

# Output cost growth appropriation in the Norwegian Armed Forces

Kjetil Hatlebakk Hove

Norwegian Defence Research Establishment

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At least since the Rush–Bagot pact of 1817 and the first Hague conference in 1899, rising defence costs have caused widespread concern among governments and armed forces all over the world (Morrill, 1974; Dove, 2015). The Norwegian parliament introduced an annual appropriation in 2017 to account for output cost growth. This article explains what makes defence so special and discusses some issues associated with Norway's annual appropriation.

## Input and output cost growth

Since the 1960s, the Norwegian Armed Forces have received an annual appropriation to cover growth in input prices (economy-driven price growth). This appropriation is called the 'price and wage compensation'. Though specifics have not been made public, the price estimates on which the compensation is based are grounded in Statistics Norway's economy-wide MODAG macro model (an input–output based model used in short- and medium-term macroeconomic planning and policy analysis in Norway, see Cappelen, 1991), over which the Armed Forces themselves have no influence. Wage estimates are calculated based on wage growth in the general economy. The calculations take into account that the Norwegian Armed Forces have a distinct input factor mix. Historically, the price compensation has been slightly higher than consumer price inflation, whereas the wage compensation has been linked to general wage growth.

In order to deliver a constant production of peace and security, the Armed Forces have to maintain the quality of their equipment relative to that of potential adversaries. The cost growth deemed necessary to maintain a constant defence output is, at least to a certain extent, the result of the actions of potential adversaries and necessary responses of the Armed Forces. This is where defence differs from the rest of the public sector. A simple X-ray machine bought 20 years ago will show the same bone breaks and fractures as one bought today, but a 20-year-old fighter aircraft cannot avoid today's air defence systems and missiles. To maintain the relative effectiveness of weapons systems, defence budgets must increase by output unit cost growth (actor-driven cost growth).

## 2017: Appropriations for output cost growth

Following a new long-term plan (Ministry of Defence, 2016a), where output cost growth

was accounted for, a new appropriation was introduced in Norway in 2017. Seventy-seven million Norwegian Kroner (about US\$9.6 million) were appropriated for output cost growth in 2017 (Ministry of Defence, 2016b). This amounts to approximately 1% of the budget for goods and services operating costs in the Army, the Air Force, the Navy, the Coast Guard and the Home Guard (only operating costs are specified in the annual appropriation; actor-driven growth in investments are dealt with on a project basis). Over time, the annual cost growth is assumed to follow a trend. Therefore, the appropriation is set a priori to increase by a similar amount each year. The defence branches submit their substantiated calculations of actor-driven cost growth for the following year to the Defence Staff and the Ministry of Defence, who decide how much money to award.

## Challenges

There are some major challenges to providing an appropriation for output cost growth. As it was a political decision to introduce the appropriation, it would also be a political decision to remove the appropriation if the Armed Forces cannot show that they have a unique actor-driven cost growth or if the appropriation leads to unintended adverse effects. Finding a solution to these challenges is therefore very important.

*Distinguishing between economy-driven price growth and actor-driven cost growth* is more difficult in practice than in theory. Upgraded and more expensive ammunition could be caused by a mix of improved armour-piercing capacity and a price growth on the existing mix of raw materials. While improved armour-piercing falls within the relevant definition, the more expensive raw materials do not. More often than not, the Armed Forces will not have sufficient information to make the distinction.

*Distinguishing between those parts of the cost growth which are contributing to maintaining relative effect (actor-driven cost growth) and those which are increasing relative effect* is a further issue. For example, the current version of the F-16 fighter aircraft has a better set of capabilities than the F-16 version made in the mid-1980s, although its relative effect might be unchanged. An important role for the Defence Staff and the Ministry of Defence is therefore to provide a guidance as to which level of relative effect they want to maintain (for example the performance of a new weapon system, or the performance of a weapon system mid-way through its life time), and to promote a standardized and transparent reporting regime.

In *prioritizing between different needs*, an optimal question would perhaps be to ask the defence branches how much an increase in cost might require an adversary to also increase costs, and then prioritize needs based on a cost/benefit-ratio. This is, for obvious reasons, unattainable, as are other quantitative methods. Therefore, determining which cost increases are actor-driven is down to the experts within each branch of the Armed Forces, who are incentivized to categorize as many cost increases as possible as actor-driven. Since the only useful approach for prioritizing is qualitative, proper prioritization remains difficult.

*The incentives to improve efficiency could be reduced* as budgets increase each year. The challenge remains for the Ministry of Defence to require annual efficiency gains, while handing out new money. By allowing the defence branches to keep their own efficiency

savings, it is hoped that some of the potential adverse effects might be avoided.

*Incentives to think in terms of whole life costs could be reduced.* Acquisition decisions are made on the basis of life-cycle cost analyses. Intentionally underestimating future operating cost increases can increase the probability of acceptance of an acquisition project. If project planners hope the weapon system will receive a part of the appropriation in the future, this could lead to more intentional underestimating of future cost increases.

In short, the appropriation should be positive for the Armed Forces, as it provides them with a certain guaranteed funding for output cost growth. However, there are several potential pitfalls for the Defence Staff and Ministry of Defence to avoid in order to not being subject to adverse effects.

## References

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