it is convenient to build a sub-aggregate with all the programs financing research in place of a listing of all the elementary programs.

After making all these changes and adjustments to budgets, the final accounting is presented in the Table 3.

<b>Table 3 – State Power Expenditure</b>			
<i>Budgetary aggregates</i>	b€	%GDP	%State budget
National Security Global Effort (brought forward)	51.1	2.3	16.5
Programme “ <i>Action de la France en Europe et dans le monde</i> ”	2.0	...	...

<sup>11</sup> In the *Code de la défense*, *Défense économique* is strictly defined as the body of measures securing the continuity of economic activity in case of major crisis and assuring the protection of the nation’s economic interests.

Programme “ <i>Diplomatie culturelle et d’influence</i> ”	0.7	...	...
Programme “ <i>Conduite et pilotage des politiques économiques et financières</i> ”	1.0	...	...
Programme “ <i>Développement des entreprises</i> ”	0.3	...	...
Programme “ <i>Stratégies économiques et financières</i> ”	0.4	...	...
Programme “ <i>Facilitation et sécurisation des échanges</i> ”	1.6		
Programme “ <i>Statistiques et études économiques</i> ”	0.4	...	...
Programme “ <i>Justice judiciaire</i> ”	3.2	...	...
Programme “ <i>Administration pénitentiaire</i> ”	3.4	...	...
Ministries research	10,3	0.5	3.3
<b>Total state power expenditure</b>	<b>74.4</b>	<b>3.4</b>	<b>24.1</b>
<i>Caption: these figures are based upon 2016 provisional French budgetary data (Ministère de la défense, 2016)</i>			

So the expenses which permit the state to get effects on the rest of the world (a part of this, at least) amount to 74.4 billion euros, 3.4% of GDP or 18.2% of the state’s general budget or, eventually, 2.3 times current military expenditure.

## Conclusion

Of course, there is room for discussing the perimeter of this last aggregate, the power expenditure, to add or to retire so much programs or missions. But because its building logics is the same as the “military expenditure” one which is recognized almost everywhere, there is no reason to reject it *en bloc*. Nevertheless the question of its ability to indicate properly the power of the state remains.

In the French Academy dictionary, a power is defined as a sovereign state that, most often, because of its capacities economic, military... play an important role on the international stage. The military capacities are treated through the traditional “military expenditure” indicator, but it was already explained that power is not the objective of its design, so that it had to be adapted, and that was done above. More than that, Greece was the second country in NATO, after the United States, for the defence effort (military expenditure/GDP), but it is not a powerful state. Their poor economic performance and their abyssal debt aren’t they a result also of their excessive military effort?

On the other side there are the economic resources. It is obvious that “the wealth of nations”, the amount of their natural resources and especially the number of their people form the basis of the power: “*veu qu’il n’y a richesse, ny force que d’hommes*”<sup>12</sup> (Bodin, 1576, p.546). There is no military or security expenditure without public purchasing power, and no public purchasing power without economic prosperity. So in this case also, an indicator is needed and there is no hesitation to designate the gross domestic product (GDP) for that purpose, even if everybody knows the critics formulated against this aggregate: “*those attempting to guide the economy and our societies are like pilots trying to steering a course without a reliable compass*” (Stiglitz, 2009, p.9).

More than that, there is no certainty that the economic resources, though abundant they are, will be used to purchase the means of power: Japan has waited for “Abenomics” to enhance its military capability and Germany - “an economic giant but a politic dwarf” - is still hesitating, with a military effort at the 16<sup>th</sup> rank in NATO. Consequently it would not be pertinent to simply replace military or power expenditure by GDP to get an unique indicator of state power. Security spending is an important indicator but insufficient to measure the power of a state, just as GDP and its evolution are not the only criteria defining the economic health of a country without reference to the distribution of wealth or the well-being and solidarity of its citizens (Fitoussi, Sen, Stiglitz, 2009).

So we need a combination of two indicators: capability to act, by the resources controlled, and will to act, by the means dedicated to action. It is like in the paper of Olson and

<sup>12</sup> “Seeing that there is wealth and strength only with people”

Zeckhauser quoted above: “*Big Atlantis and Little Atlantis are identical in every respect, save the fact that Big Atlantis is twice the size of Little Atlantis. Now imagine also that Big Atlantis is providing twice as much alliance defense as Little Atlantis, as proportionality would require. (...) Big Atlantis will want more defense or Little Atlantis will want less*” (Olson and Zeckhauser, 1966, p.270).

So, if the GDP is able, more or less, to indicate the resources controlled, the ratio power expenditure on GDP, is the good indicator for the will to act in the whole spectrum of security and influence.

## Bibliography

Aben, J., Daures, N. (1988), La production de défense face à l'inflation, *Journal de la Société de statistique de Paris*, n°3, pp. 181-192.

Aben, J., Malizard, J. (2016), Defence budgets, in Joseph, P., (ed.), *The SAGE Encyclopedia of War: A Social Science Perspective*, Thousand Oaks, 2016, p.462-466.

Aben, J. (2016), Retour sur la mesure de l'effort de défense - Variations françaises sur un thème imposé, *Défense et Stratégie*, n°41, to be published.

Bellais, R., Droff, J. (2017), Innovation et technologie dans l'armement : Un modèle en nécessaire transformation, *Annuaire Français des Relations Internationales 'AFRI*, Paris.

Billières, P. (1992), *Storm Command: A Personal Account of the Gulf War*, HarperCollins, London, 1992.

Bodin, J., (1576) *Les six livres de la République*, Paris, Jacques du Puys.

Coadour D., Droff J., Bellais R. (2015), “Technology transfers in complex systems: An assessment of risks associated with training and knowledge management” *19<sup>th</sup> International Conference on Economics and Security*, Grenoble, France, 25-27<sup>th</sup> June.

Coulomb, F., Fontanel, J. (2005), An economic interpretation of French military expenditure, *Defence and Peace Economics*.

Coulomb, F., & Fontanel, J. (2003). Disarmament: A century of economic thought. *Defence and peace economics*, 14(3), 193-208.

Fontanel, J. (1980). Le concept de dépenses militaires. *Défense Nationale*.

Fontanel, J. (1982), La comparaison des dépenses militaires, *Revue Défense Nationale* Novembre.

Fontanel, J. (2005), La globalisation en “analyse”. *Géoéconomie et stratégie des acteurs*, L'Harmattan, Paris, pp. 76-92.

Fontanel, J. (2015), La base des données des dépenses militaires recueillie par l'Organisation des Nations Unies : origine et évolution. *United Nations Standardized Instrument for Reporting Military Expenditure (2015)*, In Paix et sécurité européenne et internationale, <http://revel.unice.fr/psei/>

Fukuyama, F. (1989), The End of History ? *The National Interest*, n°16, Summer, pp. 3-18.

Guilhaudis, J-F., Malizard, J. (2015), Dépenses de défense et de sécurité, PSEI, N°1, 17 août 2015, URL : <http://revel.unice.fr/psei/index.html?id=337>

Guilhaudis, J-F. (2015), « Puissances et impuissances, acteurs de la sécurité et de l'insécurité internationale.(A1-A83) », PSEI, Numéro 1, 17 août 2015, <http://revel.unice.fr/psei/index.html?id=333>.

Hartley K. (2012), Conflict and Defence Output: An Economic Perspective, *Revue d'Economie Politique*, 122(2), pp. 171-195

Hartley K, Solomon, B, Eds (2016), Special Issue, Defence Inflation, Vol 27, n°2, pp. 172-279.

Khaliffa-Al-Youssif, Y, Defense spending and economic growth : some empirical evidence from the Arab Gulf region, *Defence and Peace Economics*, 2002/3, p.187-198.

Krugman, P. (1998). La Mondialisation n'est pas coupable. Vertus et limites du libre-échange. Paris: La Découverte.

Ministère de la défense (2016), *Annuaire statistique de la défense 2016*. Délégation à l'information et à la communication de la défense, DICOd septembre, Paris - [www.defense.gouv.fr](http://www.defense.gouv.fr)

NATO (1963), Defence expenditures of NATO countries 1949-1963, NATO Press service, 17 December.

NATO (2006), North Atlantic Council, Riga, December 2006.

NATO (2007), NATO-Russia Compendium of Financial and Economic Data Relating to Defence, [http://www.nato.int/cps/en/natolive/news\\_15498.htm?mode=pressrelease](http://www.nato.int/cps/en/natolive/news_15498.htm?mode=pressrelease)

NATO (2016), Public Diplomacy Division, *Defence Expenditures of NATO Countries (2009-2016)*, 4 July 2016.

Ohmae, K. (1995), Putting global logic first, *Harvard University Review*, January/February, pp. 119-125.

Olson M. et Zeckhauser R. (1966), An economic theory of alliance, *Review of Economics and Statistics*, 48, pp. 266-279

Perlo-Freeman, S., Mind the Gaps: Explaining missing and poor quality milex data, [www.defense-realms.com/wp-content/uploads/2015/07/](http://www.defense-realms.com/wp-content/uploads/2015/07/)

Sachs, J.D. (1995), Consolidating capitalism, *Foreign Policy*, Spring.

Samuelson, P.A. (1964), *The collected Scientific Papers of P.A. Samuelson*, MIT Press, 1964, vol II.

Smith, A. (1776, 2007), *An Inquiry into the Nature and Causes of the Wealth of Nations* (2007), Metalibry, Amsterdam et alii, 29 May 2007, p.536

Smith, R., Fontanel, J. (2008), International security, defence economics and the powers of nations, in *War, Peace and Security*, Contributions to Conflict Management, Peace Economics, and Development, Volume 6, edited by Jacques Fontanel and Manas Chatterji - London, Elsevier/Emerald,, London

Stiglitz, J., Sen, A., Fitoussi, J-P. (2009) *Rapport de la Commission sur la mesure des performances économiques et du progrès social*, INSEE, [http://www.insee.fr/fr/publications-et-services/dossiers\\_web/stiglitz/doc-commission/RAPPORT\\_francais.pdf](http://www.insee.fr/fr/publications-et-services/dossiers_web/stiglitz/doc-commission/RAPPORT_francais.pdf)

Weber, M. (1922), *Wirtschaft und Gesellschaft, Grundriss der verstehenden Soziologie*, <http://www.textlog.de/7321.html>.

## Summary

This paper tries to see how to build a simple indicator of state power. Military expenditure is the reasoning's point of departure, with the definitions given by NATO, SIPRI and others.

This definition is discussed and a power version is build, using French budgetary data. Then a defence of the result against traditional or non-traditional critics is presented under an imperative of action. Finally this concept is enlarged and a new concept of power expenditures is given, one more time using French budgetary data. The conclusion is that this large expenditure concept is an unbiased but imperfect indicator of the will to act, and has to be completed by GDP to indicate the capability to act in the long run.

**Keywords**

Defence, security, military expenditures, security expenditures, defence budget, budget structure, State power.

JEL: H56, H41, H55, H61