ECONOMIC IMPACT OF DEFENCE INDUSTRIES

Knowns and Unknowns

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OVERVIEW

- Defence Economics Problem
- Measuring Defence Output
- KNOWNS: Size; structure; performance
- UNKNOWNS: Definitions; performance; inefficiency
- Case for State Support?
- Conclusion: Future of defence firm?

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DEFENCE ECONOMICS PROBLEM

- Defence budgets: falling or constant in real terms
- Defence equipment is COSTLY
- Unit costs of equipment are rising
- RESULTS:
  - Costly development
  - Smaller production runs
  - Smaller Armed Forces

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DEFENCE ECONOMICS PROBLEM Examples

Equipment	Unit Costs (£s)	Annual unit cost increases (%)
Nuclear submarine (attack)	1.5Bn	2.9
Aircraft carrier	2.6Bn	3.8
Tank (MBT)	4.6 Mn	5.9
Combat aircraft	81 Mn	5.8

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DEFENCE ECONOMICS PROBLEM More examples

- For aircraft and tanks, add Development Costs
- Examples of ratio of development to unit production costs:

  Combat aircraft: 100 x unit production cost

  Tanks: 250 x unit production cost

RESULT: By 2054, US defence budget buys only one aircraft. UK reaches same position in 2052 (Augustine)

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Measuring Defence Output

- What is output of defence and does it represent a worthwhile investment?
- Defence industries supply defence equipment as capital inputs into military production function.
- Typically, defence final output measured by its inputs (on basis that inputs equal outputs!).

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Measuring Defence Outputs

- ***Problem: We lack market prices showing society's valuation of defence output.***
- Instead, we refer to defence output in terms of peace, protection and security.
- ***Example:*** Defence aims to protect a nation's citizens and their assets: but how much are people willing to pay for such protection?

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Measuring Defence Outputs

- ***Measurement Solutions***:
- Focus on military capability; but we still lack market values of capabilities.
- Develop PALYS: Protection Adjusted Life Years based on QALYS for measuring health outputs.
- Voter Referendum on various sizes of defence budgets: does society prefer budget X, Y or Z?

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KNOWNS
What do we know?

- ***Data problems***: we have some limited data about size of some defence industries in some nations – eg aerospace industries; ASD Europe
- Good information on Industry Structure – SIPRI Top 100 Companies
- Some limited information on conduct and performance of defence firms – but lack of good quality economic case studies of projects

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UNKNOWNS
What we need to know?

- ***Definitions.***
- Simple case: All firms supplying LETHAL defence equipment to national defence ministry
- Next variant: All firms supplying goods/services to national defence ministry

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UKNOWNS

- *Definitions: Problems remain*
- Some firms might be key suppliers with no current sales to defence ministry – eg airlines/ shipping companies which provide transport services only in emergencies
- Often focus on *Prime* contractors to neglect of *SUPPLY CHAINS*

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UKNOWNS

- ***Assessing performance of defence firms.***
- Typical performance measures include labour productivity and profitability.
- Often major defence firms have both military and civil business – eg EADS/Airbus; Boeing; RR; Safran
- Often Company Reports only report data on productivity and profitability for whole company and not defence business

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UNKNOWNS

- ***Some exceptions*** where firms are defence specialists – eg BAE: 2012 data

Division	Profits on sales (%)	Labour Productivity) (£000s
Electronic Systems	14.2	192,846
Cyber/Intelligence	8.8	170,976
Platforms/Services USA	8.7	213,099
Platforms/Services UK	12.2	202,366
Platforms/Services International	10.2	262, 645
ALL BAE	10.6	202,200

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UNKNOWNS
Inefficiencies

- *Inefficiencies in European Defence Markets*
- *Lack of competitive EDEM characterised by:*

  Free entry and end of protectionism

  Privately-owned firms

  Free capital markets allowing mergers and takeovers

  Competitively-determined fixed price contracts

UNKNOWNS
Inefficiencies

- ***Inefficient Collaboration***
- Work-sharing not based on competition
- Bureaucratic procurement and management arrangements
- Number of partner nations often excessive (A400M)

UNKNOWNS
Inefficiencies

- **Improving efficiency of collaboration**
- Work-sharing based on competition
- Use of single prime contractor
- Use single procurement agency
- Restrict to two major partners: other nations as junior partners (cf JSF model).

CASE FOR STATE SUPPORT

- ***Governments dominate defence markets: major buyers***
- Why support national DIB?
- ***Military-strategic case***: security of supply; independence; design for national needs
- ***Economic case***: jobs; technology; spin-offs; exports/import-savings

CASE FOR STATE SUPPORT

- **Case needs to be assessed critically**
- *Opportunity cost question*: are there alternative means of achieving these objectives and at lower-cost?
- *Economic case*: are there major market failures in jobs, technology and foreign exchange markets?

CONCLUSION

- **The Future Defence Firm?**
- Does defence firm have a future? **Yes** in an uncertain and unsafe world
- What will future firm look like?
- Determinants:

  Size of defence budgets

  New technology

  New threats

CONCLUSION

- **Future Defence Firm of 2050 will be Different**
- It will be as different as today's defence firms are from those of 1945 and 1900
- 1945 firms: aircraft firms now aerospace firms; emergence of electronics, cyber, intelligence
- 1900 aircraft firms did not exist: eg Boeing; BAE; EADS/Airbus. Defence industry of land and surface warships.

CONCLUSION

- **Defence Firm of 2050 will be:**
- Global
- Buy rather than make: it will be a design house with manufacturing undertaken overseas
- Diversified with range of civil business providing insurance against defence cuts.
- An electronics/IT business

CONCLUSION

- **Problem of national monopolies**
- Allow competition from foreign firms
- OR Regulation of privately-owned national monopolies: case of BAE Systems
- Regulation problems: how do we determine efficiency and control profitability for regulated monopoly?