CENTRE DELÀS
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CENTRE DELÀS
REPORT 33

THE WEAPONS BUBBLE AND THE MILITARY INDUSTRY IN SPAIN

Special Armament Programs

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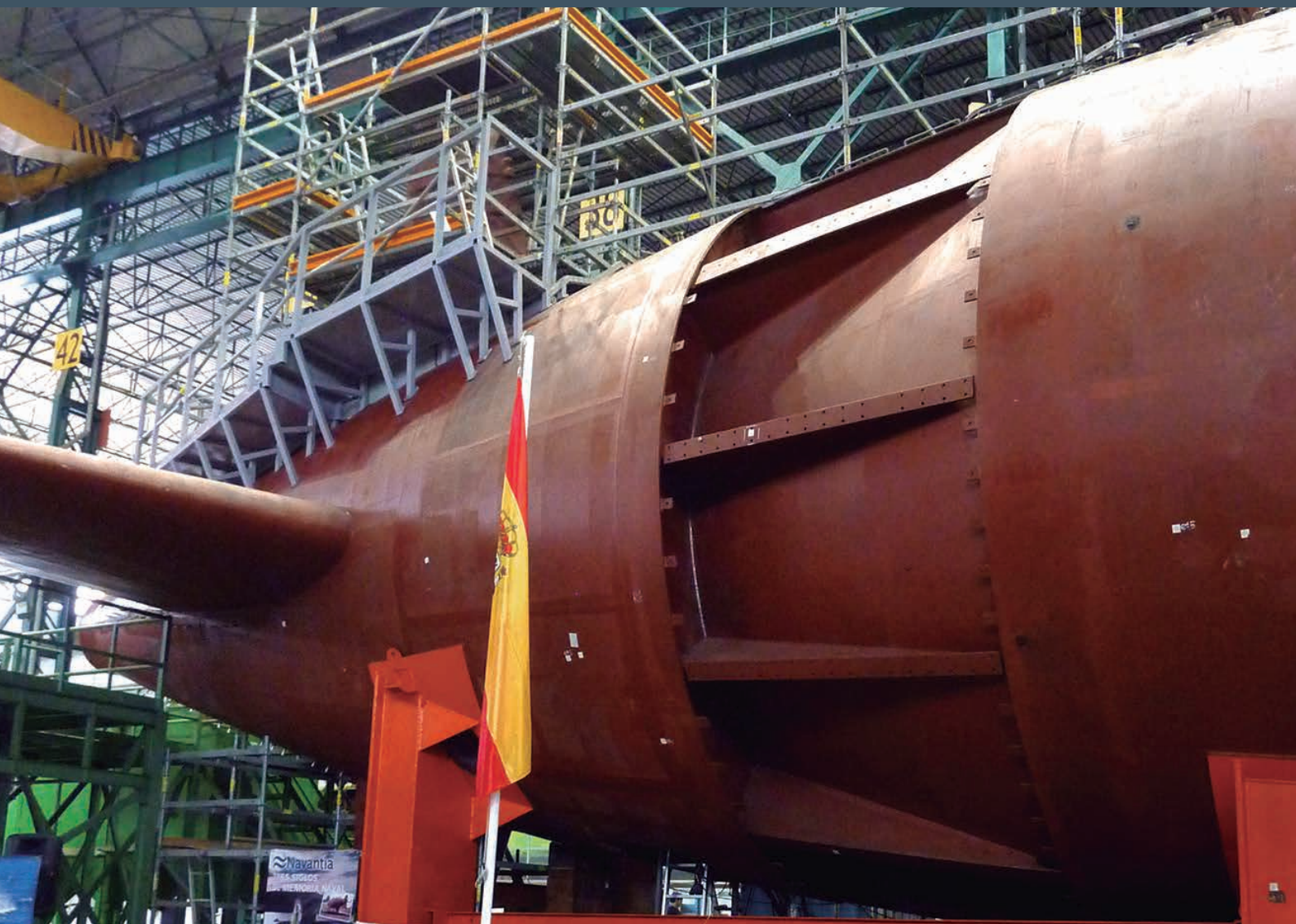

REPORT

n. 33

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Special Armament Programs

Pere Ortega

Xavier Mojal and Mar Pérez have collaborated
in the collection and analysis of information

Centre Delàs d'Estudis per la Pau
Barcelona, June 2017

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D'ESTUDIS
PER LA PAU

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EXECUTIVE SUMMARY

The military industry in Spain is largely fuelled by the demands of the Ministry of Defense, and in particular by the so-called Special Armament Programs – *Programas Especiales de Armamento (PEA)*. In 1998, the government of the People's Party (PP) approved the first three PEA, related to the F-100 Frigates, the F-2000 fighter planes and the Leopard armored fighting vehicles. These weapons were justified on the grounds that the fighter plane F-2000 was a common manufacturing operation between Germany, Italy, the United Kingdom and Spain with high strategic value. In addition, it was presented as unbeatable from a military point of view. The problem was their unsustainability due to their exorbitant costs; the initial purchase commitment in early 1998 amounted to €12.767 million for the three programs. During the next legislature between 2000-2004, still under the PP government, the number of PEA increased from three to eight, with five new categories being the Pizarro armored fighting vehicles, Tigre choppers, A400M transport aircrafts, a Strategic Projection Ship and S-80 Submarines for a total value of 7.547 M€. Their number continued to increase during the next two Legislatures led by a PSOE government (2004-2011), with eleven new armament programs, making a total of nineteen PEA whose initial costs saw an increase of €3.564 million. When the PP came back to power in 2011, five additional PEA were approved, bringing their number to 24 and their total costs to the colossal amount of €36.539 million in 2016.

Since their inception, the PEA, due to the commitments made, generated a major State debt to military industries responsible for manufacturing them, the main contractors being EADS-Casa (nowadays Airbus Defense and Space), Navantia, Santa Bárbara Sistemas (nowadays General Dynamics), and Indra.

For the development of the PEA, private military corporations received provisions for R+D amounting 17.487 million that, as weapons were delivered, had to be reintegrated into the National Treasury in order to discharge the existing debt. But this process has not been fully carried out and to date, an estimated 15.000 million are still owed. Both the excessive accumulated debt and the public deficit associated with the PEA have led to difficulties for the Ministry of Defense in meeting payments, to such an extent that the armed forces had become inoperative due to lack of resources. Thus, it is necessary to conduct an audit covering these programs, for a variety of reasons. The first reason is because both politicians and military officials have questioned their real contribution to national security. Second, for reasons of transparency and to determine exactly whether there are irregularities or breaches of the contracts, which could result in their contestation, and would thereby allow their denunciation and the reduction of their costs. Thirdly, because it needs to be assessed whether the assistance in the form of R&D credits granted to military companies have been returned, and what amount is due to the National Treasury. And fourthly, an issue arising from transparency, because it would permit to renegotiate contracts with companies, with a view to reducing the number of weapons, in particular

those that have been questioned regarding their limited usefulness for national security and defense.

Another crucial issue in order to reduce the Defense's demand for weapons would be to reconsider the number of military personnel. In Spain in 2016, the armed forces have 123.000 militaries available, and a significant reduction in military units could be achieved. In particular, when danger and threat perceptions that hung over in and around the country do not justify this number of military personnel. The defense-related needs of the 21st century are undoubtedly different from those of the last century, where armies were assigned the role to wage war on conventional lines. Today this function is practically null and security is measured by other parameters to which armies are unable to provide a response. This would oblige a decrease in heavy weapons procurement, in particular those that, like the PEA, are ill-suited to cope with the new security challenges.

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THE WEAPONS BUBBLE AND THE MILITARY INDUSTRY IN SPAIN

Pere Ortega · researcher and president of the Centre Delàs d'Estudis per la Pau

"Know how to wait and not get tired of waiting; hear tell lies about this and ignore those lies", Bertolt Brecht

1. THE MILITARY INDUSTRY IN SPAIN

There are 580 companies referenced in the directory of firms that supply equipment and services to the Ministry of Defense. It should be mentioned that most of them are not engaged in the production of weapons, its components and manufactures thereof, but provide non-military services related to the maintenance of military staff and facilities, including energy, food and other domestic supplies, without which this staff would not be operational. This also includes services without which weapons cannot be operational such as communication, flight system and missile guidance system technologies, as well as the maintenance of weapons.

For this purpose, we must understand by military industry or defense industry companies that produce weapons and weapons systems, weapons components, defense equipment as well as firms specialized in military technology or the maintaining of the armed forces, and that are included in the Military Goods Controls, which is enclosed in the Annex 1 of the Regulation for the control of external trade in defense materials, other materials and dual-use goods and technologies (Royal Decree 679/2014 issued on August 1st) [1].

Table 1 of the Annex details 48 companies that are among the most important operating in the Spanish military industrial sector and from which we have collected information – of course, it is not all of them but many are among the most significant in terms of volume of production and sales.

In 2015[2], these firms billed over €7.428 million and employed 21.130 workers. Sales figures differ, however, from corresponding ones observed in the annual Report released by IDS for the same year, 2015, which indicates sales of €5.000 million, although employment figures, that report 22.000 workers, are more accurate. The gap in sales figures relates to the fact that IDS[3] only takes into account companies associated with the defense employers' association, the TEDAE – Asociación Española de Empresas Tecnológicas de Defensa, Aeronáutica y Espacio – which are certainly not the only ones involved in military production but rather the most important, and where many small and medium-sized enterprises that we took into account are not considered.

The sales figure of €7.428 million is certainly an approximate figure as most businesses have military production lines alongside civil production but do not provide data. We thus acquire information using corporate balance sheets, and, if they do not report it, using the yearbooks of TEDAE[4], IDS or Edefa[5] group, along with media reports. This figure might not be exact but it is close to reality. This

1. http://www.comercio.es/defensa
2. The corporate balance sheets data for 2016 were not yet available.
3. IDS, Spain, Defence & Security Industry 2015, www.infodefense.com
4. TEDAE, https://www.tedae.org/es/publicaciones/etiqueta/informe-sectorial
5. *Anuario de la Defensa e Industria en España*, 2016, Grupo Edefa

Santa Bárbara is being overtaken by a competitor, Expal

turnover amounts to 1,02% of all industrial output in the State in 2015[6]. With regard to employment, the 21.130 jobs account for only 0,86% of total industrial occupations (INE). This data shows the specifically small weight of both the military sector and the employment sector, the principal arguments of which defend military production at any cost and show a decline with respect to our previous study (Ortega, P.p.15, 2015) [7], with figures from 2011.

The ranking proposed in the Table 1 of the Annex details four of the most important military industries – Airbus, Indra, Navantia and General Dynamics/Santa Bárbara Sistemas. As they generate what we call the oligopoly of military production in Spain, a specific chapter is devoted to them.

We must point out that Santa Bárbara Sistemas has moved from the fourth to the seventh place over the past two years – 2014 and 2015, thus being overtaken by Expal, S.A., Industria de Turbo Propulsores (ITP) and Aernova. This is due to the fact that Santa Bárbara has stopped supplying its star products, the Leopard and Pizarro armored fighting vehicles and the 155mm shells commissioned by the Spanish Ministry of Defense, resulting in a massive decline of its turnover over the past ten years, from €499 million in 2006 to €102 million in 2015 (Table 3). A company, Santa Barbara, which is being surpassed by a competing company, Expal, which also creates military material of all classes of explosives and projectiles for the Spanish army. Then there are ITP, which supplies military aircraft engines manufactured by Airbus and Aernova, which provides Airbus with aluminum carbon fiber bodies for military planes and helicopters.

2. THE OLIGOPOLY OF MILITARY PRODUCTION

2.1 Aircraft Construction / EADS / Airbus

Construcciones Aeronáuticas CASA, which is dedicated to the manufacture of aircraft, was State-owned and monitored by SEPI. Specializing in medium and light military transport planes, it became a global leader in this segment of production in the early 1990s. Nonetheless, CASA experienced significant losses every year until 1992 (3.593 million pesetas in 1992). In 1998, discussions were initiated together with France, Germany and United Kingdom. In July 2000, these discussions resulted in the creation of a large consortium joined by Spain. Thus, the British company British Aerospace (BAE Systems), the German company Daimler-Chrysler Aerospace (DASA), Aerospatiale-Matra owned by Lagardere (France), Alenia (Italy) and the Spanish company CASA created the European Consortium *European Aeronautic Defense and Space* (EADS), which is today known as Airbus Group. La SEPI obtained 5,52% of the ownership in return for the merger. Restructuring in the composition of the shareholding took place on 2006, divided between the German Daimler-Chrysler with 22,32% and France with the other 22,32% (15% for the French State and 7,32% in the private hands of Lagardere), while the Spanish State kept 5,52%. In 2014, a new pact between the German and French governments ruled that States needed to reduce their shareholding link with the company. France lowered its participation to 7,5% and the Spanish one was reduced to 4%.

EADS is the second largest European company, behind the British BEA Systems, and worlds the second largest military aerospace company, behind Boeing

EADS is the second largest European company, behind the British BEA Systems, and worlds the second largest military aerospace company, behind Boeing. It has 70 production centers and employs about 117.000 people spread around the world. It has business units engaged in the production of fighter planes (F-2000), choppers (Tigre), space rocket (Ariane), satellite carrier rocket (Galileo) and missile systems (MBDA), for which it is the worldwide market leader. In January 2014, it changed its name to Airbus Group. The group's businesses in Spain include

6. INE, http://www.ine.es/daco/daco42/daco4211/epa0415.pdf
7. Ortega P.; *El Lobby de la industria militar en España*, p. 15

Airbus Defense and Space, dedicated to both the manufacture and assembly of transport aircraft and EF-2000 fighters; Airbus Helicopters, which produces the full range of military choppers; Airbus Military, which produces the A400M military transport aircraft; Cassidian Aerospace, for electronic and telecommunications products; Airbus Operations, for engineering and aeronautical design; and Casa Espacio, for research and production of space systems.

The sale to General Dynamics was completed for the ridiculously low cost of €5 million. A company that has always had losses throughout its history

2.2 Santa Bárbara Systems / General Dynamics

The fully state-owned Empresa Nacional Santa Bárbara produced all the military equipment, both heavy and lightweight, for the Spanish Army: artillery, panzers, missile integration works, rifles, ammunition and all types of shells of various calibers. Because of its heavy losses recorded throughout its history, the Government of the PP decided to privatize the company in 2000. At the retail stage, three offers were submitted by the US firm General Dynamics, the German group Krauss Maffei/Rheinmetall and the Spanish company Expal. Ultimately, Santa Bárbara was adjudicated in July 2001 to General Dynamics, one of the leading global arms manufacturers. The SEPI justified this adjudication by the fact that General Dynamics had undertaken to preserve all existing jobs in Santa Bárbara during 5 years, something that the German company did not. This decision provoked a reaction from the German government which considered this adjudication went against European interests. The main objection was that Santa Bárbara was the licensee for the manufacture of Leonardo panzers, patented by the German group Krauss Maffei, which might cause a technology and information leak about Leopard to its US rival General Dynamics, a manufacturer of Abrams tanks and a major competitor of Krauss Maffei on the world market.

The sale to General Dynamics was completed for the ridiculously low cost of €5 million, whilst ensuring lucrative orders for the production of 242 Leopard armored cars for an amount of €2,139 million; the modernization of Pizarro panzers for €781 million; the manufacture of 155/52mm towed Howitzer for €191 million; and ammunitions for €180 million; all this for a total of €3.291 million. In conclusion, General Dynamics benefited from a rainfall of millions with this order portfolio, which turned Santa Bárbara into a lucrative investment. As the workload decreased with the end of the contract relative to the manufacture of Leopard panzers, the company carried out a provisional downsizing plan and shut down the factory located in Palencia, which one was acquired in October 2013 by the Norwegian NAMMO, specialized in the manufacturing of artillery shells.

2.3 Empresa Nacional Bazán / Izar / Navantia

The Empresa Nacional Bazán of the shipbuilding sector was created in 1947 in order to produce all types of military vessels and ships (submarines, frigates, corvettes); engines and turbines, communications, control and combat systems for the Spanish Army vessels. Given the impossibility to find interested buyers for a company that throughout its history has always sustained losses, it merged with the public civil Astilleros Españoles, S. A. (AESA) in December 2000; renamed IZAR, it fell under control by the SEPI. The reason why IZAR absorbed AESA is the bankruptcy of the Spanish civil shipyards. In 2005, IZAR was divided into two companies in an attempt to enhance business efficiency between the civilian and the military sectors. The military department was renamed Navantia, the public military shipbuilding company. There are two important shipbuilding centers in the Bay of Cadiz and El Ferrol. Over the last sixteen years, the company sustained losses of some €3.793 million funded by public revenue.

Nacional Bazán / Izar / Navantia is a company that has always had losses throughout its history

Indra has been one of the companies that benefits from the best protection from the State

2.4 INDRA: a company under State protection

Indra was formed out of a merger of two companies, the State-owned INISEL and the privately owned CESELSA, in 1989. INISEL was born in 1985 by the initiative of INI (Instituto Nacional de Industria, an agency which brings together all State-owned companies) to empower the electronics and information technology public-sector industry. In its short history, INISEL has always suffered losses (86.000 million pesetas in 1991) and following its merger with CESELSA, certainly without any compensation, 66,09% of the shares of the new Indra have stayed in SEPI's hands (Sociedad Estatal de Participaciones Industriales, and successor of the INI) while the rest was distributed in private hands.

As a stepping stone to privatization, Indra integrated its subsidiaries on a single company, Indra Sistemas, and signed an agreement with Thomson-CSF, holder of 25% of the shares, in order for its participation to be reduced to 10,5%. This was a measure aimed at increasing control on what was and still is the leading Spanish group for electronic-based technologies for both civilian and military use. At the same time, talks were held with various financial institutions and finally, Thomson sold 4% to the Banco Zaragozano and 10,5% to Caja Madrid.

In 1998/1999, during the stage of privatization led by the Government of José María Aznar and when Indra was already healthy and profiting, the SEPI sold government's stake to various shareholders for the amount of 92.526 million pesetas while the Ministry of Defense commissioned the latest development of the armaments then being manufactures: armored vehicles, aircraft, warships as well as multiple projects of electronic warfare. Following various operations, Caja Madrid (subsequently renamed Bankia) became its principal shareholder, controlling 20,14% of the capital.

Since its birth, Indra has been one of the companies that benefits from the best protection from the State, and, thanks to this, it has increased steadily with a growth rate for sales of 455% between 1996 and 2015, reaching a turnover of €2.850 million. This protection was demonstrated by the concentration of its activities in the public sector, where in addition to benefiting from most of the contracts aimed at developing armament technologies, it also procured information security in most ministries and was in charge of the vote counting during general, autonomous and municipal elections, along with other multiples services, such as highways, airports, air and borders control.

Javier Monzón has been at the head of Indra for 22 years, since 1992. Monzón was a personal friend of the king Juan Carlos I and owned a jet plane that he often lent to Juan Carlos I to carry out his "escapes" from La Zarzuela in his multiple private raids in these parts. But after all these years, Javier Monzón left the company's management in 2014 to preside over a company from which he resigned a year later in 2015, being replaced by a man with closer ties to the Government of the Partido Popular, Fernando Abril-Martorell junior, son of a Prosecutor of the Courts during the Franco dictatorship and Minister of Economy with the UCD (Unión de Centro Democrático).

The largest expansion of Indra came following the acquisition of Azertia and Soluziona, in 2006/2007, both specialized in technological and communications services, thereby doubling the company's human resources from 6.360 in 2000 to more than 20.000 in 2009. Today, in 2015, Indra employs a total of 37.060 people in 33 countries, including 20.251 in Spain, 13.453 in Latin America, 1.720 in Europe and North America and 1.558 in Asia, Africa and the Middle East. Its principal shareholder was during the years of Caja Madrid, which has since become Bankia, and possesses 20,14% of the shares.

The financial crisis of 2008 sunk Bankia, exposing the fraudulent practices of its directors. Among them was the former Finance Minister Rodrigo Rato (replace-

ment for Miguel Blesa), who had taken over the direction of Bankia as a result of the mediation of his friend José María Aznar. Due to the collapse of Bankia, the PP Government decided to rescue it through capital injection of 22.424 million using public money. But this was not enough; in August 2013 the PP Government acquired all of Bankia's 337.1 million shares of Indra through the SEPI in order to help rescue the company and inject more liquidity.

Pedro Morenés had expressed the wish to create a major military industrial pole in order to help companies

The PP Government had two objectives; first, continue to assist Bankia. The second one was not as well known; the Minister of Defense Pedro Morenés had expressed the wish to create a major military industrial pole in order to help companies from the sector to overcome the economic crisis by creating synergies among them and reducing production costs.

Indra played a crucial role in this project, providing the largest part of new electronic technology to companies working in the military sector. Morenés' compromise and proposal was related to the budget cuts applied in the Ministry of Defense that affected arms purchase to military companies; industries that Morenés had committed to help by encouraging this military industrial pole. A case in point are the 33 attaché offices established by the Ministry of Defense in embassies and consulates to help the weapons exports of Spanish defense industries.

This last aspect had the desired effect; in 2014, Spain appeared as 7th on the global ranking of arms-exporting States (SIPRI 2015). Thanks to military industries, which cannot be dismissed, for it is common knowledge that Morenés maintained strong linkages with these companies since he held various leadership and advisory position in Instalaza, MBDA España and in the security company Segur Ibérica. In terms of production, Indra is a holding company bringing together various companies and organized into six large areas of activity: energy and industry, information technology, public administration, transportation and traffic, financial services and security and defense. Indra group is composed of Indra Software, Indra Business, Indra EMAC, Indra Comunicaciones, Indra Teknatrans Consultores and Indra Sistemas de Seguridad. The latter, Indra Sistemas, is the group's company engaged in military production with the higher number of employees, 12.865, and with a turnover of 2.850 million in 2015.

Its balance sheets indicate that the security and defense sector occupied, depending on year, about 20% of its turnover. However, the sales figures offered by divisions do not distinguish between civilian and military spending so that the total volume of military production cannot be accurately determined. Furthermore, part of its turnover in the security sector is undoubtedly related to defense, and yet, is not included in these percentages.

Indra Sistemas' participation in military projects is spectacular. Its main client is the Ministry of Defense, which is involved in almost every major weapons program of the Spanish Armed Forces: the flight systems for F-2000 aircrafts, A400M military transport aircrafts and Tiger and NH90 helicopters manufactured by Airbus Defense and Space, electronics and communication systems of all types for warships built by the State-owned company Navantia, Pizarro and Leopard armor manufactured by Santa Bárbara Sistemas and the missile guidance systems that fire all of these arms. It also develops electronic warfare systems, for which it has a factory/ bunker in Madrid with 500 employees.

As a transnational company with presence in 33 States, Indra also has military and security contracts in many countries. The turnover in the military area, which fluctuates from year to year, amounted to €542 million in 2015 (to see the scale of the business in the defense sector, see Annex Table 2).

Indra Sistemas' participation in military projects is spectacular

The policy of the current PP Government is to use the Ministry of Defense and SEPI to promote the military industry

In addition, Indra controls 80% of the Sociedad Española de Misiles (Inmize Sistemas), which designs and develops various types of missiles, such as the Meteor, which is the weapon system of European-made EF-2000, Rafale and Gripen aircraft.

Indra, just as the rest of the largest companies of Spain's military industry oligopoly, namely Airbus Defense and Space and Navantia, receives many forms of aid and subsidies from the Ministry of Industry and the Official Credit Institute (OCI), as well as from autonomous administrations where its factory is located. Among other things, it also benefits from research and development (R&D) zero-rated loans. Such aid highlights the favorable treatment accorded by the authorities to a company which apparently has not needed them since, as has been pointed out, its income statement shows major benefits each year.

2.4.1. A Questionable Crisis

According to the 2014 balance, Indra's income statement posted losses of 91.2 million. The new management under the mandate of Abril-Martorell immediately announced a strategic plan to restructure the company for 2014-2018. The ERE did not hesitate for a moment; in the summer of 2015 it was announced that an employment regulation file would affect 1,750 people across the State. The majority union Co. Bas reported that this act of the ERE was an accounting engineering maneuver caused by the new management's manipulation of balance sheets by introducing a 196 million item as a non-recurring expense, thus making the company's final result appear as a loss.

This union indicated that the ERE's intentions were driven by a political maneuver of the PP Government to create the aforementioned industrial military pole promoted by the head of the Ministry of Defense, Pedro Morenés. It should be noted here that the ERE does not affect military production but extends to other units of the company. This proposal is in line with the policy of the current PP Government to use the Ministry of Defense and SEPI to promote the military industry, a sector considered strategic for defense and national security.

Another well-founded suspicion about the maneuvers of Indra's new management is that shares in the stock market would rise considerably after the announcement of the new strategic plan, which happened. Thus, once Indra could be linked to the military industrial pole, the sale of Indra to the private sector could be justified leading to substantial capital gains.

One of the most controversial issues regarding Indra is related to subcontractors, something very widespread in large service-based companies. According to the company's annual balance of 2015, Indra's subcontracting reached 1,483 people statewide. The Co.Bas Union speculates that Indra's number of subcontractors is actually closer to 6,500, as according to the email account in the database ending in @eservicios.indra.es Indra has some 800 subcontractors in Barcelona alone.

This issue of outsourcing work through subcontracting has a great impact on the country's economy. In the first place this practice allows the fragmentation of a very important area of the productive process, labor, because control over product is shifted exclusively into the hands of the company's management and outside of the workers' and works council's domain. This fragmentation also allows the management of the company to reduce the size of the workforce, despite the fact that much of the subcontracted employment provides its services in the same factory (as is the case with Indra). This breaks up and weakens the actions of workers' unions because the underemployed workers are covered by different union agreements and also are subject to a superordinate hierarchy of controls, that of the parent company and that of the subcontractor.
Secondly, there is very aggressive competition between subcontractors to obtain the services of the parent company, which translates into part-time, precarious

work, low wages and fewer labor rights for workers. In other words, widespread subcontracting leads to abusive practices for workers and also weakens their ability to act in defense of their rights. In Indra all this happens, the subcontracted employment has the same or even better quality than the fixed employment, but instead have less labour rights, worse wages and contracts with partial and very fragmented schedules.

In Indra the subcontracted employment has the same or even better quality than the fixed employment

2.4.2 INDRA in Barcelona

Behind Indra's impressive building in zone 22@, Diagonal of Pueblo Nuevo in Barcelona (a zone designated for companies in new technologies) are the various companies of the group. Indra Systems, which specializes in electronics and technologies for security and defense is the most prominent. In this building, Indra employs 1,035 people, with 910 employees in the rest of the companies of the group and some 800 people in other subcontracted companies. In Catalonia, the Director of Indra is Manuel Brufau, brother of Antoni Brufau who is the current president of Repsol and who before Gas Natural was strongly linked to La Caixa. Brufau's relations with the different governments of the Generalitat of Catalonia have led Indra to be repeatedly contracted for its services, especially in regional and municipal elections, besides exercising air control over airports and Catalan motorways. Another person occupying a management position in Indra of Barcelona was Josep Pujol Ferrusola, with a salary around 400,000 euros per year. Following the scandals surrounding the Pujol family, Indra decided to dispense with Josep Pujol with an indemnity of 2 million euros. The possible concessions by the Generalitat to this company are undoubtedly related to the presence of Josep Pujol and Manuel Brufau and are exemplified in the aid that Indra received through the Secretary of Industry and Energy (SIE) and the Center of Innovation and Development (CIDEM), both of which are under control of the Generalitat de Catalunya. Between 2004 and 2011 (we have yet to obtain current data), Indra received aid amounting to 1.45 million euros.

While admiring the beautiful architecture of Indra System's imposing glass building, pedestrians in the Diagonal area in 22@ of Barcelona should know that Indra is no model company in regards to CSR (corporate social responsibility), both by the abusive practices of its subcontracting and its involvement in military armaments production. Spain exports weapons to countries such as Turkey, Saudi Arabia, Egypt and Qatar, countries that are directly or indirectly involved in the current wars in Syria, Yemen, Afghanistan and Iraq. This contributes to the grave refugee crisis of people who flee their homes to escape current wars and who then are subsequently denied entry into Europe.

3. THE MILITARY INDUSTRY UNDER THE PARTIDO POPULAR GOVERNMENT (1996-2003)

Following the elections held in March 1996, the Partido Popular was elected by a simple majority and José María Aznar became the elected President. This PP government generated a shift in Spanish economic policy which had important consequences for the economics of defence. One of the most significant aspects of this new economic policy was the implementation of what is now known as economic neoliberalism. This spread after the collapse of the Soviet Union and the establishment of globalised capitalism and it penetrated all States that were formerly under Soviet influence. The dictates of neoliberalism are well known: tax reduction (especially for the top earners and companies), the privatization of public companies and utilities, along with the weakening and shrinking of public policies.

The new Spanish government gave way to a lot of privatizations, in which the whole Cabinet got involved. The unbridled neoliberalism that inspired the entire economic policy of the PP was duly reflected in the industrial policy which

Indra is no model company in regards to CSR (corporate social responsibility)

revolved, among others, around a main axis defined by the government as the *Program for Modernization of the Public Business Sector of the State*. The foundations of the program were approved in June 1996 and pointed to the need to restructure public enterprises, to redefine its financing strategy and, finally, to privatize them. In the words of the then President of the Government, José María Aznar: "I would like the public-sector enterprises to be totally transformed, privatized and sanitized in 2000 or 2001. By then, only mining and perhaps some defence should remain public"[8].

This industrial policy was implemented immediately and deficit-producing public companies stopped receiving aid. They were subject to structural adjustment programs, sanitized and sold to the highest bidder (sometimes without compensation), and those that could not survive would see their workforce decrease until they fully disappeared.[9]

Until 2003 under the PP government, an estimated 50 public companies were privatized, including leading companies of major strategic importance in sectors of the Spanish economy, such as: energy (electricity, gas, oil); air, maritime and road transportation; telecommunication; aeronautics; and the iron and steel industry. Some of the more renowned companies included Gas Natural, Telefónica, Tabacalera, Endesa, Repsol, Argentaria, Red Eléctrica, Aceralia, Ence, Iberia, Aviaco, ENA. Sales – which began in 1996 until 2003 – generated no less than €30,000 million, which was mostly intended to stabilize and cancel the historical debt of the remaining companies still in the hands of the Spanish Society of Industrial Holdings (SEPI). Privatization of state-owned military companies controlled by SEPI was also attempted. In 1996, these companies represented 75% of the total military sector and were Construcciones Aeronáuticas S.A. (CASA), Santa Bárbara Sistemas, Indra and Empresa Nacional Bazán (today Navantia). Various companies of different sectors together formed an oligopoly, and distributed military production between themselves: CASA, the military aeronautics destined to the Air Force; Navantia, ships for the Navy; Santa Barbara, weapons for the Army; and Indra, the electronics of most of the weapons that these three companies manufacture. In 2015, these industries continued to represent 82% of total military production in Spain and 78% of total employment (Table 1).[10]

All these companies were subject to attempts at privatization by SEPI, which in each case produced different results (Ortega, P. 2015).

4. THE START OF THE PEA

In 1998, the Minister of Industry and Energy, Joseph Piqué, made statements in which he pointed out that "military spending does not correspond to our economic strength or to the needs of our defence". He later added that the military industry has to be: "one of the locomotor activities of the productive system of the economy and employment".[11] These words demonstrated the will of the PP government to boost military spending, which in turn would serve to boost the defence industry. This was reflected in the close collaboration between the Ministry of Industry and the Ministry of Defence in order to assist military companies in the programming of weapon projects (Manonellas, M. and Xarles, G. 2000).

The PP government was clear that it wanted to boost military spending, which in turn would serve to boost the defence industry

In order to make change in the Government's policies regarding the defence industry, a new formula of "creative accounting" was established in order to finance the armament trade guarantees provided by the Cooperation Division of the Ministry of Defence. This proposal consisted of a three-part agreement

8. "Adiós a las joyas de la corona", *El País*, 17/05/1998
9. *La Vanguardia*, 10/09/1997
10. http://www.centredelas.org/es/base-de-datos/industria-militar/industria-militar-a-espanya
11. Piqué, Josep; "Una nueva concepción de nuestra industria de defensa", November de 1998, *Revista Española de Defensa*, n. 129

Table 1. Sales by oligopoly company 2000-2015 (in million euro)

Years	Eads-Casa/Airbus Group*		Izar/Navantia		Indra		General Dynamics/ Santa Bárbara	
	Defence Sales	Total Sales	Defence Sales	Total Sales	Defence Sales	Total Sales	Defence Sales	Total Sales
2000	910.10	1,022.58	356.81	734.17	197.65	676.88	104.58	104.58
2001	1,267.63	1,424.30	562.01	1,156.39	226.09	774.29	301.91	301.91
2002	1,211.57	1,361.32	450.81	1,536.83	227.14	873.60	367.01	367.01
2003	1,713.09	1,924.82	545.92	1,706.99	451.26	981.40	406.20	406.20
2004	2,073.85	2,330.17	881.60	1,102.41	313.80	1,079.20	392.03	392.03
2005	1,854.66	2,083.89	779.20	955.60	539.10	1,202.23	388.65	388.65
2006	3,181.39	3,574.59	902.00	1,142.99	586.98	1,950.10	499.49	499.49
2007	2,137.81	2,402.03	1,013.00	1,267.12	633.00	2,167.60	451.19	451.19
2008	4,101.37	4,608.28	1,285.90	1,461.30	684.00	2,379.60	441.79	441.79
2009	3,577.42	3,888.50	1,423.82	1,582.02	678.51	2,513.90	385.47	385.47
2010	3,771.67	4,285.99	1,516.58	1,586.17	544.70	2,557.00	312.76	312.76
2011	3,802.75	4,178.84	1,205.01	1,268.44	370.44	1,949.71	300.81	300.81
2012	3,026.33	4,013.70	879.21	919.63	305.00	1,906.23	196.74	198.73
2013	3,955.18	5,006.56	688.31	709.60	296.03	1,850.19	143.00	144.00
2014	4,494.40	5,689.11	520.20	547.60	509.85	2,937.00	123.59	123.78
2015	4,717.79	5,897.24	654.50	688.98	326.98	1,923.40	102.45	103.32
TOTAL	45,796.99	53,691.91	13,664.88	18,366.24	6,890.53	27,722.33	4,917.67	4,921.72

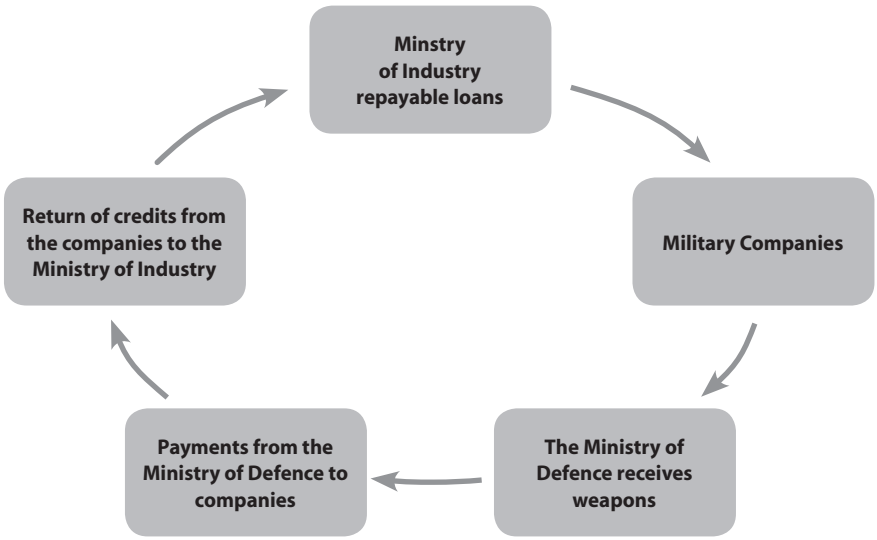
* Companies with available data for the period
In 2000: Eurocopter España, EADS-CASA y Cassidian Solutions
2001-2002: Eurocopter España, EADS-CASA, Cassidian Solutions and Airbus Operations
2003-2009: Eurocopter España, EADS-CASA, Cassidian Solutions, Airbus Operations, EADS-CASA Espacio and Airbus Military
2010-2013: Eurocopter España, Airbus Defence and Space (formerly EADS CASA), EADS CASA Espacio, Cassidian, Airbus Operations and Airbus Military
2014-2015: Airbus Helicopters (formerly Eurocopter España), Airbus Defence and Space (formerly EADS CASA), EADS CASA Espacio, Cassidian Solutions, Airbus Operations and Airbus Military
Source: compiled from SABI data.

between the Ministry of Defence, the Ministry of Industry and military enterprises, according to which Ministry of Industry would pay in advance through interest-free loans that would be returned in 20 years to the military companies of R & D during the production phase, allowing the Ministry of Defence not to pay until it had received the weapons, at which time the companies returned the credit received (Scheme 1) (Ministry of Defence 2011).

In this way, weapons programs were carried out without their cost appearing in the defence budget and the PP could avoid the political cost of beginning a new stage of government with a significant increase in defence expenditure. This allowed the true defence expenditure to be hidden from the public eye, and moreover, it resulted in an increase in Spain's public contribution to R & D, which was then in the bottom of the OECD countries.[12]

12. In 1997, Spain spent 0,95% of GDP on R&D

Scheme 1. Financing of Special Armament Programs (PEA)



Source: own preparation

On the other hand, Jose Maria Aznar intended to professionalize the armed forces and to abolish compulsory military service (Servicio Militar Obligatorio, SMO): a commitment set out in the electoral program of the PP which would crucially lead to a significant increase in the defence budget. This commitment was implemented in Law 17/1999 of the Armed Forces Personnel Regime, with the termination of SMO scheduled for January 2002.

The PP government approved the first three Special Armament Programs (PEA) in 1998, although their design had already begun in the final years of the previous government under Felipe González. This included the F-100 frigates, the F-2000 fighter jets and the Leopard armoured. These armaments were justified on the grounds that the technology, its transfer and application in the civil industry would boost the country's productive economy. A second argument in favour of the EAP was that the F-2000 fighter plane was jointly manufactured with Germany, Italy and the United Kingdom, thus enabling Spain to participate in the European project for a combat jet, so this was presented as paramount. Another argument which was presented considered the need to reconcile the Spanish armed forces with the armies of partner countries within NATO.

The problem of these programs was their unsustainability due to their exorbitant costs; the initial purchase commitment in early 1998 amounted to €12.767 million for the three programs in progress (Table 2), plus €5,135 million in investments to maintain the operability of these armaments.[13]

To this end, in 1998 the Ministry of Industry provided R & D credits to the military companies that were supposed to manufacture these armaments (€581 million), and such credits increased considerably in the following years (Annex Table 3). But if the future appeared unfavourable in economic terms, it could be left without repayment. This happened upon the onset of the 2008 crisis, when the PSOE Government of José Luis Rodríguez Zapatero in 2010 and 2011 stopped paying the amounts guaranteed under the PEA to the affected companies.

The problem of these programs was their unsustainability due to their exorbitant costs

Since its inception, the PEA have caused a major state debt to the military industries that were expected to manufacture them. The main contractors were: EADS-Casa (now Airbus Defence and Space) for the F-2000 aircraft; Navantia for the building of F-100 frigates and Santa Barbara Systems for the Leopard battle tanks. Other companies were also responsible for supplying some important

13. "Defensa tiene comprometidos dos billones para comprar armamento", *El País*, 03/09/1998

parts of the programs: Indra had to provide all electronic technologies for the operationalization of the three programs, and Industries of Turbo Propellers (ITP), the engines of the F-2000.

The PEA, due to the commitments acquired, caused a significant debt to the State. In total, there are now 24 PEA, with an initial budget of €26,821 million

In the next legislature of the Second Government of the PP (2000-2004), the PEA was extended with five new ones, incorporating armoured Pizarro (Santa Bárbara / General Dynamics), Tigre helicopters and A400M aircraft (EADS-Casa), Strategic Projection Ship and S-80 Submarines (Navantia) with a value of €7,547 million (Table 2).

The PEA continued to increase following two new legislatures of the PSOE Government (2004-2011), with eleven new weapon programs that gave a total of nineteen PEA in 2008. They included two particularly expensive programs concerning 45 multipurpose helicopters (€1,260M) and a F-105 frigate (€750M), with initial costs totalling €3,564 million.

With the return of the PP government in 2011, five more were added: EC-135 helicopter (EADS-Casa, now called Airbus); two new Offshore Patrol Vessels (BAM) and one F-110 Frigate (Navantia); armoured Piranha which have not been auctioned yet; Reaper drones were also to be purchased in the United States. In total, there are now 24 PEA, with an initial budget of €26,821 million.

This colossal figure has increased over the years due to a variety of reasons, including: events such as the incorporation of new technological applications; penalties for non-compliance with the expected delivery times for the weapons; and changes in VAT rates.

Facts show that the PEA reached the astronomical figure of €36,539 million in 2016 (Table 2). A more detailed description of all the PEA, outlining the participation of the European states in the programs along with the main European and Spanish companies that develop them and the years of their initiation, is in the Annex Table 4.

In the course of the development of the PEA, military companies have received R & D credits amounting to €17,487 million (Annex, Table 3). As weapons were handed over, they had to be reimbursed by the Treasury in order to pay off the established debt.

But this has not always been the case and companies argue that when they deliver the weapons, the Ministry of Defence discounts the credits, therefore leaving it in the hands of the Defence to return this aid to the Treasury.

Evidence of this was provided in 2008 when, on the initiative of the Centre Delàs, a parliamentary question was addressed through the ERC-IU-ICV group with the intention of ascertaining the amounts returned from these credits. The reply from the Secretary of State for Constitutional and Parliamentary Affairs (23/06/2008) was that, after thirteen years, €81,45 million euros had been returned. This question was raised again in the presence of the Secretary of Defence, Pedro Argüelles, at the Defence Committee of May 2013[14] concerning the R & D credits to companies, where he stated that €15,000 million was yet to be returned to the Treasury and that, according to him, this issue was not of great concern to the Treasury since it was an accounting matter to which a solution would be found. Without saying so, it was assumed that this was solved with an accounting entry that would correspond to *the debits and the credits* (Income and Expenses in the General State Budgets, PGE). But this would mean renouncing €15,000 million, resulting in an increase of the state's public deficit. It is no less than 1.5% of GDP, which would prevent compliance with European Commission requirement on deficit. But the most serious consequence would be the additional €15,000 million to the final cost of these weapons.

The Secretary of Defence, Pedro Argüelles, at the Defence Committee of May 20 concerning the R & D credits to companies, stated that €15,000 million was yet to be returned to the Treasury

14. Congressional Defence Committee, (23/05/2013)

The PEA in 2016 reached the astronomical figure of €36,539 million

Table 2. Special Armament Programs in 2016
(in million euro in current prices)

Name	Period	Initial Cost	Current Cost
87 EF-2000 Aircrafts	1997/2024	9,255.00	12,843.00
4 F-100 Frigates	1997/2010	1,602.80	1,997.50
239 Leopard Armoured	1996/2017	1,909.41	2,550.77
VI Legislature 1996-2000	**Total**	**12,767.21**	**17,391.27**
212 Pizarro Armoured	2005/2024	707.47	949.95
24 Tigre Helicopters	1997/2014	1,274.00	1,738.03
1 Strategic Projection Ship	2004/2010	360.00	505.47
27 A400M Aircrafts	2001/2029	3,449.81	5,819.37
4 S-80 Submarines	2011/2018	1,756.00	2,800.00
VII Legislature 2000-2004	**Total**	**7,547.28**	**11,812.82**
45 NH-90 Helicopters	2006/2012	1,260.00	1,682.44
1 F-105 Frigate	2006/2012	750.00	836.24
770 Missiles IRIS-T (EF-2000)	2005/2011	247.32	282.43
4 Ships BAC (Buques de Aprovisionamiento Combate / Supply Ship in Combat)	2003/2022	213.00	260.16
4 Ships BAM (Buques Acción Marítima / Offshore Patrol Vessels)	2006/2012	352.00	530.41
43 Taurus Missiles (EF-2000)	2004/2010	57.00	59.64
2600 Spike anti-tank Missiles	2007/2022	324.00	364.69
82 Howitzer cal. 155 mm	2006/2023	180.50	195.99
4 Cougar Helicopters UME	2007/2011	76.00	80.01
Aerial firefighting UME	2008	44.00	40.55
VIII Legislature 2004-2008	**Total**	**3,503.82**	**4,332.56**
Deployable CIS UME Nodes	2009/2010	60.37	60.37
IX Legislature 2008-2011	**Total**	**60.37**	**60.37**
8 EC-135 Helicopters	2013/2015	49.00	49.00
2 Ships BAM (5th and 6th)	2014/2019	333.48	333.48
1 F-110 Frigate	2015/2022	800.00	800.00
348 Piranha 8x8 Armoured	2016/?	1,600.00	1,600.00
4 Reaper Drones / UAV	2016/2020	160.00	160.00
X Legislature 2011-2016	**Total**	**2,942.48**	**2,942.48**
TOTAL		**26,821.16**	**36,539.50**

Source: own preparation

This situation has worsened with the arrival of the crisis at the end of 2007, and the budgetary adjustments which were applied as of 2009 to the Ministry of Defence. In 2010 and 2011, the government of José Luís Rodríguez Zapatero decided to allocate only €6.8 million to the defence budget: an amount much lower than the commitments made in the contracts. And before the end of the PSOE legislature, the Defence Minister Carmen Chacón publicly stated that due to lack of liquidity, the Ministry of Defence could not afford the payment of €26,692 million: a commitment that would reach €32,000 million in 2012, of which the Defence had only compensated €4,267 million in 2011. On the other hand, technical experts from the Defence made a prediction for the year 2015 which estimates that the debt would reach €36.800 million, and counselled an increase of investment of €1.500 million per year, the postponement of payments until 2040 and the cancellation of the progress made in R & D by the Ministry of Industry in order to lower the debt of the Ministry of Defence.

On October 6, 2011, the then-Secretary of State at the Ministry of Defence, Constantino Méndez, went further during his appearance before the Congressional Defence Commission and stated that "we should not have acquired systems that we are not going to use, for scenarios of confrontation that do not exist and with money that we did not have, then or now." It is, therefore, clear that the Defence was in a situation of financial disaster and lacked sufficient resources to cover the payments of the PEA and the repayment of the R & D credits that had been deducted to the companies.

Due to lack of liquidity, the Ministry of Defence could not afford the payment of €26,692 million: a commitment that would reach €32,000 million in 2012,

The arrival of the new PP government of Mariano Rajoy and the entry of Pedro Morenés as head of the Ministry of Defence did not make things any better. The defence budgets in 2012, 2013, 2014 and 2015 followed the same trend: continuing failure to provide the actual expenditure committed for the PEA, before authorizing extra funds to fulfil those same commitments that totalled, in four years, €4.510 million (Table 3). During the aforementioned Defence Commission (05/23/2013), the Secretary of State for Defence, Pedro Argüelles, justified this situation, arguing that the PEA were not included in the General State Budget. Nonetheless, the payments of the programs were adjusted with regard to the economic opportunities and the negotiations taking place with the industries.

In the same Commission, Argüelles announced a change in the PEA strategy, including the reprogramming of deliveries, payments for future financial periods up to the year 2030, and the reduction in some programs, guaranteeing to help the companies export surplus weapons to other countries.

The hypothesis of the Morenés / Argüelles tandem was that they would facilitate the sale of 14 EF-2000 aircraft, 13 A-400M aircraft, 73 Pizarro armoured vehicles, 6 Tigre helicopters and 22 NH-90 helicopters in order to save €3,773 million (Table 4). If one looks at the cost per unit of each of the weapons of these programs, the fact is that in spite of its reduction, the final cost per unit does not correspond to the initial price per unit. On the contrary, the prices have risen to inconceivable figures. For example, the 27 A400M transport aircraft have gone from an initial cost of €127.7 million to €358.5 million, and the same goes for all other programs (Table 5). These costs (Fonfría, A 2015) are due to the fact that initially these programs did not include much combat mission equipment, nor logistical and sustainment support, which reflect a poor planning in the design of programs; in the case of Helicopter NH-90, the total cost of the program has increased by €190 million, despite reducing the number of acquisitions from 45 to 22 units (Table 4).

Table 3. Extraordinary credits payment PEA
(in million euro in current prices)

Years	2012	2013	2014	2015	Total
Extraordinary credits	1,782.77	879.48	927.74	920.40	**4,510.39**

Source: own preparation. Compiled from the General State Budget

Table 4. Ministry of Defence's proposal to reduce and export
(in million euro in current prices)

Export	Reduce items	Saving	Increase
14 EF-2000 aircraft	14	2,966.60	
73 Pizarro armoured	73	163.00	
6 Tigre Helicopters	6	33.00	
22 NH-90 Helicopters	22		190.00
13 A-400M aircraft	13	800.40	
Total		**3.963,00**	**190,00**

Source: own preparation. Compiled from the Defence Commission nº 25, 23/05/2013, Chamber of Deputies

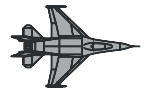
The 27 A400M transport aircraft have gone from an initial cost of €127.7 million to €358.5 million

The evolution of military spending in the Special Armament Programs 1996-2016

212 PIZARRO ARMOURED FIGHTING VEHICLES
Project period
2005-2024

- Initial cost:
707,47 M€

- Current cost:
949,95 M€



87 EUROFIGH - TERS EF-2000
Project period
1997-2024

- Initial cost:
9.255,00 M€

- Current cost:
12.843,00 M€

239 LEOPARDO ARMOURED FIGHTING VEHICLES
Project period
1996-2017

- Initial cost:
1.909,41 M€

- Cost actual:
2.550,77 M€

4 F-100 FRIGATES
Project period
1997-2010

- Cost inicial:
1.602,80 M€

- Current cost:
1.997,50 M €

24 TIGRE HELICOPTERS
Project period
1997-2014

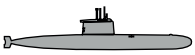
- Initial cost:
1.274,00 M€

- Current cost:
1.738,03 M€

27 A400M AIRCRAFTS
Project period
2001-2029

- Initial cost:
3.449,81 M€

- Current cost:
5.819,37 M€



4 S-80 SUBMARINES
Project period
2003/2011

- Initial cost:
1.756,00 M€

- Current cost:
2.800,00 M€

770 IRIS-T MISSILES (EF-2000)
Project period
2005-2011

- Initial cost:
247,32M€

- Current cost:
282,43 M€

1 BPE VESSEL
Project period
2004-2010

- Initial cost:
360,00 M€

- Current cost:
505,47 M€

45 NH90 MULTI-PURPOSE HELICOPTERS
Project period
2006-2012

- Initial cost:
1.260,00 M€

- Current cost:
1.682,44 M€

1 F-105 FRIGATE
Project period
2006-2012

- Initial cost:
750,00 M€

- Current cost:
836,24 M€

4 SHIPS BAC (SUPPLY SHIP IN COMBAT)
Project period
2003-2022

- Initial cost:
210,0 M€

- Current cost:
260,1 6 M€

4 OFFSHORE PATROL VESSELS - BAM
Project period
2006-2012

Initial cost:
352,00 M€

Current cost:
530,41 M€

1996 1997 1998 1999 2000 2001 2002 2003 2004 2005

MARCH 1996
PP Wins
José María Aznar.

MARCH 2000
PP Wins
José María Aznar

MARCH 2004
PSOE Wins
José Luis Rodríguez Zapatero

Total investment in Special Armament Programs during the 1996-2000 legislature
17.391,27 M€

Total investment in Special Armament Programs during the 2000-2004 legislature
11.812,82 M€

43 TAURUS MISSILES (EF-2000))
Project period
2004-2010

- Initial cost:
57,00 M€

- Current cost:
59,64 M€

2600 SPIKE ANTI-TANK MISSILES
Project period
2007-2022

- Initial cost:
324,00 M€

- Current cost:
364,69 M€

82 HOWITZER 155 MM
Project period
2006-2023

- Initial cost:
180,00 M€

- Current cost:
195,99 M€

4 COUGAR HELICOPTERS UME
Project period
2007-2011

- Initial cost:
76,00 M€

- Current cost:
80,01 M€

1 UME AERIAL FIREFIGHTING
Project period
2008

- Initial cost:
44,00 M€

-Current cost:
40,55 M€

1 NODES CIS UME
Project period
2009-10

- Initial cost:
60,37 M€

- Current cost:
60,37 M€

8 EC-135 HELICOPTERS
Project period
2013-2015

- Initial cost:
49 ,00 M€

- Cost actual:
49,00 M€

2 SHIPS BAM 5TH AND 6TH
Project period
2014-2019

- Initial cost:
333,48 M€

- Current cost:
333,48 M€

4 DRONES UAV/REAPER
Project period
2016- ?

Initial cost:
1.60,00 M€

Current cost:
1.60,00 M€

348 ARMOURED PIRANHA
Project period
2016-?

- Initial cost:
1.600,00 M€

- Current cost:
1.600,00 M€

1 F-110 FRIGATE
Project period
2015-2022

- Initial cost:
800,00 M€

- Current cost:
800,00 M€

2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016

MARCH 2008
PSOE Wins
José Luis Rodríguez Zapatero

NOVEMBER 2011
PP Wins
Mariano Rajoy

JUNE 2016
PP Wins
Mariano Rajoy

Total investment in Special Armament Programs during the 2004-2008 legislature
4.332.56 M€

Total investment in Special Armament Programs during the 2008-2011 legislature
60,37 M€

Total investment in Special Armament Programs during the 2011-2016 legislature
2.942,48 M€

36,539 M€ INVESTED IN SPECIAL ARMAMENT PROGRAMS UNTIL 2016

Source: Own preparation
Infographics: Gerard Casadevall Bach

Table 5. Reprogramming of the Special Armament Programs in 2013
(in million euro in current prices)

Programs	Initial Cost	Unit Cost	Reprogramming	Current Cost	Unit Cost
87 EF-2000 aircraft	9.255,00	106,38	73 EF-2000 aircraft	12.843,00	175,93
212 Pizarro armoured	707,47	3,34	139 Pizarro armoured	786,94	5,66
24 Tigre helicopters	1.274,00	53,08	18 Tigre Helicopters	1.738,03	96,56
27 A400M aircraft	3.449,81	127,77	14 A-400M aircraft	5.018,97	358,50
45 NH-90 helicopters	1.260,00	28,00	22 NH-90 helicopters	1.585,14	72,05

Source: own preparation. Compiled from the Defence Commission nº 25, 23/05/2013, Chamber of Deputies

The final cost of the PEA amounts to €35.576 million

After their reduction, the final cost of the PEA amounts to €35.576 million (Annex Table 5), of which €7,931 million has been paid by the Defence (Annex Table 6). And that is without counting the return of R & D credits, which has already been estimated at about €15.000 million and has to be returned to the public.

In the face of so many budgetary anomalies, the UPD parliamentary group presented a report[15] in July 2014, both denouncing the wastage and questioning the usefulness of the PEA. Alarmed by the large debt attained, they brought a proceeding together with the PSOE and IU-ICV-Izquierda Plural before the Constitutional Court about the manner in which the payments were conducted: exceeding the budget and through huge credit. In July 2016, the Constitutional Court agreed with them and rejected the payment be carried out through a Decree-Law, thus paralysing the payments planned for 2016 (Ortega, P. 2016). This ruling therefore prevents the Spanish Government from approving excessive credits without passing through the Congress of Deputies, that is to say without parliamentary debate. Of course, this was a furtive mechanism which made it possible to approve the budget of the Ministry of Defence 20% below its real expense. Therefore, next year in 2017, according to the head of Defence, Maria Dolores de Cospedal, and in accordance with the payment commitments expected in 2016 and 2017, the Defence will have to hand over €1,824 million[16]. Predictably, there is outrage from the public and significant opposition as the government of the PP present a budget for the Ministry of defence with an increase of 30%, from €6.900 to €8.700 million.

A furtive mechanism made possible to approve the budget of the Ministry of Defence 20% below its real expense

Such changes in the cost of weapons programs occur because, in the vast majority of cases, there is no control over production costs in the Spanish military sector due to the lack of competition between companies. As indicated above, the arms market is dominated by an oligopoly that split the market by subsector: the aerospace, Airbus group; the naval, Navantia; the armoured, Santa Bárbara; the electronics, Indra and to a lesser extent Sener, Tecnobit and some other. Following this rescheduling, the final debt of the PEA was set at €29,479 million: a value lower than that indicated by its predecessor in office. However, the not-yet-answered question is who is going to buy those expensive weapons? The sale proposal for these weapons is an empty promise as three years have passed and no sales operation has occurred since then.

The annual payments promised were €3,532 million until 2025 but only €1,260 million had been paid

A study by the Alternativas Foundation (Navazo, B. 2013) on the PEA concluded that the annual payments promised were €3,532 million until 2025 but only €1,260 million had been paid, showing a difference of €2,200 million which presages a bad financial future for the Ministry of Defence.

15. UPyD, (2014), *Los Programas Especiales de Armamento: fraude, despilfarro y utilidad*, goo.gl/cu9el5
16. *Infodefensa*, 28/02/2017

Whatever the amounts to be paid for the PEA, the reality is that, to date, the figures are increasing from year to year without anyone knowing for certain how this endless void of investments in armaments will end up: a so-called *arms bubble* that has plunged the Ministry of Defence into financial collapse. A bubble that has brought a serious debt problem in public accounts and has become a headache for current and future governments: one which we don't know how to eliminate without increasing the public deficit.

Investments in armaments we could call *arms bubble*

5. ARE THE PEA NECESSARY?

A controversial point with respect to the PEA considers whether there is a need for these programs in the national defence. The principal function of the armed forces and weaponry is supposedly to deter any attack from the outside. Secondly, weapons have an operational function in accordance with the strategy of national defence, and in that sense, in addition to the deterrence and the defence of the territory, they support the commitments made regarding Spain's contribution to multilateral missions through NATO, the EU or the UN. Some of these programs should not have been carried out, or at least, their number should have been reduced considerably. For example, armoured combat Leopard or Pizarro have little operability as Spain has a low risk of being a victim of invasion and, more importantly, because the Iberian Peninsula is very mountainous and vehicles weighing 63 tonnes for the Leopard and 28 tonnes for the Pizarro would only be able to operate on central plateau, on large rivers basins or in the cities. What is certain is that no Spanish armoured vehicle has been involved in any mission abroad. Nonetheless, it has been announced that in June 2017, six units (3 Pizarro and 3 Leopard) will be sent to Latvia on a NATO mission[17]. The non-participation in foreign missions can also be seen with other weapons such as the Tigre and NH-90 helicopters, the 155mm Howitzer and the EF-2000. Although two EF-2000 aircraft were deployed on the NATO mission to protect the airspace of the Baltic Republics in 2014, this is the only mission in which they have participated to date. At the beginning of its development in 1995, this aircraft was presented as technologically insurmountable. However, this has not been demonstrated since the French Rafale developed by Dassault is equally competitive and even exceeds sales of the Airbus EF-2000. Some of the ships of the navy have also been involved in missions abroad; the F-100 frigates accompanied by some ships were mobilized during the wars of Yugoslavia, Iraq and Libya. They were never in the first line of combat, rather they supported U.S. forces that ran NATO interventions or international missions. They also were used in monitoring and missions of assistance, helping fishing fleets in the Indian Ocean off the coast of Somalia and Kenya and in the humanitarian aid carried out in Haiti in 2010.

Similarly, if one looks at the European Security Strategy of the European Union[18] which identifies the dangers and threats facing Europe, some of them do not have a military response to such issues. Such issues include: the *proliferation of weapons of mass destruction* which threatens world security and is why effort must focus on preventing new states from having the ability to manufacture atomic weapons; the *terrorism,* and the radicalization of extremist ideologies that promote violence, against which Europe must redouble its efforts to combat through the promotion of greater social cohesion among emigrants from other cultures, and by combating segregation with legal means, police services and information systems; *Organized crime,* which must be tackled by enhancing internal security among European countries through further coordination and integration of the police and the judiciary; *Cybersecurity*, which is a weakness of current economies as they depend upon vital infrastructures, such as transport, communications and energy supply, which must be strengthened in order to

Armoured combat Leopard or Pizarro have little operability as Spain has a low risk of being a victim of invasion

17. "El Ejército de Tierra desplegará sus carros de combate Leopard y Pizaro en Letonia". *Infodefensa*, 13/02/2017
18. Available at www.centredelas.org: goo.gl/1Y2Jkt

The Special Armament Programs (PEA)

TIGRE ATTACK HELICOPTERS

EC-135 HELICOPTERS

NH90 MULTI-PURPOSE HELICOPTERS

COUGAR HELICOPTERS UME
Helicopters

Purchase quantities
87 Units in Spain

Current Cost:
3.549,48 M€

ALAD TAURUS LONG-RANGE AIR-SURFACE MISSILES

SPIKE ANTI-TANK MISSILES

IRIS-T SHORT-RANGE AIR-TO-AIR MISSILES
Missiles

Purchase quantities
3.413 Missiles in Spain

Current Cost:
706,76 M€

PIRANHA 5 8X8 ARMOURED
Armoured

Purchase quantities
348 Units in Spain

Current Cost:
1.600,00 M€

PIZARRO ARMOURED FIGHTING VEHICLES

LEOPARD ARMOURED FIGHTING VEHICLES
Armoured fighting vehicles

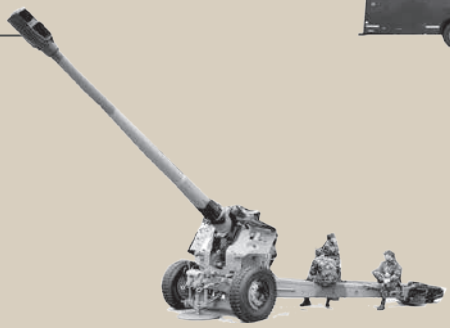
Purchase quantities
451 Units in Spain

Current Cost:
3.337,71 M€

NODES CIS UME
Nodes

Purchase quantities
1 Systems in Spain

Current Cost:
60,37 M€



INTEGRAL SYSTEM OF ARTILLERY CAMPAIGN HOWITZER 155/52 REMA
Howitzer

Purchase quantities
82 Units in Spain

Current Cost:
195,99 M€

Source: Own elaboration
Infographist: Gerard Casadevall Bach

THE WEAPONS BUBBLE AND THE MILITARY INDUSTRY IN SPAIN
The Special Armament Programs (PEA)

A400M AIRCRAFT
Military transport aircraft

Purchase quantities
27 Units in Spain
153 Other Countries

Current Cost:
5.018,97 M€

DRON UAV/REAPER
Drones

Purchase quantities
4 Units in Spain

Current Cost:
160,00 M€

EUROFIGHTER EF-2000
Combat Aircraft

Purchase quantities
87 Units in Spain
533 Other Countries

Current Cost:
12.843,00 M€

STRATEGIC PROJECTION SHIP

SHIPS BAM (BUQUES ACCIÓN MARÍTIMA / OFFSHORE PATROL VESSELS)

SHIPS BAC (BUQUES DE APROVISIONAMIENTO COMBATE / SUPPLY SHIP IN COMBAT)
Vessels

Purchase quantities
16 Units in Spain + 6 Optional

Current Cost:
1.432,54 M€

S-80 SUBMARINES
Submarines

Purchase quantities
4 Units in Spain

Current Cost:
2.400,00 M€

FRIGATE F-105

FRIGATE F-110

FRIGATE F-100
Frigates

Purchase quantities
43 Units in Spain

Current Cost:
3.674,33 M€

Source: Own preparation
Infographist: Gerard Casadevall Bach

In the face of the new risks, conventional armies appear to be unable to provide solutions

avoid cyberattacks; *energy security*, in which, due to the great dependence of European countries on fossil energy imported from abroad and the instability which may occur in the providing countries, there is a need for a commitment to the diversification of fuels, supply sources and transit routes; *climate change*, which is perceived as a threat multiplier in terms of natural disasters, environmental degradation and competition for natural resources, and which may exacerbate the situation of poverty, thus leading to humanitarian crises as well as conflicts that will affect trade routes used for transporting resources, and ultimately might be contributing to migration flows to Europe. In the face of these risks, conventional armies appear to be unable to provide solutions.

The acquisition of weapons of high operating costs has been an ill-advised decision in light of the lack of necessary resources to keep them functioning

Another aspect related to the PEA is the operational functioning of the Spanish armed forces. The high payment agreements induced by the PEA, combined with the budget cuts made by the government after the onset of the crisis, have had a detrimental impact on the costs of maintaining the armed forces and have greatly reduced their operational capacity. This has caused the reduction of the number of training sessions and manoeuvres in the three armies (Navazo B, 2011) to the extent that troops and armaments are confined and inoperative in barracks, docks and air bases[19] [20]. This shows that the acquisition of weapons of high operating costs has been an ill-advised decision in light of the lack of necessary resources to keep them functioning.

6. THE PEA AND THE R&D

As already indicated, the military companies that have developed the Special Armaments Programs (PEA) have received significant financial assistance from the Ministry of Industry every year, while simultaneously the scientific community have seen subsidies to associations and public research centres decrease. These resources granted to the military in the early years of the PEA took unwonted proportions and reached, in 1999, 54% of the State's total resources dedicated to R & D and being thereby higher than civil R & D.

Between 1999 and 2009, the amounts allocated to military R & D were maintained at an average of €1,150 million per year (Annex Table 3). However, in this specific phase of the PP government (1996 to 2003), the R & D credits provided by the Ministry of Industry to the PEA programs took on explosive proportions, with an increase of 216% and a total contribution of €6,462 million. This figure decreased in the subsequent stage of the PSOE government, which continued to be significant but did not reach the previous magnitude. The complaints and demonstrations of various scientific associations (Confederation of Scientific Societies of Spain), or other research groups (Centro de Investigación Biomédica en red de Enfermedades Neurodegenerativas) are to be expected as they feel aggrieved by the limited research contribution from the Government, with significant cuts on the onset of the 2007/08 crisis accentuated from 2010.

Subsidies allocated to public research centres are negligible with respect to the reimbursable loans given for industrial innovation by the Ministry of Industry and assigned to privatized companies. This practice, which is widely criticized by the scientific community, is based on the principle that the credits must be returned to the public, and so increases the aid for research in a misleading way. In addition, this deceptive method increases the contribution of R & D with respect to GDP allowing Spain to climb in the OECD ranking, where it has always been at the bottom of the table. Contributing to 0.88% of GDP in 2000, it increased to 1.22% in 2015, being ranked 24th out of 29 countries. Finally, aid in R & D credits to private industries, whether civilian or military, is a way of transferring research from

19. "Medio centenar de carros de combate Leopard, despiezados y almacenados. No hay dinero para modernizarlos ni para combustible". *El Confidencial Digital*, 16/10/2012.
20. "El nuevo JEME afirma que más recortes mermarán la capacidad". *El País*, 31/07/2012.

the public to the private sector, replacing the development of general interest of the population, and is undoubtedly inconsistent with the lucrative commercial interests of private companies.

Aid in R & D credits to private industries, whether civilian or military, is a way of transferring research from the public to the private sector

Another pretext commonly invoked by defenders of R&D investments in armaments is related to the transfer of technologies – the so-called *spin-off* – which refers to the principle that R&D that will later find application in civil production. This is the main argument of those who advocate the production of weapons: the application of military technologies in the civil area. While this may happen in some areas of electronics, it is not the case in the rest of the R & D, and their advocates should provide evidence of such application. Generally, they indicate the number of new technologies that have been registered in the Patent Office, because although this does not prove that they will later be used in the production of civil goods, it at least demonstrates that those discoveries are liable to be applicable beyond the scope of the military. However, as long as this is not proven, it might well go the other way, with the many new technologies that arise from the civilian sphere being implemented in the military field.

So it is not only the investments in R & D that hinders the development of the economy, but also the production of armaments. This is due to the fact that weapons are not consumer goods for the population, and in that sense they have no social value as there is no market for their exchange and they are not productive assets. In their vast majority, weapons are acquired by the States, and furthermore, if they are not used, they become useless and have to be destroyed. Thus, the manufacturer will have created work, but it has produced an unnecessary product and the labour force engaged in the production has become redundant and void. Although it is true that in some countries the population has access to them, as is the case in the United States, this is just for small and light weapons. In 2015, the world's weapons production rose to 401 billion dollars[21] but no more than 2% or 3% reached the real weapons market. Certainly the most valuable, namely heavy weapons, are directly purchased by the States.

7. CONCLUSIONS

The considerations of this study have contributed significantly to the enormous debts, the public deficit caused by the PEA and the difficulties in meeting payments in Spain, and it seems appropriate to deduce some concluding remarks.

The first step for the Government, for a number of reasons, should be to carry out an audit of the PEA

The first step for the Government, for a number of reasons, should be to carry out an audit of the PEA. Firstly, because they have been called into question by politicians and the military for not contributing to national defence.[22] Secondly, for reasons of transparency, to be able to know exactly if there are irregularities or breaches in the contracts which would provide grounds for challenging them and might help to pave the way to their denunciation and reduction. It is well known that in many cases there is not enough transparency in public procurement, and this is especially true in the defence field, with increasing suspicions of corruption, forgery, privileged information, rigged contests or side payments. Furthermore, it should be clarified whether the aid in R & D credits granted to military companies has been returned, and made clear the amounts still owed to the Public Treasury.

It is well known that in many cases there is not enough transparency in public procurement, and this is especially true in the defence field

Another possibility concerning the issue of transparency would be to renegotiate contracts with companies in order to reduce the number of weapons, because if it was achievable in 2013, it may be possible to reduce their number again, especially with those that have been questioned on the grounds of their limited usefulness to national defence.

21. Fleurant, Aude, *Arms production and military services*, Sipri Yearbook 2016
22. "Los mismos militares pidieron se llevara a cabo una auditoria sobre los PEA". *El Confidencial Digital*, 16/07/2012.

To reduce the demand for armaments by the Ministry of Defence the number of military personnel must be reduced

A crucial proposal which would lead to the reduction in the demand for armaments by the Ministry of Defence is to reduce the number of military personnel. While in 2016, the Spanish army had 123,000 troops but according to the words of the former minister, Pedro Morenés, only 27,000 were operational for emergency action because of the crisis and lack of budget. This means a significant reduction of units might well be achieved.[23] Especially since perceptions of dangers and threats to the country, as well as its environment, does not justify such a number.

Overall, these oversized armed forces are only justified by inactivity. There is no will to engage in great national debate about security threats so we opt for continuity, which thereby maintains a military structure that every year increases its spending as though it were another social service.

A reduction in the number of troops would significantly reduce the demand for weapons, which would conjointly lower the State's military expenditure by billions that could be directed towards more pressing issues, such as job creation and development. This would undoubtedly help to mitigate the negative repercussions of the economic crisis that are still felt in present Spanish society. Undeniably, this will collide with the interests of the military companies' shareholders, whom will recognise this and put pressure on the government to prevent it.

Implement industry conversion plans to avoid the expansion of unemployment, involving as many agents as possible in achieving them

The same will happen with the workers of the companies who will mobilise against the danger of the loss of their jobs. However, if it is true that the government is acting in the general interest, it should reassure the workers and the military, and should implement industry conversion plans to avoid the expansion of unemployment, involving as many agents as possible in achieving them, including central, autonomous and local governments, professional bodies, trade unions and civil associations. Therefore, together they will seek alternatives to prevent the deindustrialisation of the region where the companies are located. With respect to soldiers and the navy personnel, they could also work in other departments of the State.

The real needs of the defence of the 21st century are certainly very different from those of the last century

In conclusion, there is a need to streamline military spending and adapt it to the real needs of the defence of the 21st century, which are certainly very different from those of the last century where the armies were assigned the role of facing conventional war. Today, that function is practically nil and security is measured by other parameters which involves demands that cannot be met by extensive armies but instead through security bodies (police), intelligence services and justice departments. This requires a reduction in the acquisition of heavy weapons, especially those that do not have a practical role to play in meeting the new challenges to security, such as the PEA. Therefore, a profound change is needed in the national defence strategy as well as in the conception of the armed forces and the weapons they use.

The massive resources that it consumes would generate more work in the civil field, which would help to increase and improve national development

Finally, aside from the moral revulsion surrounding the fact that weapons might be supplied to countries experiencing massive violation of human rights and wars causing severe suffering, it should be reaffirmed that the production of weapons does not equate to real economic growth. On the contrary, it is detrimental to the economy, since the massive resources that it consumes would generate more work in the civil field, which would help to increase and improve national development.

23. "Defensa planea recortar 15.000 militares y 5.000 civiles". *El País*, 16/07/2012.

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ANNEX

Table 1. Military Industry in Spain in 2015 (in million euro in current prices)

Company	Defence sales	Total sales	Results	Defence occupation	Total occupation	Military %
Airbus Group[1]	5.040,00	6,148.00	124.00	8,421	11,268	80%
Navantia	654,50	688.98	-166.74	5,080	5,348	95%
INDRA	326,98	1,923.40	-466.18	2,233	13,136	17%
EXPAL Group[2]	248,54	255.10	18.33	790	806	97%
Indústria Turbo Propulsores	188,54	608.19	50.96	540	1,744	31%
Aernova	130,97	374.19	66.35	60	170	35%
General Dynamics/ Santa Bárbara Sistemas	102,45	103.32	-10.33	711	719	99%
Iveco España	77,72	2,391.44	-97.60	127	3,935	3%
Aciturri Group[3]	73,93	210.50	32.33	152	437	35%
CESA	66,86	95.52	3.55	239	342	70%
ISDEFE	58,80	147.02	4.53	614	1,536	40%
Thales Grupo[4]	50,60	261.34	17.56	187	986	52%
Tecnobit SLU	42,73	47.48	8.64	312	347	90%
Hisdesat	40,57	62.42	21.43	29	44	65%
UROVESA	39,58	52.77	4.47	62	82	75%
GTD Group[5]	3,36	18.29	0.70	29	147	20%
Nammo Palencia	25,90	25.90	-0.30	227	227	100%
EINSA	24,59	26.16	4.54	94	100	94%
SENER	22,20	340.51	-72.21	94	1,440	6.52%
SAPA Placencia[6]	19,31	19.71	1.33	215	221	98%
Otto Melara Ibérica	13,81	13.81	0.56	18	18	100%
Hispasat, S.A.	13,46	89.73	20.31	19	133	15%
GMV	12,08	67.12	1.62	86	480	18%
Málaga Aerospace Defence (before Raytheon España)	11,71	19.51	12.78	63	105	60%
Instalaza	10,51	13.14	1,61	79	80	99%
Equipos Móviles Arpa	10,20	12.00	0.31	44	52	85%
Nucleo	9,32	31.08	-1.18	50	168	30%
JPG Ingeniería	7,52	11.57	0.12	58	90	65%
SAES	7,39	8.21	0.39	102	114	90%
Aritex Cading	6,91	69.10	-16.91	14	138	10%
Everis	5,90	31.16	-1.00	13	73	19%
Aerlyper (into liquidation)	5,63	7.04	0.00	36	45	80%
Cohemo	4,42	5.53	0.36	8	11	80%
Rodman Polyships	4,14	20.70	1.96	32	160	20%
TRYO Grupo[7]	4,11	27.40	2.82	59	390	15%
Sainsel	4,05	6.75	0.11	18	30	60%

Company	Defence sales	Total sales	Results	Defence occupation	Total occupation	Military %
Rohde & Schwarz	3,66	18.23	-0.22	15	73	20%
Navair	3,45	3.45	0.28	33	33	100%
Industrias Matriceras Palentina	3,21	32.27	2.81	4	48	10%
Nextel Engineering Systems (extinguished)	2,84	13.53	-7.97	71	287	25%
MBDA	2,81	2.81	0.13	12	12	100%
Alava Ingenieros	2,53	25.34	0.26	7	71	10%
CIMSA	2,51	4.19	-0.67	22	36	60%
Beretta Benelli Ibérica	2,13	14.19	0.35	8	57	15%
Tecnove Security	2,05	17.11	0.31	13	89	15%
Langa Industrial	1,74	4.97	0.15	11	34	35%
Gutmar	1,07	5.95	0.34	11	59	18%
Astilleros Gondan	0,98	9.78	-0.36	8	79	10%
TOTAL	**7.398,28**	**14,385.90**		**21,130**	**46,000**	

Source: Own preparation. SABI March/2017.
1. Airbus Group: Airbus Defence Space, Airbus Helicopters España, Airbus Military, Airbus Operations, Cassidian Solutions, EADS Casa.
2. EXPAL Group: EXPAL System, EXPAL Aeronautics, Expal Ordenance, EXPAL Propellant, EXPAL Disposal.
3. Aciturri Group: Aciturri Aeronautica, Aciturri Composites, Aciturri Metallic Parts.
4. Thales Group: Thales Aliena Space, Thales España GPR, Thales Programas de Electronica y Comunicaciones.
5. GTD Group: GTD Ingenieria de Systemas, GTD Sistemas de Información S.A.
6. SAPA: SAPA Operaciones, SAPA Placencia.
7. TRYO Group: TRYO Aerospace Flight Segment, TRYO Comunication Systems, RYMSA SL.

Table 2. Main armament programs with INDRA's participation in Spain

	Program cost	Production period
87 EF-2000 Aircraft	13,596.47	1997/2024
232 Meteor Missiles	100	1999-2006
120 Sparrow Missiles	50.86	1997/2015
24 Tigre Helicopters	1,548.03	1997-2016
45 NH-90 Helicopters	1,585.14	2006/2016
239 Leopard Armoureds	2,524.56	1996/2017
212 Pizarro Armoureds	949.95	2005/2024
4 S-80 Submarines	2,800.00	2011/2018
4 F-100 Frigates	1,997.50	1997-2010
1 F-105 Frigate	836.24	2011/2012
1 Strategic Projection Vessel	505.47	2004/2011
4 Ships BAC (Supply Ship in Combat)	238.5	2003/2022
4 Ships BAM (Offshore Patrol Vessels)	488	2006/2011
5 Ships BAM (Offshore Patrol Vessels)	740	2011/2013
Peace and Ingenuity Satellite Observing System	376.52	2012/2016
5 AV-8B Aircrafts	148.06	1997/2018
Pleyades Space Military Observing System	13.7	1998/2012
F-100 Frigate Combat Systems	94	2016/2020
CIS UME Nodes	60.37	2015
"Soldier of the future" program	24.5	2006/2009
Neuron unmanned aircraft	35.5	2007/2015
4 UAV Searcher MKII-J unmanned aircrafts	23.14	2007/2009
Ovserving, attack and inhibition maintenance system (Electronic war)	40	2010/2015
SAM Avionics system	24.3	2009/2010
3D Radar Lanza	25	2009/2012

Source: Own preparation

Table 3. R&D Military in Spain (in million euro in current prices)

Years	Ministery of Defence's R&D	Military R&D of the Ministry of Industry[1]	Total Military R&D	Total R&D	% Military/ total
1996	291.29	332.25	623.54	1,244.29	50.11
1997	290.11	212.16	502.27	1,352.68	37.13
1998	300.14	581.00	881.14	1,867.95	47.17
1999	294.75	1198.58	1,493.33	2,767.84	53.95
2000	293.48	964.11	1,257.59	3,053.86	41.18
2001	382.11	947.80	1,329.91	3,435.30	38.71
2002	314.04	1176.85	1,490.89	3,465.40	43.02
2003	322.97	1049.90	1,372.87	4,000.12	34.32
2004	303.42	1070.00	1,373.42	4,402.00	31.20
2005	315.69	1014.60	1,330.29	4,972.23	26.75
2006	325.88	1358.01	1,683.89	6,510.81	25.86
2007	361.04	1225.06	1,586.10	8,060.42	19.68
2008	355.67	1308.57	1,664.24	9,342.55	17.81
2009	312.41	1149.92	1,462.33	9,654.29	15.15
2010	231.89	950.91	1,182.80	9,128.80	12.96
2011	203.91	770.71	974.62	8,493.11	11.47
2012	174.05	582.77	756.82	6,397.62	11.83
2013	145.29	218.15	363.44	5,926.29	6.13
2014	163.24	343.60	506.84	6,139.99	8.25
2015	163.00	563.92	726.92	6,395.40	11.36
2016	163.89	468.14	632.03	6,429.60	9.83
Total	**5,708.27**	**17,487.01**	**23,195.28**		

1. Credits of military R&D destinated to the PEA
Source: Own preparation. State's General Budget

Table 4. Description of the Special Armament Programs from the Ministry of Defence 1997-2016

Principal modernization program Modernización	Starting and finish date	Purchase quantity	Surrender	Participatin States to the program	Leadings companies and participation Participación	Spanish companies with an important participation
EF-2000 Aircrafts	Project definition phase 1985. Incorporation of Spain 1989. Signature of agreement for development 1997. Full period 1989-2025	United Kingdom 232 Germany 180 Italy 121 Spain 87	Since 2003 untill 2024	United Kingdom Germany Italy Spain	BAE Systems (33%) EADS (DASA) (33%) Alenia (21%) EADS (CASA) (13%)	CASA, ITP, ENOSA, CESA, Tecnobit, Page Ibérica, Draeger, INTA, Fibertecnic, Santa Bárbara, GAMESA, JVC, Sainsel, Indra
F-100 Frigates	1997-2025	4 Frigates	2002-2006	Spain	Navantia	INDRA, SAINSEL, Sener, Navalips, INTA, Canal Experiencias El Pardo, Tecnobit
Leopard Armoured	1998-2025	239 Armoured	1996 - 2015	Help of the german's companies Klauss Maffei-Wegman, MAK y STN.	Santa Bárbara Sistems/General Dynamics	Navantia (engine), SAPA (Transmissions, chains and train of filming), AMPER (program of command and control), INDRA (combat system)
A400M Aircrafts	2001-2024	Germany 60 France 50 Spain 27 United Kingdom 25 Turkey 10 Belgium 8	2011-2025-2030	Spain United Kingdom Turkey Belgium	EADS-CASA	ITP, Indra, Tecnobit and CESA
Ships BAC (Supply Ship in Combat)	2003-2022	4 units	first delivery 2008	Spain	Navantia	INDRA and SAINSEL
IRIS-T missiles (EF-2000)	2004-2018	Spain: 770 missiles	2005 - 2011	1995: Germany in collaboration with Greece, Italy, Norway, Sweden. 2003: Spain as a partner	Spain (20,9%) Germany (40,6%) Italy (14,8%) Greece (10,4%) Sweden (8,4%) Norway (5,0%).	EXPAL (makes elements of the engine) ICSA (production container of the missiles)
Strategic Projection Ship	2004-2024	1 ship	2004 - 2010	Spain	Navantia	INDRA and SAINSEL
80 Submarines	preliminary studies 1989-1991 Reinitiated in 1997 Development in 2003-2011	4 units	2021	Spain	Navantia, Indra, FABA (combat system)	AIP and Abengoa (system of propulsion). SAES (sonar), Técnicas Reunidas, Gamesa, Exide, Bionet, Sainsel and Lockheed Martin
Tigre Helicopters	1997-2025	6 units of the HAP version between 2005-2008 24 units of the HAD version between 2005-2013	2004 - 2030	Spain	Eurocopter, Indra	Eurocopter and ITP, Engine: MTR, ITP, MTU (Germany), Turbomeca (France), Rolls-Royce (United Kingdom). INDRA, network staffing

Principal modernization program Modernización	Starting and finish date	Purchase quantity	Surrender	Participatin States to the program	Leadings companies and participation Participación	Spanish companies with an important participation
Taurus missiles (EF-2000)	2005-2013	Spain: 43 missiles	From 2008	Spain Germany	SENER (Spain) TAURUS GMBH (Alemania)	SENER activate missile integration in the F-18 TAURUS GMBH production and supply missiles and technical support to SENER
Spike anti-tank Missiles	2005-2024	Spain: 260 shuttles 2.600 missiles	2009-2014	Spain Israel	Global Dynamics/ Santa Bárbara Sistemas RAFAEL (Israel)	Tecnobit
Pizarro armoured fighting vehicles	2003-2024	1992-1996: 212 units (170 VCI/C, 5 VCPC, 28 observation vehicules VCOAV, 8 recovery VCREC y 1 sappers VCZ	1992-1996 2003- 2017 2018-2024	Spain Austria	General Dynamics/ Santa Bárbara Sistemas (Spain) Steyr Daimler Puch (Austria)	Santa Bárbara, SIG, RENK, Mauser, ENOSA, Navantia, AOA and SAPA
Ships BAM (Offshore Patrol Vessels)	2006-2022	10 units more 6 optional		Spain	Navantia, Indra	Sainsel, Navalips, Tecnobit, Gabadi, Ferri, Nucleo
NH90 Multi-purpose helicopters	2006-2024	45 units	2012 - 2021	Spain	NH Industries (Eurocopter in 62,5%), Agusta and Stork Fokker Aerospace resto	ITP will lead the Spanish participation in the tasks related to the engine
Integral System of artillery campaign howitzer 155/52 Rema	2006-2023	70 shells 155/52 A; 12 Modernizations howitzers V06 and V07; 82 Vehicles tractors Of the Howitzer; 82 radio station PR4G; 82 intercom ROVIS	2006 - 2023	Spain	General Dynamics-Santa Bárbara Sistemas (factoy of Trubia)	Amper, Iveco and Santa Bárbara
F-105 Frigate	2005 to 2012	one	2006 - 2013	Spain	Navantia, Indra	Tecnobit, Sener, Maxam
Strategic Projection Ship	2004 to 2010	one	2004 - 2013	Spain	Navantia, Indra, Sainsel	Navantia, Indra, Sainsel
Cougar Helicopters UME	2007 to 2011	four	2007 - 2011	Spain	Airbus Helicopter	Airbus Helicopter
UME Aerial Firefighting	2007 to 2008	one	2008 - 2009	Spain	Airbus Defence and Space	Airbus Defence and Space
Nodes CIS UME	2008 to 2010	one	2009 - 2010	Spain	Indra, Thales	Indra
EC-135 Helicopters	2013 to 2016	height units	2015 - 2015	Spain	Airbus Helicopters, Indra	Airbus Helicopters
F-110 Frigate	2015 to 2022	one	2015 - 2022	Spain	Navantia	Navantia
Piranha 5 8x8 Armoured	2016 to ?	348 units	2016 ?	Spain	Santa Bárbara, SAPA Placencia, Indra	Santa Barbara, SAPA Placencia, Indra, GMV, Navantia, Tecnobit and Thapec
Drones UAV/ REAPER	2016 to 2020	four	2016 - 2020	United States Israel Spain	General Atomics, Sener, Indra, IAI	General Atomics, Sener, Indra, IAI

Source: R&D in the Defence Sector. Analysis of the situation (1998-2008). Notebooks chair ISDEFE-UPM nº7, 2010 and PGE
Own preparation

Table 5. Special Armament Programs during 2016
(in million euro in current prices)

Name	Period	Actual cost	2016 Situation
4 EF-2000 aircraft	1997/2024	12,843.00	60 delivered
239 Leopard Armoured	1997/2010	1,997.50	finish
139 Pizarro Armoured	1996/2017	2,550.77	finish
18 Tigre Helicopters	2005/2024	786.94	117 in 2016/17
1 BPE Vessel	1997/2014	1,738.03	finish
14 A400M Aircrafts	2004/2010	505.47	finish
4 S-80 Submarines	2001/2029	5,018.97	any
22 NH-90 Helicopters	2011/2018	2,800.00	in production
1 F-105 Frigate	2006/2021	1,682.44	5 delivered
770Missiles IRIS-T (EF-2000)	2006/2012	836.24	finish
4 Ships BAC (Supply Ship in Combat)	2005/2011	282.43	finish
4 Ships BAM (Offshore Patrol Vessels)	2003/2022	260.16	3 delivered
43 Taurus Missiles (EF-2000)	2006/2012	530.41	finish
2600 Spike anti-tank Missiles	2004/2010	59.64	finish
82 Howitzer cal. 155 mm	2007/2022	364.69	in production
4 Cougar Helicopters UME	2006/2023	195.99	in production
Aerial firefighting UME	2007/2011	80.01	finish
Nodes CIS UME	2008	40.55	finish
8 EC-135 Helicopters	2009/2010	60.37	finish
2 Ships BAM (5th and 6th)	2013/2015	49.00	finish
1 F-110 Frigate	2014/2019	333.48	1 delivered
348 8x8 Armoured Piranha	2015/2022	800.00	
4 Drones UAV/Reaper	2016/?	1,600.00	
3 aircraft tank Airbus 330	2016/2020	160.00	
TOTAL		**35,576.09**	

Source: Own preparation, January 2017

Table 6. Special Armament Programs payments 2006-2016 (in millions of euros in current prices)

Programs	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
Tigre Helicopters	306.00	60,638.00	141,361.51	118,815.87	34,267.57		76,816.66	89,000.00	145,000.00	69,715.99	971.22	748,900.70
A400M Aircrafts	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	992.03	47,850.84	144,258.27	155.586.44	1,165.67	200,266.81
EF-2000 Aircrafts	39,574.00	3,690.15	215,406.94	158,440.99	167,193.20	151,137.69	1,179,424.11	377,660.89	435,824.05	413,362.89	5,577.48	4,836,101.10
Leopard Amoured	11,848.00	1,014.82	84,560.68	128,580.53		464.25	242,337.28	2,429.00		1,452.00		472,686.56
Howitzer 155/52	3,060.00	312.10	10,000.00	14,552.00	12,999.99			32,473.29		10,000.00		83,397.38
NH-90 Helicopters	200.00				3,000.00	446.48	16,065.97	75,191.05	84,173.60	44,765.88	1,278.30	225,121.28
Ships BAM	100.00	140.00			37.88			1,000.03		1,000.00		2,277.91
Taurus missiles (EF-2000)	1,724.00	1,500.00	11,878.50	27,362.22	6,467.41		187,799.35	15,085.71		10,245.63		262,062.82
Spike anti-tank Missiles			4,787.42	1,000.00	14,972.08	219.96	35,967.94	34,580.06	22,891.58	20,000.00		134,419.04
Transport Helicopter					14,491.00	168.66	27,824.41		85,800.17	2,158.00		267,642.24
F-105 Frigates	150.00					206.80	19,473.65	69,859.12		6,577.71		96,267.28
Nodes CIS UME	51,273.08						718.53	5,965.20		5,965.20		63,922.01
EC-135 Helicopters								10,000.00	2,078.73	39,200.00	8.66	51,287.39
F-100 Frigates	1,184.86	101.48	19,261.35	234.00			2,769.95	2,769.95		6,000.00		32,321.59
Ships LLX								93,290.19		2,742.73		96,032.92
Ships BAC - AOR			1,000.00	31,582.64				28,275.03		1,000.00		61,857.67
S-80 Submarine						234.49						1,774.34
IRIS-T missiles (EF-2000)			29,558.21	2,742.73	11,057.28	47,598.51	38,968.56			1,493.85		131,419.14
Pizarro armoured fighting vehicles	7,758.06	5,465.00	13,549.05	12,450.95					55,000.00	60,000.00		154,223.06
UME Aerial Firefighting										10,000.00		10,000.00
TOTAL	**118,178.00**	**73,861.55**	**532,363.66**	**496,761.93**	**265,486.41**	**201,476.84**	**1,829,158.44**	**885,430.36**	**975,026.40**	**705,679.88**	**9,001.33**	**7,931,981.24**

Source: Own preparation. States General Budget, Program 122B

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