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### **Youth Cohort Size and Military Force Structure: Evidence from European NATO Countries**

Faced with a deteriorating security environment and uncertainty over long-term U.S. commitments, European NATO members have sharply increased defense spending in recent years. At the same time, European birth rates have fallen to historic lows. While demography places a long-run constraint on a country's ability to mobilize forces, less understood is how the size of youth cohorts shapes the immediate cost and composition of military power.

I apply a labor-supply framework in which the size of the youth cohort determines the effective price of military manpower, and test its predictions using a panel of European NATO countries from 2014–2023, using NATO disaggregated defense spending data and World Bank demographic indicators.

Using country fixed-effects models with standard errors clustered at the country level, I find that larger youth cohorts are associated with significantly lower military spending per soldier and a lower equipment-to-personnel spending ratio, indicating that abundant youth labor reduces personnel costs and shifts force structures toward more labor-intensive configurations. These results are robust to de-trended youth cohort measures and two-way fixed effects specifications.

When youth cohorts are large, the opportunity cost of military service falls relative to civilian alternatives. Evidence supports a labor-market channel: larger youth cohorts are associated with lower labor productivity, and lower productivity predicts greater reliance on personnel. Evidence from the 2024 EUROMIL survey of European military associations similarly highlights private sector competition and demographic change as key constraints to recruitment in European militaries.

The results suggest that demographic decline will place sustained upward pressure on personnel costs across NATO Europe, incentivizing capital-intensive force structures and increasing the effective cost of defense.