The Capital-Intensity of Warfare: Military Spending is Capital-Intensive
By Dr. Mason Gaffney

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The Capital-Intensity of Warfare

Military Spending is Capital-Intensive

Mason Gaffney

Those Who Don't Benefit: Average American Taxpayers

Patriotic rhetoric gives the impression that the main purpose of the American military is to protect the nation from foreign aggression. If that were the case, then military spending would truly be a public good. In fact, however, offshore property owners, as well as domestic suppliers to the military, are the chief beneficiaries.

Let us consider the classes of people who ostensibly benefit from military spending and yet only pay the costs.

Taxpayers

There was a time when Roman generals returned home to victory parades with slaves and spoils, and foreigners paid the taxes of Rome. Under modern imperialism, the dominant power pays taxes for the colonials; and the average domestic taxpayer pays taxes for the internationals, as already shown above.

Workers

Two arguments have been put forward that would explain how workers benefit from empire, either directly or indirectly. The first explanation is that expansion provides job opportunities—a safety valve for the unemployed. This was classically known as the "frontier thesis." The second rationale is offered by Marxists, who propose that capitalist countries must expand their markets or die. In that case, expansion should benefit workers in the short run by providing an outlet for American goods, thereby allowing factories to remain open and to keep workers employed. Neither of these theories holds much water.

The Frontier Thesis

Many view our world expansion as an extension of the old frontier. Occupying new virgin resources is a safety valve for unemployed U.S. labor. But our frontiering is no longer labor-using, it is capital-using. Americans do not migrate abroad in large numbers. We do bring primary products in, which some would equate with settling new lands. However, cartels skim off much of the benefit, and cheap foreign primary products, even if they are a reality, do not necessarily add to demand for labor at home. If fewer of those foreign products were imported, we would produce more at home, under more labor-using conditions. To subsidize the use of foreign primary products, as we do, encourages substitution of resources for labor.

An example is the labor that might be used in recycling, let us say, copper or aluminum. Recycling is labor-intensive. Infusions of foreign aluminum are resource-intensive. The mineral resource they use is foreign, but refining in the United States uses important domestic resources. One is fuel. Industry uses half or more of all electric power generated in the United States, and

processing minerals and chemicals takes half of that half. Another U.S. resource used is the environment. Pollution from refineries and power plants, in effect, arrogates for waste disposal part of the service flow from the polluted lands. It makes the lands inhospitable for people more than for capital, thus reducing the human intensity with which they are used.

There is a theory of equalizing nations' resources endowments through international trade: U.S. labor would benefit by importing primary products, just as it would benefit by occupying the Western frontier. Historical revisionists of the 1950s however, pointed out that labor's benefits from conquering frontiers depend on whether frontiering is labor-intensive or capital-intensive.

As noted, our offshore mineral frontiers are capital-intensive. They soak up and hold capital, which is recovered slowly, depriving domestic labor of adequate fast-turning capital, the kind that most complements labor. Mining is the least labor-intensive of industries (other than transport and utilities). When *Fortune* annually ranks industrial corporations by assets per employee, mineral firms always lead the list (even though they underreport asset values). That is because they hold assets so long between acquisition and exhaustion, a trait magnified by cartel machinations. Gaffney (1967, 342-348) provides a model showing the identity of slow turnover with high capital-intensity. To those who see the point, this relationship is so obvious that it is patronizing to explicate it. Yet half of all economists, in my experience, do not see it at all. A few deny it vigorously, in the tradition of Frank Knight and J.B. Clark.

The capital that offshore mineral industries soak up may be produced in the United States. Mining machinery and equipment is indeed an important export, and specialized U.S. personnel dominate exploration and mining worldwide. But that is to miss the point. Capital-intensity means that most of the industry output represents value added by capital and resources, and most factor payments go as interest and rents, not as wages. That characterizes overseas expansion because of the long lag between input of effort and output of ripe products.

The Underconsumption Thesis

Another popular notion is the Marxist-Leninist idea that imperialism is based on underconsumption or inadequate demand for products in the domestic market. Marx and Lenin emphasized a search for markets overseas. That thesis is refuted by galloping inflation in the United States today, which indicates that consumer demand is stronger than supply. Rather than needing to generate purchasing power in the United States today, we need to satisfy the excess demand we already have and find other ways to employ people.

There is still an urge by monopolies and cartels to secure privileged entry to foreign markets. This is a completely different motivation, but it is probably the source of much behavior that inspired and continues to feed the underconsumption thesis. In the l9th century, Europeans settling in China enjoyed exemption from internal tolls and duties levied on native traders (Fulbright 1966, 143). It was a tariff in reverse, making life easy for old China hands.

Today that would be too direct, too offensive. One goes along with the myths of one's times. Just as cartels will lose money today to preempt minerals for tomorrow, so they "invest" in future markets by losing money in them today, if necessary, to drive out competition and establish their future grandfatherhood. In the *dirigiste* LDCs of today, with their licensing market saturation

laws, propensity to bureaucratize, and fear of competition, the road is open to buy one's way into a seller's monopoly.

Soldiers

Many people are in uniform who might otherwise be competing for jobs, and the bogies of peacetime depression center around the unemployment of men, especially veterans. Thus, it might seem that labor benefits from military ventures. Yet, the military is actually too capital-intensive to be of value in relieving the problem of idle workers.

The question is not one of aggregate spending. If military spending were less, other spending, private and public, could be more. Nor do we suffer from inadequate aggregate demand today, but shortage of ripe supplies to hold down inflation.

The question is one of factor proportions. Is the military dollar more labor-intensive? If so, it could benefit labor's bargaining position vis-à-vis property. While this would be only redistributive, it is an effect that our official rhetoric (if not the operating convictions of our policymakers) would define as a benefit.

I see little substance in this view. First, the draft is not a "demand" for labor in the market sense. It is involuntary servitude, imposed under inequitable conditions by the old on the young, by women on men, by hawks on doves, by the cunning on the naive, by the rich on the poor, by insiders on outsiders, by the sick on the healthy, and, under the draft lottery system, by the lucky on the unlucky. While the slavery is temporary, the conscript is required to kill and risk death, things not required of slaves. There is clearly a net loss to conscripts. That is why they have to be forced. That is a big minus in any case for benefits to labor.

Second, labor in uniform becomes politically impotent. Congress does not declare any gentlemanly moratorium on tax law changes when men are distracted by war. Capital gains for timber, wage withholding, taxation of schoolteachers' salaries, and removal of the earned income credit are typical of the changes that occurred during World War II.

Third, if labor is to benefit vis-à-vis property, it must be that more labor than capital is absorbed by the military—that the armed forces are labor-intensive. On the surface one can note that the U.S. way in war is extremely capital-intensive, as the world goes. Elaborate, costly equipment is the rule. Of the 1971 defense budget of $81 billion, only $21 billion was to pay personnel. The rest goes to defense contractors, oil companies, agribusiness giants, and so on. Of course defense contractors also have payrolls. But they also use capital and land.

To resolve the issue of whether the military is more labor- or capital-intensive, we must look below the surface and find a more fundamental concept of what labor-intensity means. We do not judge the labor-intensity of, say, housing by the share of building costs paid to labor. Housing is capital-intensive because what labor builds lasts a long time, yields its services slowly over 50-100 future years. It must be "financed," and the financier gets most of the income. For example, if a house is to last 100 years and yield a service or cash flow of $1 a year over that time, its present value at 7% is

$$PV = \frac{1 - (1.07^{-100})}{.07} = \$14.27 \qquad (1)$$

That is, the maximum one would pay to build the house is about $14, even though it will yield a total of $100 over life. The other $86 is return on investment, shared between lender and equity investor.

Some people find it easier to perceive the matter thus. If I borrow $14 and repay it on the installment plan at 7% over 100 years, the annual level installment is $1.

The $14 capital cost is only partly payroll, too, but even were it all payroll, labor would get only 14% of what is paid for the house. Actually when we consider the land and materials in the original cost, labor gets much less than 14%.

A capital-intensive industry then is essentially one where there is a long time lag between input and output, between effort and result, between investment and recovery. It is one where the early inputs must be financed over long years before payoff.

Viewed this way, as a social investment, how fares the military enterprise? Recall that it yields no consumable output. It is a police cost to maintain and expand land tenure. The value of the service has a crude measure in the value of land newly acquired, plus some share of the annual net income of lands acquired in the past. As to lands newly acquired, the military product may be their present value, but this value is not consumable. It is the present value of remote future services. The assets of U.S. nationals and allies are increased, and this is to them a form of current income, it is true. But the income is frozen in the most durable form, so that even if we regard the entire *present* value as the product of (military) labor, the return to property over time will dwarf the labor input, just as with housing, only more so. Besides that, of course, the initial military input is not even financed by the benefiting property owner, but by U.S. taxpayers and bondholders.

Some lands acquired have paid off quickly, like Arabian oil. The U.S. Treasury has not been paid, but Aramco has. But at the margin, payoff is slow or nil. Land is the most durable asset, and usually its present value derives from future services anticipated to be higher than current ones. In addition, we have seen that there is no benefit-cost analysis in the Pentagon, and many incentives for influentials to lead the flag into deep waters where national police cost is many times greater than the present value of resources acquired.

Acquisition of new resources by force tends therefore to be a capital-intensive operation, financed by taxpayers and underpaid draftees. Benefits to anyone are long deferred; and tax recoupment, if any, even more so.

A hint of the capital cost is interest on the national debt. In 1969 that was $16 billion, or 76% as much as the payroll for military personnel ($21 billion). If the entire investment in war had been debt financed, that alone would make this a capital-intensive industry, as industries go. But most of the investment has been financed from current taxes, and the interest cost is the imputed capital shot away.

Viewed this way, the defense budget is a sink of national capital. Some of the budget comes from current consumption, rather than investment. Space forbids exploring all the questions this leads to. Loan-financed spending, reflected in the national debt, comes directly from other capital. How much of current taxation is forced saving? In general, however, our practices assure that a large share of the military outlay will dig into capital formation. It takes resources from

housing, pollution control, schools, stores, and all capital formation and spends them to acquire land, whose services are long deferred.

In addition, the debt-finance of national spending, largely because of the military budget, means that U.S. securities satisfy the demand for assets and so weaken the motive to hold real assets. Another practice associated with military spending that interferes with capital formation is the acquisition of land itself. The effect is the same as with U.S. securities. Land values are an asset that substitute for real capital, and weaken the urge to create real capital.

By withdrawing capital from civilian life, military spending raises interest rates, and increases the share of property in national income. There are those who, like Howard Ellis (1950, 156), describe this as one of the "economic advantages" to the United States. But it is no advantage to labor.

Returning to the defense contractors, only a part of what they receive results in current deliveries of materiel. A large share goes for military R&D. At best this is a capital outlay for future materiel, at worst a sink of waste, graft, boondoggle, and inveigling of intellectuals. Improving one's bridge game for the MITRE Corporation is not even capital formation. Around $6 billion went for military R&D in 1960 (Nathanson 1969, 224, citing NSF 1964, 11). In 1969 it was $7 billion, plus $4 billion for space research.

A large element of diversion of funds and waste is built right into it: findings are patentable by the contractor, with nothing for the financier, the taxpayer (Kefauver 1965, 230, citing Kahn 1963, 173-74). The contractor's incentive is to divert as much R&D as possible into forms that benefit him. These benefits, too, are deferred. Invention is, as noted, analogous to exploring for minerals. Each is a form of discovery. The inventor is seeking to discover and *gain tenure of* nature's stock of secrets. R&D is thus subject to the economic wastes found when rivals are searching for oil on a common, like the unfenced high seas: prematurity and comparative disadvantage. It is another sink of capital.

From a world viewpoint, of course, force is sterile. The "product" is purely acquisitive or redistributive—one gets only what others lose. The only net gain might be in creating security against predators, allowing fuller use of land. But from a nationalistic view this worldwide sterility is reflected in the principle that what one takes by the sword one must keep by the sword. Other nations will naturally react to our expansion and apply counterforce, as they are doing. That means the full value of lands acquired in this year cannot be credited to this year's budget. There is a continuing commitment to police—one of those contingent liabilities so easy to promise, so painful to deliver. This is a recurring yearly expense to be charged against annual income rather than capital value. I do not know what share of the defense budget should be allocated here, nor, I surmise, does anyone. Admiral Elmo Zumwalt is currently campaigning to increase the naval budget to protect us against the "ominous" threat of "coercion" applied against the world fleet of oil tankers. Whatever the amount, it reduces the net national payoff from foreign resource holdings, further delaying the recovery of national capital invested in military budgets.

This kind of accounting needs to be developed and used to guide defense spending. PPB and body counts and game theory are not going to save us from national bankruptcy. But the present point is that the military enterprise is not labor-intensive; it is capital-intensive because of the long lag between effort and result. Lags have to be financed. The lag is financed by taking capital from other uses. Property may benefit by this. Labor certainly loses.

AID programs may be interpreted the same way. They are a promotional investment, giving out free samples of U.S. exports to create future dependency. The taxpayers finance the investment, but do not share in the payoff, if any. On the contrary, AID programs have been used to establish an "American presence" and a proprietary interest in marginal nations to expand our contingent liability to police the world, imposing costs on taxpayers.

To fortify the point, the non-military aspects of territorial expansion are also very capital-using, and in the same sense, there is a lag between labor and results. Urban sprawl today is highly capital-intensive. Continental sprawl in the l9th century frontier days was too—canals, railroads, land clearing, county trunks, fencing, drainage, irrigation, wharves, terminals, new cities. All of them paid out in trickles over generations, not right away, often not at all.

Now we face worldwide sprawl, with the same kinds of infrastructure needs, requiring long-term financing, which our banking-governmental establishment is assiduous to supply. As Equation (1) shows, long-term financing means capital-intensity. It doesn't mean much that U.S. labor produces the steel, or generators, or drilling rigs. American capital finances them, and they are capital-intensive.

Consumers

One can easily portray U.S. control of foreign raw materials as a boon to U.S. consumers. One can imagine that U.S. forces are making the world safe for free trade, to secure the gains of specialization and comparative advantage, registered in cheap goods for even the poorest members of society. It would be an excellent thing. But it is not really the idea.

The emphasis, as shown, is not on simple competitive trade but on acquiring tenure to resources and privileges, and suppressing competition.

Few would argue, other than *ex parte*, that cartels intend or act to benefit consumers. Yet U.S. policy is built around cartels, as shown. The premium price of oil maintained inside the U.S. quota wall indicates where the consumer stands, and the silencing of the Federal Trade Commission by the National Security Council epitomizes the military's role.

Even so, could not *Pax Americana* raise world efficiency through international specialization? It is a good thought, but too fuzzy a picture not to be misleading.

Pax Americana is more to be likened to urban sprawl, on a global scale. Urban sprawl means that developers leapfrog over empty land near in and build far out, pulling social overhead capital along behind them, subsidized by milking the center. Global sprawl means we underutilize resources in the continental United States. Prospectors leapfrog overseas, pulling the U.S. flag behind them. They find some rich mines out there, just as centrifugal urban land developers find lovely view lots, lakes, and trees. But the whole process is heavily subsidized by milking the heartland. There are elements of optimal international trade, but they should not blind us to the forced, uneconomical directions given by taxes and subsidies. The resulting patterns of trade are not natural, but preternatural. They do not increase welfare any more than we have raised urban welfare by moving everyone farther apart so they must drive farther to accomplish the same ends. Transportation interests benefit, but only at the expense of everything else. The social overhead cost of international transport is not charged in price. The largest part of that overhead is the military budget.

The net result of pumping spending into an enterprise that yields no output until much later, or never, is to inflate consumer prices, adding a new form of tax to the others that finance the military. It is no boon to consumers.

Conclusion

Defense is not a "public good." The benefits are unevenly received. Particular groups who benefit heavily are resource owners in the overseas area we police. These include caciques, European and Japanese firms, and U.S.-based multinationals.

U.S. force is especially important to resource owners, because their prime concerns are tenure, taxes, and avoiding competition, matters in the domain of politics. "Aggressive imperialism, which costs the taxpayer so dear, which is of so little value to the manufacturer and trader, is a source of great gain to the investor" (Hobson, 59-60).

U.S. multinationals have acquired huge assets overseas. The sources of the assets are not so much capital flows from the United States as they are plowbacks, appropriation, and appreciation. Ownership of these assets is more concentrated than that of domestic assets, high as the latter is. The assets are heavily concentrated in resources. The owners benefit from U.S. force because it firms up and protects precarious tenures and helps appropriate loosely held or unfenced resources. Private appropriators often lead the flag, securing bargains for themselves but imposing great costs on the public in the form of contingent military liabilities. These have grown so large as to prejudice national solvency and lead us into dangerous confrontations.

U.S. force is also deployed in the interests of cartels whose customers include U.S. consumers and the military itself. Recoupment of the military subsidy through taxation of beneficiaries is nil. On the contrary, overseas investments enjoy tax treatment so favorable as to constitute an additional subsidy.

Labor as such does not gain from military spending. Offshore U.S. industry is capital-using, not labor-using. Access to cheap foreign minerals is not of great benefit to U.S. labor. The frontier safety-valve analogy does not apply to our present mercantilistic stance. The Marx-Lenin doctrine of imperialism based on underconsumption is belied by inflation in the United States.

As for direct military employment, the military enterprise absorbs more capital than labor because of the lag between expense and recovery. It is a social investment of deferred payout, requiring long-term financing. It sucks capital away from domestic uses of quicker payout and therefore of higher complementarity to labor.

Consumers do not benefit from the foreign trade created by *Pax Americana*. That trade is more distorted than facilitated by military pressures. Instead, consumers suffer from inflation caused by wasteful use of capital overseas and from high taxes to subsidize that waste.

Military contractors do gain. The gain is not macroeconomic and general, but redistributive. Losses are diffused and hard to pinpoint, hence, underappreciated. Gains are concentrated in a few hands, contractors being larger than the average firm. Waste and corruption abound.

For most Americans, the benefits of military spending are to be found in reducing it and reshaping it so as to diffuse the gains, promote national and world security, and indeed justify

calling it a "public good." Perhaps we can yet learn, as the British did not, from their Nobel laureate's "Recessional":

"Far-called our navies melt away;
On dune and headland sinks the fire:
Lo, all our pomp of yesterday
Is one with Nineveh and Tyre!
Judge of the Nations, spare us yet,
Lest we forget—lest we forget!”

—Rudyard Kipling