

GLOBALISATION AND THE DEFENCE INDUSTRY: STUDYING POST-COLD WAR TRENDS

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MASTER OF PHILOSOPHY

A. VINOD KUMAR



Disarmament Studies Division
Centre for International Politics, Organisation and Disarmament
School of International Studies
Jawaharlal Nehru University
New Delhi-110067
India
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CERTIFICATE

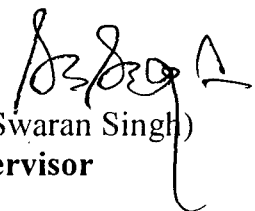
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(A. Vinod Kumar)

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(Prof. C.S.R. Murthy)
Chairperson

Chairperson
Centre for International Politics,
Organization & Disarmament
School of International Studies
J.N.U., New Delhi


(Dr. Swaran Singh)
Supervisor

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Chapter – I

Globalisation and Its Contents

“Globalisation is a fact of life. But we have underestimated its fragility... The spread of markets outpaces the ability of societies and political systems to adjust to it. History teaches us that such an imbalance can never be sustained for long”

--- Kofi Annan, Secretary General of the United Nations¹

When Columbus discovered America unwittingly, he was in fact searching for India to gather its spices. In the late 19th century, the East Indian Company ferried Indian labour to man its sugarcane fields from Mauritius to the Caribbean. In early 1970s, Malayalees stealthily swam across the Arabian Sea to find wealth in the oil rich Gulf. At hindsight, where could one locate globalisation among all these? To suggest some ubiquitous syndromes that catch global attention, one may include Microsoft, Osama, WTO, Terrorism, SARS, and MTV. Are they globalisation by different means? On introspection, where can we find the contents of globalisation in all these?

Globalisation is a multidimensional phenomenon too simple to describe but too complex to explain. A magnitude of interpretations can be identified with globalisation, which succeeded the Westphalia-born nation-state system as the current epoch in the perennial human evolutionary process. From a larger view, globalisation can be identified with elements like ideas, people, information, trade and war, to mention a handful, which can transcend and also integrate across national boundaries on an unprecedented scale and at hitherto unimaginable speed. So overwhelming is its influence that many interpretations to describe the phenomenon confront with each other on a conflicting path. The mere power of this “great idea of 21st century” is so enormous that the same energy that opens up a whole new world of living and

¹ See www.unis.unvienna.org/unis/pressrels/2000/sg2529.html and also <http://www.un.org/partners/business/davos.htm>

opportunities cutting through national borders often ends up in conflict when applied within the framework of a “global village”². But globalisation also remains as yet power-driven. For example, when Indian beedis sneaked into Marlboro’s coveted markets, they spurned it from the globalisation purview. At the most, when the developed powers impressed upon the lesser species to open their markets, they themselves refused to accept the subsequent labour inflows and “outsourcing syndromes” as elementary to this same process.³

Although the debate massively concentrates on economic globalisation, involving free trade, markets, capital and transnational companies as its fundamental core, on a wider canvas, it envelops a wide spectrum of multifaceted human activity involving economic, political and cultural ways of life. Despite identifying its effects on all aspects of human life, the contemporary debate orbits immensely around economic globalisation, which highlights neo-liberalism at the crux of economic liberalisation. The term globalisation captures the spectre of deep broadening and speeding up of worldwide “interconnectedness” and “integration” in all aspects of life.⁴ The spatial reach and density of global transnational interconnectedness weave complex networks of relations between communities, states, international institutions and multinational corporations (MNCs) that would make up for the global order.

By cutting through political frontiers globalisation gets associated with both the de-territorialisation and re-territorialisation of socio-economic and political space,

² Global Village is a term colloquially used to denote the integration that has happened in national societies across the globe as a result of globalisation process. It implicitly points to the borderless interaction among societies transcending sovereignties thereby enabling various global phenomena to manifest locally.

³ Ever since GATT took centre stage at WTO negotiations, one of the major areas of confrontation between members has been the issue of labour being invoked in the free trade talks. When the developed world demanded opening up of markets in the newly opened economies, the latter appealed for labour to be a primary issue in the negotiations. In fact, a fierce campaign is now being undertaken in the western economies, mainly the US and UK, about the threats of job outsourcing from their national economies.

⁴ David Held and Anthony McGrew, David Goldblatt and Jonathan Perraton, *Global Transformations – Politics, Economics and Culture*, Stanford University Press, Stanford, 1999; references taken from abstract published in <http://www.polity.co.uk/global/executiv.htm#whatis>; and also in David Held (ed.), *A Globalising World? Culture, Economics, Politics*: Routledge, London & New York, 2000, pp. 12-17.

where these processes gets stretched across the globe.⁵ Under conditions of globalisation, 'local', 'national' or even 'continental' space is reformed such that it is no longer coterminous with established legal or territorial boundaries. The outcome largely deals with the expanding scale of power being organised and exercised on such extensive networks. Thus, indeed, power is the fundamental attribute of globalisation, be it through decisions or actions.⁶

Globalisation has a fundamentally dynamic structure, which either directly challenges or propounds alternatives to the nation-state system. While such contestations prevail, theorists approach this argument affirming that nation-states and national systems still exist, although with diminishing power. Scholars argue that globalisation has no novelty, and has existed even before the nation-state came into being.⁷ Such arguments are propelled by citing global trade as early as Neolithic age involving the Polynesian or the Portuguese discovery of trade route to India, the East India Company's imperial hold or even the inundation of migrant labour across national borders, and so on. However, consensus has prevailed on accepting the process as one stretching across national boundaries with properties of global interconnectedness and interdependence as a consequence of the unprecedented free flow of ideas, goods, services, money and values across frontiers.⁸ To provide the vital thrust to this perennial stream of communion, the formidable power of technology has played a decisive role, by forcing not merely integration and interconnectivity, but also homogeneity in the global polity.

The likes of David Held and Anthony McGrew have segmented this more as a process of stretching, intensification, interpenetration and infrastructure.⁹ The process of stretching happens with the existence of cultural, political and economic networks of

⁵ Ibid

⁶ Ibid.

⁷ Fredric Jameson, "Notes on Globalisation as a Philosophical Issue", in Fredric Jameson and Masao Miyoshi (eds.), *The Cultures of Globalisation*, Duke University Press, Durham and London, 1998, pp. 54-55.

⁸ Rajan Harshe, "The Challenges of Globalisation and India", in B Ramesh Babu (ed.), *Globalisation and South Asian State*, South Asian Publishers, New Delhi, 1998, pp. 20-24.

⁹ n. 4, David Held (et al).

connections across the world, so much that events in one part influence the others. Intensification increases the density of this interconnectedness more visibly through communication and technology driven networks.¹⁰ The resultant interpenetration adds up when distant cultures and societies come face to face at many levels, thereby creating intensified diversity and changing patterns of interactions. The infrastructural element comes in through the institutional arrangements and information highways imminent for such networks (and also markets) to operate.

Largely, globalisation as a post-cold war phenomenon has replaced its predecessor as the most overused and unspecified explanation for a large number of events in international relations. For some it represents a natural progression towards a 'borderless world' signalling the end of the international state system in its present form,¹¹ whereas for others the concept is overstated and its benign influences are exaggerated. Many on the radical hemisphere degrade globalisation as a dangerous process invoking fear and resistance, while in-betweeners believe globalisation as not phenomenal.¹² To scholars like John Wiseman, globalisation is the 'unregulated' language of global capitalism; and to many theorists like Anthony Giddens, the urge to connect it with the global economic might and power of America is irrepressible.¹³

A representative definition by the International Chamber of Commerce says: "Globalisation is about worldwide economic activity – about open markets, competition and the free flow of goods, services, capital and knowledge. Consumers are its principal beneficiaries. The benefits in terms of faster growth, quickened access to new technology, cheaper exports and greater competition are available for all."¹⁴

¹⁰ Ibid.

¹¹ Kenichi Ohmae, *The Borderless World*, Fontana, New York, 1999, p. 16.

¹² Richard Higgot & Simor Reich, *Globalisation and Sites of Conflict: Towards Definition and Taxonomy*, Centre for Study of Globalisation and Regionalisation (CGSR) working paper no: 01/98, University of Warwick, March 1998, p. 2.

¹³ John Wiseman, "Australia and the Politics of Globalisation", and Anthony Giddens, "Runaway World" as quoted in David Held (ed.), *A Globalising World? Culture, Economics, Politics*, Routledge, London & New York, 2000, p. 19.

¹⁴ The International Chamber of Commerce definition is given in its website, http://www.iccwbo.org/home/case_for_the_global_economy/globalization%20brief/globalization_brief.asp

Indispensably projecting the concurrent sentiment of this phenomenon, it basks the undeniable role of capitalism and market-economy in this current churning. Sklair shares enlightenment describing globalisation as a network of transnational practices operating on different levels, and making the nation-state as a “spatial reference point” in such practices.¹⁵ Elucidating further, he says the most significant reference point is the global capitalist system, based on a variegated capitalist class, which unquestionably dictates transnational political, economic and even ideological practices. Enticing enough, such market-based theories advocate policies of unhindered ‘trade flows’, ‘capital flows’ and ‘technology flows’, but would comfortably leave out ‘labour flows’.¹⁶

To the domineering school of thought in international politics - neo-realism, globalisation does not transcend the international system of states, despite economies and societies being interconnected by the process.¹⁷ And for liberals, it is merely an end product of transformation in world politics, whereby a myriad of actors assume importance over nation-states in issue areas. And for the older school of world-system theorists, it is merely the latest stage in the development of international capitalism.¹⁸ According to Jan Aart Scholte, globalisation started as early as the first trans-oceanic telegraph link in middle of 19th century and continues through to 1960s when Marshal McLuhan coined the phrase “social village” – placing the foundations of globalisation for a world to act as a single place. He believes that although sovereignties have been massively threatened by globalisation, it has by no means led to dissolution of the state.¹⁹

Reiterating this theme, Richard Higgot and Simon Reich reason the raging complexity as a consequence of the emergence of a number of salient alternative

¹⁵ L. Sklair, *Sociology of the Global System*, Hemel Hempstead, Harvester Wheatsheaf, 1991, p. 17.

¹⁶ Ruddar Datt, “Globalisation – Who are the Real Beneficiaries?” *Mainstream*, 12 July 1997, pp. 15-18.

¹⁷ Steve Smith and John Baylis (eds.), *The Globalisation of World Politics*, Oxford University Press, New York, 1997, p. 6.

¹⁸ Ibid.

¹⁹ Jan A. Scholte, “The Globalisation of World Politics” in Steve Smith and John Baylis (eds.), *The Globalisation of World Politics*, Oxford University Press, New York, 1997, pp. 16-18.

authoritative structures, especially in the corporate world that compete with nation-states in determining the direction of the global economy.²⁰ This competition widens when states see themselves as principle actors in political and economic systems, even while keeping security issues paramount.²¹ Thus, both qualitative and quantitative changes in the internationalisation of politico-economic activity are faultlines for the *market powers and state authority*. As a result, governance structures of the global order witness a shift from public to private and from territorial to trans-territorial forms of authority. Such dynamics are equally evident in the defence industry, a place where national governments and market forces have muscled for domination. The globalised economy of post-cold war era, has in fact, witnessed such contentions as the realm of defence has a rarefied environment for supremacy by states and production forces equally.

Economics of Globalisation

To take a closer look, the political economy of globalisation holds its early strength from the propagation of neo-liberal doctrines since 1970s, which prescribe the recasting of relationship between states and markets, in such an order so as to liberate the latter from the former, and to formulate developmental alternatives that can circumscribe the existing state roles. This model largely structured around ingress of Global Finance Capital (GFC) represented by institutions like Multi National Corporations (MNCs), World Trade Organisation (WTO), free trade regimes and economic liberalisation. This form of global synchronisation received its biggest impetus during the latter half of 1980s at the Uruguay round of WTO negotiations that exhorted a global free trade regime and integration of national economies and financial markets structured on the GATT. Although having lineage to the Bretton Woods system of Cold War dynamics, the late 20th century reformations were still centred on global market economy.

²⁰ n. 12, pp. 4-5.

²¹ John Mearsheimer, "Back to the Future: Instability in Europe after the Cold war", in Sean Lynn Jones (ed.), *The Cold War and After*, MIT Press, Cambridge, 1991, p. 40.

As for the immediate effects of its assimilation, globalisation theorists claim a quantum change in human affairs attributed to large-scale flow of trade, investment, finance and technologies across national borders thereby increasing the scope of political, economic and social interactions among states and societies so much so that the formation of a global village saw the dividing line between domestic and international becoming overwhelmingly thinner.²² Such optimism apart, it cannot be refuted that such attempts at integration of the global economy, with unrestricted trade, investment flows and Laissez Faire policies, along with imparting a boom in global trade and GDPs, have also had devastating consequences of unregulated financial flows resulting at least a handful of national economies collapsing or going haywire.²³

Globalisation, in its current phase, aimed at integrating nation-states within the overall framework of WTO, resembles a modern version of 'theory of comparative costs advantage' propounded by classical economists to explain and justify unrestricted free flow of goods from imperial Britain to its colonies.²⁴ The same argument is introduced again today in favour of an 'export-led pattern of growth' in place of the earlier 'import substitution trade' policies. For cynics, globalisation becomes a calculated imperialist design of hegemonisation in economic, political, ecological and cultural terrains, threatening loss of economic self-reliance, political sovereignty, erosion of democratic structures and damaging cultural identities. With such theories strengthening, John Ruggie affirms that globalisation was an "embedded" liberal compromise after the collapse of Soviet Union.²⁵

While defending globalisation, one cannot afford to skip the realism that globalisation has inherited assimilation of Western technological capability, financial systems, corporate institutions and politico-economic character vehemently. In this

²² Robert Gilpin, *The Challenge of Global Capitalism*, Princeton University Press, New Jersey, 2000, pp. 53-54.

²³ Laissez Faire-related upheavals and collapsing economies in Latin America, turmoil-prone fiscal markets in East Asia and George Soros phenomenon formed up for the late 1990s chaos in this integration gamble.

²⁴ Asha Kaushik, "Globalism and Swaraj", in B. Ramesh Babu (ed.) *Globalisation and South Asian State*, South Asian Publication, New Delhi, 1993, p. 35.

²⁵ John Ruggie, "International Regimes, Transactions and Change: Embedded Liberalisation in post war economic order", *International Organisation*, vol 36(4), 1998, pp. 63-72.

regard, modernisation and democracy comes as two adjuncts to the offerings like laissez faire, representative government and liberal concept of freedom and choice, of course with the all-encompassing market. Nevertheless, understanding the complex dynamics involved in market-economy through a historical process is the key to ascertaining its effects on the defence industrial complex (DIC) audited threadbare in this study.

The post-cold war economic system was characterised by the fall of trade barriers, global division of labour, and overwhelming influence of the transnational firms. The resultant uneven gains of distribution were tackled with social protection nets and restrictions on labour movements, along with other structural changes. Though markets went global, increasing national regulations caused friction at regional, multi-lateral and global levels.²⁶ Globalists view the immediate changing context of finance and trade in terms of (a) crossing of borders; (b) opening of borders; and (c) transcending of borders.²⁷ While crossing of borders was not unprecedented, the opening and transcending part spelt novelty of economic liberalisation.

While this uncontrolled surge beyond the ambit of state sovereignties marked the transformation, nation-states strove to retain control by invoking protectionism, at least in areas it felt were strategic in nature (read security and defence industries), and at the same time, going all out to attract investments in the form of Foreign Direct Investment (FDI). Bowing thereby to this most potent tool of globalisation meant not just greater inflow of capital, but also assertion of neo-liberal corporate models like joint ventures, foreign owned subsidiaries, outsourcing and technology transfers among others, taking root in national economies.

However, the role of multinational corporations as primary vehicles of neo-liberalism is irrefutable. Such corporations, transnational in operations and ownership, were decisive for the ways in which politics and economies of the world were bound

²⁶ n. 9, David Held et al.

²⁷ n. 19.

together.²⁸ In political terms, MNCs gave little meaning to national boundaries and identities. Their ability to co-ordinate a wide range of activities across national borders facilitates investments, labour and capital, meant a natural confrontation with nation-states. Although they are no strangers in world trade, globalisation enhanced their power and prosperity manifold, so much so that sceptics describe them as colossal structures having formidable economic power, in many cases, much above many underdeveloped nations. Questions of sovereignty notwithstanding, theoretical explanations are often amiss to locate their national loyalties.

Generally, MNCs have often been denounced for their supra-sovereign and manipulative characters. Their propensity to manoeuvre financial processes, evade governmental controls on their international transactions, and ability to use triangular trade methods over governmental procedures have often been frowned upon. Their power to engage in regulatory arbitrage by moving bases on their discretion often constrains governments to enforce national loyalties.²⁹ Today, more than 50, 000 MNCs worldwide sell over \$10 billion worth goods and services. As a matter of fact, MNCs account for over 70 percent of world trade.

With inward FDI their main tool of conquest, MNCs, along with developing global distribution networks have developed transnational bases of production to take advantage of the cost conditions, and can also endanger the same labour consolidation they helped create by exiting at ease.³⁰ Nonetheless, MNCs are as vital in diffusion of technology, helping it permeate, and also helping themselves when home bases get redundant. They have enabled creation of corporate alliance, mergers, restructuring and joint ventures, many of which consolidate the national economies.

²⁸ Henry Wendt, *Global Embrace: Corporate Challenges in a Transnational World*, Harper Business, New York, 1993.

²⁹ Peter Willets, "Transnational Actors and International Organisations in Global Politics", in Steve Smith and John Baylis (eds.), *The Globalisation of World Politics*, Oxford University Press, New York, 1997, pp. 291-295.

³⁰ n. 24.

Globalisation and Defence Industries:

This has specifically been a feature followed in equal measure by the global defence industry³¹, where major industries have adopted trans-nationalisation as means to recoup energies. Although globalisation spelt a boon for multinational corporations, post cold war dynamics forced impediments galore for the defence multinationals, who were abruptly left to confront with the transitional sluggish market, symbolised by diminishing defence budgets, lesser domestic demand for defence products and constraining market forces, forcing new experiments for survival. To enable an introduction mode, we need to (a) analyse a handful of theoretical models for explaining the effects of globalisation in the neo-liberalised format, and (b) understand how these models help illustrate their applications in the defence industrial complex. According to the theoretical framework propounded by the likes of David Held, behind the rhetoric of the globalisation debate lie three broad schools of interpretations, which they refer to as the *hyperglobalists*, the *sceptics* and the *transformationalists*.³² The hyperglobalists rely on a mechanism symbolised by an increasingly global world in which states are subjected to massive economic and political processes of change.

As such a process erodes and diminishes the power of the nation-states, the latter increasingly become “decision-takers” and not the “decision-makers”. The sceptics counter this view with a belief that none of these circumstances are unprecedented and that the intensification of international social activity has only reinforced and enhanced state powers in many domains. While not subjectively differing from these conjectures and yet offering a third dimension, the transformationalists argue that globalisation creates new economic, political and social circumstances, however uneven, serving to transform state powers and the context in

³¹ Defence industry connotes all those corporate entities, either in the private sector or state-owned companies, deriving output and income from development, production and distribution or marketing of defence products or industrial products related to defence and security, either in combined form or separately. It is also referred to as arms industries, military industries and so on.

³² n. 9.

which states operate, with politics no longer being based on nation-states.³³ Hyperglobalists argue that the process brings about a “de-nationalisation” of economics through establishment of trans-national networks of production, trade and finance, where nation-states gets relegated to mere transmission belts for global capital. They stress on the fact that economic globalisation generates a new pattern of winners and losers supplanting the old north-south divide and brings in a new global division of labour with a more complex architecture of economic power. Their endnote proclaims rise of global economy and emergence of institutions of global governance conveniently interpreted as the rise of a new global order.

To the sceptics, globalisation is still mythical in form, while focus is on the heightened levels of internationalisation, which they believe, still falls under the regulatory power of nation-states. However they do believe that this level of international economic activity is undergoing “regionalisation” into three major financial and trading blocs—Europe, Asia Pacific and North America. While affirming that any significant restructuring of global economic relations are still not forthcoming, sceptics acknowledge deep-rooted patterns of inequality and hierarchy in world economy resulting in aggressive nationalism and fundamentalism being encouraged rather than the optimist prediction of emergence of a global civilisation. Excluding any discomfiting identities, the transformationalists carry the conviction that globalisation would be the driving force behind rapid social and politico-economic changes shaping modern societies and world order. In this respect it is conceived as a powerful transformative force responsible for “massive shake-out” of societies, economic governance institutions and world order. At their core lies a belief about a reconstitution of power, functions and authorities of nation-states, which they believe is in transformation.

Placing the process of transformations in the defence industrial complex, these interpretative models can serve explanations in varying forms. Global defence industry has proceeded through all these phases argued by these schools at different points of

³³ Ibid.

time in combination or in isolation. The mere transition from national military-industrial complexes to a global military corporate complex accentuates the assumptions of the hyperglobalist perspective. The emergence of trading blocs and a reinforced mode of nation-state involvement or even regional community involvement favours the sceptical view. At the same time, the levels of interconnectedness and new corporate architecture of defence industries add commendations to the arguments of transformationalists. The assumptions thus theoretically stretch across many levels of improvisation, and structuralisation of a wide realm of activity ensconced by such effervescent changes. Be it the political, economic or social systems such evolutionary processes apply to all realms across time and space. Even when these scholarly schools debate influence and effects of such processes, this study exhausts its pages on similar dynamics vibrating through the defence industry.

The global defence industrial complex is one unique consort of global significance that enmeshes all systems and practices hitherto discussed as elementary to the dialectics between internationalisation and transnationalisation, with outcomes on decision making and fiscal management amply demonstrated in wavering lengths in this industrial complex. The societal window propounded by these processes on the defence industrial complex might be seen in concurrence with the social undercurrents deriving out as various consequences of globalisation. From a larger perspective, the whole composition of defence industrial complex is definitively conjoined with the nation-state system encompassing not just broader political, economic or cultural dimensions, but also discrete Westphalian concepts like territory, war and militarism. In this globalised era, it conveniently gets interspersed with globalisation-induced models of corporatism, transnationalism and market processes.

An elementary procedure for better understanding of the dynamics between globalisation and the complex can be achieved with concerted analysis and intersection with concepts like neo-liberalism and the structures put in place by the forces of global transformation. Also, an empirical analysis of the neo-liberalist era, purportedly beginning by the end of Cold War, gives a framework to plunge into the evolving new

trends, transformations and travails in the defence industry and its adjunct complex structures.

The New Context:

Since this study locates itself in studying the post Cold War trends in the global defence industrial base, comprehending this historical epoch in the transformation of global order becomes imperative. The end of Cold War, pictured by the collapse of communism and the Soviet Union, and a simultaneous emergence of neo-liberalism marked a turning point in the structures of international politics, and in the roles and functions of nation-states and international organisations. One significant postulation on this collapse is attributed to the failure of Soviet economic restructuring to sail over the relative disadvantage to the capitalist west.³⁴ The end of Cold War removed the structural and ideological conditions underlain in the superpower conflict and set appropriate milieu for a new global order, with prospects for states to expend fewer resources on military resources. This directly translated into massive cuts in defence spending, proving detrimental to global arms trade and defence industry. Subsequently, the increasing prominence of non-state actors and a thriving bout of militarism threw up possibilities for newer forms of wars replacing the older ones.³⁵

Ever since the end of the East West conflict, global defence spending had fallen by around a third and arms exports by around half. Orders for weapon systems plummeted and even western majors like US, France and UK companies lost even domestic orders. Employment in the defence industry contracted with over a million jobs lost in US, and perhaps four times as many in Russia.³⁶ Thousands of defence production units were either closed or had drastically cut down production. Faced with such critical conditions and pressures on its survival, the immediate contingency proposed was either to engage in conversion to civilian applications, or to go for a

³⁴ Richard Crockatt, "The End of Cold War", in Steve Smith and Baylin (eds.), *The Globalisation of World Politics*, Oxford University Press, New York, 1997, p. 23.

³⁵ Mary Kaldor, *Global Insecurity*, Pinter, London, 2000, pp. 2-4.

³⁶ Ibid

massive restructuring. Since conversion never proved to be a sufficient alternative, at least for the nations with strong defence industrial base, pragmatism demanded a better means to ensure preservation and economic viability of such national industrial bases. A two-pronged strategy adopted by major industrial bases was to take up consolidation of national defence industries as one way to ensure survival, and on the other hand going global on arms production and distribution as another strategic tool for sustaining growth.³⁷

The restructuring of arms production on a transnational basis reshaped the defence industrial complex in the post-Cold War globalisation era. While national defence industries diluted into international cooperation for specific projects, the operation of international supply chains and FDI in national defence companies enhanced the level of global defence industrial integration.³⁸ The new changing security and strategic environment, along with possibilities created by neo-corporate models like joint production ventures and mergers, newer conflicts with non-state actors as the major protagonists also provided the impetus to the ongoing transformations. The defence industry began to look no longer national defence asset, with security needs being increasingly influenced by market mechanics, of which national security requirements seemed secondary at best.³⁹ Also, restructuring opened up new trends in the industry like continuing technological arms race, privatisation of military forces and new peace keeping and peace-enforcement roles for national military forces.⁴⁰

This current ongoing process of change resembled the mid-19th century phenomenon in the development of defence industry when state-controlled armouries were taken over by capitalist private arms manufacturers. So if we are to assume that the present climate of transformation might be 're-privatisation' or 're-globalisation' of sorts, attention also needs to be drawn to the fact that the altered business landscape

³⁷ Ruchita Beri, "Transformation of Global Defence Industry", *Asian Strategic Review—1995-96*, IDSA, New Delhi, 1996, p. 198.

³⁸ Keith Hayward, "The Globalisation of Defence Industries", *Survival*, vol 42 (2), Summer 2000, p. 115.

³⁹ n. 35, p. 2.

⁴⁰ *Ibid*

has enabled the consolidated defence industry to exert more and more influence on events across the globe, even as governments became hyperactive in sustaining national industrial bases with a globalised perspective. This includes not just increasing subsidies for defence production and research and development but also enabling inter-governmental scope for joint production and R&D facilities. Although certain types of international arms collaborations existed earlier in some form, the globalisation-induced transformations witnessed a high intensity of collaborative arms activity on a larger geographical scale unprecedented in Cold War times. These are the times when ideals of neo-liberalism like integration and trans-national production get better reception in any industrial activity.

In the bygone era, arms transfers were based on superpowers defence subsidises to the allied world countries. The new environment left few players with the ability and necessity to continue this procedure. Despite so, these subsidies continue to flourish in a new form as major governments still continue to fund not just defence R&D ventures, but of late, even trans-national production and marketing ventures by their defence firms. This perhaps explains why defence budgets have had a spiralling tendency since the year 2000 with the US having a national defence allocation much more than the combined total of the next five major defence spenders.⁴¹ A similar path have been diligently pursued by a large number of new industrial powers like Brazil, India, Israel, and South Africa, where national governments have indulged in massive subsidisation to build indigenous industries that can compete on a global scale.

Defence Industries under WTO:

With the defence businesses not remaining insulated from commercial pressures or preferences, a free-trade regime thrown open by a WTO system formalises the globalisation cycle for defence industries as well. When restrictions on global arms sales gradually evaporated, market forces had started unleashing an export-oriented

⁴¹ In 2001, the US spend \$282 billion accounting for 36% of world defence spending. Refer to "Military Expenditure", *SIPRI Year Book - 2002*, Oxford University Press, Oxford, 2002, pp. 231-232.

industrial system that places scant priority for domestic security interest. Foremost among its strategies is the propensity to lobby pressure to ease arms exports restrictions and increase subsidies to support overseas sales. As national governments gradually fell in line with such demands, global economic considerations held sway in export policies so as to sustain overseas sales which can keep production lines engaged and resolve crises arising out of over-capacity. To many European defence powers with minimal threat perceptions, sustaining their industrial base was only through consistent exports. The US, on the other hand, had authorised larger budgets to enhance not just the defence industrial base but also to rely on export markets to sustain its technological prowess at lower costs.

Nevertheless, the real complement came from the WTO system, which not just provides insulation to defence industry from its environmental, health and labour parameters put forth to the global trading community, but also gives a shield to any form of export subsidies from their home governments. A provision referred to as “security exception” in the General Agreement on Trade and Tariffs (GATT) gives the arms industry a major exempt from challenge under most WTO rules, based on a national security factor⁴², which can give governments an indirect incentive to invest in the military sector by enabling them to define their “essential security interests”. This provision virtually shielded governmental activities in the military sphere to remain unchallenged at the WTO.

The new world military order, with allegiance to globalisation has thrown up a stratified and highly institutionalised set up for the defence industry to operate. The stratification comes in the form of the tiered power structure with a sole superpower leading the defence industrial base, followed by the second-tier of poly-centric powers like China, France, Germany, Japan, Russia and UK who compete not merely for the space left by Soviet Union, but also the globalised world arms market. The third-tier

⁴² Article XXI of the GATT stipulates that a country cannot be prevented from taking any action “it considers necessary for the protection of its essential security interests...relating to the traffic in arms, ammunition and implements of war and such traffic in other goods as is carried on directly for the purpose of supplying a military establishment (or) taken in time of war or other emergency in international relations.”

forming the new developing bloc has a remarkable number of burgeoning economies with nascent but thriving defence industrial bases, which giving the great powers a tough run. Countries like Brazil, India, Israel, South Africa, Sweden and Ukraine - all running defence industrial hubs with governmental support form this periphery. The institutionalised structure points to the pro-active multilateral arrangements and interaction procedures on the military-political periphery that has shaped an autonomous 'arms dynamic', fortuitous for the new defence industrial complex to fructify.⁴³

Hence, exposition of globalisation and its effects on the global defence industry involves tackling key issues of global militarisation and also of military globalisation. Besides an inquisitive perusal of the economic dimensions and processes, this study scans through key mechanisms of global geo-politics which includes (a) the national defence systems and their enmeshing into respective defence industrial bases; (b) the dynamic process of arms trade, through which military capabilities and armaments productions technologies are diffused throughout the globe; and (c) the global structure of organised violence, which not just influence policies for acquisition, deployment and use of military power, but also links up with any enhanced level of militarism ever since globalisation has taken centre stage.

In fact, this research propounds the hypothesis that the globalisation of the global defence industry has led to a considerable increase in militarism as a powerful characteristic of contemporary international relations. Two concepts namely global militarisation and military globalisation – the former referring to the generalised process of global military expenditures and armaments and the latter about the processes and patterns of global military connectedness exhibited in dynamics of military relations, networks and interactions - can throw light on the elements of heightened forms of militarism witnessed since end of Cold War.

⁴³ Arms dynamic is a concept propounded by Barry Buzan and refers to a qualitative and quantitative change in global military capabilities, mainly driven by military technological innovation. See references in Barry Buzan, *The Global Arms Dynamic*, Oxford University Press, New York, 1987, pp. 2-5. Also see explanation in David Held, Anthony Mc Grew, David Goldblatt and Jonathan Perraton, *Global Transformations*, Stanford University Press, Stanford, 1999, p. 103.

The world is experiencing a new military-technological revolution (MTR), in the words of David Held, as information technologies transform existing military capabilities, the conduct of warfare, and the ability to project military force over considerable distances with great precision.⁴⁴ And the increasing globalisation of the civil industrial sectors involved in defence production, such as electronics and communication systems, compromise the traditional autonomy of national defence capability since it makes the acquisition and use of weapons subject to the decisions and actions of other corporations and bodies beyond the scope of national jurisdiction.⁴⁵

On the other side, globalisation-induced change had already laid the framework for national defence industrial bases to transcend national jurisdictions; the new revolution of technology merely supplements this process. The possibilities thrown up by RMA⁴⁶, not just in communication systems but also development of precision munitions, have in fact given the vital boost to the global defence industrial complex, for whom 'customer friendly' systems form the basic parameter in the new era. With civilian spin-offs to such innovations, the global majors reserve the option of suiting civilian attires when needed.

Studying globalisation and its conjunction with the global defence industrial complex throws up many questions on many correlated phenomena and processes within its overall framework. What would be the character of the new defence industrial bases subscribing to principles of globalisation; where would their actual allegiance lie – with the state or with the market? On the same footing are surmises posed at the neo-corporate structures and the governmental role in such ventures? In the end, if one is to see palpable strands of militarism and cultivated growth of militarisation, it would naturally lead to the conjecture that the new transformations place immense opportunity for new shades of militarism, heightened levels of

⁴⁴ n. 9.

⁴⁵ Ibid.

⁴⁶ RMA basically refers to feverish technological effort to apply information technology to military purposes since the end of cold war. Albeit various doctrinal and other warfare procedures have experienced revolution in composition and content, the technology-driven RMA consists of interaction between various systems of information gathering, analysis, transmission and weapon systems, including the various C4I systems.

militarisation and market-enforced dynamics to gain upper hand. Certainly the emergence of powerful non-state actors and their influence in the new world order has to be properly articulated. The impressions of all these phenomena, syndromes and processes on the global defence industrial complex form the core of this study.

While the first part of the proceeding chapters traces the massive transformations in the defence industry on the termination of the Cold War, the next chapter attempts an explanation of the new trends in the defence industry as influenced by globalisation and the changes that have been incorporated in the process. The third puts forward the hypothetical argument on social repercussions created or likely to be created by the globalisation of the defence industry as a consequence of enhanced militarism. On the whole, when the primary attempt is to identify the trends in transformation and restructuring process of the industry as part of post Cold War dynamics, the research challenge is to explain the influence of globalisation on these transformations and the larger implications of such a rendezvous. ✓

Chapter – II

Restructuring of the Global Defence Industry

The defence industry of today owes its foundation to the great military revolution of the Renaissance period and the consolidation it gained through the Great Wars and the colossal Cold War. Defence production and transfers date back to the Peloponnesian war - as primordial as the birth of technology and its subsequent explosion in variegated forms. History would not be erroneous to the fundamental theory that major technological evolutions of human kind were primarily military necessities,¹ after which technology diffused and interspersed with civilian spin-offs concluding as national industrial resources. In this course of action, the earliest technological pursuits were found to be relatively uneven in distribution, and the ability for arms production in ancient republics depended upon their constructs of wealth, population and economic systems, none of which resembled the key production factors of present day system. Even before the state-system evolved at Westphalia, the ancient form of production was largely state-centric, a model still adapted by many 21st century national systems.

According to Michael Roberts, the real transformation in the arms production processes might have started after the 'Military Revolution' between the 16th and 17th centuries² with commercialisation of military systems and prominent centres of arms production erupting in European heartland. Following the initial players like Italy and Germany, it was England, which built up a defence industry paralleling its global Imperium. The ambit of the defence industry enlarged with production and distribution of technology extending across Europe, Russia and Americas.³ Industrial Revolution

¹ See references in Martin van Creveld, *Technology and War – From 2000 B.C. to the Present*, Free Press, New York, 1989, pp. 1-3.

² Michael Roberts, "The Military Revolution, 1560-1660", quoted in Keith Krause, *Arms and the State: patterns of Military Production and Trade*, Cambridge University Press, Cambridge, 1992, p. 42.

furthered the cause with the Napoleonic wars creating demand for rapid application of new technologies. By mid-19th century, when European industrial powers like Britain, France and Germany dominated as first-tiers in the defence industry, a new relationship between state, industry and technology improvised the character of the arms production base, and further developing with fresh laissez-faire ideas.

Led by private initiatives, more innovations came during the First Great War thereby increasing polarisation in the tiered system. The Second World War saw the power of the private enterprise unleash further, but still controlled by national production systems. Nevertheless, the intensive acceleration of military research, development and production on a massive scale elevated the global arms production complex to such a proportion that economies in Europe and America prospered in wartime defence development and production, and continuing the phenomenon in the next historical milestone called the Cold War, the period of awakening for the politico-industrial concept called the Military Industrial Complex (MIC).⁴

The polarisation of global polity between NATO and Warsaw Pact effectually translated into a direct competition between the defence industrial bases of USA and the Soviet Union. Complementing these two majors were adjunct defence industrial bases like France, Germany and Britain complementing the US-led bloc, and the Eastern flank nurtured by nations like Poland, Czechoslovakia and Romania, among others. Also, the Cold War-oriented conflicts effected a dynamic arms production and transfer system through US agencies like Military Assistance Program and Foreign

³ The tiered system formed in the early period of arms industrial development as part of the Renaissance is a model, which developed in various structures to the modern age and exists in some form or the other to the present day. To explain it further, the first-tier innovates the technology and engage in production; the second-tier depending on transfer of capacities produce the weaponry as per specific market needs; while the third tier-supplier copy and reproduce existing technologies, but do not integrate or adapt the underlying processes of innovation. This is a feature continued in remarkable measure henceforth, with present arms industry experiencing similar modes of operations in one form or another. The models also explain the fundamentals of arms transfer and export processes applied in the arms industry today.

⁴ MIC was a term famously used by American President Eisenhower to describe the nexus of arms industry, the military and the political class as a powerful structure that controlled global economic processes largely dominated by arms trade and production.

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Military Sales and similar stakes raised by Soviets, thereby creating an arms race that practically determined the character of global defence industry. Adhering to their capitalist philosophy, the NATO-controlled MIC was dominated by a rung of colossal private arms companies with state funding, while the Soviet-led industrial complex maintained a strict state-centric system.⁵

The New Dynamism:

The Cold War further structured a profound relationship between the state and the industrial base on which the former relied for its defence production. A permanent 'state of war' required a permanent defence industrial base. The search for strategic and military advantage in the Cold War and the fear of being outpaced triggered the series of high-voltage investments in R&D, technology and infrastructure to produce superior weaponry.⁶ Besides the first-tier, the global defence industry also included second-tier bases like Britain, France, Germany, Italy, Japan and Sweden, and the intermediary complexes in the third-tier consisting of regional majors like Brazil, China, India, Israel and Korea.

Encircling this spectrum were the chunk of arms recipients like Cuba, Egypt, Iraq, Pakistan, Saudi Arabia and Taiwan among others, with nascent arms production bases or none. In such a systemic outlook, the internal mechanisms included various arrangements for technology diffusion, development and production transfer from the first-tier to the other levels,⁷ either through technology transfer by license production, and in some cases, co-production mechanisms to the second and third-tier producers, of course, pre-determined by the alliance dynamics.

⁵ Arms companies like Lockheed, Northrop Grumman, Raytheon, Boeing and British Aerospace were the majors of Cold War era, who managed to exist in one form or another in the post-Cold War system in a globalised arms trade. At the same time, the erstwhile Soviet economies where private capital was absent saw birth of agencies like Rosoboronexport and firms like MiG and Sukhoi attaining independent identities in the new scenario.

⁶ *The Evolution of US Defence Industrial Base*, A Report of the CSIS Senior Policy Panel on the U.S. Defense Industrial Base. See <http://www.csis.org/polmil/dibreport.html>

⁷ Keith Krause, *Arms and the State: patterns of Military Production and Trade*, Cambridge University Press, Cambridge, 1992, p. 65.

A global arms trading system outside the ambit of the Cold War structures were largely non-existent. Notably, the capability of second-tiers for independent production often negated the monopoly of the super-power defence complexes. Also, in the 1970s and 1980s, third world arms producers in the third-tier like Brazil, Israel, Taiwan, South Africa and India emerged with national defence industries dependent on first- and second-tier technologies and relying on production models like limited co-production, licensed manufacturing and also development of indigenous prototypes. Thus, more than being a monotonous activity, the arms dynamic was in turn more evolutionary, with differing patterns, sprinkled with historical influences.⁸ In the immediate aftermath of World War II witnessing stark downsizing of armed forces and military expenditures, the global military resources were to be once again doubled by the early 1970s, followed by brief lull of peace and stability of post-Vietnam war dynamics and the détente. It was to spiral again massively into a penultimate phase in 1980s amongst others by President Reagan's ambitious 'Star Wars' programme.⁹

At the dawn of the early 1990s, when the Cold War reached its eventual phase, theorists had predicted a system with excess capacities in arms production creating declining demand and alternatively developing horizontal growth of the industry with the assertion of second and third-tiers. For the first-tiers, the tremendous contraction of demand and downward pressures on military spending created crises when Cold War called it a day.¹⁰ The subsequent socio-political and economic events instigated a whole new set of distressing changes in the global political economy, which had its fall-out on the global military sector and the defence-industrial landscape. The mercurial effects came in the form massive cuts in defence spending, which fell by a third, and arms exports reducing by almost a half.¹¹ The worst affected were the defence economies mainly in US, the newly created republics of erstwhile Soviet Union, and European

⁸ Ibid.

⁹ In 1987, global military spending reached a peak of US\$1000 billion as quoted in Ulrich Albrecht, Mary Kaldor and Schmeder, *The End of Military Fordism*, Pinter, London, 1998, p. 11.

¹⁰ See n. 2, and also references in Ann Markusen and Joel Yudken, *Dismantling the Cold War Economy*, Basic Books; New York, 1992, p. 7.

¹¹ See SIPRI Year Book 1990, 1991, 1992. Also reference in John Lovering, "Loose Cannons: Creating the Arms Industry", in Mary Kaldor (ed.), *Global Insecurity*, Pinter, London and New York, 2000, p. 151.

states, where not just millions of jobs were periled but also led to the closure of thousands of defence production units converting the industry into a marginal force in regions where they were once dominant.

The American, British and French defence industries lost orders, both domestically and also in exports as global defence spending fell drastically as a result of the 'peace dividend'.¹² While restructuring was a natural course of the imminent transformation, on the other hand, since late 1980s, the concept of conversions was by and large propagated and recognised as one elementary alternative for the defence industry to survive in the new politico-economic order. On the same line, the high-end sophisticated weaponry perfected by the residual defence industrial complex became too expensive for nations to subsidise and acquire in the development and production processes. The push for disarmament in the late 1980s had already made the situation graver, further gaining momentum through the peace initiatives. Conjoined with this transmogrification was the impending spectacle of globalisation of the global political economy, which unleashed an unprecedented torrent of free trade and commerce transcending national boundaries.

Selective Consolidation and Expansion:

For the global defence industry anticipating imminent change, the globalisation process provided the framework for consolidation and restructuring for a new-look industrial complex to re-structuralize, even when newer form of wars, conflict zones and threats provided emancipation in the gestation period. This transformation was largely undertaken by a two-pronged strategy – consolidation, from within, in the domestic industrial realm and going transnational in production and distribution being the other.¹³ The adaptation of these strategies shaped the catalyst for the defence business to lose its sheen as a predominantly domestic activity. Although exports spelt no novelty, it now on became a vigorous means to explore global capacities through

¹² Ruchita Beri, "Transformation of Global Defence Industry", *Asian Strategic Review 1995-96*, IDSA, New Delhi, December 1996, p. 198.

¹³ Ibid.

joint ventures, co-production and offset arrangements that functionalised transnationalisation.

In this systematic application the thrust and focus was on creating worldwide markets, labour and investment networks, seeking suppliers, relocating R&D — all based on economies of scale and consolidating competencies to tackle the inexorable and intense competition. This being the external contours of the change, the core experienced adaptation to newer corporate models and organisation; new capabilities, systems and tasks; and the primary characteristic of advancing from national to global identities. Similarly, the transformations also hastened a blurring of the dividing line in the tier demarcations in the industry. Although collaborations existed in some form or another, the new forms of collaborations were more of integrative trans-industrial linkages at the corporate level through joint ventures, mergers and acquisitions.

From the period starting with fall of the Soviet bloc to the contemporary, it had been a continual and self-evolving transition wherein a whole industrial sector threatened with peril, recouped, restructured and revitalized to adjust to the neo-world order. Defence industries, hitherto, defined as national assets, supported and subsidised by national governments, revised their structures into transnational entities, exploring new means for international cooperation, involving in global networks and foreign direct investments in national defence companies.¹⁴ With the ownership of defence products becoming more and more transnational, it became increasingly abstruse to identify the precise national origins of key components and products. Prime contractors were building global supply chains, and national governments opening up to foreign contractors to maintain competition in procurement.

As defence budgets bowed to greater domestic socio-economic contingencies, governments became increasingly prepared to obtain best-value military equipment from global suppliers in preference to expensive government- subsidised national

¹⁴ Keith Hayward, "The Globalisation of Defence Industries", *Survival*, vol 42 (2), Summer 2000, p. 115.

products. The new form of strategic thinking and defence environment created new industrial and technological possibilities reflected in the form of Revolution in Military Affairs (RMA), which provided the DIC in general and defence industries in particular its vitally needed breather.¹⁵ In its new embodiment, the industrial complex continued to exert its massive influence on events, changing the relationship with industry and the state. The exposure to 'market forces' while creating newer commercial avenues also countervailed with negative effects forcing a re-think on conventional national security structures and thinking.

Ever since industrial revolution and later the great wars, nation states have given utmost prominence to sponsoring and sustaining national defence industries.¹⁶ Nationally owned firms developed specialised capabilities when the state as the customer defined military products and supported its research and development. Although, the industry's political and economic values were appreciated, it was constrained within the limits of national sovereignty, a pattern that existed through the Cold War global economy.¹⁷ Hence, it was a complex procedure at work in which large and complex state procurement agencies defined the technical requirements, negotiated contracts, oversaw development and production even while imposing constraints on private enterprise and also assuming control over the defence industrial base. Subsidised weapon supplies to allies formed the core of the international market, which was largely a political kinship in which politics and economics were vigorously intertwined.

Conversions, Mergers and Private Initiatives:

In the dying years of Cold War when defence budgets tightened, costs of autonomous production spiralled and technological resources constrained, it was time-imminent for the state to withdraw and private capital to expand. The end of this

conflict signalled the demise of Fordism in the defence industry, i.e. a World War-oriented industrial pattern followed by the arms sector characterised by mass production, mass consumption and massive state intervention. The military-technological style of World War type mass production seemingly proved expensive and wasteful at the later stage of Cold War. Hence, the rationale behind massive defence cuts in early 1990s was not just attributed to end of East-West conflict but largely to budgetary difficulties owing to higher costs involved in R&D and manufacture of new generations of weapon systems, and shrinking markets, stagnancy in arms procurement and excess production capacity. Under such circumstances, colossal defence industrial bases had to expand to an export market, which to their agony, was in itself facing contraction.

Consolidation became the need of the hour even as defence industries engaged in massive internal restructuring involving resizing firms, manpower layoffs, mothball production facilities, mergers, attempts on conversion and diversification, and then the extreme step of transnationalisation. Similarly, the existing distribution network subsidised by geo-political rationales declined and new commercial challenges became rationale for the refreshed contours of this network. As a result, in the new scenario, if one is treated with the marvel of European customers lining up at Ukrainian production outlets or Russian companies collaborating with European or American counterparts on a military aircraft programme, it nearly illustrates the new dynamic structures in motion. If this postulates a transnational rendezvous, the spectacle of the US defence industrial base seeing internal shrinking and external burgeoning by high-profile mergers and concentration, and on the other theatre the EADS¹⁸ syndrome in Europe, supported by the European Union, predicate complex forms of restructuring seen at various points across global defence industrial bases.

¹⁸ EADS stands for European Aeronautical Defence and Space Company, a consortium of defence and aeronautical companies in Europe joining hands to consolidate the European defence industrial base and enhancing market presence. The highlight of the company is its penetration into a whole realm of sectors including defence, aviation and space. The company includes majors like Airbus, Eurocopter, Eurofighter and Ariane, among others, and develops/produces as varied a product range as Airbus commercial aircraft, A-400M transport heavy lift aircraft, Typhoon combat aircraft, besides Meteor, Exocet and Aster missiles.

Tracing this route from early phase of post-Cold War restructuring to the present would point to a structural process with a dynamic and intricate character. When the primary phase sprang up with means and methods to absorb the shocks of transformations and transitions, it started off with attempts on conversion and restructuring almost on parallel tracks. While conversion faded off with miniscule success in the initial upheaval itself, restructuring by various means continued to take root in one form or another. Uncertainty and lack of clear perspective on how the defence industry would reshape in its moulding process caused the early innings of ambiguity in the instantaneous context. However, the rapid and unrelenting development of military technology necessitated by the all-encompassing RMA, increasing threat perceptions and a confused world order capacitated unique processes of concentration, internationalisation and new influence of privatisation in the defence industry presenting newer prospects of change and sustenance.

The immediate environment of ambivalence that prevailed on the termination of Cold War had, among others, assigned a question mark on the status of the global order and how it would evolve for good (or bad) as a churning of the global geo-political processes. While the latter phenomena was predicted to be signature for depreciation of the global defence industrial complex, newer forms of violence, privatisation and informalisation of security, rise of ethnic violence, et al, provided a much needed impulsion for the industry to catch up to new perceptions and force requirements.¹⁹ Nevertheless, despite such avenues springing up, they basically aided only the nascent, informal private security groups and producers. The larger defence industrial complexes still depended on the nation-states to evolve its threat perceptions and doctrines of their weapons systems. Be they forthcoming or not, the revolutions in military affairs and military aviation, and newer battlefield doctrines assumed significance in whatever restructuring the industry prepared for. The official military expenditure might have fallen, but dual technologies and small arms trade still proliferated along with high-end technologies. National producers shrunk in numbers, but transnational partnerships, mergers and networks flourished.

¹⁹ n. 9, p. 3.

The New Defence Economics:

Quite fundamental to any debate on the restructuring process is the undeniable omnipresence of elements of defence economics and its principles, derived by Cold War theorists. Broadly speaking, there are two major economic features of defence industries – research and development (R&D) and the importance of quantity. The first is the importance of research and development (R&D), and the second related to quantity (of production, capabilities and distribution). R&D is the core of any defence industrial base and has always been a costly proposition, tackled in times of conflict by the heavy subsidisation by states, at all ends, be it the first-, second- or third-tiers. But in the new context of ‘structural adjustments’, states are prone lesser to defence subsidisation and with companies assuming transnational character, the R&D dimension acquired a new shape. Spreading the high costs for R&D and the importance of its pervasion over a larger output became a pre-requisite for the industry to reduce unit costs on development and learning. With twin pressures arising from spiralling development costs and falling defence budgets, the restructuring process witnessed during the 1990s saw a notable adaptation of economies of scale in the process of consolidation, transnationalisation and readjustments.

The defence economics problem when applied in restructuring measures directly links to the costly proposition involved in R&D or rather any bulk investment in the industrial complex. Despite any cutback or recession in the industrial base, R&D cost continues to determine the final fixations of any defence products. As a result, it became much more imperative to spread the high fixed costs over a large output, an idea more applicable in a stretched multi-lateral economic system, be it through transnationalisation or other co-operative mechanisms. On the other hand, handling quantity and its valuation came up along in the process of merging economies of scale with the learning process applicable in defence production.²⁰ Large companies compensate for the learning process and costs of development with longer production

²⁰ Learning process refers to the phases of research, design and development of a weapon system or related product.

runs on one hand and involving collaborations and joint production modes on the other. Thus they strive to share the R&D costs and production costs by sharing participation and longer production runs. This simply is a resort to large quantity as stabilising factor in the cost-runs caused by costly development costs. Consequently, as an offshoot of this strategy, an inevitable urge to explore or create newer markets to place this quantity comes as a natural cyclic process, sounding logic for the market aspect of transnationalisation.

Tracking the Change

In the post-Soviet turnaround, global arms trade declined faster than global military expenditure with the largest cut backs prompted by Cold War bloc rivals: The only consolation came in 1992 by a meagre rise impelled by the Gulf conflict. Although US sustained its dominance as arms supplier in the 25% increase in global share, it almost had a similar percentage of cut backs in its military spending. Defence spending and size of the defence industrial base declined by over 40 percent.²¹ Although the buoyant US economy largely withstood the contraction in defence spending by redeploying manpower to the non-defence areas raised up by the conversion campaign, in real terms it meant hundreds of defence contractors or firms closing shop or integrating in the avalanche of mergers and consolidation that left few 'prime contractors' in each major sectors of defence production. The natural consequence was the downsizing of over two million jobs, which could not be largely absorbed by the subsequent conversion or diversification programmes. It also created a scenario of over-capacity and surplus arsenals that were nightmarish for any disarmament effort.

The United States:

With the fall of Soviet Union, the United States of America lead the global defence industry with the largest defence industrial complex and a domineering

²¹ n. 6.

presence on the global defence industry both as the largest arms producer and as leader in military spending. Undoubtedly so, the biggest transitional effects, upheavals, and transformation exercises were enacted and felt first in this hemisphere. How the US confronted the change, what were the models adopted by US firms in the new scenario and how the US government responded to these processes became natural point of industrial dialectics. American firms responded to the falling markets by rapid restructuring and rationalisation, involving both horizontal and vertical mergers, which led to greater economies of scale and cost cuts. The early trend in American defence industry was for firms to either get totally 'in' or totally 'out' of defence. The government put in its stakes by offering subsidies for mergers, initiating a vigorous export drive, and relaxing anti-trust laws to ensure the industry sustain a larger share of the shrinking global defence markets.

During the conflict years, a system of regulations and standards existed to keep the government tab on various facets of the defence base including its socio-economic equity, competition and segregating defence roles from commercialism. In the transition, the cost of maintaining this segregation was no longer tenable. Even while seemingly washing off its hands over the defence complex and its unpredictable future, the governments also needed to shake off the regulatory and protectionist mechanisms kept to preside over the base in better times. By early 1990s, the many areas of innovation in weapon systems were broadly commercial driven, and also unleashed processes in favour of lesser restrictive industrial practices.²² Relevant in this context was the fact that even when defence spending depreciated massively during this period, the costs of development of weapon systems increased drastically due to the complex and high technology involved in the RMA-structured industry. With a rationalisation policy being accepted as adaptable by the US government, the defence complex there responded to the declining national demands in two ways: First through consolidation of existing production capabilities and facilities and second, by re-engineering themselves.

²² Ibid.

The key to transformation was to integrate the defence industrial base into the commercial economy of US.²³ It mandated not just transformation in defence procurement procedures, but also a scope for induction of fresh breath into whole range of commercial business practices, technologies and production systems. This being the fundamental dogmas that stringed the conversion process, larger challenges came forth in form of escalation costs of weapon development, reformed export markets, maintaining state-of-the-art capabilities and the largely indiscernible new security environment. Mergers formed part and parcel of the consolidation embarked by the US defence industry. The mere prospect of obtaining economies of scale on their output and increase scope of their activities enabled the US industry to think about larger defence companies by mergers. In fact, the US model built up on large companies is largely based on a large domestic market. As for their wider global market capitalisation efforts, this directly translated into an advantage of their ability to offer high technology equipment at competitive prices and delivery dates, all of which were seen as attractive to the global arms market demanding modern equipment from falling defence budgets, thereby abstaining from their own production sectors. In the long run, many European nations with defence industrial complexes sensed this competitive threat from US as their *raison d'être* to consolidate their own industries.

With a major chunk of the top ten defence companies in the world being based in US, the pacesetter in global arms production started with the US. The US companies were victims to their own success and with the soaring production costs created by governmental pampering, it was almost evident that even without the resolution of the Cold War, some kind of restructuring was still imminent to impose fiscal and corporate discipline in the industry.²⁴ The steepest fall in defence spending offloaded by the 'peace dividend' meant the end of halcyon days of Reagan period and Star Wars. Layoffs even in gigantic groups like Lockheed, General Dynamics and Northrop struck

²³ Jacques S. Gansler, "Transforming the US Defence Industrial Base", *Survival*, vol 35 (4), winter, 1993, p. 130.

²⁴ Terrence Guay and Robert Callum, "The Transformation and Future Prospects of Europe's Defence Industry", *International Affairs*, vol 78(4), Oct 2002, p. 32.

the bells for adjustments and downsizing.²⁵ Even when this process went on unabated, the process of rationalisation struck with the arrival of merger models and widening political thinking in Washington about the need to apply mergers as the primary tool in the consolidation efforts. Notably, while countries in Europe and erstwhile communist states had to fine their own survival strategies in an environment of aggressive market forces, in the US, the planning and enforcement came from the government level. Soon after Clinton took over in 1992, a series of policy level meetings reclaimed the initiative by the government to spearhead the rationalisation of the industry through a series of mergers to create giant corporations.²⁶

In 1987, the US had seven major producers of fighter aircraft and bombers.²⁷ Within a decade of consolidation and restructuring, the historical high-profile mergers enabled creation of two large behemoths namely Lockheed Martin, with Lockheed acquiring Martin Marietta, and Boeing integrating McDonnell Douglas and Rockwell's defence arm. With the consolidation stream in full swing, Lockheed acquired fighter aircraft operations of General Dynamics - the superlative F-16 being the target, while Martin Marietta acquired aerospace division of General Electric in 1993, and space operations of General Dynamics the next year.²⁸ The Lockheed-Martin merger undoubtedly set the agenda and pace for global defence industry restructuring. The first step they took after merger was to consolidate manufacturing facilities in missile and space segments of both firms.

Meanwhile, the integration of Grumman with Northrop created a comparatively smaller entity called Northrop Grumman, and later controlling Vought Aircraft. After merger with Martin Marietta, Lockheed set sights on Loral, and then ambitiously on Northrop Grumman itself. Raytheon hits bulls-eye by pulling together the remaining defence activities of Hughes and Texas Instruments to become the world's largest

²⁵ See Keith Hartley, *Arms Industry and the Globalisation Process*, Centre for Defence Economics, University of York, published in www.york.ac.uk/depts/econ/rc/unesco.pdf, p. 3.

²⁶ n. 11, John Lovering, p. 154.

²⁷ Lockheed, Martin Marietta, General Dynamics, Boeing, McDonnell Douglas, Northrop and Grumman.

²⁸ n. 12, p. 202.

defence electronics corporation.²⁹ Loral went on a massive consolidation by acquiring in one bout as many majors like Ford Aerospace, Fairchild-Weston and Bolt Baranck, among others. In 1994, it set off the coup by acquiring IBM's Federal Systems Division, the largest military systems integrator in US. Similarly, although not in acquisition wave, GM Hughes regrouped its military businesses into one entity.

The restructuring of the US defence industry resembled a unique enmeshing of democracy-at-work and definitiveness of private, military and political interests. The Clinton administration encouraged conversion and diversification from the outset, but subsequently undercut these initiatives by liberalising arms exports and welcoming 'pure-play' mergers, only to down gears and slow down the merger process.³⁰ As a result, the industry, which frantically searched for partners in restructuring, had to slow down in its tracks by the late 1990s. In fact, this enabled firms like Northrop Grumman to survive acquisition bids by Lockheed Martin and Boeing. Clinton's decision to liberalise arms exports after promoting disarmament for a while, and also his bid to allow British firm GEC to purchase US contractor Tracor, as the largest foreign acquisition bid, were examples of the conflict arising out of economic and security pressures.³¹

Some of the immediate post-Cold War developments resemble the ambivalence that prevailed as to the course of action to be taken. This kind of uncertainty reminisced the post-Vietnam syndrome in US epitomized by large-scale layoffs, job loss and procurement declines.³² Despite the *Defense Authorisation and Appropriations Bill* passed in 1991 with incentives for the military spending cuts, industry watchers in US predicted contract cuts and the need for defence firms to reinvest into non-defence areas, through conversion.³³ More innovative thinkers prescribed civil-military integration and dual-use technology development to enhance quality of military

²⁹ Ibid

³⁰ Ann Markusen and Sean S. Costigan, "The Military Industrial Challenge", in Ann Markusen and Sean S. Costigan, *Arming the Future*, Council for Foreign Relations, New York, 1998, pp. 27-30.

³¹ Ibid.

³² Michael Renner, *Economic Adjustments After the Cold War*, UNIDIR, Dartmouth, Hants, 1992, p. 12.

³³ Anthony Vbelocci, "Ill-Defined US Defence priorities Making Industry a Gambler's Paradise", *Aviation Week and Space Technology*, June 1991, p. 13.

equipment and at the same time quicken the pace of civilian spin-offs.³⁴ What happened instead was the spate of mergers creating behemoths enabling global US market dominance, and threat to European industry. Added to this, defence firms in US and Europe started working out transnational product models and widening exploration of global markets. This effort, coupled with globalisation induced market processes, enabled cross-national holdings, strategic alliances and joint ventures.

Another major element in this transition period that counters widely accepted views of post-Cold War transition is the fact that the effect of the so-called 'peace dividend' enabling defence cuts, appeared more like illusionary as most western countries weathered abrupt decline in defence spending.³⁵ What happened instead was mere reversal of Cold War type build-ups. The widely anticipated aftershocks happened meagrely and were amply absorbed by the vibrant economies. The real pains of transition were in fact more visible in Russia, Eastern Europe and defence economies in the developing world. Success in conversion, diversification and restructuring were more strenuous in these economies, where civil-military integration and similar models rarely materialised.

Finally, ever since the transformation process was initiated a kind of new corporate and political mechanism came upon with firms and governments becoming more and more competitive in arms export in an effort to enlarge their pie in the shrinking markets.³⁶ This new bout of rivalry, mostly between alliance partners, was accepted as inexorable to keep production lines running and achieve economies of scale. Yet another feature of the transformation was the composition of defence budgets getting shifted in favour of private sector procurement and services over public-sector provision, as a means for joint product of long-term shift toward greater

³⁴ Jacques Gansler, *Defence Conversion: Transforming the Arsenal of Democracy*, The MIT Press, Cambridge, 1995, p. 26.

³⁵ n. 30.

³⁶ The trans-Atlantic rivalry between US and European companies at major defence and aviation expositions provided for the major news bytes in the last few years in the international media, not to mention the intense and governmental level lobbying in foreign nations to promote ones own industry.

capital intensification of warfare, namely RMA.³⁷ This was marked by privatisation of R&D, services and more outsourcing decisions. Quite remarkably, this same American model of privatisation was taken up as one major means of restructuring by other nations, even though countries like France, China and India maintained their reluctance to divest public equity from their military industrial capacities.

Support for consolidation as a major instrument in the transition was more forthcoming when theorists overwhelmingly saw its marginal benefits in the beginning itself to be outweighing the marginal costs of limited competition. At some point of time, as mergers became hot political debating issues, contemplations arose on whether this would derive any negative outcome for the industry.³⁸ At the same juncture, the predominance of market capabilities and opportunities defined the levels of consolidation to be exercised. While domestic mergers and consolidation shackled many, time and again, the possibilities of trans-Atlantic partnerships surfaced despite fears of increasing competitive players from varied sides.³⁹ But any US-Europe matrimony is structured under the NATO framework, largely in the political outlook, and incorporates economics relationships when it comes to arms trade and defence. The European pursuit to forge an independent security identity had placed the trans-Atlantic relationship at an impulsive temper, with disagreements widening over non-security issues. At the same time, the competitive surge in European-American defence industrial relations has shaped up with varying dynamics.

Undoubtedly, consolidation has an effervescent choice for the industry in US, but not without tangible fallouts in the form of diminishing number of defence firms, and overall decline in the size of the sector, even when the prime survivors or predators enhanced market share in large proportions. Economies of scale, newer non-defence and non-government opportunities, and more value-added work at the component level are marked progressive management models in acceptance, but also have twined with

³⁷ n. 30, p. 12.

³⁸ n. 24, p. 35.

³⁹ Jeffrey Becker, "The Future of Atlantic Defence Procurement", *Defence Analysis*, Vol 6 (1), 2000, p. 17.

lesser number of suppliers and firms competing in national defence market in the US. A reduction of bigger proportions has taken place in a wide realm of US defence supplies. Prior to the 1990 changes, Pentagon would have depended on at least five contractors for a defence system, whereas, today critical instances of sole customers have arisen in various areas including munitions, tanks, submarines and missile systems. A CSIS study predicts that by 2010, there will likely be only one firm manufacturing expendable space launch vehicles, strategic bombers and a variety of munitions.⁴⁰ It points that while in late 1980s, the Pentagon could depend on many to manufacture a new generation fighter jet; today just two firms remain in the US for such a product development.

In this era of consolidation, the process means more than merely shedding excess capacity or redundant workforce. It relies more on a progress to a broader national industrial base and more commercial market areas, outside the ambit of defence industries and larger dual-use segments. Commercial demands progress with the precedence of performance and affordability, as a result of which, commercial practices intertwined with increasing possibilities of innovations in many technical areas critical to future military capability. In other terms, this is the meeting point where the revolution in military affairs converges with the restructured commercial defence industrial base. Consequentially, this convergence creates a new structured industrial base supporting defence that puts immense pressure in the relationships between the government and industry, a phenomenon not just restricted to US in the transformation process. The high instances of corporatisation or rather commercialisation, with intrinsic autonomous character and transnational pursuits hardened difficulties for governments to access the potential of commercial base. On the internal composition, analysts see a massive shrinking of the size of the old defence industrial base with the process of consolidation and restructuring.⁴¹

At the governmental level, one means of adaptation to such transmogrifications was to make suitable changes in its acquisition processes and improve role as

⁴⁰ n. 6.

⁴¹ Ibid.

customer, thereby not just reducing the cost of maintaining a defence industrial base, and at the same time, also increasing access to advanced technology. This came not without apprehensions of the overt and covert influence of the “mega-contractors” on the acquisition process and resultant influences on national security. The process of competitive bidding for defence contracts has also contributed to market-driven forces taking upper hand in the acquisition processes.

Vitality raised at different periods in the consolidation and restructuring process was the possibility of creation of a monopolistic environment by restricting defence sector to a handful majors, while sooth-sayers predict healthy competition in such an environment when a pool of resources and technology gets concentrated⁴². Disparities, divergence and diversities persisting, nonetheless, governments across the frontier with defence industrial potential has through various means and measures assisted and facilitated the consolidation of these industrial bases and helped reduce excess overheads in production. Failing in such an action would have counteracted resulting in governments forcing to pump in subsidies or market support measures to sustain national labour and critical defence technologies and capabilities. Despite fears of movement towards a monopolistic industrial system, almost all sectors post-truncation, have seen at least two major competitors vying for market space.

On the other hand, the pragmatic governmental level approach in the restructuring period mentioned above had resulted in elimination of excess infrastructure and overhead costs and achievement of economies of scale in purchases of parts and supplies. The US example in government involvement in this process was marked by their policy enabling recouping of restructuring costs and enabling corporations to recover restructuring costs by retaining their savings. Apprehensions persisted on the restructuring after the governmental paranoia over vertical integration facilitating concentration of critical designs and production capabilities of any particular critical systems in the hands of one monopoly company. Such cynicism, as seen in the case of Lockheed bid for Northrop, evolve out of such vital national

⁴² Ibid.

security dimensions, but in most cases were allayed with the presence of competing majors in most vitally critical areas. The perceptible change in governmental approaches to restructuring, especially in the US, needs no better description than the initiative to shift from a mind-set and acquisition system that prevailed during the Cold War. The earlier processes were highly structured acquisition systems that not just tightly regulated the defence industry, inhibited risk taking and innovation, but also burdened the industry with legal restrictions as per public law. While this was seen largely as a US phenomenon, factually, one could see almost all major laissez faire nations having followed some sort of restrictive defence industrial format during the Cold War.

In the immediate context of restructuring, the overwhelming belief among governments who rushed to liberalise their industrial bases was to de-structure the composite regulatory processes not just to create opportunities for the industry but also to enable the governments to avail of the best products available by market standards, be it domestic or foreign. And while wishful of a self-sustaining and prosperous industry, the elementary objective seen in the consolidation processes by such governments were to create a small and manageable number of financially-stable prime contractors well able to meet increasing and sophisticated technological requirements of their militaries, and streamline an acquisition process to assist these companies and the militaries. On the whole, the preliminary focus of consolidation process was to gain overall qualitative advantage, help maintain essential defence industrial capabilities with potential for more innovation, ensure adequate and well funded R&D through the industry tandem, eliminating dilatory restrictions, reforming the acquisition processes, and reduce the burden of overhanging Cold War assets and ensure it no longer burden defence spending.

Europe:

At the other end of the spectrum, the transformation picture in Europe was more of a mixed nature when their defence industry entered the transition decade as a

collection of national fiefdoms comprising of medium-sized, nationally oriented firms.⁴³ The crisis in the global defence complex pervaded to this territory with subsidiary or independent defence-industrial hubs plunging into calamity both in the Western hemisphere and also the Eastern nodes of the Soviet industrial bloc. While the western base attempted emulation of the US experience and worked out on a dual path of conversion as well as consolidation through restructuring, the erstwhile eastern bloc was left in a critical juncture looking for indications and independence from its core and all the time outwardly yearning for conversion to civilian applications. The focus simply was on to gain independent footing isolated from the Soviet core and creating national self-reliant economies with the Soviet era industrial infrastructure.⁴⁴

There are four primary, immediate interrelated reasons which created the need for European defence restructuring: the end of the Cold War itself, declining defence budgets, the costs of technology and a sense of external threat. Without an imminent threat in the form of the Soviet Union, Western European militaries downsized and therefore needed lesser military resources. This has led to a vast overcapacity in the European armaments manufacturing sector. Lack of threat led decline in defence spending and the shift in priorities. In addition, spending shifted from new equipment purchasing to the maintenance and repair of existing equipment, thereby decreasing orders to defence industry even further. If these were not enough, European militaries and industries had to cope with another major shock around the same time: the Maastricht Economic and Monetary Union (EMU) criteria, which forced states cut back on defence spending.

The profound end of Cold War revamped the security architecture in Europe, plunging into crisis not just the geo-political framework, but also its self-sustaining defence industrial base. Faced with severe defence cutbacks, global slow-down and threatening posture from a revamped American industrial base, the European defence

⁴³ n. 24.

⁴⁴ Yudit Kiss, *The Defence Industry in East-Central Europe*, SIPRI, Oxford University Press, Oxford, 1997, p. 5.

industry decided on a dual approach of looking inward and also think transnational. While European national governments failed to get their act together to tide over the crisis, the industry took on the onus to pushing the process on its own with larger national defence champions acquiring smaller domestic firms.⁴⁵ The transnational collaborations that did exist took the form of joint ventures or multinational consortia (as seen in Euro Fighter), a process which ensured maintenance of their national independence. Despite outward reluctance from governments on trans-border cross share holdings fearing job losses, and inward resistance by industry groups over uncertainty created by mergers, the European defence industry led by the majors, leaned on this new found independence engaged on its own process of consolidation.⁴⁶

The first major assertive for consolidated restructuring was displayed by the GEC when it agreed to sell its defence arm (Marconi Electronics Systems) to British Aerospace, and the new entity being renamed BAE Systems. In fact, this followed a government-supported initiative to create a pan-European consolidation by merging British Aerospace with DASA of Germany and Aerospatiale of France. Although this BAE formation washed hopes of creation of a unified European aerospace and defence behemoth, it nevertheless enabled a British inward consolidation.⁴⁷ With bells ringing loud on the imminent transformations, European firms displayed more flexibility, more efficiency and ability to survive in a competitive market.

On a closer look, there emerge many concomitant factors influencing the nuances in Europe, including developments within the US defence industry, impact of technology and dominant ingredients of defence economics. For example, the United Kingdom, one of the earliest actors to get its act together, started off into the transition by significantly reducing its defence spending in the first step, and correspondingly initiating a radical restructuring of the defence industry, which in some respects were

⁴⁵ A strategy initiated by Germany's Daimler-Benz and furthered by acquisitions like Thomson-CSF of France purchasing defence electronics wing of Philips and so on.

⁴⁶ Jocelyn Mawdsley, *The EU, the State and Multinational Defence Firms: The Emerging European Political Economy of Defence and ESDP*, Paper prepared for British International Studies Association Annual Conference 2002, London, and published by Bonn International Centre for Conversion, pp. 2-6.

⁴⁷ n. 24, p. 35.

reproductions of models adapted by the American defence industry.⁴⁸ Virtually following the American track, the British defence industry undertook its restructuring with twin modes of privatisation and consolidation. Although European countries attempted to maintain a larger degree of self-sufficiency in arms production, this became increasingly difficult during the transition period with smaller production runs, higher costs of production, especially vis-à-vis American products, and diminishing propensity of European governments to support high level of research and development necessary to produce the most technologically sophisticated products. This created a situation where European weapon systems started becoming less desired in the international market, and even in Europe.⁴⁹ The real lump seemed to be the sheer number of European contractors that exceeded those in US, thereby intensifying the need to reduce overcapacity.

The British restructuring kicked off the landmark European effort with the creation of BAE System, thereby creating a single holding British giant with vertical integration and specialising in defence, boasting capabilities in aviation, land and sea systems, as well as in defence avionics and electronics.⁵⁰ A major paradigm shift in the character of UK defence industry at this juncture was the shift of its *raison d'être* from a strategic justification to a purely economic rationale for existence. Even while moving on the track of privatisation, the UK defence industry was massively subsidised by the Ministry of Defence, not just in attribution to the employment factor, but also in acquisition gains for local industry. The next major European model came in the form of EADS denoting a unified European aerospace and defence company, a trans-European effort to jointly face the global market. In fact, this has been viewed as the most dramatic development in the European defence industry when the first major intra-European aerospace and defence company, EADS or the European Aeronautic Defence and Space Company, combining the arms producing activities of *Aérospatiale* Matra, *DASA*, Spanish *CASA*, and others came into being on July 10, 2000, with a combined annual revenue of \$22 billion, putting it in the third place in the rankings of

⁴⁸ n. 11, See John Lovering, pp. 159-160.

⁴⁹ Terrence R. Guay, *At Arm's Length*, Macmillan Press, London and New York, 1998, p. 12.

⁵⁰ n. 25.

international defence companies, behind Boeing and Lockheed Martin, and just ahead of BAE Systems.⁵¹

The success of EADS in quick progression vindicated the progressive movement towards European integration theorists. At the time of formation itself, EADS became the largest European aerospace and defence company and the second largest worldwide, with varied activities civil and military aircraft, space, defence systems and services, and achieving revenues of €29.9 billion, of which 80 percent were achieved in the civil market and 20 percent in the military market.⁵² The market-oriented structuring saw EADS merging in the commercial aircraft manufacturer Airbus, the helicopter supplier Eurocopter and the space company Astrium, share holding in MBDA and playing a major role in the Eurofighter consortium and the A400M military transport aircraft. This formed not just the answer to the stiff competition from US, but also a success model for greater European politico-economic intergration. More consolidation came up when the French government decided to privatise Thomson-CSF and bring in more players like Dassault Electronique and Aerospatiale's satellite subsidiary in 1997. Subsequently, Thomson-CSF acquired Racal of UK to form Thales, becoming the third largest in Europe after EADS and BAE.

Similarly, the EADS subsidiary for helicopters named Eurocopter and Italy's Agusta merging with UK's Westland to form Agusta Westland in 2001, virtually became the European challenge to the US (Boeing) in the fledging military and civil rotorcraft market. Also, the combination of missile interests of EADS, BAE and Finmeccanica in the same year, created MBDA as the world's second largest maker of missiles, just behind Raytheon of US.⁵³ Thus, it was a grand show of solidarity in Europe not just appropriating its restructuring process, but also consolidating its position on par with the efforts taken by US companies to lead the global defence and aerospace markets. This process of inward consolidation on the one hand with mergers,

⁵¹ The Military Balance: 2000-2001, Oxford University Press: Oxford, 2000, p. 36.

⁵² See details of composition and structure of EADS in <http://www.eads.com/frame/lang/en/1024/xml/content/OF0000000400004/6/03/31000036.html>

⁵³ n. 24, pp. 35-36.

and the higher level cooperation and combined cross holding among the European champions as seen in MBDA is a vital example of the real character of the restructuring process enabled in Europe. Of course, it reinforced the common bonding thread in Europe, of competition from US, even seen in the integration and reorganisation of Airbus into EADS, and later downloading 20 percent share to BAE systems as means to strengthen its position in a market dominated by the US' Boeing. Quite remarkably, industry reports of 2003 shows Airbus taking the upperhand in aviation market for the first time in its history by bagging more orders than Boeing.⁵⁴

By pioneering the European restructuring, Daimler-Benz (DASA), renamed as Daimler Benz Aerospace (DBA), dramatically set the trigger for reformation in the German defence industrial base. With DBA dominating more than half of German government contracts, the consolidation here slowed down, while emphasis was kept on joint ventures, mergers or collaborative projects with other European firms. More than self-sufficiency in national production, the policy emphasis is on access to technology through R&D and seeking collaboration as a means to achieve this.⁵⁵ The French have been on the move with massive consolidation enabled by the Aerospatiale-Dassault merger, and the Alcatel Alsthom and Lagardere bid to acquire state-owned Thomson's defence electronics wing.

The government decision to allow privatisation of Thomson set the pace for more consolidation and encouragement to mergers and collaboration from outside. While integration with EADS have been of fruitful gains, independent firms like Snecma, among others have chosen to flow the tide yearning for international ventures.⁵⁶ Italy, a country known with a state-controlled defence industry, the post-restructuring shake-out saw the public sector Finmeccanica becoming the dominant firm. Following the merger of majors like Aeritalia and Selenia into Alenia, the other known aerospace major, Finmeccanica completed the picture by acquiring EFIM,

⁵⁴ See *Vayu Aerospace Review* 1/2004, New Delhi, 2004, p. 132.

⁵⁵ n. 12, p. 201.

⁵⁶ Snecma tied up with GE of US to form the CFM engines, which is considered the global leader in its segment.

another state-owned group. For Italy, the declining defence exports, lower R&D funding and diminishing defence spending were the factors that prompted the consolidation and restructuring.

These consolidation formats are described as divergent models by theorists, with the BAE Systems' formation termed by Terrence Guay and Robert Callum as 'hypernational champion', on having consolidated much of UK's national defence infrastructure, without much cross-border ties; and the EADS creation titled as 'merger of mergers', which did not terminate at the national level, but consolidate newly merged entities into a stronger position to negotiate transnational ventures within similar sectors of activities.⁵⁷ The kind of divergence in their approach to the restructuring can be described by describing the 'bottom-up' adjustment approach taken at the corporate level and a co-ordinated 'top-down' approach planned and yearned by the European governments, to create giant defence companies.⁵⁸ The BAE assertion notwithstanding, the government thinking in Europe was dominated by the short-term need to boost sales and bring in revenue to keep companies afloat, while being reluctant to allow national majors to turn themselves into transnational companies.⁵⁹ The hazy long-term plan envisioned was of a possible comprehensive future integration of the European community in which a new defence and security build-up would be structured around a consolidated European defence industrial base with a different organisational hierarchy and redefined sovereign roles and controls over it.

Regardless of the anxious Americans labelling of these European initiatives as a "Fortress Europe", the actual picture shows a complex web of corporate, governmental and supranational dynamics at work at various levels trying to order a seemingly uncertain movement to the future.⁶⁰ Europeans mainly lacked the organisation for a large-scale consolidation, considering the fact that complete political integration was

⁵⁷ n. 24, p. 35.

⁵⁸ n. 11, Refer to John Lovering, p. 156.

⁵⁹ *Ibid.*

⁶⁰ n. 46, p. 3.

still superficial. Despite major cross-border cooperation between various European companies, the creation of the new European Arms Procurement Agency (OCCAR), with its first project of armoured vehicles was the first beat of a consolidated European agency to preside over the process on a supra-national level. The lack of coherent European policy for defence and arms procurement had in fact encouraged the British industries to look forward to the trans-Atlantic link with American industry, especially seen in the Joint Strike Fighter (JSF) programme, where the UK government has put in an initial investment of over \$200 million.

While European cooperation has been on a consistent track with collaborations increasing at a faster pace alongside acquisitions and joint ventures, questions of over-capacity, international competition and issues of defence reorganisation on a national or multilateral basis without a European Union framework for a consolidated industrial base has caused the quandary of the procrastination. However, the setting up of a regulatory mechanism at the European level with the Letter of Intent process leading to the Framework Agreement on defence industrial restructuring was a landmark move covering the big sharks. Even when the European shakeout continues, the EU's attempt to assert in these troubled waters through Article 223 of Rome Treaty (Art. 296 of Amsterdam treaty) gives it specific control of four areas – administering a framework for defence R&D; approval for major corporate mergers; funding redeployment of workforce affected by defence shrinking; and the 1995 decision to set up a license free regime for trade of dual goods.

Also, despite ambiguity over European Union's role in a common security framework or defence industrial base, over the past few years, EU has been identifying areas in defence industry where EU level cooperation and regulation are needed for the overall economic well being. It seems as long as the common European Security and Defence Policy (ESDP) does not structuralize, the possibility of EU envisaging great control over the defence industrial base would have lesser gravity.⁶¹ For, the complexities in the European case are more applied by the conflictual and

⁶¹ n. 49, pp. 43-44.

contradictory relationship between the actors – the firms, the governments and the EU. Also, an uneasy compromise between preferences for a neo-liberal market system and a mercantilist ‘strategic trade’ perspective and leaner connection to the common security thread had added to the muddle.⁶² While the size and structure of the industry had been historically determined by market forces, the ability of governments to manipulate or control this by subsidies and regulations and the failure to arrive at consensus on the global pursuit of the industry completes the shake-up.

When most of the European restructuring concentrates on the major powers and industrial actors, often the impact of the transition on the smaller countries with smaller industrial bases tend to be ignored. In smaller nations like Belgium, Netherlands and East European states, the conversion exercises instigated sale of smaller units, drastic reduction of workforce and in some cases complete closures. In these countries, the trend among governments was notable by their diminishing interest to retain the industrial base in governmental control, while preserving on the strategic elements or niche areas.⁶³ Unlike the Western European phenomenon, the events and procedures that ensued in Eastern Europe, the periphery of the erstwhile Soviet Union was an altogether different experience of transition, reorganisation and conversion that virtually transformed the whole character of the military and industrial sector.

The hints of partial resurrection and modernisation enacted in this part of Europe largely pointed to the half-hearted efforts to convert this capacity, often called as the Cold War command economies, to civilian production.⁶⁴ The Visegrad group—The Czech, Slovakia, Poland and Hungary, as examples of the Eastern and Central Europe command economies, were vestiges of state authority and control, with high division of labour deployed in gargantuan industrial capacities to perform a variety of operations. The restructuring and transformation in these economies were aimed at reforming this industrial organisation and ownership structure. Framing up this agenda were the twin elementary tasks of conversion and demilitarisation adapted as

⁶² n. 46, p. 4.

⁶³ n. 61.

⁶⁴ n. 44, p. 7.

restructuring process. The conversion plan was to use the heavy weapon production infrastructure for capabilities in aircraft, electronics and related areas.

However, instead of conversion, a massive collapse took place in the region once the existent economic system was transformed, which was followed up by a partial construction of military production. The greater part of the 1990s were occupied to work out means and methods to tide from this crisis and restructure into a new economic order and industrial base apt for the globalised markets. Four major setbacks – collapse of the WTO (Warsaw Treaty Organisation) military-industrial cooperation system eliminated stable demand for equipment; withdrawal of state support; losing non-WTO markets; and intrinsic socio-economic features in the existent industrial set up. While each country's reform process largely depended on the individual governmental initiatives and regional politico-economic factors, the comprehensive atmosphere of crisis and financial collapse was a challenging process to the conversion method. One fundamental factor attributed to the failure of this process in these economies was the sustained influence of military methods inherited from the command system. The radical change in attitude, structure and organisation was a laborious grind for these societies. There was an overall sense of deprivation on the initiatives from the governments to promote conversion.

The propensity to interpret it with general abandonment, rationalisation of defence production, and passage to Western oriented technologies and defensive postures made it an unacceptable proposition for many. Not surprisingly, conversion was claimed by sceptics as a ploy to destroy the defence industrial base. Thus lack of initiatives, stereotypes and inefficiency marked this era of transition. Finally, it was left to the mercy of market forces and individual enterprises to decide upon. As for the market economy, the economic conditions to step into civilian production were amiss, and survival rather than restructuring proved more significant, not to forget the strong economic and social bonds with military production. Finally, it was a mixture of concentration, decentralisation, market forces and state support, along with increased production lines, that virtually helped the defence industry rebound until the neo-forces

of globalisation appeared in the Eastern heartland, aided by presence of new NATO initiatives.⁶⁵

Russian Federation:

When America and European hinterland are forced to reform by the political transformations deriving from the end of Cold War, the effects of this transition and subsequent reforms in the core of the erstwhile Soviet empire—Russia and its periphery, also was a tumultuous one. The sudden fall of Soviet Union was marked by severe economic crises; especially in areas depended on arms production. The plunge in industrial output, employment and living standards were at an unprecedented low. Combined defence spending in the newly formed republics fell by over 70 percent, and size of armed forces shrunk considerably, especially on the East European periphery due to the Conventional Forces Europe (CFE).⁶⁶ Russia, which was the world's leading Cold War arms exporter, fell to the third position by 1993. Russia had neither the wherewithal or incentive of Soviet Union to subsidise weapon suppliers to the third world anymore. The Soviet Union maintained a costly, but self-sufficient industrial base with high costs, but conveniently kept down by larger production runs and an incremental approach to design and development, attributed to the geo-political environment.⁶⁷ However, by 1992, the total output declined by 18 percent with a continual fall in the next few years. Drastic reductions in procurements led military industries to the brink of bankruptcy and restructuring seemed to be gargantuan task considering the scarce financial resources within reach.

While orders fell for everything from aircraft to warships, procurement dropped by 65 percent in 1992, and production facilities faced shutdown. According to the Russian Ministry of Defence statistics, until 1994, almost 70 percent of the defence production sector remained idle, and sustaining the autonomous self-contained defence

⁶⁵ NATO had made massive inroads into Eastern Europe and successfully managed to enrol majority of the former Warsaw Pact states into its fold, of course with Russian tacit recognition to the alliance.

⁶⁶ Genevieve Schmeder, "Global Trends in Military Efforts and Activities", in Mary Kaldor, Ulrich Albrecht and Schmeder, *The End of Military Fordism*, Pinter, London and Washington, 1998, p. 17.

⁶⁷ n. 12, p. 205.

industrial base became a difficult proposition. The Soviet industrial base was of formidable size, relatively autonomous, with own administrative structures, and cloaked in secrecy.⁶⁸ With an equal responsibility over civilian production, the major chunk of units was spread across the Russian Federation and Ukraine. Demilitarisation being the commitment of the new dispensation in Russia, post Cold War, the drastic need for change resulted in heavy cuts in military expenditure and price liberalisation.⁶⁹ Out of the Soviet nutshell, firms experienced dramatic price changes as their true resource costs became apparent. Although conversion became a natural policy option, the acute budget stringency lacked resources to implement it. Meanwhile, new incentives came up for governments to sell arms and redundant stock to raise resources.⁷⁰ This also had its under-currents as criminal and clandestine sales of arms grow notoriously out of the former Soviet Union.⁷¹ In the survival bid, most of these former communist countries had to continue to depend on the arms sector, as it was vitally important to the local economy for its technological base. With a kind of de-nationalisation pervading Russian economy, arms producers flourished in the export markets, even when it became a sustainable and desperate foreign exchange generator.

With dwindling prospects of government-funded restructuring, the Russian defence industrial units were left to itself to recourse a path for survival and sustenance. Some showed remarkable initiative in finding foreign partners and organising new civilian production, many others got paralysed, awaiting state budgetary support or credit for resurrection. On the whole, the first half of 1990s was an implacable phase when the Russian defence industry realised and recognised the need to go in for collaborations and co-production arrangements with other countries, a virtual metamorphosis for a former communist base known to cultivate within its iron curtain. In fact, tracing the path of restructuring of Russian defence industry unwittingly shifts to a parallel course where Russia gets integrated into a global economy process through the military globalisation it enacted in its international

⁶⁸ Julian Cooper, "Transforming Russia's Defence Industrial Base", *Survival*, vol 35(4), Winter 1993, p. 147.

⁶⁹ *Ibid.*

⁷⁰ One example of this frantic bid to sell-out by the bulk sale of the East German Navy to Indonesia!

⁷¹ n. 11, See John Lovering, p. 151.

collaborative initiatives. In fact, down the lane, none gets puzzled to see Russian defence and aerospace companies neck deep in joint ventures and cooperative corporate missions with counterparts in US and Europe.

For, by then the political economy dynamics has completely changed from the archaic Cold War structures. Eager to resurrect from progressive destruction and meeting demands of the reformed armed forces, Russian industry awaited a national industrial policy to approach the change. In 1992, with the appointment of Andrei Kokoshin, an acquisition expert, as First Deputy Minister of Defence, the transformation began marked by a civilian handling armed forces for the first time in Russian history.⁷² His elucidations on the future industrial base were significant in the restructuring context. In his doctrine, the integration with world economy was considered vital for Russia. National interest, he propounded, dictated there must be an effort to gain an increasing share of the world market in industrial goods, above all in science-intensive, high-technology products, for which the defence industry would be an 'enormous reserve'.⁷³

Since Russia had advanced its global position through its military technology, but restrained the same in civilian technology, Kokoshin believed the foray into world markets would be through using the edge in industries like defence, aerospace, shipbuilding, steel, composite materials and even lasers. And the adoption of a high technology export strategy would require some restructuring of the civilian industry as well. As a first step, Kokoshin embarked on a National Industrial Policy (NIP) to serve the broader functions of mobilising sections of society around this strategic national task. The NIP, unveiled in 1992, aimed two major objectives: first, the restructured defence industry should provide the core of new Russian economy; second, the transformed defence industrial base should create conditions for the maintenance of a

⁷² n. 68, pp. 148-150.

⁷³ *Ibid.*

capability to develop and produce advance military equipment, high-precision weapons, C2 technologies and equipment for rapid force deployments.⁷⁴

The core of the NIP was the formation of the ‘financial-industrial groups’, a new formation of corporate groups that would integrate research and production facilities of the industry.⁷⁵ These large groups, also encompassing colossal financial and commercial organisations, were meant to incorporate both military and civilian enterprise, with predominance for the latter.⁷⁶ The primary theme is to produce dual-use technologies and good with eye on export, although not exclusive. The overwhelming belief was that these groups would generate the desired civil-military integration, and create conditions for the civilian technologies to command the economy. But two stark areas remained – the form of ownership to be adopted and extend to which foreign investment can be permitted. While consensus remained on co-ownership by the state and private capital, it also symbolically proclaimed the intention to exit from the conventional state ownership of Soviet legacy. The Kokoshin game plan was to organise diversified corporate structure reducing forms of state-support, enable cross-subsidisation internally, and involve commercial banks to mobilise resources as and when needed. The nucleus of the first phase of FIG was the design and production bureaus of the aviation and rocket-missile industries.⁷⁷

The Russian expertise in these areas appended the scheme of revitalisation with majors like Saratov Aviation, Omsk Polyot, which produces rocket engine and attempted An-74 aircraft, the Sukhoi and Ilyushin design organisations, known for their superlative fighter and transport aircraft, and Almaz and Antei, the air-defence missile company, already deep into S-300PMU1, as Russian equivalent of US *Patriot* missile. The formation of ROS as Joint Stock Company was elementary to the first phase. Also,

⁷⁴ Ibid.

⁷⁵ Ibid, and also reference in *Military Industrial Overview*, <http://www.fas.org/nuke/guide/russia/industry/overview.htm>.

⁷⁶ n. 68, pp. 149-151.

⁷⁷ The Soviet Union defence industrial base had a three-tiered defence industrial structure; the first being the scientific research institutes that handles the research component, second – the high-profile design bureaus who plan the products and take it from concept level to prototype stage, and last the production facilities where these prototypes gets final product form.

in 1993, a new Interdepartmental Commission for the Promotion of the Organisation of Joint Stock Industrial Companies and Financial-Industrial Groups was formed to assist the creation of new corporate structures. The remarkable feature of the Russian restructuring effort is the affinity derived from similar efforts made in the US and motivations from the Japanese model for the overall industrial restructuring.⁷⁸ The latter effort dawned on the conviction that economic revival of Russia must be based on vigorous promotion of high-technology exports. The Soviet era system suffered from a procurement system, where a Military-Industrial Commission under the Communist party controlled the process, with little say for the armed forces. The Kokoshin policy was a resemblance to a US-type contract system, with much greater budgetary control on the contractors, and more market friendly policies, giving upper hand to the competition element.

The next logical step in this progression was privatisation. The Government released a document "On Measures to Stabilise the Economic Situation of the Defence Complex Enterprises" in 1994, the essence being to form federal scientific technical centres to fulfil most state military contracts and a small number of federal enterprises.⁷⁹ When the consolidation effort was launched, the two primary goals furnished were: first, to shed the responsibility of budgetary support to low-technology enterprises who directly cater neither to military or civilian, and the second, to exercise stricter control and pressure over the remaining industry involved in defence R&D and production. The twin attempt was to consolidate a strong defence industrial base, and at the same time intertwine with a civilian integration to create a strong market economic base.

In its first attempt to privatise about three-fourths of the more than 2000 firms by 1994, the government segregated them into four categories namely: full privatised firms not engaged in military work; full privatised ones engaged in defence production; joint stock companies with government's stake, and fully state-owned companies.⁸⁰ But, the Russian belief that this highly-resourceful base can be easily converted to the

⁷⁸ n. 76.

⁷⁹ n. 12, p. 206.

⁸⁰ See *Military Industrial Overview*, <http://www.fas.org/nuke/guide/russia/industry/overview.htm>.

civilian global marketplace was a half-baked dream, as their military products failed to take a concrete civilian shape, and added to that Russian, while strong in engineering and manufacturing, showed their lack of expertise in marketing and financial management. Even in niche areas like aviation, where Russians excelled and considered as strategic industrial area, output fell after the privatisation bid started.

While the government has^d placed protectionist barrier for this industry even during privatisation, it failed to provide the vital subsidies, big orders or other resources to spruce it up for a competitive market. The financial crisis of 1998 had its effects on defence industry also, a good chunk of industries plunging into debt. However, the new Russian defence industrial policy, which emerged in 1997, had already pushed forward the momentum for the consolidation. It had three main elements: increased funding, consolidation and increased competitiveness in arms exports. The Planned Consolidation according to the Federal Programme for Restructuring and Conversion of the Defence Industry for 1998-2000 aided this policy with focus on further concentration.⁸¹ The aircraft industry was the one sector which experiences the most of these efforts, where the goal was to form a maximum of 10 technologically integrated concerns out of the existing 350 firms, although not with much success.

Nevertheless, the Russian industry recouped its energies to compete in the globalised competitive marketplace. One of the significant moves that assisted the Russian industry in its global pursuits was the initiative to launch collaborative links with foreign defence industries.⁸² Even during the crisis period in mid 1990s, Russians were involved in over 300 joint ventures. Some of these ventures include the joint development of the Yak-130 trainer between Yakolev and Aermacchi of Italy; MiG AT jet trainers between Mikoyan and Daewoo of South Korea; business jet project

⁸¹ Elisabeth Skons & Reinhilde Weidacher, "Arms Production", *SIPRI Yearbook 2000: Armaments, Disarmament and International Security*, Oxford University Press, Oxford, pp 324-25.

⁸² n. 12, p. 206.

between Mikoyan and Dassault of France.⁸³ Similarly, the interaction with international banking firms like Pratt & Whitney to secure loan guarantees and the marvellous sight of US build engines powering Russian aircraft are all signs of Russia's neo-global enterprise.

The setting of Rosoboronexport Federal State Unitary Enterprise in November 2003 was a giant leap in Russia's entry into the global defence market. It is sole state intermediary agency for Russia's imports and exports, and coordinates, markets and promotes Russia's international collaborations and gives technical support to Russian companies and products at the global level.⁸⁴ Being the largest and sole nodal agency flaunting Russian dual-use products, Rosoboronexport is not Russia's face for globalisation, but also an answer to critics on Russia's lack of expertise in marketing and international economic management. Presiding over 80% of Russian dual-use exports including civil and military aviation, missile systems, artillery and other land systems, this setting up of this corporation was a result of the appreciation by Russia about the need to tackle globalisation induced market dynamics using their same tools, again a la US.

Ukraine:

Alongside the Russian Federation, the other major republic of the erstwhile Soviet Union to make inherit a major part of the Soviet MIC was Ukraine, as being home to many a major design bureaus, manufacturing units and missile and space launching stations. Along with Russia, Ukraine too attempted rigorously to create its own defence model and experiments through various conversion and restructuring exercises, but only to end up integrating itself with global defence industry once the realisation awakened that the path to its economic resurgence would be through the sustainable industrial base. Sooner or later, Ukraine was to become a major player in this industrial segment largely supported by its industrial base, and as home to spares,

⁸³ See Randall Forsberg (ed.), *The Arms Production Dilemma: Contraction and Restraint in the World Combat Aircraft Industry*, MIT, Cambridge, 1994, p. 113.

⁸⁴ For details of its activities, see <http://www.rusarm.ru/comp.htm>

sub systems and components of the Soviet era and newborn Russian aircraft and defence industry.

Considering the fact that around a third of the Soviet industrial output went towards defence, and largely concealed from the rest of the world, other than military allies, it was natural for the new republics to unleash their products on the global market. If Russia did it through joint ventures and Rosoboronexport, the other major player of the Soviet legacy, Ukraine, attempted conversion and in the process diverted its resources to the civilian sector and experimented with a process of economic reforms that had impressions of privatisation, liberalisation, and had a largely one-sided, ephemeral and asymmetrical integration in the world economy.⁸⁵ Ukraine source of global identity lies in its technological capabilities derived from the Soviet MIC. At the time of formation, the Ukrainian Ministry of Machine-Building Industry, MIC and Conversion listed over 2594 enterprises, with around 3 million employees, consisting over 6 percent of the population, of which nearly 700 enterprises belonged to the MIC.⁸⁶ Ukraine used to produce 20-25 percent of Soviet tanks, 20 percent of warships and nearly 70 percent of military electronics, and aviation being another major industry.⁸⁷ Nearly 50-70 percent of all Soviet R&D centres were located in Ukraine.

The real time attempt at conversion in independent Ukraine in 1991 started on resolving three elements: economic, social and ideological. But, due to the economic crisis, there weren't simply the sufficient funds for the restructuring process.⁸⁸ And whatever little happened were marked by its transnational collaborative character, like an Ukrainian-German joint venture to produce cranes from mobile missile launchers; a joint venture with US firm, Westinghouse for supplying electronic components for warheads; a government company, Aviter, was created to promote defence technologies for civilian market, among others. Despite all these gains, the fruits of conversion came slow. At the second stage that started in 1992, the MIC was itself

⁸⁵ Hans van Zon, *The Political Economy of Independent Ukraine*, McMillan, London, 2000, p. 7-8.

⁸⁶ Igor Egorov, "Conversion in Ukraine: Some Results and Problems", in Mary Kaldor, Albrecht and Genevieve Schmeder, *The End of Military Fordism*, Pinter, London & Washington, 1998, pp. 197-198.

⁸⁷ Many aviation design bureaus including the one for Antonov transport aircraft was based in Kiev.

⁸⁸ n. 86, p. 200.

victim of the economic crisis in the country with over 500 defence production units closing shop.⁸⁹

Severing ties with Russia had cost dearly, and lack of R&D base or ties with the ones in Russia virtually spelt doom for the industry. Inheriting the Soviet legacy didn't really work, as Ukraine was home only to most of the aviation design bureaux, but not the production houses, which were scattered across the Soviet republics. The machine building industry, the main strength of Ukrainian industry was the hardest hit sector. Nevertheless, the Ukrainian base in high-technology military related companies and the space industry gave hope for the resurrection. In March 1993, the Government issued a decree "*About the Use of S&T and Industrial Potentials of the Defence Industry for Development of the Economy*", containing over 142 programmes for a Soviet-style conversion, whereby defence industries were ordered to produce civilian equipment as prescribed in the decree. But, with no provision to subsidise raw materials, the industries were left dumb folded on the next step.

Ukraine had propounded five objectives for the conversion programme.⁹⁰ First, Ukrainian weapons systems were expected to be competitive owing to relatively low labour costs. Second, it should not lag behind burgeoning industrial bases like Brazil and South Africa. Third, it would be possible to sell licenses, not just weapons. Fourth, their exports would not threaten an obsolete neighbourhood, and fifth, Ukraine can exploit its comparative advantage in weapon systems in the new market environment. However, effective market conversion scarcely fructified on these missions, due to lack of access to markets and finance, and falling exports was a natural consequence. But, at hindsight, what mattered most to Ukrainian was its vital economic lifeline with Russia, the association primarily sustaining its space, aircraft and shipbuilding industries. After these bouts of unsuccessful restructuring plans and "correctional measures" till around 1995, newer ones like "Technology-96" and "Ukrainian Electronics-2000" were formulated to push the reforms further.

⁸⁹ Ibid.

⁹⁰ Ibid.

However, after these implosive measures remained largely unfruitful, the push for opening up to the global markets, and the attempt to enhance its technological base to meet global competitions did the real turn around for Ukraine in the late 1990s and early years of 2000. The idea used was to occupy emerging market niches or substitute for Western companies as subcontractors in modern industries. This focus on the niche market helped costs of new products and at the same time integrates with the global market.⁹¹ It had in one way opened up Ukrainian possibilities in the outsourcing sector for military components for everything from flight simulators to aircraft components to nuclear plants. The massive potentials of Ukrainian aviation industry have been enlightened in this context. The interest generated in Western markets on Ukraine's Antonov military transport aircraft is a case in point. On the whole, the integration has been a slow and painful process, where the strengths of the complex systems have not been put to optimal use, and the permeation of the technological base needed to move much further.

People's Republic of China:

China attracts global attention not just for its emerging role as a great power, but also with its unique economic system, which systematically merges communism with market economy. Some more uniqueness in this macro system is the role of Peoples Liberation Army (PLA), the largest military force in the world, which runs everything from a national army to traditional Chinese medicines. The Chinese Military Industrial Complex is one of the largest in the world, managed by the Commission of Science, Technology and Industry for National Defence (COSTIND), burgeoned on Soviet technologies since 1950s.⁹² However, the crisis dealt by cut-off of Soviet aid in 1960s, and the Four Modernisations process initiated in 1970s, put China on a modernising track, which in the long run, enabled it to develop an industry capable of producing nuclear systems, satellites, missiles and even nuclear-powered submarines.

⁹¹ Ibid.

⁹² Srikanth Kondapalli, *China's Military*, Knowledge World, New Delhi, 1999, pp. 158-159.

Nevertheless, the greater emphasis of growth was focussed on acquisition of latest technology⁹³ either through wholesale import or “reverse-engineering”, or preferably even by indigenous production. The industrial complex is linked through a network of R&D institutions, infantry, artillery and armour productions units, and a gargantuan aviation and naval industries, and known for premier groups like Aviation Industries of China (AVIC), Shenyang Aircraft Corporation, Chengdu and Changhe Aircraft Corporations, each with specialised expertise in fighter aircraft upgradation, production and maintenance competencies⁹⁴. But despite possessing the third largest defence industrial base, it was beset with problems, suffering prolonged technological and industrial contraction all throughout its growth years, aggravated more by fall of Soviet Union on which its technological dependence was prone.

However, since the mid-1990s, China's defence industry has undergone an extensive restructuring to make it leaner, more efficient and better able to meet PLA's high-technology needs.⁹⁵ But apparently, the industry had to suffer for its pendulum between the two schools of thought – one calling for indigenisation and other for foreign procurement.⁹⁶ And after the reforms process started, a large number of production units remained idle and capacity unused. Loss making has been the single largest factor for its retardation,⁹⁷ creating large-scale retrenchment. Despite strains of improved performance as part of the restructuring, the defence industry continues to suffer from deep-seated structural, organisational and institutional problems posing barriers to innovation, project management and systems integration, and in turn, threaten to thwart the successful development of many of its next-generation projects.

⁹³ Ibid, pp. 154-159.

⁹⁴ In 1998 itself, AVIC industries produced over 14,000 aircraft, both military and civil, including a new fighter by Shenyang Aircraft Corporation. See *Jane's All the World's Aircraft 1998-99*, Janes Information Group, 1998, p. 52. Chengdu Aircraft Industries have produced more than 2000 fighters including the J-7/F-7 series, while Changhe Aircraft Corporation is known for its rotorcrafts.

⁹⁵ See “Chinese Defence Industry: The Chinese puzzle”, *Jane's Defence Weekly* - January 21, 2004, pp. 22-24.

⁹⁶ n. 93.

⁹⁷ Bates Gill, “Defence Industry: China's Arms Makers Struggle with Market Place”, *Far Eastern Economic Review*, November 30, 1995, p. 62.

In fact, the Chinese have had a mixed format of reforms – while striving for internal restructuring; PLA has shown remarkable affinity towards virtues of market economy. And this integration of the CMIC into the market economy, alongside the economic integration with WTO⁹⁸, has been through a considerable conversion of defence industries to the civilian sector – uniqueness even unseen in nations, which have practised conversion in different forms. A large scale civilian production of defence industries, a la Soviet model partially, and meant for greater integration with polity with strong links to the “one army, two systems” model.⁹⁹ However valid these ventures have been, the actual objective of conversion has not really been met due to many factors including over-commercialisation of PLA, corruption, loss-making ventures, heavy dose of decentralisation, excess market control by PLA, and so on.¹⁰⁰

On the internal restructuring side, a complete overhaul was undertaken on the moribund industry's management and corporate structures in the late 1990s to inject competition and at the centre of these organisational reforms was the separation of the military and civilian components of the COSTIND, which till then oversaw the management of the defence industrial complex.¹⁰¹ The reconstituted COSTIND was primarily responsible for the implementation of policies, regulations and laws dealing with the DIC as well as long-term strategic planning, foreign co-operation and acquisitions, regulation of the export of sensitive military technologies and project management of weapon projects. The industry's corporate structure also underwent massive change as the single massive conglomerate was dismantled into ten state-owned corporations to promote competition. Conjoined with this were efforts to close down the most heavily indebted and loss-making plants and lay off surplus workers.

⁹⁸ On 17 September 2001, the World Trade Organisation Working Group on China in Geneva approved China's entry application by adopting relevant legal documents. China carried out 42 bilateral talks with various countries over the years in its bid to gain accession. After 15 years of protracted negotiations, China became a member of the WTO on 11 December 2001.

⁹⁹ Peter Kien-hong Yu, “One Army, Two Systems”, *Jane's Intelligence Review*, vol (5) 4, 1993, p. 23. By this principle, PLA was allowed to participate in production of goods and services for the civilian sector of the economy.

¹⁰⁰ n. 92, pp. 219-221.

¹⁰¹ n. 95.

Supported by a sharp subsidisation and downsizing, the country's defence plants have been stepping up the design, development and production of new generations of warships, aircraft, satellites, missiles and other sophisticated military systems. In fact, COSTIND had reported breaking even by many companies in 2002 and remarkable progress in many development ventures aided by the reforms. Even as China enters the WTO and greater global integration, the defence industry is also decked up to meet the challenges of the global market place, through joint ventures and collaborative ventures, and would aim to do to the global defence markets what Chinese consumer goods did to global markets. Presently, Chinese collaborative ventures are confined to Russia and Pakistan. In fact, China continues to depend on Russian defence industrial complex through its off-the-shelf purchases.¹⁰² This has been a mutually beneficial relationship with China keen on building a network of licensed production and joint ventures with Russia, which in turn, were keen to offload the burden from cash starved weapon development programmes. A host of agreements ranging from technology transfer, license production to joint ventures has marked the new strides in varied sectors as anti-missile systems, Sukhoi aircraft, space and nuclear, and other technology ventures.¹⁰³

New Second-Tiers and Third-Tiers:

These being some major defence industrial complex, which formed the first- and second-tier, that responded and reformed in various forms in reaction to the transformed geo-political environment since the end of Cold War. There are some important actors in the third-tier like India, Israel, South Korea, Brazil and South Africa, and nations like Sweden and Japan fluctuating between the second- and third-tier, all of whom had in various forms responded to the changes in the global politico-economic order, by enabling their variegated forms of restructuring through decentralisation, privatisation, internationalisation and other forms of collaborative production and distribution mechanisms.

¹⁰² Swaran Singh, "Sino-Russian Techno-Military Cooperation", *Asian Strategic Review 1995-96*, IDSA, New Delhi, 1996, p. 183.

¹⁰³ Ibid.

The performance and revamping, if any, in the intermediary nations like Sweden and Japan had largely been influenced by either their geo-political environments and domestic economic situations. Japan, being under the US security umbrella, also depended on the US defence industrial base to enhance its own technological edge. Japanese MIC largely consisted of civilian enterprises, especially, heavy manufacturing and electronics giants like Mitsubishi, Kawasaki, etc, that rely heavily on the market forces, but which have defence firms appended to them.¹⁰⁴ With this civilian identity, the focus was on to exploit the benefits of dual use technologies. Arms production, in fact, remained as a cushion against recessions, and as source of investments.

With this civilian interference as impediment to any form of vertical integration, the means to growth and sustenance in the transformed era was to go in for horizontal integration with American defence industrialists and gain from the technological edge. In the initial period of restructuring and concentration, Japanese engaged in a mutual benefit relationship and at the same time trying to develop own industry, with its own indigenisation efforts seen in the aerospace programmes, missile and naval defence systems.¹⁰⁵ Even in this self-enhancement pursuit, the key sectors continued to depend on imported US technology¹⁰⁶. Significantly, the main growth engine then were the licensed production of US weapon systems. But without much domestic restructuring effort to bother about, the focus was on developing a strong domestic defence industry by the start of the millennium and cater to the global markets.

Although small by global standards, Sweden, promotes a defence industry that offers a wide array of products from ammunition, howitzer guns, naval systems to the third generation fighter aircraft. In 1992, Sweden decided to facilitate foreign ownership of arms producing companies, as part of its liberalisation policy on foreign

¹⁰⁴ Andrew K. Hanami, "The Emerging Military-Industrial Relationship in Japan and the US Connection", *Asian Survey*, vol (23) 6, June 1993, p. 601.

¹⁰⁵ Paolo Miggiano, Elisabeth Skons and Herbert Wulf, "Arms Production", *SIPRI Year Book 1992: World Armaments and Disarmament*, Oxford University Press, Oxford, 1993, pp. 376-377.

¹⁰⁶ *Ibid*, pp. 376-380.

acquisitions and response to the changing conditions in the industry. A series of ownership changes in early 1990s have produced concentration in the hands of a few, with restructuring reducing both production capacity and employment, while creating national monopolies in each sector. While majors like SAAB and Celsius Bofors AB engaged in varied areas from missile systems to aircraft, companies like Ericsson, Volvo, Hagglands and Nobel Industries specialised in their niche areas. The Celsius Group through mergers took over the shipbuilding industry and the military electronic sectors, and at the same time continued restructuring, privatisation and active foreign collaboration. With such monopolising structures being the basic element of the transition, the concrete part of the restructuring was the internal consolidation of the industry on the basis of core competency areas, and convert focus to transnational alliances. SAAB's JAS-39 Gripen aircraft has not just triggered an internal reorganisation in SAAB, but also opened up possibilities of trans-Europe links to be created in the Swedish industry.¹⁰⁷ On the whole, with a small structure, and handful of players in the reckoning, the restructuring and transition was not a difficult venture in the Swedish industrial base.

Israel has been a major among the third-tiers, who grew under the US umbrella, but built up a largely self-sustaining industry, and probably the only one to produce weapons on its own doctrine and sell it at global markets. Israel, in an attempt to create self-sufficiency in the 1970s, virtually created competencies in niche areas like military electronics, avionics and lately, UAVs and AWACS. The industry acquired a high degree of sophistication through its attempt to produce own jet fighter like Kfir. In the early 1990s, Israel too was hit by economic crisis and needed an imminent restructuring, not just of the industry but also the Israeli Defence Force (IDF), on whose doctrine the industry builds its products.¹⁰⁸ Many private companies either merged or reduced staff, or diversified into civilian markets, with some companies fully spinning off their civilian activities into separate businesses.

¹⁰⁷ In the early years of the new millennium, SAAB struck a marketing alliance with BAE systems to market the Gripen multi-role aircraft.

¹⁰⁸ Farah Naaz, "Israel's Arms Industry", *Strategic Analysis*, vol XXIII (12), New Delhi, March 2000, pp. 2078.

However, by end of 1990s, Israel developed a strong public-private equilibrium in its industrial base, with a host of private sector firms coming up in isolation and also in tandem with the military run industrial units like Israeli Military Industries (IMI). Today, Israel has three major public sector defence firms – Israel Military Industries, Israel Aircraft Industries (IAI) and Rafael, and a host of highly proficient private sector ventures like Tadiran, Elisra, Elbit with core capabilities in electronic sub-systems, missile systems and air defence systems. On a course of occupying its pie in the globalising arms market, Israel's defense exports are now coordinated and regulated through SIBAT - the Foreign Defense Assistance and Defense Export Organization - which is run by the Ministry of Defense. Israeli industries are actively in joint ventures with various nations on many defence development ventures.

Formed on the apartheid sanctions from 1977, the South African industry gained a lot from access to state resources, and in the 1990s, lost its primary customer – the South African Defence Force, and had to heavily retrench and restructure, at the same time force itself into integration with the global economy.¹⁰⁹ In the speedy changeover of roles, South Africa worked itself to the threshold of the new second-tier states with modest military industrial bases. In the process, it cancelled its indigenisation process, and drastically re-oriented its industry. In the period of change in early 1990s, South Africa had to adjust itself as a second-tier niche producer of sub-systems as in the hub and spoke system,¹¹⁰ and survived from the benefits of defence industrial participation projects, adjustments and exports.

Global integration has been the key to its growth and sustenance and development as an outsourcing base. The government had continued to support the industry through its funding of military R&D and international marketing support. A General Export Incentive Scheme subsidises exports, dominated by Armscor, maintains over seven overseas offices. The turn around in South African industry occurred

¹⁰⁹ Jakkie Cilliers, "A Brave New South African Defence Industry?" *African Security Review*, 12(4), 2003, pp. 1-2.

¹¹⁰ Hub and Spoke model as propounded by Richard Bitzinger, talks of two layers of production system where the first-tiers (Hub) are centers of excellence in technology development and production network and the second tiers (Spoke) merely act as niche production centers of these Hubs.

largely by its overseas rendezvous, especially by servicing as sub-component and sub-manufacturing base for many industries in France, Poland and Ukraine, and off late even majors like BAE and SAAB.

On the other hand, a country like Brazil has suffered the transition process largely due to the fall of export market for its artillery systems and armoured vehicles. The state-run Embraer and its competency in low-cost aircraft development has been the key to change, but was largely pinned down by sharp decline in sales and heavy losses all throughout the 1990s. Brazil went in for early international cooperation in development of its military aircraft by alliances with Italian firms Alenia and Aermacchi. In the early transition, Brazil had to deal with idle capacity of over 30 percent along with heavy job cuts. Brazil's route to emancipation was a straight adaptation of privatisation of the national industry and gain foreign investors for the production units. While over 55 percent of Embraer was up for private placement in 2002, the target limit has been over 80 percent privatisation.¹¹¹ The other focus of restructuring has been sub-contracting by transforming its infrastructure as base of refits and maintenance of foreign aircraft. At the same time, Embraer, through major state subsidy, and foreign capital, burgeoned in the aircraft industry, coming up with specialised civilian and military aircraft, including the regional jets.

India is another major player in the intermediary tier as a Cold War third-tier player and an upcoming second-tier industry in the new composition. The new growth pattern also coincides with the resurgent economic growth initiated by the economic reforms launched in the early 1990s, significantly at the time when global economic integration started. The Indian DIC, inaugurated with the 16 ordnance factories during World War II, has historically taken a dual path of defence production – one as licensed producer of equipment and the other, as effort to indigenously develop

¹¹¹ Ian Anthony, Paul Claesson, Elisabeth Skons and Siemon T. Wezeman, *Arms Production and Arms Trade, SIPRI Year Book 1993: World Armaments and Disarmament*, Oxford University Press, Oxford, 1994, pp. 436-437.

defence systems.¹¹² The licensed production ones record some premier aircraft like Prentice, Vampire and the Folland Gnats, until India came up with its own jet variant – the Marut, produced at state-run HAL. Although Marut project did not progress due to design handicaps, India continued this dual path until the Soviet connection strengthened in the 1970s and 80s.

The association with Soviet Union enabled transfer of technology and licensed production of a range of MiG series aircraft, and later extending the same facility to the French Mirages and Anglo-French Jaguars. It was in the 1980s that India leaped forward on a faster track to indigenisation with the launch of the Integrated Guided Missile Development Programme¹¹³, the Light Combat Aircraft (LCA) project, Advanced Light Helicopter (ALH) project, Air Defence Ship (ADS), Advanced Technology Vessel (ATV) and the Arjun Tank, among others¹¹⁴. Nevertheless, with mixed results on these indigenisation programmes, India continued on the track of licensed production and upgradation of fighter aircraft and other systems, even while continuing to acquire defence systems from a plethora of suppliers ranging from Russia, Israel, US to European industry.

Global restructuring of the DIC has had its influences in India also, which has lost its primary supporter in the Soviet Union. While still continuing to maintain a strategic relationship with Russia, it is more of a mutually beneficial relationship than a strategic one. India has enhanced ties with Israel, which has supplied it with advanced defence electronics, surveillance and air defence systems. The cooperation with US goes ahead on a low-key note as competitors from Europe, along with Israel and Russia

¹¹² Amit Gupta, "The Indian Arms Industry – A Lumbering Giant?" *Asian Survey*, vol (30) 9, September 1990, pp. 846-858.

¹¹³ The IGDMP involved development of a family of short range and interim range ballistic missiles like Prithvi, Agni, Akash and Trishul. Of this, Prithvi and two variants of Agni are inducted while the others are still in various development stages.

¹¹⁴ The LCA programme was a lengthy exercise with the Aeronautical Development Agency, the nodal body, struggling under US sanctions to build up on own avionics and power plant. Although the Prototype Vehicles are successfully tested, the LCA with own Kaveri engine is not expected anytime before 2008. While Advanced Light Helicopter is the only feather in the cap within time frame, thanks to Israeli avionics, the Arjun Tank turned out to a battlefield non-performer. The Air Defence Ship would be the indigenous aircraft carrier, which is still awaiting nod for cutting steel, while the Advanced Technology Vessel is sunk in ambiguity.

are dominating the Indian defence sector. Taking lessons from its largely failed indigenisation efforts, India has opened up its industry to privatisation, foreign investment and joint ventures.

There is more convergence with private initiatives by Confederation of Indian Industry (CII), who have progressed on review of the working relationship between the Indian defence sector and the private industry. The industry plays a supplementary part to the development and production process by involving as sub-contractor or component supplier to most of the defence programmes in the country, but restricted from involving in a major way. The new dispensation led by Bharatiya Janata Party (BJP) had shown commitment to an economic reform process, which also enables private capital in Indian defence production. The growth in Information Technology, global defence industry restructuring, arrival of new players in the scene, have all prompted India on a forward path of internal restructuring and also move global.

The Indian industry has all along been a PSU show, with state run bodies monopolising the sector. But off late, outsourcing to the private sector has increased in a major way¹¹⁵. India had opened the doors to joint ventures with the first major one in the form of BrahMos, a joint venture with Russia in the private sector, with production by Indian private firms, as the first step towards internationalisation. Similar endeavours are planned with Israeli companies and European groups like EADS. It is a unique effort to sustain the existent production base, and at the same time gain technological advantage and market gains through internationalisation.

¹¹⁵ Indian Defence programmes have always witnessed active involvement of the private sector. More than 200 small scale and large firms involve in various activities of defence production and development under the banner of the Defence Research and Development Organisation (DRDO), the nodal research body. Besides, the Indian Air Force (IAF) runs a network of Base Repair Depots (BRDs) across the country meant for maintenance and upgradation of the IAF's aging fleet. In an interview with the author, the IAF Chief Air Chief Marshal S Krishnasamy has talked on the need to involve more private participation in this BRD network and work for more private capital in the industry. (See J.C. Malik & A. Vinod Kumar, "We Believe in Qualitative Relationships, not Power Projections", *Vayu Aerospace Review* - II/2004, New Delhi, 2004, pp. 18-22.). A consortium of five private firms reportedly produces the BrahMos supersonic cruise missile for BrahMos Aerospace, a private initiative between India and Russia. IAI of Israel jointly markets ALH with HAL.

Further, there are other burgeoning bases coming up in South Korea, Italy, Argentina, Norway, the Czech Republic, Canada, Australia and many others, all of which have used core competencies to convert into gains in defence sector or use the same merits in the defence industry to benefit the civilian sector. The global defence industry might have contracted, but at the same time have structured itself into corporate entities with new approaches to market forces, and new means to enhance their market shares.

Retrospection:

The 1990s were a decade of profound change and restructuring in the defence industry in most parts of the world. This was highlighted by (a) significant downsizing of the industry; (b) faster concentration in the very top layer of the defence industry; (c) a significant amount of diversification and conversion to civilian production; (d) propensity to rely on exports to compensate for the loss of domestic sale; (e) the increasing impact of globalisation on the defence industry creating cross border mergers, joint ventures, collaborative production, distribution and even development, thereby creating a transnational defence industrial complex not aligned to any particular war doctrine. Many methods of restructuring have been evolved from within national systems and without, including concentration, privatisation and internationalisation.

The most dominant in the early years of restructuring was concentration in ownership and production, which have involved large-scale mergers and acquisition and huge joint ventures for special types or broad categories of weapon systems, within national economies. This was aimed at consolidating the domestic industrial bases; reduce the number of players in each segment due to the constrained defence budgets and market shares, and construct well-equipped consortiums capable of increasing competitive global markets. Concentration has often marked for the top 10-20 largest defence companies in the world, with specialisation in specific weapon development programmes. This consolidation effort have drastically reduced the number of players

in all major industrial bases, thereby absorbing the shocks of a diminished arms market since end of Cold war. The formation of around five majors in US, BAE in UK and EADS in Europe were the largest embodiments of successful consolidation programmes.

Joint ventures have taken place at two different levels. One, the joint production ventures in a domestic defence industrial base, sharing core competencies in specific development programmes, and the other being the internationalisation part, where major defence firms of two or more countries join hands on a common development programme, with common doctrines or none at all. The Joint Strike Fighter developed by a consortium of US, UK and other European countries is a specific example of such an endeavour. Similar efforts were the Eurofighter Typhoon by a European consortium; the Indo-Russian development of BrahMos Supersonic Cruise Missile; the German-British-French-Italian MBDA for missile programmes. But the internationalisation bid in the context of the first tiers in Europe and US have a different dimension. It happens at three levels: among major defence firms in Europe; on the transatlantic level, and third the acquisitions on a minor producer to gain market share or export deals. While the examples of first two have been described, the third context has increasing relevance. Emergence of Western suppliers in South Africa and Central and Eastern European markets are a case in example.¹¹⁶

Privatisation, being another realm of activity, too has a multitude of dimensions in different contexts. Three major drivers of privatisation can be distinguished in the post-Cold War scenario.¹¹⁷ The first include the privatisation of major remaining state-owned defence firms in Western Europe nations like France, Italy and Spain, and Australia, in the first stage of measures for consolidation and internationalisation. The second involves the transition of former Central and Eastern European state of Soviet

¹¹⁶ The Boeing acquisition of major shares in Czech Aero Vodochody intended to make presence in the Czech market with its F/A-18 aircraft and bids to sell the latter's L-159 advanced jet trainer is one example. EADS and AVIA taking shares in Polish PZL Warszawa-Okecie, and European and American companies bidding for shares in South African arms firms are such examples.

¹¹⁷ Elisabeth Skons and Rienhilde Weidacher, "Arms Production", *SIPRI Year Book 2002: Armaments, Disarmament and International Security*, Oxford University Press, Oxford, 2002, p. 341.

legacy, shifting to a capitalist system with private ownership. The last involves the minor or upcoming arms producing countries like India, South Africa, Brazil, Israel, etc. which absorb private capital as a result of industrial offsets, expensive indigenisation programmes, greater technological pursuit or infuse private capital for expansion. Alongside such private initiatives are subsidiary areas of private involvement like outsourcing of military functions and services, production of sub-systems, maintenance, etc, which are almost recognised as normal processes in most of these countries. UK has enhanced this spirit with its outsourcing programmes like Private Finance Initiative (PFI), Public Private Partnership (PPP), etc. In the US, almost 60 percent of non-combat operations of the US armed forces are maintained by various private contractors.

Even before the end of Cold War, the global military sector had started a high-profile attempt to restructure in terms of disarmament and arms control through the process of conversion – by converting the mass production bases of military hardware to mass bases for civilian production of spin-offs. Genuine conversion implied a change in the socio-economic conditions that makes arms production a lucrative business, transferring the gains to the civilian sector, a disposal of redundant weapon systems or converting the same technology or parts for civilian use, civilian use of military infrastructure, reintegration of military personnel and labour into civilian economy, and switching research labs and design bureaux to civilian use.¹¹⁸ But without any proper funding process or sustained governmental initiatives in most countries, the whole affair turned damp squib.

While many left it to market forces to complete the conversion, they instead, restructured and sustained their arms production bases. The actual level of social transformation never happened with reluctant workforces refusing to abide to a civilian set up, military infrastructure proving redundant in many cases for lack of any civilian spin-off or usage. Besides no genuine democratic promotional system for conversion, there was no combined global effort for the same, as nation state strived to maintain

¹¹⁸ Michael Renner, *Economic Adjustments After the Cold War*, Dartmouth, Hampshire, 1992, p. 17.

their defence industrial bases, fearing labour disenchantment, security rationales, and the lure of market forces for the restructured defence industry. The industry, on its part, concentrated, consolidated, rationalised and trans-nationalised to recover from the tardy transition and opted out of conversion measures to sustain its own bases.

Richard Bitzinger points to lure among nations to produce rather than import, citing myths of self-sufficiency and promotion of technology as two addictions to manufacture. An ardent supporter of the first-tier defence industrial complex, Bitzinger pinpoints on the Learning Curve, describing the production idiosyncrasy of second-tiers, who incrementally climb the production ladder based on earlier success, covering the high start up costs suffered, and finally reaches a wall which they have no energy left to climb. Snubbing the second-tier for hitting this wall and not recouping despite all forms of restructuring, he says, the future defence industry will be small and concentrated and more globally integrated. His message is the *Hub and Spoke Model*¹¹⁹ – a stratified, hierarchical system in which the Hub, made up of first-tiers, will produce niche and low tech products and sub contract it to the spoke, made up of second- and third-tiers. A clear hit against third world indigenisation and evangeliser for the global majors, this is the kind of industry he predicts for future, but only if the others fail in their bid.

¹¹⁹ *Problems and Prospects Facing Arms Producing States in 21st Century*, Rapporteur's Report, December 15, 2000, Council on Foreign Relations – http://www.cfr.org/public/armstrade/ArmsTrade_12-15-00_RapReport.html

Chapter – III

Emerging New Trends in Defence Industry

“The End of Military Fordism” is how a study by the United Nations University described the restructuring of the global military sector.¹ Truly so, the Fordist era, symbolised by mass production, consumption and massive state intervention, has given way to a new period of economic resurgence although still influenced by capitalist systems, but this time more and more by the free market elements propounded by the principles of globalisation. The same is applicable to the global defence industrial complex/base, which has graduated in transitions from Fordist model of defence production of World War era, to semi-Fordist methodology of a conflict-oriented Cold War period, to the present resurrected system of globalised production and distribution systems.

Through the description in the previous chapter, the study has detailed the immediate transitions in the defence industrial sector as a consequence of the post-Cold War transformations in the global polity. Desperate attempts to adapt to the transformed environment through conversions, diversification and reformations ended up in varying forms of restructuring and consolidation of the defence industrial complex. Even while attributing all such changes as dynamics of the transition phase, some where down the line, the overwhelming influence and impact of the forces of globalisation and free market forces always came forth to dominate in any theoretical understanding of all such metamorphoses. Simply so, this chapter attempts to discern the long term impact and consequences of globalisation on the far reaching transmogrification processes the defence industry went through in the last decades of the 20th century and the first decades of the 21st century.

¹ The book by the same name, published in 1998 and co-edited by Mary Kaldor, Ulrich Albrecht and Genevieve Schmeder, was a project on restructuring of the global military sector undertaken under the auspices of UNU World Institute for Development Economics Research. Ulrich Albrecht, Mary Kaldor and Schmeder, *The End of Military Fordism*, Pinter, London & Washington, 1998.

Even when the study affirms the absoluteness and totality of the irrevocable restructuring and consolidation process in sway in the complex, it needs to be known on how much and how far globalisation-oriented forces have influenced these processes in the contemporary period. While the transnational element can be undoubtedly attributed to the globalisation instinct, the effects of a cross-border influence on the existing state dynamics and its politico-economic dimensions are still vague areas of estimation. Globalisation, as emphasised throughout in this study, has been an evolutionary process since industrial revolution with its capitalist outlook of trade and commerce.

The Cold War was a period of restraints and constraints for this phenomenon only to re-emerge in a new form of market-controlled free trade regime imposing a globalised production and trading system in the new political economy of 1990s. The key manifestation of globalisation in its present form has been the establishment of a comprehensive world market for goods and services, engulfing every stage of industry and trade from research and development to production and distribution.² Impact made by globalisation on the defence industry has seemingly been superfluous by nature, but visible subtly in identities. Globalisation drastically transformed the national security discourse when old models of corporate organisations and trading procedures gave way to a high dose of transnational integrated industrial trading structures transcending not just national borders, but also traditional notions of sovereignty and state control.

Free market forces hitting the global armament sector reaped the immediate consequences on the defence industrial base hitting at its basic existing structure, which was already in transition, and assembled new corporate structures, models and drastic changes in the processes ranging from production to distribution. Issues of patterns of ownership, modes of production, new forms of collaborative arrangements, among others, springing up in various dimensions in the sector and the renewed trading patterns in the defence industry formed the construct of the free market dynamics

² n. 1, p. 3.

enacted here. When restructured, the kinds and levels of state contribution to capital outlay for the industry in the neo-market situation is another area where consensus still eludes for a generalised system. How states with stake in the defence industrial base had tackled problems of transition, restructuring and issues of losing share capital, re-investing or disinvesting form the current debate. Nevertheless, discerning the fullest impact of free market forces is no mean affair, and this humble assignation is an attempt on this count.

Certainly, the free-market economics and its frameworks have dominated the global economic system in its visible absolute forms and structures. But with its distinct character and behavioural complex, the global defence industry has an altogether distinct identity in comparison to the global political economy, and hence has a different approach or architecture when it comes to adapting to globalisation-run processes. Even when we talk about market forces and its ingredients like corporatisation, free-trade, intellectual property rights, and trade and tariff systems, it should be noted that the defence industry, in its turbulent revitalization process, has build up its own formal and informal models and framework for corporatisation and market systems, even while still struggling to create an absolute, overbearing fundamental structure of commercial participation. Thus, in the late 20th century and the early years of this decade, what we experience at first glance is a tormenting process of internal struggle where the defence industrial complex has indulged in a multifarious process of revival; attempts to create a new structure and framework of business modalities; and above all, create a distinct identity of its own.

Weapons as products have gone global, taking along the production systems which hitherto existed within national realms. Aiding the rapid consolidation created by the restructuring process, incentives to integrate and diversify across global markets have been steadily forthcoming, although in a conflictual mood, when the output is often centred on a handful of conglomerates.³ Exports have come to stay as an

³ Erik PAGES, *Responding to Defense Dependence*, Praeger, Westport, 1996, p. 12.

imminent component of defence commerce, even while governments as end consumers are striving to integrate and rationalise procurement strategies for defence equipment. Added, the defence corporate, their free market trysts, has been exploring umpteen ways and means to globalise capacity through mergers, co-production agreements and offset arrangements.⁴ Production has fanned out beyond political boundaries to places where local conditions are optimal and considerate for economies of scale. When Texas Instruments contracts their chip development assignments to India, BAE outsource Hawk production to South Africa, BAE and EADS combination share work on a next-generation aircraft, Eurofighter Typhoon, and BAE teams up with SAAB to market the latter's Gripen combat aircraft or for that matter, when two erstwhile socialist constituencies of India and Russia, register a private company, BrahMos, to develop the first ever supersonic cruise missile, undoubtedly globalisation of the defence industry presents itself on the centre stage -- churning on into a new dynamic shape, if not complete.

Globalisation brought to defence production its global re-orientation, and a more interconnectedness with trans-border technology centres in the process eliminating the nucleus status of the traditional arms production factors. The pragmatic slogans of the market-run industry call for 'slicing up of value chains' and propound key corporate notions of 'global costing, sourcing and pricing'.⁵ With military globalisation forming one of the contents of the globalisation syndrome, the emergence of a single global arms market becomes the likely end product of the globalisation-induced change. The change in the political map, although asymmetrical, is also strongly palpable – (i) Joint ventures involving Russian and American firms are today possible; (ii) Russian and Chinese firms still flaunt their indigenous, but archaic, technologies and infrastructure, but at the same time set their eyes on the global market; (iii) In Western Europe, national arms markets virtually disappeared and a feverish process of mergers and collaborations symbolise the desperate attempts to

⁴ Richard A. Bitzinger, "Globalisation in the Post Cold War Defence Industry", in Ann R. Markusen and Sean S. Costigan (eds.), *Arming the Future: A Defence Industry for the 21st Century*, Council on Foreign Relations Press, New York, 1999, p. 305.

⁵ n. 1, pp. 3-4.

create an integrated European defence industrial base, well before the European Union's political integration comes in place; (iv) An unprecedented multi-national industrial collaborative consortium enabled the teaming up of some European majors with US companies to develop the 5th generation Joint Strike Fighter (JSF) F-35 programme. Amidst such political realignments in the market place, the historical and institutional differences continue to create major impediments in enabling a complete globalised framework and structure for the defence industry.

Changing Scenario:

In the greater part of the 20th century, nations preferred to remain 'autarkic' (remaining largely self-sufficient in arms production). Free market principles were anathema to these sectors and the typical market factors like competition, efficiency, accountability and profits were not of any primacy concern.⁶ The state as customer defined military products and supported R&D in the institutionalised military industrial complexes.⁷ Large and complex state procurement establishments' defined technical needs and military requirements based on military doctrines, culminating in tailor-made weapons systems shaped by the national defence industry. In fact, the new globalised market had enforced a primary change in this relationship as new weapon systems in the global markets lacks strong doctrinal affinity to the customer and fits into any political space with immense options to be fine-tuned later by the end customer.

Globalisation undoubtedly imparted a challenge to the autarkic power of states as constrained defence budgets, inadequate base markets and limited technological resources forced nation states to sacrifice national autonomy in favour of interdependence in arms development and production.⁸ The result was the enhancement of collective capabilities in defence production, growing inclination for co-production

⁶ n. 4.

⁷ Keith Hayward, "The Globalisation of Defence Industries", *Survival* Vol.42 (2), summer 2000, p. 115.

⁸ *Ibid*, p. 118.

and development programmes and a compulsive need to look overseas to sustain own industrial base, and also for access to newer markets. The compulsions of technological innovations and manufacturing efficiency to survive in a new world of contingencies compounded the need to adapt to these transformations. Inevitably, when nations had to restructure their economic systems and principles to withstand the free market challenge, the defence industrial base took the track to restructuring and consolidation as means to their own survival and also to catch up with the requirements of market systems.

Globalisation, undeniably, was the vehicle of opportunities, for growth and sustenance. Nevertheless, the defence industry's transition exhibited an extraordinary behaviour by the mid-1990s when the results of these transformations were yet to be fully pronounced. By then, the forces of globalisation had set the agenda for global economic activities. The latter half of 1990s were the gestation years in this new environment when the defence industry had to prove its sustainability as a new industrial block and at the same time set its own corporate architecture and framework for global trading. Even when the global corporate and the defence industry were feeling this globalisation pinch, the doctrinal and political pressures on the nation state were direct, with explicit challenges on their sovereignties, made acute by the political dilemmas over nature of existing controls on their own national political, economic and security systems.

With a precise observation, it can be affirmed that the dynamic consequences of globalisation on the defence industry besides being a dynamic churning process was also conflict in nature, between the economic power factor of the industry and the security- and development-oriented pressures on the state. Here, the classical defence versus development debate had graduated to a much more intricate syndrome of systemic complexities wherein the state resorts back to the security element as a means to sustain sovereign powers in an increasingly globalising political economy and challenge the market systems followed by the industry. Notions such as globally integrated multinational firms, non-physical space, and non-physical security are

challenging the older models of economic organisations, policies and defence of the nation." Governments increasingly lack the capacity to regulate the activities of these borderless economic and financial entities, resulting in a growing tension between older notions of sovereignty and the new requirements of competitiveness and innovation in the world economy.¹⁰

Even when governments struggle to assert their control over trade and technology flows in the name of national security, a consensus has evolved even in political circles that the "rules of the game" have changed with the globalisation of business and technology. The new environment had multifaceted dimensions on different defence industrial bases on either side of ownerships. In state-run industrial bases, the free market winds forced in bouts of *lassiez faire* pressures to explore the new market opportunities and adjust to lower military budgets, even when states make consistent attempts to sustain control. On the other side comprising the capitalist bloc, concerns rested on the future of the industrial base, technological and market competition, consolidation and export nightmares and levels to which state would lessen hold over private defence companies. Such woes point to the growing divergence of interests between corporate managers and policy makers. The process of consolidation, mergers and transnational cooperation leading to strategic alliances has forced the state to confine its choices between techno-nationalism and techno-globalism.¹¹

Technological movements like RMA and economic factors like *lassiez faire* have forced governments to dilemmatic extremes and constrained choices. As requirements of armed forces' modernisation confront with rising costs of R&D and arms production, the need to think on market resources for procurements and curtail domestic production brings them to the exterior of free market sources. Much of the

¹⁰ Denis Fred Simon (ed.), *Techno-Security in an Age of Globalization*, M.E. Sharpe: New York, 1997, p. xiii.

¹¹ *Ibid.*

¹¹ While the march of techno-globalism is the imperative ideology of the transnational corporations, the domestic pressures of real politick for governments decides the policies for techno-nationalism – simply put, the principles to decide on technology and trade between governments and corporate world.

globalisation processes occur below the threshold of government control thereby limiting their ability to either regulate the process, or keep tab over the flow of defence technologies, and in some cases, even abdication from any role in the defence industrial policy. This probably answers the frenzied intervention by governments in the consolidation and restructuring process as a precursor to the globalisation processes. The US government's bid to regulate mergers and acquisitions at the prime contractor level was one such case in example. The diffusion of technology at the defence industrial level, and smoothed by globalisation has multiple security dimensions, as feared by most advanced nations.

But with the market lanes engrossing into these bases, technology is no longer controllable on a strictly national basis.¹² Experts opine that it is high time nations like US define essential military capabilities as core assets so as to discrete dispersible technology from the strategic ones, while the bulk of military requirements can be procured from open-market sources.¹³ The core of national superiority in technology in the new context could depend on 'soft' skills and expertise, which can integrate, assimilate and be flexible with technology offered by global markets. But, unfortunately, the diffusion of technology is still anathema to the Western world despite globalisation aura spreading through and until such security inhibitions are removed the origins of a technology would continue to be an important variable. On the other hand, even when a exaltation prevails over the increasing product choices, the globalisation of supply chains and rise of technology above national identities have kind of perplexed doctrinal meanings for military systems and also defence policy making for the government.

Even so, as solutions for such problems are in short supply, the incentive to "go global" to ensure survival and viability of defence industrial assets becomes more attractive.¹⁴ Thus, along with ceasing control over key industrial assets and core technologies, the emergence of a transnational defence industrial base spell

¹² n. 7, p. 118.

¹³ Ibid

¹⁴ n. 4, p. 306.

implications for a vast arena of national security issues, including defence policies, weapons proliferation, security arrangements, and above all about its own future.¹⁵ According to Jacques Gansler, the American Under Secretary of Defence Acquisition, the unique challenge before states and defence industries is to expand globally, all the while still protecting the vital, military critical technologies.¹⁶ Truly so, despite anxieties among governments, a common consensus exists among the global community for the need to explore and exploit the opportunities created by the emergence of a transnational defence industrial and technological base, activated and manoeuvred by globalisation.

Globalisation of Defence Industry –Tangible Movement:

The globalisation of arms production, no doubt, has linked itself with the consolidation process taken up as transition from the Cold War economy. Despite different contextual classification, the influx of globalisation in the arms sector has coincided as an extension of the restructuring phase, with a thin line demarcating the two processes. Therefore, defining globalisation of the defence industry in this context would be to describe it as a shift from traditional, single-country patterns of weapons manufacturing in favour of “internationalising” the development, production and marketing of arms.¹⁷ Significantly, various modes of international arms cooperation, licensed production and collaborative programmes have existed since long, largely driven by strategic rationales.¹⁸ However, since the 1980s, the pace and scope of global arms collaboration have increased manifold. With the advent of globalisation through the 1990s, the means and methods of collaborative activities have not just become an

¹⁵ The US Defense Science Board report on defence industry globalisation of 1999 opined that “the concept of FDI in the defence sector is antithetical to traditional defence industrial base concepts”, *Globalisation and Security*, Defence Science Board, Office of the Undersecretary of Defence for Acquisition and Technology, Washington D.C., December 1999, p. 11.

¹⁶ Jacques Gansler, “Globalisation: Creating a New Trans-Atlantic Competitive Model”, in *The Globalisation of Defence Industries*, <http://www.sovereign-publications.com/images/WDS/Gansler.pdf>, p. 1.

¹⁷ n. 4, p.306.

¹⁸ The US aid to Israel on the Lavi fighter Jet; Taiwan license-producing US equipment or Russian combat jets manufactured in India.

integral part of defence production, but also imminent for the survival of the global defence industrial and technological base.

Tracking this transition to globalism, it is to be pointed out with precision that the conversion and restructuring processes of immediate post-Cold War was in fact a preferred and adaptable route to globalisation of the defence industry. The early 1990s was standing witness to a monolith Cold War-bred complex of technology, manpower and capital, which found itself gasping for life with steep cuts in procurement budgets.¹⁹ While smaller firms absorbed the shocks by weaning from defence dependency and moving to a civilian spin-off, the larger entities were caught in a flurry of mergers and divestitures as a result of consolidation and restructuring, and ending up competing for fractional defence budgets and invading competition. The need to re-deploy financial and physical assets, explore new and cost-effective production bases, and newer markets became imperatives. Although civil-military integration and conversion seemed to be better alternatives in the first bout of transition, the actual outcomes were not encouraging in many respects. Rapid downsizing, forced investment in civilian technology, lack of incremental support all led to a chaotic transition that gave no answers for the crises.

Optimisation through Diversification:

Conversion as a natural exercise of transition took a more positive turn in the form of diversification aimed at converting the existing research and industrial base capable enough to meet immediate and future defence needs in a cost-effective manner. Another objective was to transfer the organisational strength and technological know-how to alternate non-defence markets. But what happened throughout this period was policy confusion in US and European sectors where dual policy to encourage conversion and also consolidation at different levels created ground for uncertainty and uneven growth. Even as attempts at consolidation and restructuring choked the nascent

¹⁹ Michael Oden, Laura Wolf-Powers and Ann Markusen, "Post-Cold War Conversion", in Ann Markusen, Sean DiGiovanna and Michael C. Leary (eds.), *From Defense to Development*, Routledge, London & New York, 2003, p. 15.

conversion and diversification process to a larger extent, on the other hand, the shadow of regulations that befell on the latter stage of consolidation and mergers spelt uncertainty in this phase of transformation also in equal measure.²⁰

Unlike the smaller firms who successful dragged out from defence dependency to civilian and semi-military activities, the larger entities, neck deep in mergers and divestitures, left themselves boxed into flat defence markets, shorn of civilian prospects, leading to poor financial and technical performance and forced to pressurise on governments to increase defence budgets, liberalise export policies and anti-trust laws.²¹ The intensity and rapidity of shutdowns, downsizing and relocations at the large primes and the corresponding abandonment of any diversification experiments led to high levels of regionally concentrated worker displacements resulting in labour lockouts and related socio-economic implications.

Thus, even before globalisation touched the defence industrial base, the industry was in consistent conflict between processes of diversification and consolidation. While in the first phase diversification had common identifications with the conversion process, the second phase became a denominator for the growth plans of defence firms with a good chunk of them also sharing foothold on consolidation. At the outset itself, number of strategies remained for these defence companies gasping with falling contract revenue. They could easily choose from consolidation, or diversification into non-defence markets, or exiting altogether from defence. Theoretically, these three interspersing processes involved divestitures, diversification and mergers. While divestitures involved clear-cut detachment from the existing defence business and moving into non-defence areas, diversification included a dual corporate policy of maintaining hold in core defence competencies, but extend the technology and resources to civilian technologies so as to tap the growing markets in that segment. Finally, mergers logically derived from compulsion of a handful of players to share the reduced pie and yet ensure core competencies, are integrated

²⁰ Ibid, p. 20.

²¹ Ibid.

together into one entity so as to enable market extension, and growth. The strongest rationale for merger comes on grounds of efficiency if sufficient economies of scale cannot be achieved as a single operation.²²

From a different perspective, the rationale of all these complexities lie in the general theory that most of these larger entities were too specialised in defence and related technologies that it was either systemically difficult for them to diversify or rather the corporate conscience gave no willingness to exit their *raison de etre*. Besides the gargantuan structures, they maintained excess capacity to compete for future in such an intense manner that exiting from these structures virtually meant the abyss. In the turnaround period, each confronted strategic choices – re-deploy financial and physical assets, know-how and manpower into civilian areas; and stick to defence markets and enlarge their marketshares.²³ When civil-military integration was the encouraging theme for the diversification supporters, there was a strong group who sold defence assets and used core competencies to move into exclusive non-defence areas.

Firms like Raytheon, Rockwell and Hughes took a gradual step from civil-military integration to total civilian application by starting out to areas like aerospace, telecommunication markets and automotive projects. At the other end, defence majors like Boeing attempted maintaining a perfect balance between civilian and defence areas, though internal mobility practices that allowed personnel and resources to move between civilian and military projects.²⁴ Quite distinct from these groups were the “genuine” defence majors like Lockheed, which merged Martin Marietta and became the top US contractor; and BAE Systems which was a creation of British Aerospace and other European companies. These mergers with diverse portfolios of production and development not only reduced the total number of defence entities, but also created

²² Michael Oden, “Cashing In, Cashing Out, and Converting”, in Ann Markusen and Sean Costigan (eds.), *Arming the Future*, Council on Foreign Relations Press, New York, 1999, p. 81.

²³ n. 19, p. 18.

²⁴ Boeing, while sustaining domination over global civil aviation markets, attempted its bid in the JSF programme, failing which concentrated on F/A18, and then working on joint venture with Aero Vodochody on the L-159 advanced jet trainers.

scope for surviving defence majors to venture into and offer a wide range of defence related products and services. Besides enabling them to be active in more segments, it also helped them reduce R&D and production overheads, provided them the opportunity to integrate management and research functions across all these business segments.²⁵

While the European conglomerate EADS was a new model in the consolidation process, companies like Rolls Royce, Volvo, Raytheon, among others, either made total exit from defence, or continued to maintain balance between civil and defence competencies. From the government side, be it in US or Europe, the policy confusion was apparent throughout the transition. Market extension mergers in the U.S. were undertaken through amended incentive and reward system to sustain development capacity for new technologies and next-generation weapons. The newly diversified or consolidated companies were expected to maintain high profits on products contracts for one weapon in order to maintain capability to carry out new development programmes or keep less profitable production going in other defence segments, and help provide full capability for future force missions.

The new incentive system was born out of a policy directive that called for high levels of force readiness and extensive development and production capability, but notably, “within constrained military budgets”.²⁶ The central concern was on how to keep contractors active in each key weapons system, capable of producing current and new weapons with limited budgets. This spelt policy confusion in many ways, and further aggravated, like when the Clinton administration interfered to curtail mergers and foreign investment on many occasions – first, when the government encouragement to mergers virtually killed the conversion and diversification process, and second when consolidation was at a peak in the second half of 1990s, the

²⁵ EADS was one major example of this model managed successfully; creation of BAE, mergers of Lockheed and Northrop with other entities were other examples of this model.

²⁶ The 1992 Bottom-Up Review (BUR) shaped the US DoD policies towards the acquisition system and reshaping of defence industry.

government stepped in to prevent prospects of foreign investment and unnatural corporate take-overs.

Of the transition processes, diversification had been more typical and successful than is widely assumed. Mergers and consolidation in turn limited the migration of technology and know-how into high growth civilian areas. The transformation of large military industrial firms into more diversified high-tech organisations were arrested by the short shock of the merger era. It created an even more isolated, technologically sluggish and exorbitantly expensive industry. It has slowed down the product development process, reduced competition for new and upgraded systems, and segregation with non-defence technologies increased massively.²⁷ On the other hand, technology and product specialisation strongly conditioned the manner in which firms diversified into non-defence markets. A serious commitment to diversification carried high-risk commitment by the managements, considering the high barriers in place.²⁸

In the first instance, diversification happens only in closely related market, and hence the scope for defence majors to diversify was limited compared to other corporate areas. The complexities involved a religious devotion to strategies, re-organisation of corporate operations and a major commitment of resources to internal product development. In fact, studies suggest in most cases more success for companies who used internal product development as a means for diversification rather than through acquisition.²⁹ The key to successful diversification attempts has been the ability to integrate and reform systems and allocate more capital to product development and diversify. This also demanded development of new distribution and servicing networks considering the new capabilities to be promoted in newer markets. Also, entry into a new segment demanded serious commitment of internal funding and re-allocation of profits.

²⁷ n. 22, p. 102.

²⁸ Ibid, p. 87.

²⁹ David Ravenscroft and Fredrick Sherer, *Mergers, Sell-Offs, and Economic Efficiency*, Brookings Institution, Washington, 1988, p. 43.

At hindsight, more than the consolidating firms, it is the chunk of diversifying firms that have used their defence technology foundation for more growth in new high-flying segments. Consolidating firms were often seen stagnant in existing areas, with lesser commitment to future markets. When their backlogs stagnate, they shave off labour and capacity, and purchase another company. But in the later phase, the opportunities granted by globalisation and political events in the new decade changed much of this sluggishness into new vigour for the arms markets. In fact, when market systems gained ascendancy in the new state of affairs, the markets with systems integration capacity and technologies of defence companies were burgeoning. Also, diversifying defence companies also active in non-defence markets showed progressive growth patterns.

But eventually, the merger era virtually put an end to the conversion phase, although diversification exercises continued thankful to the neo-liberal models adapted by the defence industry. Later, when cross-fertilisation of talent and technology across civil-military linkages terminated, the merger champions diverted pressures on lobbying for higher exports, subsidies, budgets and more privatisation.³⁰ In fact, the predominant policies encouraging merger and consolidation pulled companies in opposite directions. Several potential diversifiers in US and Europe had to withstand severe fiscal and political pressure to sell off their defence units for the sake of consolidation.³¹ At the policy level, consolidation spelt a different dimension aimed at keeping contractors active in developing and producing current and new weapon systems. Despite the progress with dual-use technologies and procurement reforms, ultimately, merger and consolidation were seen as best means to cope with capability needs and limited budgets.³²

Nevertheless, equally valid is the proposition that aggressive and strategic federal policies for investment in civilian technologies, more incentives for diversification, and greater efforts to reorient the defence labour force would have

³⁰ n. 19, p. 20.

³¹ n. 22, p. 80.

³² Logic spelt by the Bottom-Up Review.

promoted a more integrated and dynamic industrial and technological base. On the other side, despite the robust efforts for conversion and diversification, it was also felt that massive diversification into civilian areas despite healthy initial results, would in the long run give negative consequences for the industry, probably throwing up a handful of large, debt-laden firms who remain heavily dependent upon defence markets and governmental budgets.

Sensing this, most majors remained glued to their core competencies in defence, and designed a game plan to offset the declines in domestic demand by searching for overseas markets in a rapid mode, bereft of policy constraints. As for the governmental viewpoint that consolidation was the only means to ensure survival of the defence industry, it was soon belied by the constrained choices when a handful of majors gave only a negligible product choice with high price tags, while depressing innovation.³³ The logic for encouraging consolidation was the feeling that political pressures for higher levels of defence spending would be reduced and would also create more efficiency. In turn, the rapid consolidation led to emergence of a “private arsenal system” run by a handful of large conglomerates and largely closed to international cooperation.³⁴

New Management Techniques:

Effective management against this trend demanded more government regulation of production and contracts as opposed to market dynamics. Instead, the resurgent military industrial complex supported the emergence of market forces to determine the ultimate structure of the defence industry, argued for loosening procurement

³³ When the JSF programme saved Lockheed and many other US firms from bankruptcy, Boeing relied on its civilian subsidiaries to ensure its sustenance, even while making frantic attempts to shore up its defence units by searching for global markets, and even getting into unproductive collaborations like in the Czech company Aero Vodochody. Similarly, BAE executives could sigh a relief recently only after the UK government agreed to grant orders for RAF, after foreign competitors threatened to derail BAE prospects even in home territory. In this case, RAF has cheaper choices from foreign sources, but found constrained by national interest.

³⁴ Erik Pages, “Defence Mergers”, in Ann Markusen and Sean Costigan (eds.), *Arming the Future*, Council on Foreign Relations Press, New York, 1999, p.208.

regulations and enforcing lesser instances of multiple competitors. The result was possibilities of rise in defence goods, potential loss of innovation and a chilling effect on international defence cooperation. In the policy perspective, choices were marginal considering that alternative to consolidation would be expensive subsidisation by governments. Although choices existed in the form of more regulation over pricing and production schedules, encouraging budget stability and subsidy for only new technological ideas, the influx of market forces gave more choices to the industry rather than the policy makers.

However, it seemed the restructuring process could not produce a viable and sustainable research and industrial base in a cost-effective manner and its model of mergers little helped rid the unneeded production capacity of Cold War relic. Naturally, the push to export was one answer to keep production lines “hot”, but still worked on the top side of economies of scale in the larger macro-economic dimension. Under such circumstances, globalising arms production turned out to be dual weapon for sustenance, as well as the key growth driver. Consolidation created the foundation for actual defence industrial globalisation with the creation of ‘national champions’ in Europe, a handful of large defence majors in the US, privatising erstwhile state-run gargantuan firms in Russia, all providing the roots for the Defence Multinational Corporation. We can identify five root classifications as rationale for globalisation of technology and R&D.³⁵ The falling defence budgets forced the creation of technological alliances across borders in order to reduce the R&D and production costs:

- (a) With government share in R&D depreciating, the corporate sector took the lead on a larger share of national R&D costs.
- (b) With defence research losing over the technological edge to the civilian spin-offs, the latter gained as driving force in many core areas.

³⁵ Jon Sigurdson, “Emerging Sources of Cooperation and Conflict in the International Technology Market”, in Denis Fred Simon, *Techno Security in an Age of Globalisation*, M.E. Sharpe, New York, 1997, p. 22.

- (c) The corporate take over of R&D and production and its systematic outsourcing to cheaper foreign production destinations.
- (d) Nations redefine R&D sources and attempt partnerships to develop certain technologies creating a strategic alliance.

Strategic alliances, be it at the corporate level or the government level, became dependable models for the long-term, fundamental shift towards a more globalised and integrated economic system. Mergers, acquisitions and joint ventures complete this cycle on the corporatisation side in the course of globalising. Many countries like Russia in a transformation mode, have not just created private entities out of existing gargantuan state-run units, but also kept scope and space for foreign investment in such firms.¹⁶ The new regimes of erstwhile socialist bloc abstains from sustaining capital-intensive, over-sized enterprises even while allowing foreign groups to reap the growth benefits of their liberalised markets. In the Russian case, this steady adaptation of globalisation trends is meant to put to use the advanced research infrastructure as platform for in-sourcing while giving many a Western competitor a run for their money - just one example of faster assimilation to globalisation.

The incentives from and for globalisation simply provided the benchmark for the industry to follow suit. The choice to operate freely in world markets with lesser accountability on national markets and the prospects of making better investment decisions based on market access and industry efficiency are clear allurements for globalising this sector.¹⁷ Consolidated defence prime majors simply derive the motivation to source from an international supply base offering a cost-effective production or distribution line, within the fundamentals of 'best price' and 'optimal delivery times'. The reduced cost of production runs in such a scenario provides the best economy of scale models. Another scale of enormity equally influential in the new context is the scale of market capture, a domineering element in globalisation-oriented industry. In the consolidation associated with globalisation, acquisition and integration have emerged as major tools for growth and market domination. Scale is vital in

¹⁶ Ibid, p. 33.

¹⁷ n. 7, pp. 116-118.

building capacity to bear the financial risks and enhancing greater political and public clout. Hence the integration process demands acquisition of companies with existing contracts or new possibilities.

However, when globalisation provides platform for new industrial energies to merge, it also provides the ambience for conflict out of competition as seen in the trans-Atlantic corporate confrontations. Unlike the scenario mentioned earlier of a private arsenal system, globalisation can also force governments to create artificial competition at prime contractor level and negate the significance of the latter when more transnational choices gives a strong hand to governments. When the globalised market begins to force corporate and government attention on core competencies, critical technologies, new managerial techniques and more dependence on conceptual development of complex products, a very different defence industrial structure is like to emerge in the near future.³⁸

In the new context of changes induced by RMA at the highest industrial structure, the tyranny of both large platforms (projects) and large corporations would lessen, and emergence of commercial technologies in order to drive down costs, and increase pace of technology insertion would rule the roost. Opening the markets not just enables creativity and facilitates accountability to the shareholders and customers, but also open the floodgates for a trend towards contractorisation. In chicken-neck competition, the element of after sales, upgrades and technology insertion gives the space for contractorisation to sub-level firms or smaller entities. In future, it is predicted that most of the defence services from training to logistics would go to the private contractor, whereby he comes creeping close to the battlefield.³⁹

At the real end of the spectrum, undoubtedly, the sole determinant to actual growth and effects of globalisation depends upon how governments decide upon the

³⁸ This would also mean a new kind of prime contractor structure, when the contractor is not necessarily the prime producer of the required system and therefore have the advantage of sourcing the same from the most cost-effective source.

³⁹ In fact, the trend is already strong in the US, where a considerable chunk of US Army's non-combat and semi-combat applications are out-sourced to a strong rung of defence contractors across the globe.

limits and extent of influence the markets can have on the industry in each national domain. The spectre of globalisation, after all, is often considered a direct challenge to the political organisation of the nation-state. Even limited forms of international restructuring efforts have invited questions about state funding for the process, asking how states benefit from an globally integrated defence market. Nevertheless, nations have increasingly accepted globalisation as an irreversible process in major facets of commerce. Like Jacques Gansler's statement depicting an archetypal government outlook towards globalisation when he says the new market oriented opportunities should serve both our mutual national security and industrial needs.⁴⁰

In principle, governments abiding to the neo-liberal economic ideals look at this new opportunity in the defence industry as an opportunity to balance between expanding globally while protecting critical military technologies. From a corporate point of view, John Weston, Chief Executive of BAE Systems, opines globalisation as a "fundamentally practical issue". He says: "We have to collaborate, partner, merge, rationalise and consolidate this industry in order to survive and succeed. At a time of shrinking markets (sic), we can bank on the year on year growth in our export business."⁴¹ In countries like US with strong defence industrial base, governmental policies have accommodated this market surge by invoking reforms in export regulations, anti-trust laws and arms control policies. Besides, strong trends on trans-continental cooperation have been mooted by such governments through agreements on export exemptions and streamlining licensing procedures for joint production and equity holdings.

Logic of Defence Industrial Globalisation:

The logic of defence industrial globalisation is simply motivated by the market logic propounded by economic liberalism. Its basic principle hinges on seeking profit – whether at home or abroad. Over the years, states have exerted control over various facets of cross-border economic activities. But, since historically defence industries

⁴⁰ n. 16.

⁴¹ John Weston, *Globalisation is a Business Imperative*, <http://www.sovereign-publications.com/images/WDS/Weston.pdf>, p. 1.

come up the state ambit, the latter have constrained the ability of defence industries to operate across national borders, through a variety of mechanisms. It is this clash of interests and controls that underline the existing dynamic of globalisation in the defence industry and the predicaments thrown up by the process. But, defence industries, like any other economic phenomena, would need to seek new markets, cut costs and sharing technology in a market economy. In a globalised world propelled by Information Technology (IT) and revolution in military affairs, it is increasingly difficult for countries or firms to pursue independent policies in the economic realm.

A country, which restricts its industries from expanding internationally runs the risk of losing future arms races, and could breed technological backwardness. The consolidation process in defence industrial bases, in one way, diverted the route to globalisation when firms motivated by the “big is beautiful” belief rushed to reap benefits from cost-saving off-the-shelf procurement approach of governments, predisposed towards foreign contractors for their procurement needs.⁴² Flowing with the stream, arms manufacturers are following the lead of other corporate counterparts and going global, pursuing transnational alliances and establishing design, production and market operations in cheaper locations abroad.

Nevertheless, there are powerful constraints limiting the extent to which globalisation of the defence industry can occur. And in all contexts, it is miles away to affirm that across the principal dimensions of economic globalisation, i.e, trade, investment and technology diffusion, defence industry would follow a faster and trendier road to globalisation like other fast-paced sectors. There are impediments in the form of concerns over national security that could force policy makers to increase military spending without regard for domestic economic issues.⁴³ Economic and political impediments to defence exports continue to restrict hyperactive trade in this segment. Another concern developing with cross-border investments often generates security concerns in host states. In the post 9/11 order, the heightened fear over

⁴² Adrian Kuah, *Globalisation and Singapore's Defence Industrial Base*, IDSS Commentaries, 3/2004, <http://www.ntu.edu.sg/idss/Perspective/IDSS032004.pdf>, p. 2.

⁴³ Ibid.

'leakage' of critical technologies to terrorist groups and nations harbouring them had strengthened many governments' resolve to maintain control over basic arms production capabilities. Added to that, advanced military-specific technologies have a high rate of public equity which enforces more reluctance to part with such technology, even if it is dual-use.

From a bird's eye view, what does globalisation of the defence industry look and feel like? The immediate and long-term facets and features of globalisation's consequences on the defence industry are varied:

- a) It primarily involves the permeation worldwide markets for the defence industry.
- b) Transnationalisation would the elementary character of the new industrial set up.
- c) Intense competition would be a hallmark of the new trading systems when markets are thrown up for all players in a local defence industrial base or market.
- d) As like other industrial sectors, finance and investment would be the key to the growth and sustenance of any markets in the globalised system.
- e) Tectonic shifts in the global labour markets, major labour displacements and its reallocation would symbolise its new socio-economic dimensions.

The new corporate objectives would be the unrelenting search for new markets, seeking newer hubs and bases that can give the best economies of scale in microeconomic analysis. The search engines of this era would be on the constant search for suppliers, outsourcing outfits and sub-contractors who can provide with the most competitive and lowest-cost components and skills. So too, in this cyclic process, many national bases, existing or newer ones, would prosper in an age of out-sourcing and sub-contracting. Another emphasis, with multiple manifestations would be the desperate rummage for locating R&D centres in nations where it is subsidised or cheaper than in home countries of the multinational firms. Ultimately, it is the unprecedented rise of market forces, networks and the apparent surfacing of a new

system of economic governance that transformed not just global corporate but also the global defence industrial base. The new system propounds newer theories of corporate and industrial organisation; newer capabilities, systems and tasks; and the ultimate integration of the national defence industrial base into the international defence industry. What were once military alliances shaping defence industrial relations, globalisation turned them into strategic corporate alliances between organisations – through joint ventures, value-added partnerships and industry consortia?⁴⁴

State versus Market Determinism:

When geo-political dynamics and relationships determined defence industrial strategy, the market-influx saw global corporate strategy shaping up even as forces of transnational competition continue to escalate and the ability to dominate market becomes a gargantuan task. Just like how foreign institutional investors dominate most stock markets, the technological strengths of foreign firms become increasingly prominent and technologies too expensive for a single firm to afford alone. Thereby, the intra-firm trade and inter-firm partnerships became the basis of competitive global strategy.⁴⁵ Also cross-border inter-firm arrangements offer companies the opportunity to expand their strategic options beyond existing capabilities and current product-market domains. Virtually all types of defence businesses are entering into alliances based on the belief that the technologies and skills required to develop new markets are beyond the technical and financial reach of any single firms and today complex global market demands a broader, network and team approach.⁴⁶

⁴⁴ Jeffrey C. Shuman and Anthony F. Buono, "The Impact of Strategic Alliances on Global Competition", Denis Fred Simon (ed.), *Techno-Security in an Age of Globalisation*, M.E. Sharpe, New York, 1997, p. 127.

⁴⁵ Ibid.

⁴⁶ If consolidation meant mergers, creating new conglomerates and large prime contractors, the market effects are primarily in the new development and production schedules and plans. If British companies joined together to form BAE and other European firms for EADS and many others in the US, today, it would be no surprise to find a BAE and Lockheed partnering in a JSF programme or a EADS and BAE partnering in Euro Fighter programme, which astonishingly would be competitor for JSF. Similarly, EADS and Russian aircraft manufacturers had joined hands on many transport and heavy aircraft programmes, not to forget the famous India-Russia private company that developed the world's first supersonic cruise missile – the BrahMos.

In the era of globalisation, markets have become the dominant actor taking over from the nation state vital roles in deciding or influencing policies. No wonder, defence policies of nations today have a great influence by the market forces and conditions – because ultimately, it is the markets, which decide the weapon and the customer, and certainly so the producer and developer. And to the state’s chagrin, what Cold War did to military budgets, today markets have taken over that task. John Lovering terms contemporary relationship between governments and defence companies as in a continuum.⁴⁷ In different countries, if one pole of the policy initiative lies with the defence companies, at the other, it lays with the government. In UK, if it is closest to the companies end, in countries like China, India, France and Japan it is at the government end, and in US, somewhere in the central position. In the blitzkrieg by market dynamics, defence industries in a good majority of countries have been privatised, or if not so, would have been or in the process of being directly subjected to market forces, somewhat symbolising ‘withdrawal of the state’.

Like earlier mentioned, Lovering affirms that fact that ‘marketisation’ and ‘privatisation’ has gripped the global defence industry and has even affected the organisation of the military, with private firms playing a growing role in all facets of military system.⁴⁸ But even when the arms production across the globe has been taken over by markets, the impact of this transformation is not as concrete as in other economic realms. In the new environment, the link between demand and supply as been more forged on ad hoc basis, effected through new forms of economic governance mentioned above in this text, and through the powerful network of producers and customers that transcends national boundaries. Even when governments increasingly loose hold over this network and their transactions, the question of ‘who is the enemy’ haunts frequently on the doctrinal side in the new system. One means adopted by companies to extinguish political risks arising from such questions is to embed in long-term defence programmes with contractual obligations involving international

⁴⁷ John Lovering, “Loose Cannons: Creating the Arms Industry of the Twenty-first Century”, in Mary Kaldor (ed.), *Global Insecurity*, Pinter, London & New York, 2000, p. 162.

⁴⁸ *Ibid.* p. 163.

collaborations, thereby “insulating them from the vicissitudes of changing political regimes and public audit (sic)”.⁴⁹

Explaining the evolution of globalisation, it can be noteworthy to the liberal trade system was synonymous with the MNC and their growth through multiple corporate methods for foreign business operations. In the defence industrial spectrum, they can be classified as (a) resource seekers – seeking physical resources, cheap labour or technology; (b) market seekers – seeking to sustain existing markets or develop new ones; (c) efficiency seekers – attempting rationalisation of the structure of established resource-based or market-seeking investment in order to obtain economies of scale; and (d) strategic asset seekers – aspiring to promote long-term international competitiveness⁵⁰. Equally remarkable is to ascertain the ways and means used by MNCs to enter newer defence markets. In most elementary cases, the easiest pattern is the path of export servicing and distribution, or to move ahead by creation of autonomous sales operations and licensing. A higher plane in this process would be the opportunity to involve in integrated assembly operations. The actual phase of total market involvement comes with collaborative, joint venture associations culminating in forms of strategic alliances.

What are the underlying benefits in the long run? In the post Cold War run, defence industries went through varying seasons and methods of restructuring. Erstwhile markets in the third world have aspired themselves to turn into competitive production centres, and many of them are demanding their pie in the production process by offset manufacturing arrangements, licensed production and technology transfers. Globalisation in this context does not merely imply the competitive arms market, foreign military aid or arms exports. Richard Bitzinger delineates five points as to why globalisation gives a different perspective to transform the defence industry:⁵¹

⁴⁹ Ibid.

⁵⁰ Keith Hayward, “The World Aerospace Industry”, in Philip Lawrence and Derek Braddon, (eds.) *Strategic Issues in European Aerospace*, Ashgate, Aldershot, 1999, pp. 6-7.

⁵¹ n. 4, pp. 309-310.

- a) Collaboration through multinational joint ventures permits the economic rationalisation of military R&D and allows sharing the R&D costs and risks and spreading it across various partners.
- b) By ensuring larger production runs to a wider arms market, producers can attain increased economies of scale. Production cooperation here makes the weapon more efficient and less expensive compared to such weapons produced separately.
- c) More efficiency can be attained in most cases if certain sections of the production are moved to cheaper and low-cost production centres in the developing world.
- d) If cooperation in military R&D is high, it can gain access to many innovative foreign technologies. Technology sharing through industrial globalisation permits shortcuts to developing more advanced weaponry.
- e) Globalisation can aid penetration of some unique markets that are closed to off-the-shelf arms sales. When more countries insisting on enhanced role in production and development, such cooperative arrangements would come as incentive of "price of admission" to that new market.

Thus, theorists of defence industry globalisation would be unhesitant in affirming that globalisation here is in fact the transnational extension of the consolidation process taking place within the industry. Military technology always transcended borders, and in Cold War years, it was through licensed production and co-production propounded by the "family-of-weapons" concept.⁵² But globalisation brought with an entire different character of such cooperation, this time controlled and run by markets, giving a quantum jump in quality, in place of the quantitative jump of pre-transition years. Globalisation has taken liberalism to the sub-systems level. Offsets have become one powerful tool in the arms market by which the buyer manufactures some of the subsystems for the particular weapon it is purchasing.⁵³ This has become not just another trading system in this process, but also enabled diffusion of technology to the buyer end. Adjunct to this trade is another burgeoning international commerce of dual-use subsystems, exploiting the opportunities provided by globalisation.

⁵² Examples of Cold War era co-production arrangements are the F-16 project involving US and four European nations of Belgium, Denmark, The Netherlands and Norway; the Anglo-Italian-German Tornado fighter jet; the Franco-German HOT/Milan anti-tank weapons and so on.

⁵³ n. 51.

Integration Blurring Distinctions:

On an optimistic note, it can also be affirmed with definiteness that the dividing line between defence industry and normal industry has thinned up considerably due to globalisation. One justification of this claim is to exclaim that when defence industries in erstwhile era was moulded in secrecy and away from public gaze, what you have today is an array of image-conscious, market-friendly corporations with no stigma to flaunt their weapon systems.⁵⁴ If this can be termed as process of 'normalisation' or assimilation', then the irreversible advent of the "Wall Street Factor" or rather financial investors into the industry represents one of the greatest embodiment of globalisation-induced change.⁵⁵ The fact that defence industry has attracted financial investment as a good investment prospect reflects the new political economy of the industry in globalisation era. The reconstructed defence industry has derived a new political and economic profile with ability to influence future customers and investors, thus showing a trend of market dynamics in control over the industry than governments.

The key to corporate survival being of expert knowledge, the restructuring has enabled defence industries to control the flow of information and influence ways of prospective buyers – implying that they have the drive to imagine future wars, likely technologies to counter future threats and create solutions thus converting national security appreciation as a private corporate asset in each constituency. In this context, the MIC has shaped into a corporate entity through a networking of governmental, industrial, research and development, and corporate actors. The ability to create jobs, develop technologies and generate export earnings complements this influence. The formation of quasi-autonomous corporate entities on a global scale, relatively isolated from governments, has transferred the ability of decision-making to the defence industry. Thereby, the industry is no longer agents of the government and this power is demonstrated by the industry's ability to influence government policy.

⁵⁴ n. 47, p. 170.

⁵⁵ Ibid.

The transformation has occurred and the key elements of growing role of finance capital, the influence of prime contractors over supply chains and the prospering integration of market and production systems all are part of this process. Globalisation process has expanded geographically from US and Europe to nations of erstwhile socialist bloc including Russia and China. Added up is its growth in the developing world where globalisation has served as means to establish and nurture defence industrial bases in countries in the third world. It is not just the growth and significance of new bases like Israel, Brazil, Japan, India and South Africa, among others, as pointers to this growth, but also the increasing instances of north-south cooperation in defence industrial development almost in the form of semi-industrial unions.

Collaborative programmes have been a boon for new industrial bases, emerging as reliable bases of sub-systems and sub-contracting, but also helped project their exclusive technological capabilities.⁵⁶ The implication for this change would mean that arms production no longer can be viewed in strict national terms and blurs the concept of "indigenous" weapon systems. Also arms trade is no longer merely trading in finished weapons systems. Instead, it is characterised as international commerce in military technology, production know-how and manufacturing. Last, but most critical in political terms, is the increased possibilities of arms proliferation by the mere unprecedented growth of defence industry and arms supply across the globe. Free market winds hitting the armament sector also have implications and new challenges for the Intellectual Property Rights (IPR) regime. Despite the invocation of neo-corporate models in the defence industry and the adherence to global trading procedures, it is still a far cry in implementing the principles of IPR and patents in development of the defence industry. In one sense, this can be attributed to reality that development of arms technologies still have a great influence by home governments

⁵⁶ In this list of nations with own competencies include Taiwan (Light Combat Aircraft), Brazil (trainer aircraft, executive jets and rocket launchers), South Africa (long-range artillery), Israel (avionics, main battle tanks and armoured vehicles). The level of cooperation shown by examples like: Israel licensing production of Gabriel missiles to Taiwan and South Africa; Israel cooperation with China on new fighter jet based on the cancelled Lavi programme; China and Pakistan collaborating on several weapons systems; India and Russian union on Medium Transport Aircraft, and so on.

and also the dominance of the Western, industrialised defence powers still exist in colossal forms in the defence industry, hence the lighter progress in this direction.

This being the general contours of the globalised defence industry, it can be affirmed that despite whatever inroads globalisation has made into the global arms market, the roots of transformation or consolidation holds tight to those economies in the US, Europe and Russia, which were the erstwhile bastions of defence industrial movements. In the new market economy of defence, companies in the North American and West European belt continue to dominate global arms trade in terms of development, production and marketing. A rejuvenated Russia, a burgeoning Israel and many third world bases might have come in competition to exploit the opportunities of the liberal world, but still have a long way to go. Even in the current ranking of top 100 defence companies, less than five non-American, non-European companies come in the top 20, this despite Russia grouping up its industry under the Rosoboronexport.⁵⁷

In the multi-fold structure that exists today, US as the dominant technological and industrial dominant actor continues to hold sway over the markets, accentuated by the process of mergers that created a handful of prime contractors topping the list even in world's top ten. The European challenge to the US is a largely successful attempt that has spelt trans-Atlantic rivalry. The EADS and BAE model were unique in globalisation business systems and with an array of consolidated firms, Europe puts up a picture of not just economic integration, but also more of defence industry integration largely due to market compulsions and also due to the explicit policy role played by the European Union.⁵⁸ To a particular extent, the future of European industry is greatly influenced by trans-Atlantic dynamics as it involves competition as well as

⁵⁷ "World Defence Industry Revenues - 2000", *Defense News*, 14 August 2000, pp. 17-18.

⁵⁸ Article 223 of the Rome Treaty (296 of Amsterdam Treaty) were legislations through which the EU attempted creating a EU defence industrial policy. Besides, EU published three major documents – The challenges facing the European defence-related industry; Implementing European Union strategy on defence-related industries, and Draft action plan for the defence-related industry. EU described 14 areas in which immediate EU action is necessary for assisting the arms industry. Also, the European Security and Defence Policy (ESDP) was another attempt by EU to consolidate its hold over security and the industry.

cooperation.⁵⁹ Russia is on a progressive path of reforms in the defence industrial sector with multi-character efforts including consolidation, privatisation, foreign investment and state-level integration attempts. Still flaunting a technological base equivalent to US, but beset with financial crises, the real challenge rests with technological development for future. Russia has opened up its avenues to joint ventures projects, mainly in aviation, and has offered its biggest USP as the destination for low-cost and credible research, development and design centre. Russian companies have already initiated joint ventures with European companies like Thales, Dassault, MBDA, Sagem and EADS for various projects ranging from avionics to developing fifth-generation fighters, UAVs and even executive jets.

Core versus Periphery:

Beyond this core exist the peripheral and threshold states dependent on this core, still trying to break free: Japan, a niche manufacturer with ambitious plans and largely dependent on the US and vice versa when critical sub-systems are at stake. China, a strategic investor in aerospace, naval infrastructure and missile systems, wants to break from the "Soviet" mould, and aspire to dominate in specialised areas within two decades. Israel, almost in the same mode, gasps for independence from American "suzerainty" over its technological base, and would attempt to carve its niche share in the global market through competencies in missile systems, artillery, avionics, UAVs and surveillance systems. Already, Israel is giving major players like Russia and some European companies a run for their money in many third world markets. In the last group comes the emerging defence economies like Brazil, South Africa, India, Korea and Taiwan – all of them involved with varying forms of restructuring, some into privatisation, some contending with semi-privatisation and others striving to consolidate within the state's control. The stigma to abhor autarky still persists in these bases and stimulation of the industry's development occurs from varying local dynamics. Still, some of them have attempted being aggressive players in niche areas,

⁵⁹ For an excellent survey on this, see Terrence Guay, *At Arm's Length*, Macmillan Press Ltd, London, 1998, pp. 74-100.

while some others commit themselves to defence modernisation with mixture of indigenous and collaborative programmes.

While EADS, BAE and the US mergers have dominated defence industry debate as unique and emulative models for the defence industry re-organisation, Russia had attempted two models, worth mentioning in an innovative context, that have impressions of the Western ones, but also distinct ones for the Russian systems and historicity. What Russia basically touches in these models are solutions for concerns arising out of intellectual property rights on its aerospace designs, considered its niche area, and the other being the levels of contribution of the state to the base capital of the defence industrial structures. Aerospace being a core activity of Russian MIC, the models are first aimed at this segment, later to be tried out in other areas. The Alyeshin Model, propounded by Boris Alyeshin, deputy prime minister responsible for the defence industry, had suggested establishment of a single national aviation entity, which he believes would eliminate domestic competition and enable a unitary technological chain for civil and military aircraft, bringing lower manufacturing expenses and a reduction in excessive manufacturing capacity while improving the climate for local and foreign capital.⁶⁰

The other model is mooted by Ilya Klebanov, another minister in the Putin cabinet, calls for two-stage integration of Russian aerospace enterprises into about 20 "common technology" holdings by 2004-5 and the follow-on creation of handful of larger mergers by 2007. Klebanov's military reconstruction plan calls for two entities – Ilyushin, Mil, Sukhoi and Yakovlev united in one merger and Kamov, RSK-MiG and Tupolev in another, so that competition in domestic markets remain. The Alyshein model based on EADS is aimed at lowering costs and increasing quality through standardisation and streamlining of commercial and military transport aircraft manufacture.⁶¹ The Russian attempts are noteworthy in efforts to create unique models of restructuring and globalising, even while using the good lessons learnt in the West.

⁶⁰ Vladimir Karnozov, "United Front", *Flight International*, 12-18 August 2003, pp. 29-31

⁶¹ Ibid.

Even while controlled competition forms one basis of these models, the need to integrate, cut costs and improve quality remains the rationale behind the new structures in a highly competitive market.

In fact, this fantasizing does not stop at such models; there are even debates on whether there would be a Russian-European aerospace industrial integration. There is also support for a Russian-Indian industrial union as an alternative to the Western domination over the industry. Since India takes a big chunk of orders from Russia and both have cooperated on the BrahMos cruise missile system, the significance to form such a union is being stressed. If formed, it could create another unique model of globalisation-oriented transformation in the defence industry. It could bring forth similar ramifications like what EADS did to the European industry. In fact, integration would likely become the key to future cooperation and sustenance of the industry when competition increases the market in an unprecedented mode.

Wrapping up the dialectics of globalisation and its impressions on the defence industry, a brief touch at the basics would clear the blur further. There are today three ways by which globalisation manifests itself - first, through the purchasing of weapons and taking part in the production of these weapons; second, through military cooperation packages covering trade, production and maintenance, and now, even joint military exercises;⁶² the other means is through cross-border joint ventures, and joint R&D projects. With globalisation, armaments cooperation comes down to level of technology and components even as defence firms forge global links beyond geographic scope to involve in collaborative ventures. These links have become critical for its survival and are likely to accelerate further in coming years.

⁶² This happens to be the latest US policy in framing its strategic relationships. It involves military packages and joint exercises and other levels of interaction. The latest being in the Indian case, when, after removing sanctions and gradually giving the green signal for liberalising arms transfers to India, US has engaged in multiple levels of military participation. US forces have engaged in various military exercises with Indian forces acquainting with each others' weapons and procedures, the latest one being the Cope 04 - the first ever Indo-US combat air exercises held at Gwalior in February 2004. For a detailed report and its strategic manifestations, see A. Vinod Kumar, "Eagles Over Gwalior", *Vayu Aerospace and Defence Review*, II/2004, pp. 14-17.

Chapter - IV

Rising Militarism and Globalised Defence Industry

"Many of today's conflicts are within states rather than between states. The end of the Cold War removed constraints that had inhibited conflict ...As a result, there has been a rash of wars within newly independent states, often of a religious or ethnic character and often involving unusual violence and cruelty.... even when inter-state wars have become infrequent."

-- Boutros Boutros-Ghali,
Former Secretary General of United Nations¹

Former Secretary-General of United Nations Boutros Boutros-Ghali remarked thus on the 50th anniversary of the UN in 1995. The anxious Secretary-General further talks about the growth of militias and 'armed civilians' with 'ill-defined chains of command', and 'combat authorities'. The obvious reference is to the growing number of conflict zones from the Balkans, across the African hemisphere to volatile Asian regions. What puzzled analysts of the period were the pains of definitions for these conflicts, which were constrained to local theatres, but had transnational socio-political manifestations and consequences. For the theorists, describing it as either a civil war or an international conflict seemed a hardened challenge in the face of growth of a new form of globalised violence or rather violence going global. For a global polity pecked on superpower conflict, this phenomenon seemed inexplicable.

Mary Kaldor attempted definition with her "new wars" theory, calling the violent upsurges in Eastern Europe, Africa and other zones as a new form of violence, different from the traditional inter-state, 'Clausewitzian' concepts of war, involving military budgets and planning.² Not to say that civil wars got a new facelift, but to affirm that if Rwanda, Bosnia and Chechnya projected this new form of violence, events after the 9/11 attack on US, subsequent war on terror et al discerned the actual

¹ Refer to Boutros-Ghali, *Supplement to an Agenda for Peace: Position Paper of the Secretary-General on the Occasion of the 50th Anniversary of UN, A/50/60, S/1995/1, New York, 21 August 1995.*

² Mary Kaldor, *Global Insecurity*, Pinter, London, 2000, p. 3.

picture of the nature and range of this new form of violence. Be it ethnic violence, clash of civilisations or raw terrorism, the nature of conflict has certainly changed once and for all.

No matter whatever rationales compete to answer the why and how of this transformation, the real pointers are the primacy and ascendancy of non-state actors on the scene, and the new form and amount of utilities gained by military force and military equipment by its ubiquitous presence across conflict zones. Why and how have military systems – till then a prerogative of nation-states – permeated among a wide range of groups from ‘unprivileged’ nation states to a whole range of non-state actors? The answer to these questions might lie in the dynamics of globalisation, the new global phenomenon which not just restructured socio-political systems globally, but also enabled a new form of militarism erupt in subtle and concrete forms in all areas touched by its grace.

When the earlier chapters of this study voluminously lectures on the positive influence of globalisation on the transformation of the global defence industrial complex, this chapter focuses on the detrimental effects of the same on the socio-economic and political fibre of nation-states and global society manifested in various forms of militarism. Suitably, the hypotheses propounded by this chapter is that the globalisation of the defence industry – symbolised by new forms of marketisation, transnationalisation and corporatisation – has enhanced the level of militarism in the social, economic and political spectrum of international relations, which this study would prefer to describe as “market militarism”.

The sudden termination of Cold War led to hopes of a new environment of sustainable peace and prosperity showcased by reduced military spending, arms control treaties, indiscriminative forms of justice and a world free from conflicts. Instead, what came up were new rationales for enhanced arms spending, a newly restructured defence industry with unregulated market access (and also dependence), evolution of violence through low intensity conflicts and state-led military operations other than

war. With a feverish technological impulse promoted by the revolution in military affairs, nations and militaries began to seek newer sources of funding ultimately leading to the pre-eminence of non-state actors, both as sources of arms trading and also end users for the same.

As illustrated in previous chapters, the defence industry in its impulsive post Cold-War evolution had taken refuge in a wave of restructuring processes to enable a coherent consolidation before embarking on globalising effort. If globalisation has done well to its survival, certainly, it tends not to escape the damaging trends created by the influx of globalised values on the political economy. Despite his high profile start based on free trade ideals, globalisation efforts confronted discomfiting eventualities when markets collapsed, financial anarchy prevailed, socio-economic disparities widened, leading subsequently to a global resistance against it. The opposition to this 'new world order' besides being opposed at forums from Seattle to Cancun, also took violent forms in the Zapatista movement and, if not delicate in appearance, also in the growth and power of non-state extremist groups like Al Qaeda, who saw in globalisation a standing embodiment of imperialism.¹

If this marks the general gross domestic discontentment against globalisation, its influence in the markets and trading systems is more identified with its sheer manipulation capabilities. True, it has helped the defence industry to survive and create a new framework for growth of the defence industry along with its deregulation. But when globalisation facilitated the spread of military systems and force to a greater audience outside the ambit of traditional national defence processes, then it became more apparent that it had an indiscernible militaristic face, this time, not on the trading side. In the non-military spectrum, the linkage between globalisation and militarism has been long established by above-mentioned set of symptoms. But, as for the effects on the defence industrial core and its socio-political periphery, it assumes variegated

¹ American writers have developed the propensity to identify the globalisation link in Islamic extremism. See John Micklethwait and Adrain Wooldridge, *A Future Perfect*, Crown Business, New York, 2000, p. 277.

manifestations. These growing instances of military globalisation are identified with newer concepts like informalisation and privatisation of military systems and warfare, and the new vigour for enhancing defence budgets, de-regulating defence markets, and if not still irrelevant, the re-surfacing of the Military Industrial Complex into a new form called “Military Corporate Complex”.⁴

Militarism and Globalisation

Globalisation as a multi-dimensional phenomenon while augmenting opportunities of growth also provided space for social fragmentation and conflict.⁵ Security and conflictual implications churn out of these circumstances when people are forced on by such interdependencies creating economic disparities, financial instabilities and social deprivation. Nation-states, themselves, are fighting a harder battle to regain sovereignty when many elements of national systems seem mortgaged to market forces. The dissensions in the global polity created new security threats and conflict zones aggravated by the technological impetus and movement of people. As a disequilibrium takes root, it gets tackled intermittently when increasing economic opportunities negate many of these dissensions, and at the other end, the multinational corporations, in order to derive maximum benefits from economies pressurise military forces and governments to assure political stability and security, which anti-globalisation theorists term as “re-colonisation” of the world.⁶

The militarisation of national security forces, human right violations, increasing tolerance of violence, et al, are ample factors for militarism to take root, further exasperated by the absence of a coherent political framework to absorb the fallouts of globalisation. The political vacuum created by the erosion of state structures gave the

⁴ Globalisation theorists like David Held and Anthony McGrew, among others, propound the theory of military globalisation, while Mary Kaldor and co. presents the theory of informalisation and new forms of privatisation.

⁵ Lynn E. Davis, *Globalisation's Security Implications*, Rand Issue Paper, 2003, www.rand.org/publications/ip/ip245.pdf, p.1.

⁶ See Barbara Lochbihler, *Militarism as a Facilitator of Globalisation*, Women's International League for Peace and Freedom, <http://www.wilpf.int.ch/economicjustice/lochbihler.htm>

autonomy for non-state and ethno-political actors to initiate the new state-less conflicts. These transnational elements not just privatised ways and means of warfare, but also provided the platform for arms proliferation in a political framework devoid of states' powers. A new combination of industrialised warfare, geo-political competition and new actors fuelled an unprecedented globalisation of military conflict and rivalry.

Natural logic, when every sphere of human life has globalised, why not military and conflicts? The new wars centred on politics of identities and ethnicities; with strategies of insurgency and counter-insurgency reworked, and, the theatre of such conflicts shifting to places with low local production and economic output, marginal state-aided developmental effort or even in places where presence of newer actors (read multinationals) led to social and economic instabilities. In its rush to create the space for markets, the forces of globalisation perpetuated vigour into a redundant arms trade thereby enabling privatisation of the trade, and also means of warfare and enabling a kind of trans-geographical spread of organised violence, no longer a state monopoly. The geo-governance of organised violence involves not just transnationalisation of erstwhile state-controlled systems into international security regimes, but also incorporates a process of "informalisation" and "privatisation" of warfare.⁷ This process of informalisation points to the globalisation of security regimes⁸ on a global scale as a means of spread of organised violence and imparting a pervading effect of military systems across borders.⁹ Models of collective defence, as propagated by NATO, and proclivity among regional blocs like EU and ASEAN to have security forces and systems point to such syndromes.¹⁰

Informalisation and privatisation of military forces are not just products of globalised security regimes, but also of the restructured military sector.¹¹ Privatisation of the military sector refers to the phenomenon of military services being offered to

⁷ David Held, Anthony Mc Grew, David Goldblatt and Jonathan Perraton, *Global Transformations*, Stanford University Press, Stanford, 1999, p. 124.

⁸ n.2, pp. 12-14.

⁹ n. 7.

¹⁰ Ibid.

¹¹ When we talk of restructuring of the arms industry, there also implicitly remains another angle to the process, involving restructuring of the military sector involving all other instruments of warfare.

private customers. Informalisation refers to the unofficial military sector develops comprising regular and irregular, self-financing private security forces operating outside the formal ambit of state controlled military sector.¹² If cut in military budgets were meant to demobilise military forces, instead it led to new avenues being opened through the informal routes. What happens to regular military forces when their purse strings are tightened? They should disarm, demobilise, or find new ways to sustain their economy, as the Pakistani military used to do for a long time.¹³ With the end of Cold War, armed forces sought new means to cover their budget deficit, even if it means illicit sources of resource-generation. With millions of soldiers and weapons lying without political control, entrepreneurship became a natural choice for these forces.

Amidst such redundancies, globalisation of conflict and military systems came in through massive proliferation of private militias and mercenaries, mostly run by former military men.¹⁴ The erstwhile Soviet region demonstrated this in its most damaging form when thousands of Soviet era soldiers joined mafias and secessionary groups spreading out to Balkans and other regions. While a good part went with private militias, organised under some charismatic personality, it was the mercenary forces that reaped gold in the conflicts of the transition. When the good elements landed up with legal security firms, the criminal bent became recruits to extremist and militant forces. This informalisation was paralleled by a complementary process of illegal arms trade burgeoning through the feeder supply of surplus weapons and military technology. Thus it was a dreaded combination thrown up by the transition – large number of demobilized and disgruntled soldiers, and readily available weapons without legal claimants – their cause furthered by a globalised arms market, an increasing disenchanting crowd and new conflict zones.

¹² n. 2.

¹³ Even during the Cold War and after, Pakistani Army was known for its corporate autonomy creating sources of its own fund, and when constrained takes over the governmental system through military coups.

¹⁴ Ulrich Albrecht, "The Changing Global Composition of Armed Forces and Military Technology", in Mary Kaldor, *Global Insecurity*, Pinter, New York & London, 2000, pp. 122 & 126.

In fact, militarism as a social character grew thanks largely to these factors, clearly discernable in conflicts in Africa and Balkans, and the large, invisible link created by the market forces. An investigation by the Centre for Public Integrity's International Consortium of Investigative Journalists into the business of war reports:

“Non-state actors have developed copious connections to intelligence services, multinational corporations, political figures and criminal syndicates in the United States, Western and Eastern Europe, Russia, Africa and the Middle East. Often, they work as proxies for national or corporate interests whose involvement is buried under layers of secrecy.”¹⁵

Private military companies, as they are known, allow governments to pursue policies in tough corners of the world with the distance and comfort of plausible deniability, says the CPI report.¹⁶ The investigation uncovered the existence of at least 90 private military companies that have operated in 110 countries worldwide, often providing services normally carried out by a national military force, including specialized skills in high-tech warfare, communications and signals intelligence and aerial surveillance, as well as logistical support, battlefield planning and training. They have been hired both by governments and multinational corporations to further their policies or protect their interests.¹⁷ The relics of superpower rivalry were replaced by a set of entrepreneurs, selling arms or military expertise and support, and companies, whose covert involvement often prolong conflict in some conflict zones. The dumping of such goods and services enabled non-state actors to fight wars on levels unimagined before.

The new inflow of entrepreneurship in security services was thus one major opportunity given by globalisation, whether in the legitimate side of providing services to government, or on the illegitimate by doubling up as mercenaries. As Geneva Convention outlaws mercenaries, the identity for such groups varies from being

¹⁵ The Business of War, Centre for Public Integrity, Washington, <http://www.thepubliceye.org/bow/report.aspx?aid=147>

¹⁶ Ibid.

¹⁷ Ibid.

security service providers to consultants and advisers.¹⁸ The arrival of mercenaries and private actors demonstrate the de-regulation of military force and the informal manner in which conduct of war is globalised. While Western analysts have repeatedly looked down on such groups in conflict zones in Africa and Eastern Europe, they tend to ignore the heavy input of commercialisation in their own hinterlands, especially the US, where a major chunk of military activity has been outsourced to private contractors, in the 'pretext' of cost-cuts and budgetary constraints.

Linda Robinson, in an article in *US News and World Report* talks about how a swarm of private contractors have 'bedevilled' the US armed forces, taking over virtually a major chunk of its logistics, training and technical support systems, besides giving background support in its operations in Afghanistan and Middle East.¹⁹ But, this being a no-conflict zone, and on the 'moral' side of global politics, such globalisation induced commercialised effects on majors military forces would attract little criticism by being in the good books of market forces. Back to the conflict zone, the supply side of Para-militias have attained a deadly element through their influence over illegal arms trade, which constitutes roughly 10 percent of total global trade, especially in small arms. A SIPRI report mentions that a major part of small arms transfer have been to conflict areas like Liberia, Sierra Leone, Congo, Rwanda, Macedonia, among others.²⁰

Although the Economic Community of Western African States (ECOWAS) had declared a moratorium on small arms and light weapons in 1998, the fact that a major chunk goes to non-state actors itself eclipses the actual figures of this trade from the weapons audit. Overlooking this process were the "dead arsenals" of Cold War, especially in the former Soviet republics. The presence of a Convention Forces in

¹⁸ *Executive Outcomes*, founded by former South African serviceman Lt Col Eeben Barlow, is one such globally active private military organisation, providing services ranging from military support, training programmes, logistics, and every other service provided by a regular military force. Its clients include African countries, mostly strife-torn like Algeria, Angola, Botswana, among others.

¹⁹ Linda Robinson, "America's Secret Armies", *US News and World Report*, November 4, 2002, pp. 38-44.

²⁰ Bjorn Hagelin, Pieter D. Wezeman, Siemon T. Wezeman and Nicholas Chipperfield, "International Arms Transfers", *SIPRI Year Book 2002: Armament, Disarmament and International Security*, Oxford University Press, Oxford, 2002, pp. 384-386.

Europe (CFE) Treaty streamlining reduction of arsenals set the pace for sale of surplus weapons.²¹ Even though clear-cut stipulations for sale and disposal of weapon systems existed by CFE Treaty, the over-capacity in post-Cold War defence industries and surpluses created a buyers' market when the "arms bazaar becomes a yard sale".²²

Notable is the fact that this arms inundation happened much before market forces set in. While this segment denotes the official, legitimate transfers, what actual propounded the militarism cause was the rise of mafias and arms smuggling networks based in Soviet republics, spreading a dragnet of arms be it to the Taliban in Afghanistan or fighting groups in Africa and Balkans.²³ According to the ICIJ investigation, these arms dealers conveniently crossed through worlds of arms trade, terrorism and organised crime, thus proving the dubious connections created by the defence industry de-regulation and commercialisation. Although a miniscule part of global arms trade, this illegal network proliferates small arms in a massive proportion, which finds its way in 90 percent of the conflicts since 1990.

The Market Link to Militarism

If we have sought to understand globalisation as establishment of a world market through product cycles and supply chains, the same applied to weapons systems also, not just for the markets, but also when the design and production of weapons are framed around the globe looking for cost-effective sources. The defence industry may still be facing instability, but nevertheless, the influx of globalisation and market processes has given it the vital breather to revive from the traumas of transition and gave a fresh new life amply demonstrated in the increasing weapons sales and consolidation, if not for the spiral in world military expenditure in the past few years. The increase in expenditure has taken place primarily in the Euro-Atlantic, NATO and erstwhile Warsaw Pact regions, while there was never a reduction in the developing

²¹ Treaty on Conventional Armed Forces in Europe, Paris 1990, Article VIII.

²² n. 14, pp. 121-122.

²³ One such mafia leader, Victor Bout, despite sought by many law enforcement agencies enjoyed pride of place and influence in Russian politics in those years and presides over the global illegal arms network. See n. 15.

world in the past many years.²⁴ In all such cases, the increase in military spending to this proportion for the first time after Cold War is attributed mainly to the driving economic and political forces – symbolised by new threats in the form of terrorism and the subsequent war on terror, and on the economic plank, the growth generated out of consolidation and restructuring of the defence industry constantly seeking out for newer markets.

When 9/11 attacks drove a high defence budgets in US and Europe, a high competitive defence industry has been confronting the technological challenge with newer product designs and joint ventures. So, if we are believe about a declining arms sector after the Cold War, that hypothesis would go wrong to see that globalisation and a series of market-friendly regimes, and a resurgent military industrial complex have ensured that the industry would well catch up with other growth sectors. Just as how the industry conceptualised a “world car” in the 1980s, the defence industry thinks of things like “world fighter plane” – be it the JSF, Eurofighter Typhoon or the F-16s, governments have recognised and supported multilateral production systems in the defence industry, even if it demanded loosening arms export regulations or cross-border equity holdings. Governments, in the past years, have repeatedly invoked the “national economic interest clause” support and enhance defence production and exports.²⁵

Even as late as 1999, the US government was easing out arms exports restrictions with notion that US can greatly benefit from “defence globalisation”. Despite concerns about proliferation, US had initiated high-intensity arms sales, even to hotbed areas like Middle East.²⁶ And to talk about internationalisation, governments when promoting consolidation tried to keep hold over their defence industrial bases,

²⁴ Elisabeth Skons, Evamaria Loose-Weintraub and Petter Stalenheim, “Military Expenditure”, *SIPRI Year Book 2002: Armament, Disarmament and International Security*, Oxford University Press, Oxford, 2002, pp. 231-233.

²⁵ US Presidential Decision Directive 34 of 1995, states that “one of the goals of US arms exports is to enhance the ability of US defence industrial base to sustain itself (sic) and maintain long-term military technological superiority.

²⁶ Tamar Gabelnick, *Spinning Out of Control: The Impact of Globalisation on the Conventional Arms Trade*: www.socialistfuture.org.uk/globaleconomy/The%20Issues/arms%20trade.htm or www.fas.org/faspir/v53n2a.htm

restrict foreign capital and all the while continue to subsidize defence industries in the name of new weapon system development. Despite massive job cut-backs, not just governments, but also leading financial institutions in US backed the consolidation and merger efforts of the defence industry enhancing its political value.

The WTO Fixture – An Uneven Playing Field

Globalisation has created a new relationship between governments on the one hand, and between corporations and military, which has ensured maintenance of corporate subsidies through virtually unlimited military spending. Unlike any other industrial segment, defence industrial gets pet-child treatment from government, and from even from the World Trade Organisation, the single-powerful body expected to regulate and streamline global free trading regimes. Laissez faire theories propound that the state should withhold from financing trading operations or subsidize corporate activities, maintaining a stonewall between state and economy. But economic globalisation and its financial architecture is structured more in favourable of a war economy, working on the basis of wealth generation and trade facilitation – implicitly stating that no amount of restrictions would constrain free trade.

The WTO system does this in its verbose sense – while eliminating obstacles of environments, health and labour standards through the General Agreement on Trade and Tariffs (GATT), the system has also ensured that massive research and export subsidies from governments be sustained for defence industries and are exempted from challenge under WTO rules.²⁷ While WTO allows countries to challenge each other's laws and regulations on labour, environment, human rights and consumer protection as "non-tariff trade barriers", it has exempted activities in the military sphere from such challenge with its all-powerful, but discreet, Article XXI of the GATT. Widely termed as the "Security Exception", the article says a country cannot be prevented from taking any action which:

²⁷ Report by the World Policy Institute's Arms Trade Resource Centre Updates, titled *The WTO and the Globalisation of the Arms Industry*, <http://www.worldpolicy.org/projects/arms/updates/12999.html>.

“It considers necessary for the protection of its essential security interests...relating to the traffic in arms, ammunition, and implements of war and such traffic in other goods... as is carried out directly for the purpose of supplying a military establishment (or) taken in time of war or other emergency in international relations”.²⁸

This exception argued during GATT negotiations, provides the blanket for military spending for any reason related to national security, thereby enabling governments to define for themselves their “essential security interests”, and also to invest in the military sector at leisure.²⁹ Taking this benefit to utmost use, developed countries have steered towards military production and trade, considering as national sovereignty prerogative, and manipulating the trade rules in their favour. In most cases, many developed countries have used the security exception to provide direct financial assistance to their domestic defence industry. In many cases of clear offset subsidies by governments and challenged at WTO, the verdict was manoeuvred using the exception to good use.³⁰

The logic sounds more pragmatic considering the fact that governments, restricted by WTO from protecting or promoting their industries on the global market, would end up expanding military spending and subsidies so as to ensure its sway over at least this strategic sector. Unfortunately, when this clause shields the war industry, communities and governments would have lost the right to condition their resources and investments to other economic activities to peace, social justice and human rights and instead spur military spending. A similar exception in the IMF structural adjustment programme provides states to have slashed government budgets on social areas and privatise government industries. But defence budgets are kept knots away off this hook, thereby allowing governments not only to subsidise the industry, curtail competition, but also to intervene as an when needed to enhance the competitive edge

²⁸ Steven Staples and Miriam Pemberton, “Security Exception & Arms Trade”, Policy Report, *Foreign Policy In Focus*, http://www.fpif.org/papers/globmil/index_body.html.

²⁹ Ibid.

³⁰ An example being in 1999 when some European majors contracted offsets to South Africa to strike a deal for major weapon systems, and landed up in WTO, but cleared up on the security exception.

of their own industrial base in the global market place. Even when wealthier nations benefit from such loopholes, and continue to maintain their defence industry their subsidies, the hypocrisy lies in their reluctance to allow the developing world to engage in any sort of protectionist policies, a feeling raging across the third world and used as weapon against globalisation.

Arms Control – Gone With the Wind

But the other side of the coin is as innovative. Globalisation, truly, has provided equal opportunity at many junctures. When globalisation has induced militarism through deregulation of weapons markets and privatisation of militaries, it has enabled the non-state actor to exploit these circumstances to their own vicious ends. Weapons can now end up anywhere; terrorists can raise funds in deregulated financial markets and unregulated black markets much more easier and faster; private armies can rival state militaries. But, what has remained un-tackled during all these hype and happening on restructured and rejuvenated defence industry and trade is the ominous threat of proliferation of weapons looming large and alongside the virtual demise of many arms control treaties. Ever since the present Republican dispensation came to power in the US in late 1990s, the future of arms control treaties and statutes remain in unpredictable ambivalence. While the previous regime under Bill Clinton has clear impetus on NPT and the Comprehensive Test Ban Treaty, besides pushing on with Fissile Materials Cut-off Treat, and global campaign against landmines, the George Bush Jr. led government had announced its intentions clear when the war cry was made for scrapping CTBT and setting the stage clear for a National Missile Defence (NMD) system.

The real functions of militarism and the globalised policy manifestations caught hold of popular fascination at this point. The resurgence of defence industry, the take over by market and corporate mechanisms, the return of the MIC while pointing to the militaristic ingredients of globalisation along with imperialistic magnificence of the sole superpower, also puts to light the other side of the horizon filled with illegal arms

trade, terrorist groups, massive proliferation of small arms, possibilities of weapons of mass destruction (WMD) ending up with terror groups, religious fundamentalism and so on. The inter-linking shades away from its subtler picture, and gets clearer and clearer. When the self-styled policeman of the world talks of NMD, rogue states and a resurgent defence industry and global arms trade, the logic of attack on an Islamic country in the name of WMD, with little proof to handle with, virtually meant a challenge to the Islamic world, which has already expressed its harder sentiments on 9/11.

A point to affirm at this juncture is that when markets permeated the defence industry and its products, flaunted militarism in the hands of powerful, it also ensured that these same tools of power, be it the markets and its ingredients or the politico-element of militarism, the other world identified as illegal and immoral has also made a way of life out of these same systems, again thanks to globalisation. Undoubtedly, the resurgence of the defence industrial complex spelt demise of non-proliferation and arms control systems. While Western scholars still remember to dialect on this element, their focus remains on the threats to the US and the developed world from the prospect of WMDs falling into hands of terrorists or 'rouge states', but certainly not the undercurrents in global politics from the proliferation of small arms, increasing military expenditures, conflict zones and dissensions created by the growing disparities in the social and economic realms.

This hypocrisy manifests in policy quests of the West and simply demonstrated the inability to understand the futility of building up missile defence shields when kamikazes fly up from within a territory to destroy its core. Nevertheless, the potential destructive capabilities of WMD in the hand of terrorists take up a few chapters in the annals of policy makers. The global spread of ideas and technologies has made it easier for states, and non-state actors, to not just lay their hands of the most sophisticated and deadly weapons, but also can obtain the know-how to develop newer ones. When administrations compete to liberalise export control and non-proliferation regimes, the

need for a new strategy to counter the possibilities of proliferation of weapons – WMD or even small arms, is still to be charted.

Unfortunately, the US, taking leadership at the moment, continues its nuclear obsession and talks about counter proliferation to combat WMD through “strengthened non-proliferation efforts” and phrases like “interdiction, deterrence and right to respond with overwhelming forces”.¹¹ Although some concrete initiatives have figured on the Biological Weapons Convention (derived by fear of biological attack on US), global concern refuses to shift to core areas of massive arms proliferation in the conflict zones, destructive small arms in the hands of terror groups or the empowerment of the private militias by the new found market enthusiasm in the arms trade. Without doubt, the defence industry restructuring and post-Cold War transitional dynamics have created an “uncontrolled live arsenal” that has supplied the animation to the non-state actor-led militarism in international politics today. With non-proliferation treaties virtually gone, or bothered on WMDs, this lighter, but more damaging side of arms proliferation remains unaddressed to.

Market Militarism – From MIC to MCC

Ever since this Eisenhower label gained validity, the Military Industry Complex (MIC) has grown in shape and power in the superpower race for supremacy. Despite fading for a meantime after demise of Cold War, the processes of globalisation give it a fresh life only this time with structural adjustment forcing a new corporate-like incarnation with a new character called the MCC – Military Corporate Complex. Even while the new industry moves through the pleasures of market forces, it had to consistently confront an uncomfortable question raised on its *raison d'être* – on who is the real enemy to rationale the sustenance of the industry?¹² For a change, the new non-state actors have filled up the vacuum for new threats, and the three-tired system finding its own logic for survival. But with supply far exceeding demand over

¹¹ n. 5, p. 2.

¹² John Lovering, *Loose Cannons: Creating the Arms Industry*, in Ann Markusen, *Global Insecurity*, Pinter, London & New York, 2000, p. 168.

constrained markets, who ultimately would be the end beneficiaries of market growth and enhanced military spending? Newer threats perception might have (re)defined the new 'enemy', but fails to justify a gargantuan global defence industrial complex.

In fact, even the present structure of over-crowded markets, and “toned-down” threat perceptions do not warrant substantive logic for most weapon programmes, be it the Joint Strike Fighter or missile defence systems, unless with some imperialistic tones. The technological opportunity thrown up by RMA deviates to the dual-use technological elements like IT and futuristic communication and surveillance systems with a strong civilian component. How then have the industry and its omnipotent guardian – the Military Industrial Complex (MIC)³³ - resurrected and managed to influence national defence and economic policies? As societies skew to welfare and development, the military as social institution represented by the MIC, have managed regained long lost glory through a return from the margins of what can be called a post-military society.³⁴

The core of the hypothesis argued here rests on the presumption that the MIC has re-attired, changed its structure and reappeared as a new politico-industrial force in nations with powerful defence industrial bases, continuing to exert control and influence over their policy-making machinery, be it in the US, Russia and other peripheral powers. In the aftermath of the new transformations, the traditional relationship between the military and the industry, epitomised by the MIC, has undergone a significant transition. The Cold War was unique in allowing industry managers, governments and military planners to plan, budget and implement industrial policies and programmes on a predictable and long-term basis.³⁵ The restructuring and structural adjustment replaced this system by a more flexible, short-term, commercial arrangement, more suited to market economics. As a consequence of such structural

³³ Military Industrial Complex is an axiom coined by US president Dwight Eisenhower in the early part of the Cold War after sensing the dubious influence of the industry, and its flag bearers on the governmental decision making capabilities regarding national security and defence policies “We must guard against the acquisition of unwarranted influence, whether sought or unsought, by the military-industrial complex,” Eisenhower said in his last speech as president in 1961.

³⁴ For reference to the term “post-military society”, see n. 7, p. 147.

³⁵ Ibid.

adjustments, the very nature of the MIC has reformed into a new character, with new roles for the corporate, new representations on the decision-making bodies, and also a complete revamping of the relations between the key stakeholders in the military-industrial-bureaucratic complex.

When corporatisation and transnationalisation dominates the industry, the MIC too has undertaken a structural change – one that can be termed as a Military Corporate Complex (MCC). The MIC during the Cold War manoeuvred all aspects of defence spending and influenced policies. The Star Wars programme, as being reported, was developed and planned by the MIC on which the US defence industry was expected to grow more than 200 percent at the expense of the US taxpayer. The new Republican dispensation led by George Bush Jr. was quick to announce the NMD treaty and decided on enhancing military spending to almost pre-1990 levels. A World Policy Institute report estimates that the Pentagon has added over \$8.3 billion to the 2002 and 2003 budgets for projects related to the New Triad, with at least \$33 billion in additional expenditures likely between 2004 and 2008.³⁶ ?

With the restructuring transforming the industry into a handful of large conglomerates, the old groups of MIC has come again into ascendancy, from the defence corporate, to the research laboratories, political groups, think tanks, and not to forget the bureaucracy, in powerful return to heydays, so much so that the Bush administration has been branded the “Lockheed Presidency”. The nuclear weapons complex remains extended, despite its redundancy and think tanks are researching means to sustain them. With the war on terror, homeland security apparatus has become a burgeoning growth area. But, above all this, the most striking embodiment of new influence of MIC/MCC is the way the corporate world has taken over the Bush administration in numerous ways.

Quite damaging is the fact that a handful of personalities from the corporate world have ended up handling major constitutional positions in the Bush

³⁶ See <http://www.worldpolicy.org/projects/arms/reports/reportaboutface.html#III>.

administration, starting from the Vice President Dick Cheney himself and followed by the Defence Secretary, Donald Rumsfeld, among others.³⁷ In fact, Rumsfeld had reportedly used corporate experience as criteria to decide upon senior positions in Pentagon and DoD. Dick Cheney had been the CEO of Halliburton, a leading defence contractor for the US army, which, along with another controversial firm, Bechtel, not just handle a major chunk of outsourced operations of US armed forces, but also took a sizable share in the spoils of Iraq invasion.³⁸ The Cheney-Halliburton story is the classic military-industrial revolving door tale. As Secretary of Defense under Bush I, Cheney had reportedly paid Brown and Root services \$3.9 million to report on how private companies could help the U.S. Army as Cheney cut hundreds of thousands of Army jobs.³⁹ Many from the Bush administration, including Cheney's wife, served in various capacities in Lockheed, assuming the rationale behind its irrevocable influence in the US government.⁴⁰

If Lockheed Martin, along with Heritage Foundation and many other semi-corporate think tanks were assumed to be the indiscernible power behind the Star Wars programme⁴¹, an encore has repeated in the NMD project, vigorously promoted by Lockheed and co. as a version of its Theatre High Altitude Area Defence system, THAAD for the US Army. The "Big Three" contractors—Boeing, Lockheed Martin, and Raytheon—stand to make billions more if a national missile defence system is actually deployed. So too a host of think-tanks like Centre for Security Policy and Heritage Foundation among others, who are heavily funded by leading defence contractors. While the Star Wars lobby continues to reshape and empower itself in multiple dimensions, a host of labs like Los Alamos, Livermore, and Sandia national labs, are reportedly still lobby hard for nuclear weapons programmes. Similarly, the kind of political donations given by these major defence companies to the Republican

³⁷ Ibid, The World Policy Institute review of major Bush appointees found that 32 major policy makers had significant financial ties to the arms industry prior to joining the administration.

³⁸ Lee Drutman and Charlie Cray, *Cheney, Halliburton and the Spoils of War*, <http://www.corpwatch.org/issues/PID.jsp?articleid=6288>.

³⁹ Ibid.

⁴⁰ Ibid, Also see Pratap Chatterjee, *Halliburton Makes a Killing on Iraq War*, 20 March 2003, <http://www.corpwatch.org/issues/PID.jsp?articleid=6008>

⁴¹ n. 36.

candidates with an eye of the missile defence and other projects.⁴² Post 9/11, and the war on terror is another breeding ground for the MCC, with Bush vowing to “win the war at any cost” and already over half-trillion dollars pumped in every year since 2001 on this war project.⁴³

Interestingly, when it comes to military spending, the tradition of the “iron triangle” - Congress, the Pentagon, and defence industries - joining to push costly weaponry is nothing new, even if it means redundant projects. Some notable ones include the F-22 Raptor fighter aircraft, B-1 bomber, V-22 Osprey tiltrotor aircraft, Crusader self-propelled artillery system, and Comanche helicopter.⁴⁴ The trinity’s influence on the US economy can be manifested by the \$123 billion proposed for the 2003 procurement, together with research and development on new weapons and the new homeland security doubling the figure to \$38 billion. Americans might still reminisce Eisenhower’s warning, but still can tolerate “Crony Capitalism”⁴⁵ promoted by the Bush administration proclaiming the power of the MIC/MCC.

For a change, Bush’s share for enhancing the militaristic spirit was intended for friends and corporate financiers, and for this measure, decisions like expanding the nuclear hit list and framing the rogue states list, high intimidation by lowering the nuclear threshold for American retaliation or authorizing development of lower-yield nuclear weapons for use against “targets capable of withstanding non-nuclear attack not just blow up non-proliferation treaties to the wind, but gives space for militarism to grow in the society from the powerful spectrum. No wonder, America, under his regime, witnessed the biggest attack on its territory after Pearl Harbour, and continued with its militarism with vengeance in Afghanistan and Iraq. Scholars are united in asserting that Islamic militarism grew out as response to US hegemony and the war on

⁴² Ibid.

⁴³ Brad Knickerbocker, “Return of the ‘military-industrial complex?’” *The Christian Science Monitor*, <http://www.csmonitor.com/2002/0213/p02s03-uspo.html>. Also see Dave Zweifel, “Corporations Cash in on War on Terror”, *Madison Capital Times*, May 21, 2002, <http://www.globalpolicy.org/wtc/analysis/2002/0521profits.htm>

⁴⁴ The decision to withdraw *Comanche* project was officially announced at the Asian Aerospace 2004. See Vayu Aerospace Review, II/2004, p. 45.

⁴⁵ For reference to the term “Crony Capitalism”, see n. 38.

terror has further strengthened the "*Clash of Civilisations*" theory. In fact, the War on Terror was the playing field of the US MIC. Their influence and discretion were exhibited on two fronts – first, a major chunk of post-Iraq reconstruction went to major US firms with stakes heavily indebted in the MIC. And second, the war discreetly displayed to the world how the US armed forces are virtually "manned" by the private sector. From subsidiary operations like logistics, transport, maintenance and depot services, the private contractor has "taken over" the US army to engage in security services for the US forces, providing diplomatic security (to Afghan President Karzai) evacuation, technical training and any other thing that does not fall under the purview of combat operations.⁴⁶

While western scholars debated on private armies proliferating in conflict zones, they tend to ignore a similar phenomenon in the US armed forces. In the Balkans, a set of private contractors (virtually 1 contractor for every 100 personnel), undertook everything from base construction to feeding troops to giving perimeter security, while in Liberia and Sierra Leone, they are engaged in logistics, security and aviation operations. If Western analysts considered this on the legitimate moral side, in contrast to the opposite in Africa and Balkans, then it should also be noted that most of the contractors sharing the Iraq pie or those supplying to US forces, including Boeing and Lockheed, had at many junctures been subjected to public scrutiny for excess outruns and graft in the contracts.⁴⁷

The fog of MIC influence is not restricted to US alone. In Europe, UK consortiums like BAE Systems, EADS, among others, constitute the national champions who unleash enormous influence over the decision-making bodies in respective governments. BAE's influence on the government was recently explicit through the Hawk deal for RAF, when the British MoD, despite having cheaper options was forced to take up HAWK AJT under severe political pressure. Similarly, BAE

⁴⁶ See n. 19, pp 38-43.

⁴⁷ See *Cutting Through Fog of War*, Center for Public Integrity, <http://www.publicintegrity.org/wow/report.aspx?aid=66>; also in Pratap Chatterjee, *Big Dig Yields Big Bucks*, April 24, 2003, <http://www.corpwatch.org/issues/PID.jsp?articleid=6549>.

faced graft charges for its alleged bribing of Czech officials for promoting the SAAB Gripen aircraft for the Czech Air Force against likely deal for Boeing-Aero Vodochody aircraft. Similarly, some European firms were put under the scanner for similar shady deals in South Africa, among others. As for the Russia MIC, the post Cold War Soviet version), much has happened in its resurgence through “legitimate” government means. Unlike the west, Russia still follows a great deal of governmental control on the defence industry, and the former itself had taken efforts to privatise the industry. And considering that the defence industry is a major economic feeder, the influence of MIC could not be negated in Russia.

On an expansive introspection, how has the link between globalisation, the defence industry and the element of militarism conjoined in its subtle palpable form? According to globalisation theorists, the emergence of world trade in arms, diffusion of military technologies and institutionalisation of global regimes over military affairs all point to a process of “Military Globalisation” and “Global Militarisation”⁴⁸ While the first refers to the process of military connectedness transcending the world’s major regions through military relations, networks and interactions, the latter points to the increased levels of total world military expenditures, armaments and armed forces.

In a post Cold War world, highly stratified by the presence of multiple tiers of arms producers and ranked military powers, and institutionalised by multilateral organizations, an arms dynamic complements the global integration of newly emerging military systems, doling out its own natural evolution of consequences and after-effects, primary among them being militarism.⁴⁹ In fact, the basis of the post Cold War arms dynamic is the revolutions in military technology and its global diffusion, through a hierarchical arms transfer and production system, resulting in most instances by an arms race, derived out of the security dilemma created by the dynamic.⁵⁰

⁴⁸ n. 7, p. 88.

⁴⁹ Arms dynamic is a concept propounded by Barry Buzan and refers to a qualitative and quantitative change in global military capabilities, mainly driven by military technological innovation. See n. 7, p. 103.

⁵⁰ Barry Buzan & Eric Herring, *The Arms Dynamic in World Politics*, Lynne Rienner, London, 1998, pp. 75-82.

Along with the intensity, extensity, stratification and expansion of military power and relations, the impact of technological innovation carried by the defence industry make it a formidable model for enhancing militarism and organized forms of violence.⁵¹ The systemic structure encompass a whole set of processes including foreign military presence, military diplomatic endeavours, alliance systems, arms trade, defence expenditure, and defence industrial linkages, among them, integrating and diffusing at various points in group or isolation, or through the clash of these process at various junctures – all together creating a real impetus of military globalisation, and probably the subsequent output in the form of militarism. As a matter of fact, military globalisation has unleashed new forces on the international spectrum, on many fronts – the war system, the arms dynamic process, and on geo-governance of organized violence. All these spectrums encumbered structural changes and effects, through a global process of change on the “global security dynamic” and also on the “global trading dynamic”.

⁵¹ n. 45.

Chapter – V

Conclusion

Studying the global defence industry is a passionate affair and paradoxical as well with its own sober moments. Considering that it stands as an embodiment of both war and peace. Besides, until recently, the global defence industry was among the largest employers in the world feeding millions of people across the globe. This has been an industry holding genesis ever since man initiated discoveries to ensure his survival and protection. All through evolution of human life, the defence industry has had various characters, structures and objectives. In the 20th century, the industry had a parallel path on par with other scientific and industrial innovations. The Great Wars gave a new meaning to this industrial sector, later finding a dominant place in world affairs during the Cold War. The end of Cold War virtually sounded doom for the industry. But such predictions proved unworthy as the whole of defence industrial base vigorously confronted the systemic challenges, recouped and restored its place in the global economic and industrial arena, and adjusted itself to the new challenges and opportunities given by the great idea of the century called globalisation.

The previous four chapters of this study made an assiduous attempt to explain this evolution, absorbing all its tone and tenor. The pivotal attempt was to describe the events that symbolised the transition of this industry in a new political economy and global order. Even as this description was undertaken narrating the major landmarks and transitional epochs which the defence industry went through in the second chapter, a honest attempt was made to explain the structural change happening in the industry, its attempt to restructure with the new industrial models and consolidate itself in the new environment. Taking through this course in the third chapter, the study aptly derived the link between the transformation processes in the defence industry and the globalisation process which had by then set the rules of economic relationships in a global free market regime. The scope and significance of this study in present day context derives from the vitality of this linkage when defence industries and its related

subsidiary industrial units are in a constant struggle to establish itself as a credible and sustainable industrial unit among its counterparts in the industrial community.

It can be affirmatively stated that the study had largely been successful in its primary task of identifying these trends in the post Cold War scenario. Similarly, tracing the transformations in the sector and the influence of globalisation in all these processes have also been sketched in detail. But the strenuous challenge was to propound a theoretical understanding of these transformations and processes so as to place it in the right context in the dialectic process. Largely, the evolution of the defence industrial complex in the new scenario has remained a neglected area in academic research other than some specialist works emanating from the West. Many nations in the second and third tier are yet to derive a comprehensive model they should adapt to integrate into the globalised market economy.

While the above mentioned areas mark the core of this research study, the vital complement to this volume comes from its hypothetical aspect which attempts to discern the negative aspects of influence on globalisation on the defence industrial base. The study has largely substantiated its argument that the globalisation of the defence industry has enhanced the level of militarism in international relations. Militarism itself is a concept that has had many different interpretations. Nevertheless, the attempt here was to discern the new mode of militarism created by a globalised defence industry which deals with fallouts of overemphasis on markets, corporatisation and the threats created by the emergence on the non-state actor in this realm. Certainly, the presence of the non-state actor and their role in the transformed global order forms core of this argument.

While negative implications of globalisation form part of strong contemporary discourse, this study manages to create this linkage with similar effects on the defence industry. Added, it also puts substance on the proposition that the omnipotent Military Industrial Complex has marked its return with new vigour, but this time integrating itself with the new environment and putting on a new market-oriented corporate attire

which can be termed as Military Corporate Complex. While arguing all these propositions, all the pointers lead to the new form of militarism that has reached the marketplace with the ascendancy and growing power of markets over the defence industry and nation-states as part of the globalisation models. The study has coined the term “market militarism” to put across its point in more lucid terms.

This being the general attempt of this study, it honestly touches only the superficial element of a giant industrial structure which can be segregated into hundreds of segments to be learnt threadbare to understand the dynamics of this industrial complex in true form. Being a general descriptive study, it can discern only the general characteristic contents of the defence industry and its overall dynamic processes. More in-depth research needs to be undertaken on each element of the industry to comprehend the actual effects of globalisation and the transformations in the industry – be it through individual case studies of specific industrial bases, or dissecting processes in segments like military aerospace or missile systems, and so on. Also the real impact of socio-economic manifestations would also mean looking at the implications of these changes on the human resource aspect of the industry, which unfortunately gets only a scant treatment in this study. Hence, this happens to be only a humble effort touching the tip of the iceberg. The industry is still moving on, with its constant struggle to consolidate, to adapt to the growing market systems. It desperately needs a framework and a reliable and credible structure.

Largely, the global defence industrial base is today an unstable place. Even at the end of 2003, despite market reforms and globalisation trends emerging stronger in the defence industries, the kind of stability is still not smoothly forthcoming. Slow process of reforms, antipathy towards globalisation from strong sections of global polity, the stigma attached with the defence industry, lack of a proper framework for new corporate structures, etc., are some of the issues that continue to disturb the defence industrial base in many ways. Despite all the goodwill and benevolence shown by national governments in the defence industry restructuring, at many levels, governments still confront the possibility of losing control over this industry, which

was once considered paramount to national security. On the other hand, governments in the developed world managed to strike an even balance with allowing defence industries to go global, but all the same keep a rein over its basic industrial structure, by still deciding on the weapon systems, continuing with the subsidies and interfering when needed to curtail or promote a particular transnational arms deal.¹

From the period of end of Cold War to the present, the defence industrial complex has travelled a long way, sifting through pangs of transition, conversion attempts, and an excruciating diversification and restructuring process, which in concrete terms, filtered the industry into the size and structure of the form seen today. Conversion was a near total failure with probably a mere 10 percent success rate attributed to this first phase of transition. But diversification gave positive signs, as it came hand-in-glove with restructuring efforts, and hence many firms while selling off their defence units, or re-investing in the civilian side, could forecast the benefits of investing in dual-use technologies. Nonetheless, the kind of impetus expected on dual-use technologies was below expectation as major weapons manufacturers kept hold on to their core competencies without bothering about investment in the civilian side. At the same time, there were many like Boeing, which had through acquisitions and cross-share holdings managed to keep its dominance intact even in the civilian sector. Many companies sold off their defence units to settle down on the civilian side, which had by then explored and developed high-growth potential areas in telecommunications, surveillance, networking and unconventional civilian areas like transport and even aviation.

In the end, the real process of transformations started with the advent of new market forces and a fleet of concomitant corporate and industrial structures. This coincided with the restructuring of the industry, during which the defence industry had realised the need to transcend borders, not just for finding newer markets, but also to

¹ Despite the US DIC being the most competitive in the world and the most ubiquitous, the US government continues to play a major role in the decision making, be it for new projects, funding or even foreign trade. In fact, the US government has come in to blockade sale of F-16s and other systems to many a country antagonistic to it or not in its good books. Similarly, the US government continues to decide the fate of defence trade with countries like China, India, Russia and to many in the Arab world.

identify cheaper sources of production, sub-systems, and even subsidised platforms for new research programmes. Marketisation – being the primary globalisation tool – brought with it possibilities of all such endeavours, and also initiated a new space for international collaborative ventures; joint development, production and marketing programmes; new resource centres, new supply chains, and above all an unregulated trading framework based on mutual understanding and cooperation. As mentioned above, the real framework still avoids fruition, but nevertheless, the industry has functioned itself on a tacit understanding of common trading and business structures, although a common defence industrial regulatory body is far from realisation.

The shift to marketisation has been enhanced competition, brought the defence industry to integrate with the global free trading mechanisms, created possibilities of financial markets to come into the sector, opened up opportunities for investment, even while enabling the destiny of products to be decided by markets. Although such innovations marked the new changes in the industry, the same factors caused friction within the state system, manifesting even in international security processes. States are still reluctant to loosen the noose over their defence industrial bases so much to the extent of being dominated and controlled by markets. Although, this level of confrontation has been treated as a feature of globalisation-induced change in the global industry and commerce, the case of defence industry with its strategic outlook and character has invited more concern than required. As a result, the conflict process between state and market has been demonstrated in this sector to a magnificent level in many instances.

Despite all such bad weather, the industry continue to blossom in its new incarnation, and the frantic search for markets, cheaper systems, and newer alliances have virtually redefined the international political economic and security framework. If you suddenly find Russian and European companies working together on a new aircraft programme or a Russian aircraft flying with an American powerplant, one ought to discern the ramifications of this change in the international arena. For once, in recent human history, weapon systems are being made without proper identification on to

whom it is intended for – either as end user customer, or even the enemy to be ameliorated with that weapon system. The doctrinal element in weapon systems has clearly given way to the market element. But, added up, this feature has also proven counter-productive to the industry, whose *raison d'être* is suddenly questioned on the basis of invisible threats and missing enemies.

As of today, the only force that nurtures the market-controlled defence industry is the massive opportunity given by the technological challenge. RMA, as a military imperative is the new vehicle of growth and sustenance, if not survival, for the new defence industrial complex. The technology imperative, seen as the future challenge and face of warfare, has become the new rationale for the defence industry. A similar impetus was provided by the War on Terror, deriving out of the rise of non-state actors on the horizon with the end of superpower bloc conflict in early 1990s. The new actors varying from range of terrorists, secessionary groups, militias, private armies and so on, has taken over the primary role of 'enemy' in threat perceptions of most nations today on the right side of ethnic identities. With the end of Cold War, new ethnic strife in new conflict zones like Balkans, Africa and Middle East, saw the surge of the non-state actor. With the change in world order after the 9/11 attacks, the focus of defence industry has suddenly turned to indoctrinate this new threat perception, even while proving that missile defence systems and fifth generation aircraft would tend not to attract human fantasy as big defence proportions.

In the surge of markets and neo-liberal industrial forces transcending markets, a systemic shift has occurred in international politics, largely framed by the trans-Atlantic rivalry between the US DIC and the European industry. Blame on the cut-teeth competition and constrained markets overflowing with supply exceeding demand and suppliers beyond market capacity. Following the trend in US on consolidation and restructuring, the Europeans too embarked on a similar process, but different in character, when the survival of the defence industrial base was at stake. Europe followed a new model, systemically different from the US, largely due to the common identities created as part of European integration process. Europe had created a trans-

national industrial model called the EADS, which integrated at one go a whole set of core competencies and whole group of erstwhile competitors into a single consortium good enough to emerge as market leader in all segments.² The EADS model projected a perfect example of economic integration. The fact that economic integration in other areas was amply adopted by the defence industry reflected on the success attained by the European Union on its regional integration efforts.

The trans-Atlantic split came to the fore, when both sides, at the peak of restructuring, had cocooned themselves from industrial cooperation between each other in the defence industrial area, as both viewed with suspicion the possibilities of surviving in a sector fast changing to a competitive industrial segment. Although NATO was a common bond, the EU decision to raise its own security force³ and cut-throat competition between US and European firms in many global defence markets led to the Europeans virtually thinking on the lines of an “industrial iron curtain”. But what clearly saved the day was the technological imperative for which the Europeans were still dependent on a larger extent on the US industry. With NATO expanding in Eastern Europe and possibilities of coalition security framework still holding fort, the EU stigma on US industry was largely uprooted. After the consolidation, Europe was left with a handful of defence majors in each country, with no new impetus to cope up with the technological imperative, while the US had shown a difference by working on many future projects. However, projects like Joint Strike Fighter (JSF) programmes largely enabled maintain the trans-oceanic link at least in some measure.

But clearly, the procurement process in Europe was in shambles with marginal choices for governments, and reluctance by US companies to bid in European markets, unless opened up to them in a bigger manner. Although, the US administration has come up with eased export laws and initiatives for special exemptions and common agreements, the blood continue to happen in major defence markets, where there is a

² The European Aeronautic, Defence and Space Company incorporates units handling all areas in defence, aerospace and aviation and encompass firms like Airbus, Alenia, Aerospatiale, MBDA, and many majors who had survived as competitors in Cold War era.

³ The European Security and Defence Policy (ESDP) provides the framework for independent thinking of a European framework, even while a European security force under EU seems a near possibility.

mutual sense of boycott and indignation. Even when many voices claim there exists no 'fortress Europe' or 'fortress US', the mutual sense of suspicion between the two continues to eclipse in the larger political framework also. The EU decision to formulate a European defence industrial policy exemplifies the frustration over dependence on American defence products and the need to achieve self-sufficiency before thinking about a defence force of its own. The root lies in the European thinking of US as threat to its local industrial base, and the high expectations embarked by the EU leadership to create an independent industrial base, without the US shadow, and in future challenge the latter. From the US perspective, if they continue to treat European counterparts as junior partners in the globalisation process, this would lead to US being frozen completely out of the European markets. Of course, the greatest effect of globalisation, thus, thanks to this industrial rivalry is to enable Europe to strive to carve a distinct identity of its own.

Despite all such undercurrents, the EU attempt to promote an integrated industrial policy is expected to continue even when the major element of EU-US relationships would be a mixed character of threat and lure of US markets. And inspite of EU directives, governments would continue to play a key role in defence spending and hence the larger prospect of re-uniting ties with US industrial base. In the near future, when technology would prove to be the real arbiter, the lure of US markets and demands of US technology might force up at least a piece-meal cooperation would hold the key between the two, although the competition for markets may continue to remain on a higher note.

When this forms one part of the spectrum, the other factors are reflected at the socio-political framework of globalisation induced world system. This study has dealt in detail the threats of proliferation and enhanced militarism in global polity. The mere fact that the industry has resurrected to new hopes of survival itself has denoted the demise of non-proliferation treaties, many of them lying in cold storage. The enhanced level of militarism seen through the war on terror, rise in Islamic fundamentalism, ethnic holocausts, and rising spirit for newer, but anachronistic, defence systems like

the NMD and future weapon programmes, on the overall predicts a gloom picture on the socio-political side of global life. Even when the fate of many a non-proliferation efforts and statues lie in ambivalence, the dreaded rise in proliferation of small arms and the increasing destruction it unleashes in conflict zones is a major cause of concern for global statesman. No treaties or laws seems to stem these endangered phenomena largely because the whole rung of non-state actors have taken centre-stage in present day conflict and international relations, so much so that no state have the ability to control them, and in many cases, the non-state groups have bred on their hostility against the state itself.

There is an urgent need for governments to shift focus from national security based on military power to one based on 'human security'. Basic necessities like food, health, education, environment and other social concerns remains to be addressed even when the race for arms and power continues unabated in the major civilised world. While the globalisation induced market forces and its complementary free trade regimes and mechanisms have argued and enforced end of subsidies in social sector in many third world nations, such market structures have failed to enforce the increasing number of subsidies being given to the arms sector by governments. This not just speaks of hypocrisy, but a deliberate impetus to promote militarism and military globalisation. Even as a corporate framework eludes the defence industry, also of concern on the socio-political side is the absence of a code of conduct or a regulatory framework for the defence industry, which would find lesser rationales other than the market rational to indulge in any sort of business mannerisms that would further endanger human life in this planet. While the diffusion of technology to civilian areas generates new vehicles of growth and development, technological impetus in precision-guided munitions and enhanced destructiveness of weapon systems have cultivated the paranoia further.

Globalisation is here to stay, be it for the general corporate sector or for the military industrial sector. Markets would continue to dominate the industry where weapons would tend to lose national identities. Nor would there be constraints for

national government to enlarge the ambit of procurement processes. The basic structure of the industry is expected to further evolve through an impending filtering process as and when the ratio between supply and demand slants heavily on the former. As in any industrial sector, markets would not nurture an industry with too many players. Hence, the industry would blossom further only under the aegis of a handful of majors, a set of small rung players relying on niche markets, and a third section dependent on the out-sourced pie from the first two. It would mean a restructuring of the tier-system and its possible realignment, depending on the economic and political conditions in the international circuit of each periodic interval.

Also, along with the 'Fortress Europe' and 'Fortress US', there is possibility of 'Fortress Asia' to develop as an emergent section of industrial powers from Japan, South Korea, China and India may dominate a major chunk in the future defence industry trade. Americanisation might continue in the near future considering the technological supremacy of this base, and despite attempts to break out, Europe and Asia might still be dependent on this industrial base. Nevertheless, there are possibilities of new shades of internationalisation on a state-to-state basis, when market controlled globalisation process runs into rough weather sometime. Also, there is strong trend of regionalisation of the defence industrial base, with possible embankment on the sector by regional groups. While all this happen, the MIC or MCC would continue to hold sway influencing weapon programmes and budgets. Probably in the near future, there would be pressure on these groups for more accountability and enforcing transparency in the defence industry, provided a regulatory mechanism comes into place. It is after all this framework that can guide the industry to productive and promising future.

Bibliography

Primary Sources

America's Dual-Use Technology Future: Are We Prepared? Hearing before the Subcommittee on Technology, Environment and Aviation of the Committee on Science, Space, and Technology. U.S. House of Representatives, May 17, 1994, U.S. Congress, Committee on Science, Space, and Technology U.S. Government Printing Office, Washington D.C., 1994.

British Strategic Defence Review, 1998; <http://www.mod.uk/issues/sdr/process.htm>.

Defence Restructuring Costs: Payment Regulations are Inconsistent with Legislation, General Accounting Office, GAO/NSAID-95-106, Washington D.C. <http://www.gao.gov/archive/1995/ns95106.pdf>.

FSX: Hearings Before the Committee on Science, Space, and Technology, U.S. House of Representatives, One Hundredth First Congress, first Sessions, April 6; May 11, U.S. Congress, Committee on Science, Space, and Technology, U.S. Government Printing Office, Washington D.C., 1989.

Globalisation and Security, US Defense Science Board Report on Defence Industry Globalisation, Defence Science Board, Office of the Undersecretary of Defence for Acquisition and Technology, Washington D.C., December 1999.

Quadrennial Review. 1997, US Department of Defense, Office of the Secretary of Defense and Joint Chiefs of Staff, September 1997, Washington D.C. <http://www.defenselink.mil/pubs/qdr2001.pdf>.

Supplement to an Agenda for Peace: Position Paper of the Secretary-General on the Occasion of the 50th Anniversary of UN, A/50/60, S/1995/1, New York, 21 August 1995, www.un.org/partners/civil_society/docs/d-peace.htm.

The Bottom-up Review, 1993, Department of Defense, Office of the Secretary of Defense and Joint Chiefs of Staff, September 1993, Washington D.C. http://www.pentagon.mil/news/Dec1996/n12131996_9612138.html.

The Proposed FSX Agreement with Japan: Hearings Before the Committee on Armed Services, House of Representatives, One Hundredth First Congress, first Sessions, May 4 and May 16 1989, U.S. Congress, House Committee on Armed Services, U.S. Government Printing Office, Washington D.C., 1990.

United States-Japan Nuclear Cooperation Agreement: Hearings Before the Committee on Foreign Affairs, House of Representatives, One Hundredth Congress, first and second Sessions, December 16, 1987 and March 2, 1988, U.S. Congress, House Committee on Foreign Affairs, U.S. Government Printing Office, Washington D.C., 1988.

Secondary Sources

Books

Andrew L. Ross (ed.), *The Political Economy of Defense*, Greenwood Press, New York, 1991.

Ann Markusen and Joel Yudken, *Dismantling the Cold War Economy*, Basic Books, New York, 1992.

Ann Markusen, Sean DiGiovanna and Michael C. Leary, *From Defense to Development*, Routledge, London & New York, 2003.

Ann R. Markusen and Sean S. Costigan (eds.), *Arming the Future: A Defence Industry for the 21st Century*, Council on Foreign Relations Press, New York, 1999.

Anne G. Keatley (ed.), *Technological Frontiers and Foreign Relations*, National Academy Press, Washington D.C., 1985.

B. Ramesh Babu (ed.), *Globalisation and the South Asian State*, South Asian Publishers, New Delhi, 1998.

Barry Buzan & Eric Herring, *The Arms Dynamic in World Politics*, Lynne Rienner, London, 1998.

Barry Buzan, *An Introduction to Strategic Studies: Military Technology and International Relations*, St. Martin's Press, New York, 1987.

Barry Buzan, *The Global Arms Dynamic*, Oxford University Press, New York, 1987.

C. R. Neu and Charles Wolf, Jr., *The Economic Dimension of National Security*, Rand, Santa Monica, 1994.

David C. Mowery and Nathan Rosenberg, *Technology and the Pursuit of Economic Growth*, Cambridge University Press, Cambridge, 1989.

David Held (ed.), *A Globalising World? Culture, Economics, Politics*, Routledge, London & New York, 2000.

David Held and Anthony McGrew, David Goldblatt and Jonathan Perraton, *Global Transformations – Politics, Economics and culture*, Stanford University Press, Stanford, 1999.

David Ravinscroft and Fredrick Sherer, *Mergers, Sell-Offs, and Economic Efficiency*, Brookings Institution, Washington, 1988.

Denis Fred Simon (ed.), *Techno-Security in an Age of Globalization*, M.E. Sharpe, New York, 1997.

Edward P. Haley (ed.), *Nuclear Strategy, Arms Control, and the Future*, Westview Press, Boulder, 1985.

Erik Pages, *Responding to Defense Dependence*, Praeger, Westport, 1996.

- Ethan B. Kapstein (ed.), *Global Arms Production: Policy Dilemmas for the 1990s*, University Press of America, Lanham, 1992.
- Ethan B. Kapstein, *The Political Economy of National Security: a Global Perspective*, University of South Carolina Press, Columbia, 1992.
- Franklin D Margiotta and Ralph Sanders (eds.), *Technology, Strategy and National Security*, National Defense University Press, Washington D.C., 1985.
- Fredric Jameson and Masao Miyoshi (eds.), *The Cultures of Globalisation*, Duke University Press, Durham and London, 1998.
- George Modelski and William R. Thompson, *Leading Sectors and World Powers: The Coevolution of Global Politics and Economics*, University of South Carolina Press, Columbia, 1996.
- Gregory A. Bischak (ed.), *Toward a Peace Economy in the United States: Essays on Military Industry, Disarmament and Economic Conversion*, St. Martin's Press, New York, 1991.
- Hans van Zon, *The Political Economy of Independent Ukraine*, McMillan, London, 2000.
- Henry Wendt, *Global Embrace: Corporate Challenges in a Transnational World*, Harper Business, New York, 1993.
- Herbert Wulf (ed.), *Arms Industry Limited*, SIPRI, Oxford University Press, Oxford, 1993.
- Jacques Gansler, *Defence Conversion: Transforming the Arsenal of Democracy*, Mass, The MIT Press, Cambridge, 1995.
- Jacques S. Gansler, *Affording Defense*, The MIT Press, Cambridge, 1989.
- Jacques S. Gansler, *The Defense Industry*, The MIT Press, Cambridge, 1980.
- John A. Alic, *Beyond Spinoff: Military and Commercial Technologies in a Changing World*, Harvard Business School Press, Boston, 1992.
- John Micklethwait and Adrain Wooldridge, *A Future Perfect*, Crown Business, New York, 2000.
- John Triman (ed.), *The Militarization of High Technology*, Ballinger Publishing Company, Cambridge, 1984.
- Katz, James Everett, (ed.), *The Implications of Third World Military Industrialization: Sowing the Serpents Teeth*, Mass: Lexington Books, Lexington, 1986.
- Keith Krause, *Arms and the State: Patterns of Military Production and Trade*, Cambridge University Press, Cambridge, 1992.
- Kenichi Ohmae, *The Borderless World*, New York, Fontana 1990.
- Kwang-il Baek, Ronald McLaurin and Chung-in Moon (eds.), *The Dilemma of Third World Defense Industries: Supplier Control or Recipient Autonomy*, Westview Press, Boulder, 1989.

- L. Sklair, *Sociology of the Global system*, Hemel Hempstead, Harvester Wheatsheaf, 1991.
- Marek Thee, *Military Technology, Military Strategy, and the Arms Race*, St. Martin's Press, New York, 1986.
- Martin van Creveld, *Technology and War – From 2000 B.C. to the Present*, Free Press, New York, 1989.
- Mary Kaldor (ed.), *Global Insecurity*, Pinter, London & New York, 2000.
- Mary Kaldor, *New and Old Wars: Organised Violence in a Global Era*, Polity Press, Cambridge, 1999.
- Mary Kaldor, Ulrich Albrecht and Schmeder, *The End of Military Fordism*, Pinter, London and Washington, 1998.
- Matthew Evangelista, *Innovation and the Arms Race: How the U.S. and the Soviet Union Develop New Military Technologies*, Cornell University Press, Ithaca, 1988.
- Merritt Roe Smith, *Military Enterprise and technology Change: Perspectives on the American Enterprise*, MIT Press, Cambridge, 1985.
- Michael Renner, *Economic Adjustments After the Cold War*, Dartmouth: Hampshire, 1992.
- Nils Gleditsch (eds.), *The Peace Dividend*, Elsevier, Amsterdam, 1996.
- Paul P. Craig, *The Nuclear Arms Race: Technology and Society*, McGraw-Hill Publishers, New York, 1990.
- Philip Lawrence and Derek Braddon, (eds.) *Strategic Issues in European Aerospace*: Ashgate, Aldershot, 1999.
- Randall Forsberg (ed.), *The Arms Production Dilemma: Contraction and Restraint in the World Combat Aircraft Industry*, MIT: Cambridge, 1994.
- Reinhard Drife, *Arms Production in Japan: The Military Applications of Civilian Technology*, Westview Press, Boulder, 1986.
- Richard J. Samuels, *Rich Nation, Strong Army: National Security and the Technological Transformation of Japan*, Cornell University Press, Ithaca, 1994.
- Robert Gilpin, *The Challenge of Global Capitalism*: Princeton University Press, New Jersey, 2000.
- Robert L. Pfaltzgraff, Jr. (ed.), *Emerging Doctrines and Technologies: Implications for Global and Regional Political-Military Balances*, Lexington Books, Lexington, 1988.
- Ronald Aycock & Keith Neilson (eds.), *Man, Machines and War*, Wilfred Laurier University Press, Ontario, 1988.
- Sam C. Sarkesian (ed.), *The Military-Industrial Complex: A Reassessment*, SAGE Publications, Beverly Hills, 1972.
- Sean Lynn Jones (ed.), *The Cold War and After*, MIT Press, Cambridge, 1991.
- Srikanth Kondapalli, *China's Military*, Knowledge World, New Delhi, 1999.

Stephan Peter Rosen, *Winning the Next War: Innovation and the Modern Military*, Cornell University Press, Ithaca, 1991.

Steve Smith and John Baylis (eds.), *The Globalisation of World Politics*, Oxford University Press, New York, 1997.

Stuart W. Leslie, *The Cold War and American Science: The Military-Industrial-Academic Complex at MIT and Stanford*, Columbia University Press, New York, 1993.

Terrence R. Guay, *At Arm's Length*, Macmillan Press, London and New York, 1998.

Timothy Garden, *The Technology Trap: Science and the Military*, Brassey's Defense Publishers, London, 1989.

W.H. McNeill, *The Pursuit of Power: Technology, Armed Force and Society Since AD 1000*, University of Chicago Press, Chicago, 1982.

Wayne, Sandholtz, *The Highest Stakes: The Economic Foundations of the Next Security System*, Oxford University Press, New York, 1992.

Yudit Kiss, *The Defence Industry in East-Central Europe*, SIPRI, Oxford University Press, Oxford, 1997.

Journals and Magazines

A. Vinod Kumar and J.C. Malik, "We Believe in Qualitative Relationships, Not Power Projections", *Vayu Aerospace and Defence Review*, II/2004, New Delhi.

A. Vinod Kumar, "Eagles Over Gwalior", *Vayu Aerospace and Defence Review*, II/2004, New Delhi.

Amit Gupta, "The Indian Arms Industry – A Lumbering Giant?" *Asian Survey*, vol (30)9, September, 1990.

Andrew K. Hanami, "The Emerging Military-Industrial Relationship in Japan and the US Connection", *Asian Survey*, vol (23) 6, June 1993.

Anthony Vbelocci, "Ill-Defined US Defence priorities Making Industry a Gambler's Paradise", *Aviation Week and Space Technology*, June 1991.

Bates Gill, "Defence Industry: China's Arms Makers Struggle with Market Place", *Far Eastern Economic Review*, November 30, 1995.

"Chinese Defence Industry: The Chinese puzzle", *Jane's Defence Weekly* – 21 January 2004.

Farah Naaz, "Israel's Arms Industry", *Strategic Analysis*, vol XXIII (12), New Delhi, March 2000.

Gregory P. Coming, "U.S.-Japan Security Cooperation in the 1990s: The Promise of High-Tech Defense," *Asian Survey*, March 1989.

Jacques S. Gansler, "Transforming the US Defence Industrial Base", *Survival*, vol 35 (4), Winter, 1993.

- Jakkie Cilliers, "A Brave New South African Defence Industry?" *African Security Review*, 12 (4), 2003.
- Jeffrey Becker, "The Future of Atlantic Defence Procurement", *Defence Analysis*, vol 6 (1), 2000.
- John Ruggie, "International Regimes, Transactions and Change: Embedded Liberalisation in post war economic order", *International Organisation*, 36 (4), 1998.
- Julian Cooper, "Transforming Russia's Defence Industrial Base", *Survival*, vol 35 (4), 1993.
- Keith Hayward, "The Globalisation of Defence Industries", *Survival*, vol.42 (2), Summer 2000.
- Linda Robinson, "America's Secret Armies", *US News and World Report*, 4 November 2002.
- Peter Kien-hong Yu, "One Army, Two Systems", *Jane's Intelligence Review*, vol (5) 4, 1993.
- Ruchita Beri, "Transformation of Global Defence Industry", *Asian Strategic Review — 1995-96*, IDSA, New Delhi, 1996.
- Ruddar Datt, "Globalisation – Who are the Real Beneficiaries?" *Mainstream*, 12 July 1997.
- Swaran Singh, "Sino-Russian Techno-Military Cooperation", *Asian Strategic Review 1995-96*, IDSA, New Delhi, 1996.
- Terrence Guay and Robert Callum, "The Transformation and Future Prospects of Europe's Defence Industry", *International Affairs*, vol 78 (4), October 2002.
- Theodore H. Moran, "International Economics and National Security," *International Security*, 69(5), Winter, 1990/91.
- Theodore H. Moran, "The Globalization of America's Defense Industries: Managing the Threat of Foreign Dependence," *International Security*, 15(1), Summer, 1990
- Vladimir Karnozov, "United Front", *Flight International*, 12-18 August 2003.
- Walsh, J. Richard, "Technonationalism in U.S.-Japanese Security Relations: The FSX Controversy," *Armed Forces and Society*, 19(3), Spring, 1993.
- William R. Thompson and Karen A. Rasler, "Technological Innovation, Capability Positional Shifts, and Systemic War," *Journal of Conflict Resolution*, 35(3), September 1991.

Year Books and Research Papers

Jocelyn Mawdsley, *The EU, the State and Multinational Defence Firms: The Emerging European Political Economy of Defence and ESDP*, Paper prepared for British International Studies Association Annual Conference 2002, London, and published by Bonn International Centre for Conversion.

Richard Higgot & Simon Reich, *Globalisation and Sites of Conflict: Towards Definition and Taxonomy*, Centre for Study of Globalisation and Regionalisation (CGSR) working paper no: 01/98, University of Warwick, March 1998.

SIPRI Year Book 1992: Armaments, Disarmament and International Security, SIPRI, Oxford University Press, Oxford, 1992.

SIPRI Year Book 1993: Armaments, Disarmament and International Security, SIPRI, Oxford University Press, Oxford, 1993.

SIPRI Year Book 2001: Armaments, Disarmament and International Security, SIPRI, Oxford University Press, Oxford, 2001.

SIPRI Year Book 2003: Armaments, Disarmament and International Security, SIPRI, Oxford University Press, Oxford, 2003.

The Military Balance: 2000-2001, Oxford University Press, Oxford, 2000.

Websites

Adrian Kuah, *Globalisation and Singapore's Defence Industrial Base*, IDSS Commentaries, 3/2004, <http://www.ntu.edu.sg/idss/Perspective/IDSS032004.pdf>.

Barbara Lochbihler, *Militarism as a Facilitator of Globalisation*, Women's International League for Peace and Freedom, <http://www.wilpf.int.ch/economicjustice/lochbihler.htm>.

Brad Knickerbocker, "Return of the 'military-industrial complex'?" *The Christian Science Monitor*, <http://www.csmonitor.com/2002/0213/p02s03-uspo.html>.

Cutting Through Fog of War, Center for Public Integrity, <http://www.publicintegrity.org/wow/report.aspx?aid=66>.

Defense Restructuring and the Future of the U.S. Defense Industrial Base, A Report of the CSIS Senior Policy Panel on the U.S. Defense Industrial Base.

European Space and Defence Company Website - www.eads.com/frame/lang/en/1024/xml/content/OF00000000400004/6/03/31000036.html.

<http://www.corpwatch.org/issues/PID.jsp?articleid=6549>.

<http://www.csis.org/polmil/dibreport.html>.

International Chamber of Commerce Website - http://www.iccwbo.org/home/case_for_the_global_economy/globalization%20brief/globalization_brief.asp.

Jacques Gansler, *Globalisation: Creating a New Trans-Atlantic Competitive Model*, in *The Globalisation of Defence Industries*, <http://www.sovereign-publications.com/images/WDS/Gansler.pdf>.

John Weston, *Globalisation is a Business Imperative*, <http://www.sovereign-publications.com/images/WDS/Weston.pdf>.

John Weston, *Globalisation is a Business Imperative*, <http://www.sovereign-publications.com/images/WDS/Weston.pdf>.

Keith Hartley, *Arms Industry and the Globalisation Process*, Centre for Defence Economics, University of York published in www.york.ac.uk/depts/econ/rc/unesco.pdf.

Lee Drutman and Charlie Cray, *Cheney, Halliburton and the Spoils of War*, <http://www.corpwatch.org/issues/PID.jsp?articleid=6288>.

Lynn E. Davis, *Globalisation's Security Implications*, Rand Issue Paper: www.rand.org/publications/ip/ip245.pdf.

Military Industrial Overview, <http://www.fas.org/nuke/guide/russia/industry/overview.htm>.

Pratap Chatterjee, *Big Dig Yields Big Bucks*, April 24, 2003 www.socialistfuture.org.uk/globaleconomy/The%20Issues/arms%20trade.htm.

Problems and Prospects Facing Arms Producing States in 21st Century, Rapporteur's Report, December 15, 2000, Council on Foreign Relations, http://www.cfr.org/public/armstrade/ArmsTrade_12-15-00_RapReport.html.

Report by the World Policy Institute's Arms Trade Resource Centre Updates, titled *The WTO and the Globalisation of the Arms Industry*, <http://www.worldpolicy.org/projects/arms/updates/12999.html>.

Rosoboronexport Website - <http://www.rusarm.ru/comp.htm>.


Steven Staples and Miriam Pemberton, "Security Exception & Arms Trade, Policy Report", *Foreign Policy In Focus*, http://www.fpif.org/papers/globmil/index_body.html.

Tamar Gabelnick, *Spinning Out of Control: The Impact of Globalisation on the Conventional Arms Trade*:

The Business of War, Centre for Public Integrity: Washington, <http://www.thepubliceye.org/bow/report.aspx?aid=147>.

World Policy Website - <http://www.worldpolicy.org/projects/arms/reports/reportaboutface.html#III>.



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