

## II. Military industrialization: the case of Brazil

AUDE FLEURANT

Brazil's efforts to build an indigenous military-industrial capacity are indicative of some of the challenges and risks of implementing a military industrialization strategy. This case is interesting for two reasons. First, it questions the centrality of threat perception as a driver of the creation of indigenous arms production capabilities. Second, it shows the many challenges that such a project can encounter, regardless of the motivations that drive them. Indeed, current Brazilian efforts to increase and modernize the country's weapons production capabilities are its second attempt at becoming a major military industrial actor regionally and internationally.

### **Brazil's first military industrialization project, 1964–80**

Brazil's first military industrialization project was implemented by a military dictatorship following the 1964 coup d'état. Reported motivations supporting this plan were diverse—from achieving self-sufficiency in weapons sourcing to improving the country's general industrial and manufacturing capabilities, and the search for international prestige—but did not include an external threat to Brazil's borders, population and institutions.<sup>1</sup> Several analysts also indicate that Brazil's military industrialization was one aspect of a wider industrial development strategy.<sup>2</sup> This strategy was based on an assumption that technological advances made through military production could benefit the industrial sector through 'spin-offs' (i.e. the transfer of knowledge, new manufacturing processes and/or products from the military to the civil sector).<sup>3</sup>

Brazil used offsets to implement its strategy, with imports of major weapons from foreign suppliers being accompanied by requests for technology transfers, local manufacturing through licence production or co-produc-

<sup>1</sup> Franko-Jones, P., *The Brazilian Defense Industry* (Westview Press: Boulder, CO, 1992); and Quéau, Y., 'Are the Brazilian military industrial ambitions at risk?', ed. F. Dane, *Multilateral Security Governance* (Konrad Adenauer Foundation: Rio de Janeiro, Oct. 2014). Franko-Jones notes the 'so-called influence of subversive forces' presented by the military dictatorship as an internal threat and used to garner support for the military industrialization plan.

<sup>2</sup> See Perlo-Freeman, S., 'Offsets and the development of the Brazilian arms industry', eds J. Brauer, and J. P. Dunne, *Arms Trade and Economic Development* (Routledge: London, 2004); and de Gouvea Neto, R., 'How Brazil competes in the global defense industry', *Latin American Research Review*, vol. 26, no. 3 (1991), pp. 83–107.

<sup>3</sup> The most well known cases of successful major spin-off are jet engines and Teflon. However, the effectiveness and impacts of 'spin-offs' are the subject of disagreement in the expert community. See, Adams, G., 'Is the sky really falling?', *Foreign Policy*, 25 Nov. 2013; and Brzoska, M., '2006 trends in global military and civilian research and development (R&D) and their changing interface', Proceedings of the International Seminar on Defence Finance and Economics 13–15 Nov. 2006, New Delhi, India, pp. 289–302.

tion.<sup>4</sup> These efforts enabled Brazil to become a major arms exporter in the 1980s and early 1990s, capable of producing a semi-diversified range of weapon systems considered ‘medium-tech’, including armoured vehicles, training aircraft, small ships and some artillery. Brazilian companies mainly supplied arms to the so-called Third World countries and to other ‘newly industrialized countries’ (NICs).<sup>5</sup> According to SIPRI data produced at that time, Brazil was the fifth largest exporter and the second largest arms producer of the NICs.<sup>6</sup>

However, the military industrialisation project was halted in the early 1990s. While the creation of a domestic arms industry required significant resources, the relatively low level of Brazilian military spending for procurement demanded that industry export a large proportion of its production.<sup>7</sup> Companies forming the core of the Brazilian arms industry became reliant on a handful of customers, notably Iraq.<sup>8</sup> The end of the 1980–88 Iran–Iraq War and the application of sanctions on Iraq following the 1990 invasion of Kuwait, together with decreases in military spending in Middle-Eastern and African countries—recipients of Brazilian weapons—dealt a severe blow to the arms industrialization process, and brought the country’s major arms companies to near bankruptcy.<sup>9</sup>

### **Brazil’s second military industrialization project, 2005 to date**

Brazil’s second effort at acquiring and rebuilding its national arms production capabilities was formally launched with the announcement of the ‘National Policy for the Defence Industry’ (PNID) in 2005, although signs of increased arms industry activity were apparent earlier in the 2000 decade.<sup>10</sup>

As was the case in its earlier attempt, the current arms industrialization strategy is not motivated by the existence of an external threat to the country. Rather, current efforts are based on Brazil’s pursuit of influence in regional and international affairs, the need to replace aging weapons, and its

<sup>4</sup> See Perlo-Freeman (note 2); and Conca, K., ‘Between global markets and domestic politics: Brazil’s military-industrial collapse’, *Review of International Studies*, vol. 24, no. 4 (Oct. 1998), pp. 499–513.

<sup>5</sup> Goldstein, A., ‘Embraer: from national champion to global global player’, *CEPAL Review* 77, Aug. 2002; and Sanchez, A., ‘Embraer: Brazilian military industry becoming a global arms merchant?’, *Council on Hemispheric Affairs (COHA)*, 1 Sep. 2009.

<sup>6</sup> Sköns, E. and Ohlson, T., ‘The trade in major conventional weapons’, *SIPRI Yearbook 1987*.

<sup>7</sup> Perlo-Freeman (note 2).

<sup>8</sup> Pelza, M., ‘Bullets from Brazil: Growing military industrialism in Latin America’, *WOLA*, 21 Mar. 2014.

<sup>9</sup> Bickers, C., ‘Avibras escapes bankruptcy’, *Jane’s Defence Weekly*, 11 Apr. 1992; and Solinger, E., ‘The rise and fall of arms industries in Argentina and Brazil’, eds E. Inbar and B. Zilberfarb, *The Politics and Economics of Defence Industries* (Routledge: Abingdon, 1998), pp. 201–20.

<sup>10</sup> Federal Republic of Brazil, ‘Aprova a Política Nacional da Indústria de Defesa—PNID’ [Approves National Policy for the Defense Industry], *Portaria Normativa No. 899/MD, Diário oficial*, 19 July 2005. See also Perlo-Freeman (note 2).

perceived necessity to protect national assets directly linked to Brazil's prosperity such as offshore oil.<sup>11</sup> The strategy also supports the development of a South-South axis in Brazil's foreign policy, which was a characteristic of the first military industrialization phase—the production of robust, less expensive and easy to use and maintain military equipment aimed at Global South markets.<sup>12</sup> However, at this stage of the military industrialization strategy, the main customer for Brazilian arms producers remains the Brazilian Ministry of Defence (MoD), even though some Brazilian weapons (notably the Super Tucano) have been sold to African and other Latin American countries.<sup>13</sup>

The stated overarching objective of the PNID is to strengthen the Brazilian 'defence industrial base'. In order to do this, the PNID—and a more detailed regulatory ordinance published in April 2006—lists seven specific goals accompanied by 'strategic actions' that support the core motivation in pursuing national arms industry development. The key strategic goals are the reduction of the Brazilian MoD's dependence on foreign suppliers for major weapons (which covers measures such as special fiscal treatment for arms companies); and aligning the MoD's R&D programmes with the objective of developing and/or strengthening national arms production capabilities and substituting imports with domestically-produced products.<sup>14</sup> As was the case in the 1970s and 1980s, another driver of the 2005 policy is to enhance the technological and innovation capacity of Brazilian industry as a whole. This includes developing closer relationships between universities, research centres and the armed forces.

The 2005 PNID and the 2006 ordinance set out two major methods for achieving the arms industry goals. The first is the development of a large and ambitious weapons modernization programme relying on imports of advanced weapons systems from major foreign suppliers. These projects include demands of technology and know-how transfers, partnerships with foreign companies for local production and assembly as well as joint development programmes with foreign suppliers.<sup>15</sup> To replace the country's aging and, in some cases, obsolete weapons, the Brazilian government chose to use offsets and technology transfers to more rapidly acquire the skills and knowledge needed in the design and production of more recent genera-

<sup>11</sup> Van Leeuwen, M., 'Brazil's defense industry booms', *International Aviation News*, 22 Aug. 2012; and Quéau (note 1).

<sup>12</sup> Nkala, O., 'Super Tucano, Embraer soaring in Africa', *Defense News*, 19 July 2015, <<http://www.defensenews.com/story/defense/policy-budget/industry/2015/07/19/super-tucano-embraer-soaring--africa/30257389/>>.

<sup>13</sup> See SIPRI Arms Transfers Database <<http://www.sipri.org/databases/armstransfers>>.

<sup>14</sup> Federal Republic of Brazil (note 10); and Federal Republic of Brazil, 'Aporva as ações estratégicas para a implementação da Política Nacional da Indústria de Defesa—PNID' [Approves the National Defence Policy Strategic Actions], Portaria Normativa No. 586/MD, 24 Apr. 2006.

<sup>15</sup> Federal Republic of Brazil, 2006 (note 14).

tions of armaments.<sup>16</sup> The second method is by creating a closer connection between general R&D and innovation efforts and the needs and requirements of the armed forces, as mentioned earlier. A crucial part of this initiative is to identify key strategic technologies and support their development at the national level.

Leveraging major arms imports to achieve the objectives of greater military production autonomy is costly and has led to an increase of 42.5 per cent in Brazilian military spending between 2005-15.<sup>17</sup> According to official Brazilian budget figures, the procurement budget has grown by almost 380 per cent in real terms, although R&D funding has been relatively low considering the expectations and 'strategic actions' presented by the PNID.<sup>18</sup> As the country has benefited from strong economic growth during that period, this increase in military expenditure has not been a significant drain on a rapidly growing GDP, with a 1.5 per cent average over 2005-15.<sup>19</sup>

To implement the PNID Brazil launched several major weapons programmes. Some of the higher profile imports include the conventionally-powered attack submarine supplied by French naval company, DCNS, and the Gripen combat aircraft by Swedish firm SAAB. In both cases, the exporting companies offered significant offsets to Brazil, including direct participation of national firms in the production of certain sub-systems and components and, in the case of DCNS, the construction of a submarine building infrastructure.<sup>20</sup> SAAB is partnering with civilian engineering firm, Odebrecht, for the Brazilian Gripen programme. The increased foreign investment has led aeronautics company, Embraer—considered to be the 'flagship' of the Brazilian arms industry—to invest in the development and production of a new generation of its popular trainer and counter-insurgency aircraft, the Super Tucano, which is making inroads in the international market. It is also developing a new transport aircraft, the KC-390, for which it is seeking an African market. Other armoured vehicle and helicopter programmes were won by European producers, which have opened subsidiaries and developed part of their supply chains in Brazil.<sup>21</sup>

This second attempt to become a substantial military-industrial actor seemed to be at a crossroads in 2015. While there has been no official indication of a review of the 2005 industry policy or announcements of suspension of major programmes, a worsening economy and suspicions of corruption in

<sup>16</sup> 'Brazil probes \$5.4 billion SAAB Gripen Deal', Reuters, 10 Apr. 2015; and 'Corruption investigations may delay construction of Brazil's SSN submarines', Forecast International, 21 Jan. 2016.

<sup>17</sup> See SIPRI Military Expenditure Database 2016, <[http://www.sipri.org/research/armaments/milex/milex\\_database](http://www.sipri.org/research/armaments/milex/milex_database)>.

<sup>18</sup> Data provided to the author by Prof. Thomas Scheetz, Escuela de Defensa Nacional, Buenos Aires.

<sup>19</sup> See SIPRI (note 17).

<sup>20</sup> 'Brazil and France in deal for SSKs, SSN', *Defense Industry Daily*, 12 Dec. 2014.

<sup>21</sup> E.g. Krass-Maffei-Wegmann and Airbus Helicopters.

major projects involving foreign and domestic suppliers may be producing a rethink.<sup>22</sup> Moreover, as was the case during the 1970s and 1980s, part of the strategy involves foreign sales—an objective which could become more pressing for companies in the context of possible national budget cuts and shifting priorities. However, intense international competition and possible reductions of imports in countries dependent on oil revenues could make this goal difficult to attain. Notably, Embraer's arms sales are thought to indicate a decrease of 44 per cent in 2015 compared to 2014.<sup>23</sup> Low investment in R&D may prove an additional challenge to the military-industrialization project, which could weaken prospects for becoming a major supplier in the longer term.

## Conclusions

While Brazil's first military industrialization effort attained several of its objectives and was on the path to success, it was ultimately weakened by specific choices in terms of exports as well as major changes in the global security environment and arms market following the end of the cold war. The effort is well-documented and highlights a strategy combining a diverse range of political and economic objectives. So far, the second attempt is much less analysed, but the available information indicates that the country is pursuing a similar path to the previous one: seeking to address a diversified set of goals through the process of military industrialization. Indeed, some observations made by analysts regarding the 1970s and 1980s experience could well be applied word-for-word today. For example, in 1984, Ross writes that '[T]he principal objective underlying Brazil's investment in a large-scale arms manufacturing programme include—in addition to reducing dependence upon foreign suppliers—force modernization, solidifying a hegemonic position in Latin America, and lending credence to major power status'.<sup>24</sup>

In the current environment, Brazil's capacity to fully implement its military industrialization plan is in doubt. Domestic pressures—such as the 2014 recession, the very high costs associated with the organisation of the FIFA World Cup (2014) and the Olympic games (2016), episodes of social unrest across the country and current suspected cases of corruption—are impacting public finances and the political process, leading many to question the future implementation of the PNID.<sup>25</sup> In the international arms market,

<sup>22</sup> Jelmayr, R., 'Brazil's prosecutor reopens probe of SAAB fighter jet purchase', *Wall Street Journal*, 5 Feb. 2016.

<sup>23</sup> Embraer, 'Embraer divulga resultados do 4º trimestre, do ano de 2015 e estimativas para 2016' [Embraer announces results for the 4th quarter, the 2015 year and estimates for 2016], Press Release, 3 Mar. 2016.

<sup>24</sup> Ross A.E. cited in Maldifassi, J.O. and Abetti, P.A., *Defense Industries in Latin American countries* (Praeger: Westport, CT, 1994), p. 28.

<sup>25</sup> Quéau (note 1).

fierce competition from established producers and the declining price of oil may undermine expected orders from some countries that have been targeted by Brazilian arms companies.<sup>26</sup>

<sup>26</sup> Bitzinger, R., 'Brazil's re-emerging arms industry: The challenges ahead', RSIS Commentary, no 195/8, 8 Oct. 2014.