Chapter 11

From Offsets to Industrial Cooperation: Spain's Changing Strategies as an Arms Importer[1]

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11.1 Introduction

In July 1984, Spain and McDonnell Douglas Corporation signed the most important offset deal ever agreed by Spain and a foreign corporation or government. Spanish firms had secured licensed and co-production agreements before,[2] as in the purchase of US F-5 fighter aircraft in the mid-1960s, but had never entered an offset programme of this magnitude.[3] Lacking experience in handling big offset programmes, the Spanish administration found itself having to manage an offset worth $1540 million (in 1981 US dollars). To address this situation a new office was created: the *Gerencia de Compensaciones* (Offsets Management Office) would be responsible for managing the F-18 programme as well as any other offset agreements that followed. Later, the office changed its name to "Gerencia de Cooperación Industrial" (Industrial Cooperation Management Office). I will argue that this change in name reflects a transformation in the acquisition and compensation policy followed by the Spanish government. From enthusiasm about offsets in the early and mid-1980s, the emphasis shifted in the early 1990s towards other ways of obtaining industrial and technological benefits when importing military equipment. Although offset deals remain an important aspect of Spain's arms importing policy, other "compensation" formulae, like foreign investment for joint ventures set on Spanish soil, are gaining preeminence. Besides, international co-operation is increasingly favoured as the means of acquiring highly complex and expensive arms systems. It may seem contradictory that while US sources expressed concern about the allegedly too prodigal offset deals that US defence companies had granted foreign clients, a main beneficiary of such an apparently lavish approach was shifting its purchasing policy away from offset agreements. The present chapter will attempt to clarify the causes behind this apparent paradox.

11.2 The 1984 Offset Deal for the Purchase of 72 F-18S from the US

11.2.1 Background

In June 1983 Spain agreed to purchase 84 F-18s from the US company McDonnell Douglas Corporation (MDC). Although talks on the compensation package had already been going for several years, spanning at least three defence ministers and two administrations, the offset agreement was not signed until one year later.[4] MDC committed itself to provide offset deals to the value of 1.8 billion 1981 US dollars. As the number of planes to be bought was later reduced to 72, the offsets were proportionally reduced to 1.54 billion dollars.[5]

Offset deals were becoming a common occurrence in the world defence markets. The compensation package became a factor, important as any other, in determining purchasing decisions. Firms like McDonnell Douglas and General Dynamics established whole departments specialised in negotiating and then managing offset agreements. In contrast, the importing countries often had little or no experience in the administration of offsets. That was the case in Spain, where the Offsets Management Office was quickly established after the agreement was signed. It was expected that the experience acquired could then be applied to negotiating and managing future offset agreements. Soon, the Offsets Management Office was overseeing a myriad of smaller compensation programmes. There is little doubt that the experience provided by the F-18 programme has been crucial in developing Spanish abilities as an informed customer of big weapons systems.

The economic goals that buyers pursue when signing offset agreements are well-known and will not be repeated here. Suffice to say that the positive effects on the Spanish defence industrial and technological base of such a programme were constantly highlighted by officials in industry and the Ministry of Defence. The importance of the F-18 programme for the Spanish defence industry and defence industrial policy has to be understood against the political and economic background at the time when the contract was signed. Spain's defence industry had emerged from Franco's dictatorship and the years of democratic transition in a state of decline. When, in the early 1980s, governments were able to start turning their attention to defence and defence industrial policies, they pursued a modernising strategy. First, the government expected that supplying the armed forces with advanced equipment could help "professionalise" a body characterised by decades of political interference and prove, to a sceptical military, that the democratic government (specially the left-wing administration that came to power after the elections in October 1982) took national defence seriously.

Second, it was hoped that the domestic industry could play an important role in this modernisation process, thus providing incentives for the development of high technology industries, in which Spain was clearly deficient. Foreign assistance was needed to place Spanish defence industry at a technological level comparable with that of neighbouring countries like Italy. In the early 1980s Spain's access to multinational joint development and production programmes was limited: Spain's NATO membership was still pending from a referendum and she was consequently absent from other major international arms cooperation fora. It was only through operations linked to the purchase of foreign defence equipment that Spain could attempt to upgrade the technological level of its defence industries.

It was not the first time that Spain had used defence imports to prop up its ailing defence industry. From the mid-1960s to the early 1970s, three major arms production programmes consolidated the three major (state-owned) Spanish defence firms.[6] Partly because of the economic crisis and political turmoil, no major defence procurement programmes were started in the second half of the 1970s. The F-18 programme came as a spur to the development of Spain's defence firms in the aerospace and electronics sectors. The offset deal was the most important project that the Spanish defence industry had entered for many years and, as we will see, helped some firms establish a foundation in some defence technologies upon which they have since continued to build.

Yet, as important as this economic rationale is, political considerations bear heavily on the Spanish interest in obtaining offsets for its big defence programmes. The purchase of 72 F-18s raised considerable opposition. An investment of well over $2 billion to buy US-made fighter planes was not a popular measure when unemployment rates were nearing 20% of the active population. In this context the offset deal became a cornerstone of the government's effort to justify the purchase to the sceptical Spanish public. Arguing that offsets covered 100% of the total value of the programme, it followed that the purchase was even helping to create employment and it did not have any negative influence on the battered Spanish commercial balance. Besides, the offset would help Spanish firms to break into the American market and, even more important, would involve the transfer of technologies essential for the development of Spain's "high-technology industries". After the contract was signed, and while MDC could keep and even better its yearly offsets targets, the evolution of the deal was accorded a high profile. Often the *Gerencia de Compensaciones* would distribute to the press assessments of the progression of the programme, including sectoral information, geographical data, and lists of the main beneficiaries. However, such dissemination of results dwindled as MDC started to fall behind its commitments.

11.3 The F-18 Offset Programme: Main Traits

In July 1984 the Spanish government and McDonnell Douglas signed the offset agreement linked to the purchase of 84 (later to be reduced to 72 planes) F-18s planes. MDC committed itself to place offsets for a total value of 1.8 billion 1981 dollars (proportionally reduced to 1.54 later) with Spanish firms over a period of 10 years, extendable for up to three more years. One of the objectives established was to

"offer to the Spanish industry in the aerospace and electronics sectors co-production opportunities in manufacturing, assembling, testing, repairs and revision of the aircraft, and to initiate and foster programmes for the development of Spanish industries in the broadest possible number of areas, helping and developing new industries including technology transfer."

The offsets were divided in four groups:

Group A ("designated offsets"): Work, items or services to be carried out, manufactured or assembled by Spanish firms on the planes to be bought by the Spanish Air Force. This includes all operations that would involve the transfer of capacities enabling Spanish firms to carry out maintenance, repairs and revision on these planes.

Group B ("aerospace co-production offsets"): Work to be carried out by Spanish firms on F-18s for the export market or other aerospace activities.

Group C: "indirect offsets" involving the use of defence-relevant technologies excluding those in the aerospace area.

Group D: indirect commercial offsets, including Spanish exports, investments in Spain including technology transfers, and sales derived from the latter.

McDonnell Douglas offered a list of potential offsets in groups A and B from which the Spanish government could choose. MDC estimated the value of this package as 40% of its total commitments. In any case, and whatever the Spanish final decision on the offsets initially offered by MDC, the contract established that a minimum of 40% of the offsets was to involve "technologies typical of developed countries", and a minimum of 10% had to involve technology transfers to Spanish-owned or controlled companies.[7] There were no pre-established upper or lower limits for the type of offsets, except that tourism related offsets could not exceed 10% of the total, and groups A and B (offsets directly linked to the manufacture of the F-18) had to account jointly for at least 17% of the total. Yet the achievement of this latter target was a shared responsibility between MDC and the Spanish government. When subcontracting F-18 work to Spanish firms under the offset agreement, the costs to MDC should not be higher than those it would incur when subcontracting to its normal suppliers. Consequently, the Spanish government has to pay for the additional costs that

domestic firms may incur. That the commitment to a minimum investment in direct offsets involved both parties should not come as a surprise: being at the earlier stages of their learning curves, Spanish firms were bound to be less efficient than established equipment suppliers. It then falls on to the Spanish government to make up for the extra costs. To this end, the Spanish government put aside 100 million 1981 US dollars to finance eventual additional costs. Given the floor established for offsets in groups A and B, the amount committed for additional costs could total up to almost 40% of the value of the aerospace-related offsets subcontracted to the Spanish industry.[8]

Despite these eventual extra costs, the Spanish government showed special interest in maximising the amount of aerospace-related offsets during the negotiation process. Although local assembly was finally ruled out because of the excessive expense involved, Spain insisted on obtaining offsets in aerospace equipment, materials, avionics, and simulators. Group B offsets, guaranteeing Spanish work in 50% of all F-18s destined to the export market, were specially attractive. That other countries would buy F-18s with Spanish components was not only important for the technological development of the fledgling Spanish aerospace components industry, but could also provide grounds to praise the development of the Spanish defence-related firms, particularly if the extra costs incurred and paid by the Spanish government were not granted similar notoriety.

The offsets were to be executed over a period of 10 years, with MDC commitments growing as the years passed. As reflected in Table 1, for the last three-year period the level of commitments exceeds by 60% the amount to be spent during the first three-year period that ended in 1987. One reason for this progression in the level of commitments might have been the need to undertake the necessary groundwork to carry out such a complex commitment; it can be assumed that the efficiency of the organisations will improve as time passes, hence the increasing commitments. Yet, a significant plus of this arrangement was that MDC completed and even outstripped its projected commitments during the first

Table 1: McDonnell Douglas Projected F-18 Offset Commitments (1983–1993) — Revised Commitment 72 Planes

	Period Ending	**Offset Commitment 1981 $ (thousands)**
Period 1	31 Dec 1984	47000
Period 2	31 Dec 1987	403000
Period 3	31 Dec 1990	450000
Period 4	31 Dec 1993	643000

years of implementation, when public scrutiny was at its greatest, immediately after what had been a much contested purchase.

At the time of signing the contract, McDonnell Douglas assured the Spanish government that, according to its own research, it had identified potentially eligible offsets to a value of 4.4 billion 1981 USdollars: that is, almost three times the size of its eventual commitment. Yet despite these assurances, implementation became fraught with difficulties. Managing the whole scale of the programme became a very complex task, Spain did not accept many proposed offset operations, and, eventually, MDC started to fall behind its projected commitments. The next section will discuss the problems that have appeared in the implementation of this agreement and how these might have tarnished the image of the whole project.

11.4 Programme Implementation

The F-18 offset deal included a wide range of operations and was, in principle, open to contributions in any area of Spanish technological development. Because of such flexibility, this sort of deal has been described in the literature as the best kind of offset agreement for purchasing countries.[9] In principle, it allowed the Spanish authorities to establish, to a certain extent, some sectoral or regional priorities. However, during its implementation several problems constraining such flexibility surfaced.

Table 2 presents the sectoral distribution of the offsets received under the F-18 programme to the end of March 1994. Interestingly, defence offsets[10] account for only 28% of the total value of the F-18 offset programme, down

Table 2: Sectoral Distribution of F-18 Offsets — Up to 31st March 1994

Sector	Share of Offsets
Defence	28.42%
Chemicals & Pharmaceuticals	17.54%
Iron & Steel	12.46%
Foodstuffs & Consumer Goods	8.75%
Electronics & I T (Civil)	8.07%
Investment & Technology (Civil)	4.55%
Shipbuilding	3.90%
Capital Goods	3.80%
Others	12.51%

Source: Data supplied by the *Gerencia de Cooperación Industrial.*

from 35% in December 1988. Despite the interest of the Spanish negotiators in obtaining direct offsets involving substantial technology transfers, the final configuration of the F-18 programme has been biased in favour of indirect commercial compensation. This relatively low and falling presence of defence offsets is explained both by the difficulties faced by the US defence industry, and by the limited capacity of Spain's military-related industry to absorb a high volume of direct offsets. It can be argued that, for instance, such limitations were implicitly recognised in the offset agreement when the minimum value for aerospace offsets (including also indirect offsets) was established at a meagre 17%. This was a low figure if we consider that it is one of the fields in which the Spanish negotiators were most eager to obtain offsets.[11]

Regarding indirect commercial offsets (Group D), Table 2 shows a significant concentration in a few industrial sectors. Chemicals and pharmaceuticals,[12] iron and steel, foodstuffs, and electronics account for well over one half of the total indirect offsets. With the exception of electronics, they are "traditional" industrial sectors in which the Spanish economy is relatively strong. This sectoral distribution is not surprising when a large portion of these indirect commercial offsets involve additional exports of Spanish goods. While technology transfers can, and often will, benefit sectors in which Spain does not have much of a commercial advantage, such "trade-oriented" offsets will necessarily benefit industries able to supply products that the export markets can absorb.

In short, the sectoral distribution of the F-18 offsets programme has largely been defined by the existing industrial capabilities. The potential flexibility to establish sectoral priorities in the allocation of offset operations is largely constrained by the existing domestic capacities, such constraints being tighter the larger the offset programme. There will always be a limited degree of flexibility for the receiving country to set sectoral priorities and use the offset as a tool of defence industrial policy; the Spanish case shows, for instance, how local capabilities in fields like simulators and automated test beds were introduced through the F-18 offset programme. These are qualitatively very important operations, but in terms of volume are much smaller than the bulk of indirect commercial offsets.

In terms of regional distribution, there is a high concentration of offsets in those regions that would be the "natural" receivers of such work in the absence of any offset distribution policy of a regional nature. In other words, the regional distribution of offsets is largely determined by their sectoral allocation; there are no signs of a regional policy being implemented on the back of the offset agreement.

As Table 3 shows, the province of Madrid appears by far to be the main receiver of offsets. The major reason for the pre-eminence of Madrid is that it

Table 3: Geographical Distribution of Offsets — Up to 31st March 1994

Region	F-18 Programme % of all offsets	All Programmes % of all offsets
Madrid	59.9	64.4
Andalucia	13.4	11.9
Basque Country	7.6	7.3
Catalonia	7.1	6.4
Valencia	6.5	4.8
Asturias	4.1	3.2
Others	1.4	2.0

Source: Data supplied by the Gerencia de Cooperación Industrial.

receives most defence offsets;[13] Madrid is the only area in which the defence offsets outweigh indirect commercial compensations. The remaining regions are mainly receivers of indirect "civilian" offsets. Andalucia, the Basque Country and Catalonia have all received more indirect offsets than Madrid, with Andalucia being the most important recipient.[14]

The concentration of offsets in Madrid has been growing over the years, alongside the increasingly defence-oriented nature of Spain's offset policy. This concentration results in a clustering of technologically significant offsets in the province.[15] This is not surprising; the aerospace and electronics firms that receive most of the direct offset work have their headquarters and most of their research and production facilities in Madrid.

There is also a noticeable concentration of offsets at the firm level. Table 4 shows the 10 firms that have received the largest share of offset activity. Two defence-related firms, CASA and INDRA,[16] account for 30% of all offsets and the 10 firms in Table 4 account for almost 50% of the total value of F-18 offsets. This concentration exists despite the large number of firms that have participated in one or more offset agreements: 413 by the end of 1993. Therefore there must be a large number of companies participating in very small offset operations, particularly in the commercial fields. To select and oversee these small operations requires a substantial administrative effort.

Compared with the proliferation of small firms that receive some offset work, in the defence area such activity is extremely concentrated, with only two firms, CASA (aerospace) and INDRA (electronics), accounting for over 90% of the F-18 defence offsets.[17] Because defence-related offsets have been more important from a technological point of view, such concentration of defence offsets is very significant. First, it means that there has been very limited diffusion

Table 4: The Industrial Beneficiaries of F-18 Offsets to 31 March 1994

Firm	Offsets Received		Sector
	Million Ptas.	%	
Casa	50502	16.96	Defence
Indra	42138	14.15	Defence
Ertisa	16525	5.55	Chemical
Union Naval de Levante	9120	3.06	Shipbuilding
Pro.Quimicos del Mediterraneo	7393	2.48	Chemical
Asturiana de Zinc	5308	1.78	Iron & Steel
Amper Programas	5234	1.76	Defence
Santa Barbara	4618	1.55	Defence
Repsol Petroleo	3845	1.29	Chemical
Scott Iberica	3078	1.03	Chemical

Source: Data supplied by the *Gerencia de Cooperación Industrial*

of defence-related technological capabilities obtained through the F-18 deal. Second, while the Offsets Management Office has to invest large amounts of time and effort in overseeing the indirect commercial offsets, its main interest resides in areas dominated by a few firms and institutions. Indirect commercial offsets thus appeared as the main cause of an onerous management overhead, and would henceforth be avoided if at all possible.

The importance of aerospace and electronics firms, as recipients of offset activity, is not accidental. Besides being the defence areas in which Spain is most dependent on imports, offsets in these fields can offer the Spanish defence-related industry assistance in areas that the Ministry of Defence considers most critical, including microelectronics and related technologies (like simulation, software, radars, and testing and maintenance equipment), and new materials (specially ceramics and composites). To mention only two examples, offset deals helped CASA develop its skills in the manufacture of composite structural components for aircraft, and the electronics firm CESELSA (now subsumed in the electronics conglomerate INDRA) establish an important presence in the field of simulators and automated test beds.

The implementation of the F-18 offset programme has been besieged by another set of problems linked to the management of such a big and "flexible" programme. As McDonnell Douglas submitted projects for approval to the Spanish Offset Management Office on a one-by-one basis (the contract established that the suitability of projects had to be agreed between both parties), the Office was soon overwhelmed by hundreds of projects of widely varying size,

and had to decide whether they conformed to the conditions required to be accepted as genuine offsets. Not that this decision was easy; for instance, for commercial offsets the transactions proposed had to result in a net increase for Spanish exports to the United States or a net decrease of Spanish imports. Therefore the Offset Management Office had to decide, for each proposed commercial offset, whether it would amount to a net gain in the balance of trade or would just divert already existent trade flows. Besides, the proposed operations could be (and were) in any sector. Eventually, many proposals were not accepted. By December 1986, the total value of rejected proposals amounted to 23% of the total proposals in the commercial area. For defence-related offsets the proportion of "rejected" proposals was even higher: 41% of the total value of the defence-related offset proposals submitted. Eventually, by the end of March 1994, a total of 7759 applications had been processed, of which 1190 (15%) had been rejected amounting to a 31% of the total value of the projects submitted (see Table 5).[18]

After a project is accepted the Management Office has to calculate its "offset value". To this end, it has to check the information received from the participating Spanish companies, evaluate the help they are receiving from the US company "providing" the offset, assess the growth of the normal trade flows that the new offset has caused, calculate the Spanish value added that the new operations involve, and translate this value into 1981 US$.[19] The problem of selecting and assessing the applications and administering the whole programme is compounded by the large number of proposals that McDonnell Douglas has presented to the Spanish authorities.

Notwithstanding the large number of rejections, MDC initially managed to keep the offset programme progressing at a good pace. In the initial years the offset contracts granted surpassed the goals set in the agreement. In 1987, for instance, the offsets realised exceeded by 51% the commitments for that year.

Table 5: Situation of the F-18 Offset Programme as at 31st March 1994

Total Commitment:	**1543 M$ 1981**	
Credited:	**1259 M$ 1981 (81.6% of total commitment)**	
	Number	**Value**
Proposals Submitted:	7759	2617 M$ Current
(of which) approved:	6543 (84%)	1760 M$ (67%)
" under consideration:	26 (0.3%)	38 M$ (1.5%)
" rejected:	1190 (15%)	818 M$ (31%)

Source: Data supplied by the *Gerencia de Cooperación Industrial*

Yet in 1988 the yearly surplus was down to 4.3% of the commitments for that year, and from 1989 MDC started to fall short of the planned yearly payments. The surplus that had been accumulated in the first five years of the programme was rapidly eroded; by the end of 1991 the **total** realised offsets were trailing projected commitments by almost 6%. In 1991 the offset contracts accounted for only 45% of that year's projected commitment. When the programme reached its projected closing date by the end of December 1993 the default accumulated had reached 18% of total commitments. Out of a target of 1981 US $1543 million, the total credited offsets amounted $1265 million.

Despite the promising start, MDC proved increasingly unable to comply with its offset commitments. This is partly due to the fact that annual commitments increased as the programme progressed. The growing obligations have coincided with the international economic crisis of the early 1990s and the fall in demand for the defence industries. There have been increasing difficulties in finding additional markets for Spanish products, and the contraction in the defence markets is shrinking the base on which defence offsets can be offered to Spanish companies. Although Spain's preference for group B offsets continues (as shown by Spain's interest in making components for the F-18s sold to Finland in 1992), the participating US companies are hard pressed to keep for themselves as high a portion of this work as possible. To allow Spanish companies to participate in the manufacture of F-18 components, no matter how small this participation, would not go down well in the US when defence firms are shedding thousands of jobs.

The offset agreement stipulated the possibility of a three-year grace period for MDC to fulfil its commitments; this period started on 1st January 1994. The first months of 1994 saw the culmination of the negotiations between MDC and the Spanish authorities to determine the offset projects that would be carried out over this three-year period ending on 31st December 1996. It is expected that the agreements signed in early 1994 will cover all the remaining MDC obligations. What is significant about this batch of offsets is that they are all direct defence offsets, aimed mainly at increasing the capability of Spanish firms and the Spanish Air Force to maintain the F-18s over its complete life-cycle.[20] The projects that Spain proposed were the result of an analysis undertaken, over a period of some two years, in anticipation of the foreseeable failure by MDC to fulfil all its commitments by the end of 1993. The main objective was to put an end to further "commercial" offsets and to concentrate instead on defence compensations, targeted mainly at diminishing Spanish dependence in weapons system maintenance and support. This is in line with the overall direction of the offset agreements that Spain has entered over the last years: the main emphasis is in obtaining direct defence offsets. As we will see below, the F-18 programme with

its large volume of indirect, non-military, mainly commercial compensations has become an, admittedly very large, exception to the many offset agreements signed by Spain.

11.5 Main Outcomes

After all the implementation problems, there is little doubt that the programme has had beneficial effects. It can hardly be questioned that it brought to Spain a substantial workload in different areas of the economy and that, in consequence, there was a job creation effect. Exports to the US of defence and civilian products under the offset agreement helped to assuage the negative effects on the trade balance of the import of the F-18 fighters. Some offsets programmes involved the training of industrial and Air Force personnel[21] and others have helped Spanish defence-related firms to homologate their products in the international markets.

Yet these results have been obtained at a cost. Apart from the administrative difficulties that we have discussed in some detail, there is the question of the "cost premium" paid for offsets. As mentioned above, a system was implemented to help Spanish receivers of direct offsets (Groups A and B) to keep their prices within the market prices MDC expected to pay for these components from its normal suppliers. In a nutshell, the difference between domestic and "market" costs was covered by Spanish public funds. The F-18 has been the only offset programme to implement such a system.

In this section, three main problems with the implementation of the F-18 US-Spanish offset agreement have been identified. First, there is the administrative ordeal of having to review thousands of applications for offsets and apply regulations that may be subjected to different interpretations.[22] Second, the ambiguous basis on which the criteria and the procedures for selection are established cause doubts about the eligibility of some operations. By 1989, the Spanish administration acknowledged that they had difficulties assessing some of the offset proposals, and the opposition questioned in Parliament the eligibility of some selected projects.[23] The third problem lies in the long span of time over which the offsets will be distributed; as the Spanish case shows, the programme can fall victim of economic circumstances impossible to foresee when signing the contract.

It can be argued therefore, that smaller offset contracts offer clear advantages over long term massively complex agreements. In fact, most of the programmes that the Offset Management Office administers are much smaller than

the F-18 programme. Some of these programmes are direct agreements to co-produce or jointly develop specific components for inclusion in the systems acquired by the Spanish Armed Forces. Unlike the F-18 offset agreements such co-production agreements are much more narrowly targeted and do not develop over such long periods of time. In fact, many of them could not be called "offset agreements". Strictly speaking an "offset agreement" is a high value countertrade[24] operation with a long period for the completion of the contract.[25]

11.6 Other Offset Deals

The weight of the F-18 agreement within the total population of offset deals that Spain signed as an arms importer can be appreciated from Table 6. This single agreement accounts for more than two-thirds of the total value of all offset agreements, and almost one-half of the value of outstanding offset obligation as at the end of 1993.

Although it is by far the most important, the F-18 offset agreement is one of many managed by the Offsets Management Office. By December 1986, the Office administered 40 projects; by the end of 1993 this number had grown to 72.

As shown in Table 7, about two-thirds of the number of offset deals have been signed with US firms and these include the most important deals in terms of their economic value.

The massive difference between the F-18 and other offset programmes can also be seen in Table 8; this provides details of the most important offset programmes signed during the 1980s. It shows that the largest deals have been signed with US firms. The second most important deal after the F-18 was less

Table 6: The Number and Value of Offset Agreements Signed by Spain for Imports of Defence Material over the Period 1983–1993

	Number of Offset Agreements	Total Offset Volume (M.Ptas.1993)	Offsets Pending (M.Ptas.1993)
Offsets Signed	72	516,000	143,000
F-18 Offset	1	354,000	65,000

Source: Elaborated from official data provided by the Secretary of State for Defence to the Spanish Congress Defence Commission on June, 21 1994. Cortes Generales, *Diario de Sesiones del Congreso de los Diputados, V Legislatura, Comisión de Defensa*, sesión núm. 14 21 Junio 1994.

Table 7: Offset Agreements Linked to Spanish Arms Imports 1983–1993

	US	Europe	Total
Total number of Deals	46	26	72
Completed Deals	19	7	26

Source: Elaborated from official data provided by the Secretary of State for Defence to the Spanish Congress Defence Commission on June, 21 1994. Cortes Generales, *Diario de Sesiones del Congreso de los Diputados, V Legislatura, Comisión de Defensa*, sesión núm.14 21 Junio 1994.

Table 8: Spain's Most Important Offset Programmes in the 1980s

Programme	Offset Value	% Total Programme	Non-defence Offsets	Duration Years	Vendor
EF-18	1543 M$1981	100	Yes (72%)	10	US
AV-8B (Harrier)	130 M$	100	Yes	?	US
Lamps MK-III	36 M$	30	Tec.Transfer	6	US
Roland		67	?	?	France
Harpoon	20 M$	20–50	<20%	?	US
Chinook	44 M$	50	Tec.Transfer & Ind. Invest.	8	US

than one tenth its size; the offset for the purchase of 8 AV-8B ("Harriers") to McDonnell Douglas amounted to $130 million (in current terms).[26] The remaining programmes are all moderate in size and are dwarfed by the dimension of the F-18 agreement. The F-18 offset deal is also exceptional because of its very high percentage of indirect non-defence offsets. There has clearly been a trend towards more accurate targeting of offset programmes, even when this was done at the price of lower returns in absolute terms. For instance, the Roland offsets package, despite only being for 67% of the total contract value, has been crucial in developing Spanish capacities in missile manufacturing, a field that Spain was eager to enter. The F-18 agreement is also different inasmuch as it was rare, at that time, to find 100% offset deals.

The modest presence of European firms among Spanish offset partners contrasts with the European orientation of most international arms development and production programmes in which Spain has expressed interest. However, the trend toward cooperation with US companies will not disappear just because Spain's enthusiasm for a particular form of offset is waning. In some very important instances, Spain has chosen US firms for acquisition programmes and

future development projects instead of competing offers from European joint programmes. The most recent and relevant example of such a trend is the purchase of Hughes TOW 2-B anti-tank missiles. Spain had, at a previous stage, joined the European programme TRIGAT, but finally decided to withdraw and buy US TOW missiles. As part of the deal, Hughes has agreed to rescue the troubled Spanish state-owned firm ENOSA (a firm involved in vision and optical systems), and to create a joint firm (Gyconsa) with the Spanish electronics holding INDRA. Gyconsa is a systems engineering company responsible for the Spanish TOW programme and for developing a new electro-optically guided short range anti-tank missile for the late 1990s (MACAM-3). This is probably the best and most important example of the new strategy, which uses purchasing programmes to draw foreign partners into Spanish firms with a view to maintaining the partnership for future developments and programmes.

11.7 Changing Strategies: From Offsets to Industrial Agreements

When, in 1984, Spain decided to buy 12 Harriers AV-8B from McDonnell Douglas, it did so under an offset programme. When, in the early 1990s, Spain was considering the modernisation of the same aircraft and the procurement of a further 8 Harriers in more advanced versions, the institutional arrangement for this purchase were very different: Spain would participate in a joint development and production programme that would also involve the United States and Italy. The shift from plain purchase with offsets to partial joint development and production is a significant one. Although the amount of business generated for the Spanish firms is similar,[27] the programmes are managed in a different way. While offsets must be approved by the Offset Management Office, and they are agreed after the procurement decision has been made, joint development and production involves the direct participation of industry from the early development phase. Hence when final procurement decisions are made, the tasks that will be contracted to Spanish companies will have been, by and large, defined. Theoretically, this allows the Spanish firms to interact more closely with their "senior" partners. Negotiations on workshares involve directly the participating firms, and the corporations from the smaller countries bear the brunt of the responsibility to ensure that they can have access to meaningful tasks. In joint projects, the responsibilities for the development programme are usually shared, implying a deeper involvement of the junior partners from the early stages of development and production.

In this new situation the task of the Offset Management Office was substantially redefined, and its name accordingly changed. The re-labelled Industrial Cooperation Management Office sees its new broader role as to offer institutional support to the Spanish firms negotiating with their foreign "senior" counterparts, and to put in place mechanisms to guarantee that Spain receives a "juste retour" for its imports of military systems.

Spain's move from offsets to other forms of cooperation became progressively clearer in the early 1990s. This move was not unique to Spain; for instance, Greece was shifting away from offset agreements towards other forms of cooperation, specially joint ventures, as early as in 1987. In the mid-1980s, Spain started to participate vigorously in several international development and production programmes.[28] Although some highly publicised failures have led to a measure of scepticism among industrialists, some government officials, and the press, international development and production programmes mark a new phase in Spain's policies as an arms importer and in the internationalisation of its defence industrial base. Even when the participation of a small partner in a joint project is marginal and agreed as a form of compensation with the main (foreign) producer, there are significant differences with offset deals in at least two respects. First, the tasks to be developed by the small partner are agreed before the purchase (which is not always feasible in offset agreements), and are usually "direct" in that they relate to the specific arms system being object of the transaction. Second, there is no need to oversee a large number of offset applications to determine whether they conform to the agreement. Therefore management is less cumbersome, although not devoid of protracted negotiations as countries and firms strive for control of those tasks that they find more rewarding from a technological point of view.

When joint programmes involve genuine joint development, small partners become more deeply involved in research and production, and gain better control over the evolution and characteristics of the programme than in an offset agreement. Yet the main difficulty for small countries with an intermediate technological level, is to find areas in which its industry may be able to provide a meaningful contribution to the joint programme. One of the rôles of offset agreements can be to provide the basis on which a country can start developing "niche" expertise in defence-related areas that will later allow it to participate in joint development and production programmes. Joint development and production may then be interpreted as a further step in the process of internationalization of the domestic industry. For instance, up to a certain extent, the Spanish move from offsets to international cooperation has been supported by the experience gained in the F-18 and other previous offset programmes. Spain's main contribution to the co-operative programme to develop and produce the Harrier

II Plus aircraft revolves around the appointment of CESELSA as the prime contractor for the simulators and automated test beds. These are areas in which CESELSA developed most of its expertise through the F-18 offset programme.

The role of offsets in Spanish defence procurement has subsided due to the undeclared but emerging policy of using acquisition programmes to draw foreign partners into domestic companies. Its most important example so far has been the arrangements accompanying the sale of TOW anti-tank missiles to Spain by Hughes. The sale of TOW missiles to Spain came at a cost for Hughes. As part of the deal, Hughes has bought a 49% share in the state-owned ENOSA and in the newly created Gyconsa. Similarly, following the sale of communications equipment to the Spanish Army, Thomson CSF has become a shareholder in the domestic assembler of such equipment, Amper Sistemas. Another Thomson subsidiary took a 40% share in a new venture involving the Spanish firms Bazán and INISEL, whose first goal has been to supply underwater electronics systems to the Spanish Navy.

At times, foreign firms have invested in Spanish ventures related to joint international development and production programmes, specially the European Fighter Aircraft. For instance, Rolls-Royce is a major shareholder in Industria de Turbo Propulsores (ITP), the Spanish partner in Eurojet, the consortium in charge of developing and producing the EF2000 engine. Also, Lucas Aerospace launched a joint venture with CASA to form the "Compañía Española de Sistemas Aeronáuticos, S.A." (CESA), a firm specialising in the production of hydraulic components for aerospace applications. The company also participates in the EF2000 programme.

In all these cases the foreign shareholder does not control the company but has, nevertheless, a substantial stake in it (usually between 30 and 49 per cent). So far, the Spanish authorities have been reluctant to relinquish control of key activities in the defence field to foreign owners. Hence the substantial, yet minority stakes, through which foreign firms are allowed to access the Spanish market.

Although these operations are linked to a single transaction, the participation of foreign companies in the ownership of Spanish firms brings about the promise of a longer commitment to the Spanish industry. After the foreign firms have sunk substantial investments to modernise and improve the Spanish firms, it is to be expected that they will try to maintain their presence in Spain to make their initial investment more profitable.

The Spanish authorities are specially interested in the technological and marketing skills that foreign companies can bring to their Spanish associates. For the foreign partners these operations often entail sizeable investments against promises of additional purchases. That foreign firms are ready to risk investments

in a market like the Spanish, that is anything but growing, is a reflection of the difficult situation in which arms exporters find themselves. US companies, like Hughes, may be attracted to these ventures not only by the moderate size of the Spanish markets, but also by the opportunity they offer to establish a bridgehead in Europe for fear of the emergence of a closed European defence market. That Spain has used the "buyers market" to prop up the technological level of some of its ailing defence related industries should not come as a surprise.

11.8 Conclusions

Since signing the F-18 offset agreement, the Spanish defence industry and its international surroundings have changed beyond recognition. It is not surprising then that the ways through which Spain has sought to improve this industry, when driven to purchase defence equipment abroad, have also evolved. Spain has used an increasing variety of methods to draft technological and marketing skills in support of its defence firms. Offset agreements were the first of them. Later, with a more qualified defence industrial base, with membership of international defence organisations, and with a more competitive international defence market that strengthened its bargaining power as a purchaser, Spain managed to obtain other compensating arrangements.

Although offsets have never been fully abandoned as a way of securing industrial benefits when importing arms, other avenues are now available that avoid many of the problems with offsets. The F-18 example shows the difficulties encountered in the management of big, long-term, flexible offset programmes. Uncertainty over the ability of the contracting company to fulfil its commitments, difficulties interpreting complex and at times vague clauses, and the effort necessary to deal with thousands of proposed offset operations are the most obvious obstacles in the implementation of an offset agreement. Clearly, smaller offset programmes are easier to administer, but are usually narrower and more difficult to control and to adapt to changing circumstances.

The success of other arrangements, like compelling foreign sellers to take a stake in domestic firms, remains to be seen. The long term benefits of foreign participation in domestic defence companies may not accrue if the foreign investor does not see its efforts rewarded by a flow of sales to the armed forces. Already, Hughes has made its disappointment with the poor results of its Spanish investment publicly known. The unavoidable clash of interests between domestic firms and foreign sellers then moves from the highly formalised and structured environment of the offset management offices, to the more fluid market relations between firms and between them and their buyers. Foreign firms

may press the Ministry of Defence to maintain a flow of orders for their Spanish ventures in the knowledge that if such custom is not forthcoming they can always withdraw from Spanish industry. Their Spanish partners will be more interested in assuring that the promised transfer of technologies and marketing skills takes place, and that the involvement of the foreign partner improves the firm's access to the notoriously difficult export market.

In this context, we expect the policy of using arms imports to "attract" foreign investors to continue. Together with international joint production and development programmes, they will be the main tools used to capitalise on defence imports to improve the technological capabilities of the Spanish military-related industries. This is not to say that offsets are a thing of the past. Although their relative importance is diminishing, Spain has accumulated important experience in negotiating and managing offset agreements. Because the Spanish administration feels it is learning to extract better offsets than before, the offset option will remain an alternative to consider in almost any weapons transaction. Yet, with the preference given to other forms of "compensation" like international cooperation, or direct foreign investment in Spanish defence production, offsets will probably be increasingly limited to small transactions. A small operation may not justify an international programme, or a foreign direct investment in Spain, and will not suffer from the main drawbacks of large offset agreements that characterised the F-18 programme. In other words, offsets are here to stay as one element of the Spanish arms purchasing policy. However, the main policy thrust has moved away from offsets, and towards other forms of obtaining industrial compensations when importing arms. These new forms (joint development and production, foreign direct investment) invariably entail more intricate patterns of international interaction, in which firms are playing an increasingly important role.

Endnotes

1. The author acknowledges the assistance received from Antonio Rodríguez and the Gerencia de Cooperación Industrial when writing this chapter.

2. Offsets may include co-production agreements, but also other sorts of countertrade deals. They are different from mere co-production agreements in that they have to reach a preset value and are implemented over long periods of time.

3. Its only relevant precursor was the 20% offset agreed for the purchase of 30 Mirage III fighter aircraft from France in 1968.

4. Later on, one of the defence ministers involved in the negotiations, Agustín Rodríguez Sahagún, recriminated his successors for having accepted conditions he had previously rejected. Cinco Días (Madrid), 26 April 1989.

5. Although both official Spanish sources and MDC declared the offset agreement to cover 100% of the value of the transaction, this direct relationship is not explicitly established in the official agreement.

6. Jordi Molas-Gallart, **Military Production and Innovation in Spain**, Chur: Harwood Academic Publishers, 1992, pp. 49–50.

7. The system to assess the value of technology transfers is not clearly determined in the initial agreement. This offered four vague alternatives: the "just value" of the technological licence transfer, its value to the Spanish company, the highest of the former, or any other mutually agreed value.

8. No information is available on the extra costs eventually incurred; yet additional costs of more than 30% over the contract values are likely. Part of these extra costs would later be recouped by the State in the form of additional tax income and social security contributions.

9. Grant T. Hammond, **Countertrade, Offsets and Barter in International Political Economy**, New York: St. Martin's Press, 1990, p. 43.

10. These refer to Groups A, B, and C as described above.

11. By the end of 1993, aerospace offsets reached 31%, well beyond the established floor.

12. The weight of pharmaceuticals within the "chemical & pharmaceutical" sector is very low.

13. This explains why, for all programmes, the concentration in Madrid is even bigger: the presence of direct offsets is lower in the F-18 programme than in the other ones.

14. Andalucia and the Basque Country are also areas receiving direct defence offsets: the aerospace firm CASA has a couple of plants in Andalucia, and the aircraft engine components firm ITP has its main manufacturing centre in the Basque Country.

15. Indirect commercial offsets are far from having the technological content of direct offsets; they have included for instance the US purchase of Spanish paper pulp, the US import of Spanish wire for tires, and the construction of a cruiser.

16. CASA and INDRA are respectively the leading aerospace and defence electronics companies in Spain.

17. This is why, despite the fact that defence only accounts for 28% of the total offset, CASA and INDRA lead the list of major offset receivers.

18. Including all other offset programmes, the total number of applications processed by 31st March 1994 exceeded 9000.

19. Antonio Rodríguez, "**Los programas de compensaciones asociados a las adquisiciones de material de defensa**," in *Economía Industrial*, January–February 1987, p. 88.

20. One of the objectives is to make the Spanish firm Industria de Turbo Propulsores (ITP) capable of performing full maintenance on all the GE equipped Spanish military aircraft. Besides, once complete, these projects will mean that no further payments in the form of royalties or the like will be owed to US firms.

21. Although the chapter concentrates on the offsets received by industry, the Spanish Air Force has also been an important receiver, above all of training and technology transfer, related mainly to the operation and maintenance of the aircraft.

22. To tackle the problem of interpretation two mechanisms were implemented. First, some points in the agreement were further clarified in the minutes of a series of meetings between the Spanish Offset Management Office and MDC that followed the signature of the contract. Minutes and offset agreement conform a single contractual body. In the second place, in every routine quarterly meeting between the Gerencia and MDC, new minutes are signed gathering the criteria and procedures followed to assess offset applications; such criteria are used as guidelines for future similar applications.

23. Cinco Días (Madrid), 26 April 1989.

24. Countertrade exists whenever an export operation is contractually linked to a "compensating" import.

25. Luis Jiménez, "**Las transacciones por compensación en el comercio internacional: los acuerdos 'Offset'**", *Revista de Aeronáutica y Astronáutica*, no. 576, December 1988, pp. 1354–1358.

26. Most of the offset contracts signed with Spain are specified in current dollars. US inflation over the period of application will erode the real value of the offset obligation.

27. Partners in international projects have a share of the production work equivalent to their share of the purchase of the final system.

28. Jordi Molas-Gallart, "**Spanish Participation in the International Development and Production of Arms Systems**" *Defense Analysis* 6 (December 1990): pp. 351–365.