

**Technology and knowledge diffusion between civil and defence sectors
in France: an empirical study**

Syoum NEGASSI

negassi@wanadoo.fr

The military enterprise has historically had an important role to play in stimulating technological advance (McNeill, 1983, Smith, 1985). This phenomenon was particularly evident during and immediately after the Second World War, when the US military, as a sponsor of R&D and a consumer of high-technology products, became one of the most significant drivers of technological development in the world (Gummert, 1991). But on a dollars-per-dollar basis, defense R&D's impact on commercial technology is limited for a number of reasons (special in USA, France and UK): most of it is spent on the development of specific military system having limited commercial relevance; most of it is spent in companies or corporate divisions with limited opportunities to turn it to commercial advantage; and most of it is concentrated in a few industries of special importance to defence, notably aerospace and electronics. Another reason is that most R&D spending is salary payments for R&D workers, and the supply of this scientific and engineering talent is quite inelastic. When the government increases R&D spending through subsidies or by direct provision, a significant fraction of the increased spending goes directly into higher wages, an increase in the price rather than the quantity of inventive activity.

Historically, we have moved from the view that military science is an engine driving basic scientific and technological advances, to one in which the "basic science" aspect of military R&D is seen as less valuable, and that military R&D should be focussed on specific military needs. Also with the end of the Cold War and the sharp decline in the defence industry, the relationship between civil and defence technologies has become the subject of renewed interest. There is the movement of research towards extra-mural performance. Make-or-buy has had as one of its goals to reduce the amount of research done in-house and increase the amount contracted out. Indeed, the specific goal that some percentage of research be contracted out was announced i.e. civil firms are directly involved in military oriented R&D.