

HELPING ARMENIA WITHOUT HELPING THE BLOCKADE

*Richard Beilock**
University of Florida

The Blockade is the most prominent element distinguishing Armenia from all other Transition Economies, as well as virtually all other economies. Because of difficulties related to the Transition, the 1988 earthquake, and the Blockade, the international community is assisting Armenia. This paper has two objectives. The first is a partial assessment of the costs of the Blockade in terms of lost trade, higher transport costs, lower FDI (foreign direct investment), and altered composition of its industries and infrastructure. It will be asserted that, while there are considerable uncertainties in calculating the costs of the Blockade, the Blockade has a profound negative effect on the economy and its growth potential. Second, with particular, though not sole, focus on transportation, interrelationships will be discussed between assistance strategies and incentives/disincentives to work for normalizations of relations in the region. It is proposed that assistance organizations, as well as the Government of Armenia, should develop benefit/cost assessments of projects both with and without the Blockade and, if these differ significantly, also assess probable impacts of projects on prospects for eliminating the Blockade.

JEL Classification: F21, N75. Keywords: development, Armenia, blockade.

I. INTRODUCTION

A man wearing lead boots wishes to run. Through his own efforts and with the help of friends, he can learn to run and even develop the stamina and techniques to increase his speed. However, he will never run as fast or as well with the lead boots

* An earlier draft of this paper was prepared for the Armenian International Policy Research Group conference "Armenia: Recent Economic Trends and Growth Prospects," Washington, DC, January 25, 2003.

as he could without them. If he is condemned forever to wear the boots, his friends should help him reduce their debilitating effects. But if it is or could become within his power to remove the boots, both he and particularly his friends should carefully consider how elements of his training and equipment impact on his running today as well as how they might affect incentives and probabilities for discarding the boots. Indeed, if the man could, but for some reason does not, remove the boots and if the boots are clearly harmful, there is a real question if friends should help make the boots more comfortable—should friends help friends to run in lead boots?

The man or men wearing lead boots in this story are the nations of the Caucasus and, to a lesser extent, their trading partners. The heaviest pair is worn by Armenia, which will be the main focus of discussion in this paper. And the boots, of course, is the Blockade. The Blockade refers to the:

1. Virtual absence of direct movements of goods, services, and people across Armenia's borders with Turkey and Azerbaijan.
2. Official prohibitions against trade between Armenia and Turkey/Azerbaijan.
3. Risk of renewed hostilities.

In this paper, I argue that the costs of the Blockade, while impossible to quantify fully, are profound, particularly for Armenia.¹ By “profound,” I do not mean that removal of the Blockade necessarily would result in a rapid, smooth rise in Armenia's and the region's GDPs and living standards. The histories of Transition Economies and development in general clearly demonstrate that these roads virtually always are bumpier and longer than might be anticipated. But I do mean that much of the poverty today is attributable to the Blockade and without its removal the pace of improvements will be greatly slowed and the ultimate potential for those improvements greatly reduced. One might think of removing the Blockade as a development project --- the Blockade Removal Project, BRP. Particularly for Armenia and by orders of magnitude, the BRP is the most beneficial endeavor. The World Bank, US AID, and other donors should judge other projects, in part, on the degrees to which they advance or discourage the BRP. This is especially true for projects involving long-term, fixed investments, such as transportation infrastructures.

Using impacts on the BRP as a criterion for judging all development projects might be seen as an improper, precedent setting interference into internal and international

¹ While there may be differences with regard to opinions regarding the degrees of severity of the Blockade's effects, many recognize their significance. For example, Freinkman et al. state that removal of the Blockade would rapidly result in a doubling of Armenia's exports and Polyakov estimates that GDP would increase by about a third.

politics by organizations administering development assistance. It is not. Ignoring interrelations between the Blockade and other projects is simply poor planning, a disservice to those individuals and governments supplying the funds and the intended beneficiaries.² This is particularly true as Blockade-related effects of a project are likely to be felt in more than one nation, much like damming a river that flows across borders. A project might have positive net benefits for one nation, while resulting in costs for another. From the standpoint of a benefiting nation, costs borne by other nations might be treated as ignorable negative externalities. International donors, normally, are supposed to take a broader view. Moreover, in two regards it is simply impossible to ignore the Blockade. First, there is near-universal agreement that the economic situation being addressed by development agencies is, in part, shaped by the Blockade. Funding projects to address Blockade-related problems without considering the Blockade itself would be like a doctor supplying insulin to a diabetic without inquiring about the patient's diet nor considering the possibility that such treatment in the short term allows, even encourages, the patient to down more Twinkies, with delayed, though predictably more severe consequences. Second, it is intellectually fraudulent for an assistance organization to feign blindness to the impacts of a project on the Blockade's continuance. The doctor KNOWS that insulin without dietary restrictions invariably results in higher sales for Hostess and Nabisco and eventual tragedy for his patient. Likewise, when the World Bank funds road construction in Armenia with little or no regulation on which roads are developed or EBRD builds an oversized air cargo terminal or US AID makes its annual delivery of kerosene or promotes a pipeline curling hundreds of kilometers around Armenia they KNOW that they are not only responding to current on-the-ground realities, but also facilitating their continuance.³

In the next section, the costs of the Blockade will be discussed. After that, transportation will be examined, with particular focus on ways to improve Armenia's current situation while taking into account their impacts on the Blockade.

II. COSTS OF THE BLOCKADE

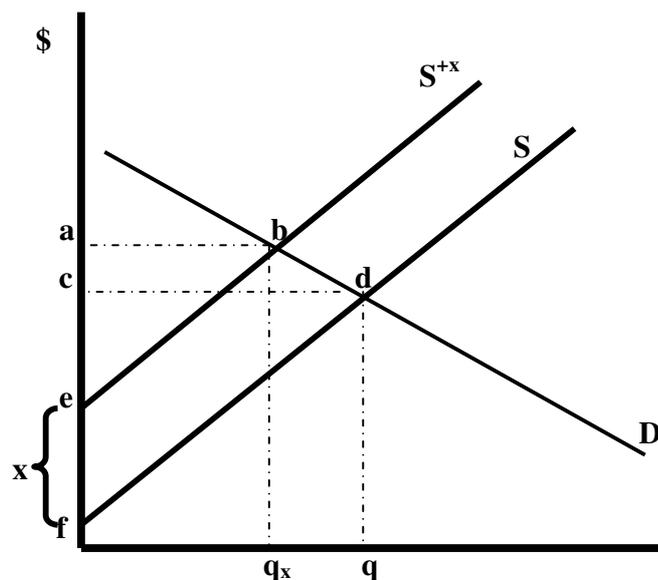
Kenneth Boulding once described tariffs as "negative railroads," because tariffs elevate the costs of movements between two points. It is tempting, particularly for

² This is nothing more than a call for comprehensive cost-benefit assessments. If a project would yield \$y in net benefits, ignoring the Blockade, but would also result in an estimated continuance of the Blockade for t years which would cause \$x harm (discounted) each year, then a more accurate net benefit estimate for the project would be $\$y - (t * \$x)$.

³ The realization that political, even international, issues cannot be avoided by assistance organizations and, perhaps, should be given explicit consideration is an increasingly important debate regarding humanitarian (i.e., emergency) assistance, e.g., see Anderson and Terry.

those of us who are economists working in transportation, to conceive of the Blockade in the same terms. Turning to Figure 1, let S be the supply of Armenian goods and services for export, including transportation costs, but without the Blockade, and D be the demand for those goods and services. If the Blockade adds x to transport costs, then S^{+x} becomes the relevant supply relationship. Because of the Blockade, the quantity of goods and services exported is q_x , rather than q . The loss to Armenia is the area cdf minus the area abe and Armenia's customers lose $abdc$. In theory, it is a simple matter to estimate the parameters and, in so doing, tally the cost and how it is distributed. Even if the underlying mechanics were this simplistic, data problems would render the estimates problematic. But more important --- the central message of this section --- the impacts of the Blockade are far more complex, because the Blockade alters the levels and compositions of both S and D .

Figure 1: A Simplistic Presentation of Blockade Effects



A. A Partial View of Missing Exports

To get a tip-of-the-iceberg feel of the magnitude of the Blockade's costs, it might be of value to estimate the missing exports to Turkey and Azerbaijan for Armenia. That is, the part of $q - q_x$, which would have gone to Turkey and Azerbaijan assuming the Blockade had never existed and that the Blockade has no impact on S and D themselves. The estimate is based on two observations: 1. because of its generally depressed economy, Armenia has excess capacity in most of the industries currently engaged in exporting and 2. Georgia and Armenia are similar to one another with

regard to their physical access to Eastern Turkey and Azerbaijan. Unlike Armenia, Georgia has good relations with both Turkey and Azerbaijan. If there were no Blockade, it might be expected that the shares of exports to Turkey and Azerbaijan from Armenia would be similar to the export shares these countries account for with regard to Georgia. Because Armenia's export industries have excess capacity, the additional exports to Turkey and Azerbaijan if there had never been a Blockade would not be at the cost of reduced exports to other destinations.

In 2001, 28.6 percent of Georgia's exports were to Turkey and Azerbaijan,⁴ versus 0-to-2 percent of Armenia's exports.⁵ The 0-to-2 percent range of Armenian exports reflects both that there are no official exports to these countries and that actual exports are, almost surely, very small. Many, indeed most, sources indicate no exports. For 1998, Polyakov reported that 1.4 percent of Armenia's exports went to Turkey and none to Azerbaijan. As there certainly is some volume of exports from Armenia to Turkey and Azerbaijan, I will assume that 2 percent of Armenia's \$343 million in 2001 exports went to these countries. If the Blockade had never occurred and with no changes in S and D, Armenia's exports to Azerbaijan and Turkey would have been \$128 million more, a 37 percent increase in all exports. This is roughly six percent of the exchange rate GDP. Accounting for multiplier effects, because of this part of $q - q_x$, without the Blockade the economy would have been 12 to 18 percent larger.

Freinkman et al., Polyakov, and others correctly point out that gains of this magnitude, while significant, will not revolutionize Armenia or the region. Such observations are, in part, made to justify taking the issue of the Blockade off the table and getting on with development efforts which effectively assume the Blockade is permanent. But none, perhaps not even the collective sum, of past and planned assistance efforts by World Bank, EBRD, France, US AID, and others have realized or hope to realize benefits of this magnitude. Moreover, the \$128 million very much understates what would have been the impact on exports to Azerbaijan and Turkey, much less to other countries from having no Blockade. Without the Blockade, Armenian products would have been more welcome in Turkey and Azerbaijan (i.e., D would have been higher) and Armenian businesses would have targeted production for these markets (i.e., S would have changed, higher and qualitatively different). In addition, transport costs would have been lower, encouraging more trade with all nations.

⁴ Part of these exports may have been indirect trade originating in Armenia, passing through Georgia to lose their Armenian identities and circumvent the Blockade. It is unlikely, however, if this could have accounted for more than a negligible portion of Georgia's trade.

⁵ The source for the Georgian export partners is the *Central Intelligence Agency World Factbook*. The same source, as well as many others, such as *The Economist Intelligence Unit*, list no exports from Armenia to either Turkey or Azerbaijan.

Polyakov attempted to measure $q - q_x$ from Armenia to all countries. He estimated that, without the Blockade, Armenia's exports would increase by about \$300 million, effectively doubling. He employed the parameters for a gravity model estimated using European and North American countries. While I have some concerns about the appropriateness of the approach and many of the specifics of his results, the important message to be drawn from his study is that the effect of removing the Blockade would be large, even without accounting for changes in D and S.

III. HOW GOOD OR BAD IS THE ARMENIAN ECONOMY?

We will move on from the simplistic, minimalist approach of treating the Blockade's impact as solely an increase in transportation costs, to discussing how it alters the behaviors of those determining S and D. Before that, however, it would be appropriate to examine how well or badly Armenia's economy is performing. Obviously the Blockade has negative effects. What is not obvious is if these are sufficient to deny Armenia prosperity. After all, South Korea, Taiwan, and Israel endured the same, but prospered, albeit not to the extent possible without their blockades. For two reasons, it is unlikely Armenia can be as fortunate. first, there is my admittedly subjective and unquantifiable assessment of will. Armenians do not have the same "back to the wall, nowhere to go, so we must, can, and will make this work" philosophy about themselves and their country as was the case in the other nations. When given the opportunity, an Armenian will export him or herself and his or her wealth, as they do in droves. And there is a pervasive psychology of dependence --- a belief that their country's and their individual fates, positive and negative, are largely determined by others. No insult is meant by this. It is the almost inevitable result of the country's history. Much the same could have been said of the Irish until very recently. Second, the degree of isolation from the Blockade is much greater. South Korea, Taiwan, and Israel all had unimpeded access to maritime transport, with very large markets nearby (i.e., Japan and, increasingly, Southeast Asia for the first two, and Europe for Israel). Armenia is landlocked. The Blockade has forced it to rely, almost totally, on Georgia which:

1. Has a transport system with severe capacity, reliability, and efficiency problems.
2. Has limited potential as an origin for Armenian imports or destination for its exports and, therefore, views Armenia as primarily a customer for transit services.
3. Not unreasonably takes advantage of its near-monopoly position to realize economic rents, both officially and unofficially, through its transit services.

But, again, how bad are things? There has been growth in GDP, about 5 percent per annum since 1993, and faster in the last year. While laudatory, this growth should be judged against the facts that:

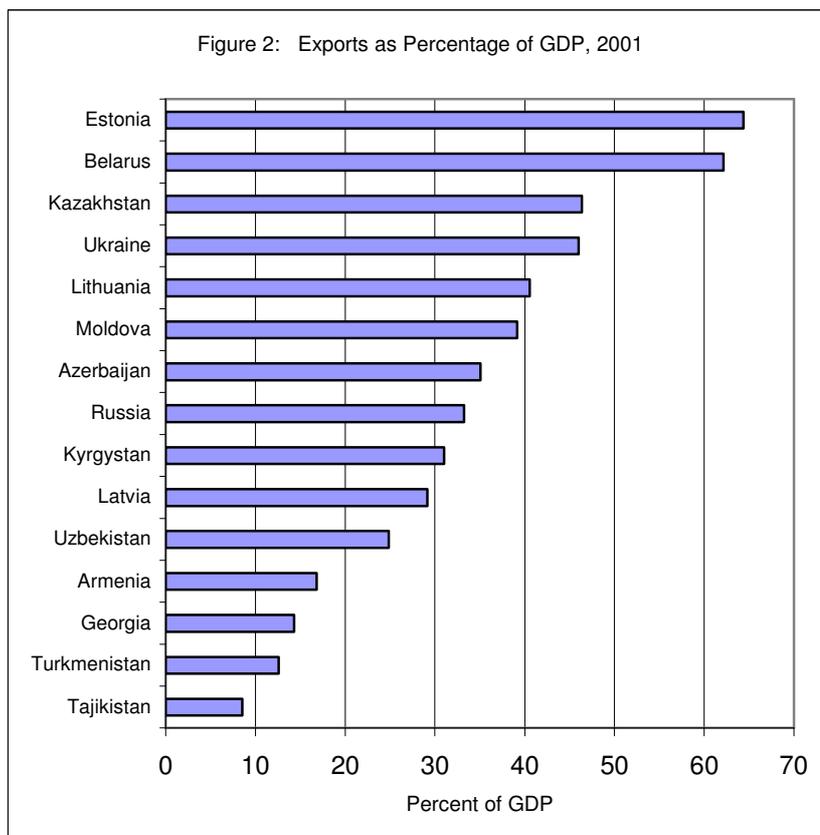
- In 1994 GDP was at extremely low levels, roughly a third that in 1989, the lowest of the Former Soviet republics (half that for Russia), see EBRD.
- Because of the virtual cessation of hostilities and associated diplomatic initiatives, transport costs through Georgia fell and reliability improved.
- Throughout this period, Armenia has received the equivalent of over 10 percent of GDP annually in official assistance as well as millions more from remittances and gifts.

It is difficult to see how the economy could not have grown in the years following 1993. But a World Bank Country Study suggests that the pattern of growth is not sustainable (Freinkman et al.). Despite considerable economic reforms, there are low rates of small business formation, overall investment, and participation by banks and foreigners in investment. Asset stripping remains a common strategy among managers and while the service sector has expanded, there has been only slight growth in manufacturing.⁶ It is rather like replacing the points, plugs, air filter, checking the belts, oil, and fuel, but still, mysteriously, the car runs slow and rough.

Not surprisingly, with low investment to improve and expand production, the country sells little. As a percent of GDP, Armenia's exports are among the lowest in the FSU (Former Soviet Union), see Figure 2. But the same is not true of imports. Armenia persistently has the worst trade balance in the FSU, relative to GDP. As can be seen in Figure 3, the excess of the country's purchases from other countries, relative to its sales, is the equivalent of 26 percent of its GDP.⁷ This might not be so troubling if the imports were primarily to expand production capacity. But they are not. Only about 7 percent are for capital goods (Economist Intelligence Unit). Essentially, Armenia spends between a fifth and a quarter more than it produces for current consumption, either through importing consumables or the inputs to make

⁶ At least in part the unusually large emphasis on the service sector is an artifact of high levels of international assistance. Many businesses are geared toward serving the official and private needs of the assistance and diplomatic community, including high paid Armenians in their employ. Expatriates see new shops, hotels, and restaurants, while the average Armenian --- particularly those located outside Yerevan --- often see little or nothing. The sustainability of these businesses is obviously a question.

⁷ By way of comparison, the excess of purchases over sales for the shamelessly spendthrift United States is equivalent to 4 percent of its GDP.



consumables. So, the Armenian economy is like a profusely bleeding patient who survives and perhaps even begins feeling stronger thanks to transfusions of like amounts of blood. This raises two questions: 1. How can Armenia afford this and is it sustainable? and 2. Why does Armenia do this? The answer to the first question is largely through gifts and loans from others. The shortfall of about \$500 million is roughly equivalent to the combined total of remittances (estimated by Poghossian as high as \$450 million annually) and development assistance (steeply discounted to subtract expatriate travel and salaries), with loans patching and filling any remaining gaps. Its sustainability depends entirely upon the world's willingness to maintain these transfers. As to why Armenia has this highly unusual and almost surely hurtful pattern of exports and imports, I believe it is primarily because of the Blockade's effects on S and D.

IV. THE BLOCKADE'S IMPACTS ON S AND D

To examine the Blockade's impacts on S and D, it is necessary to look at its effects on each of the actors. These are:

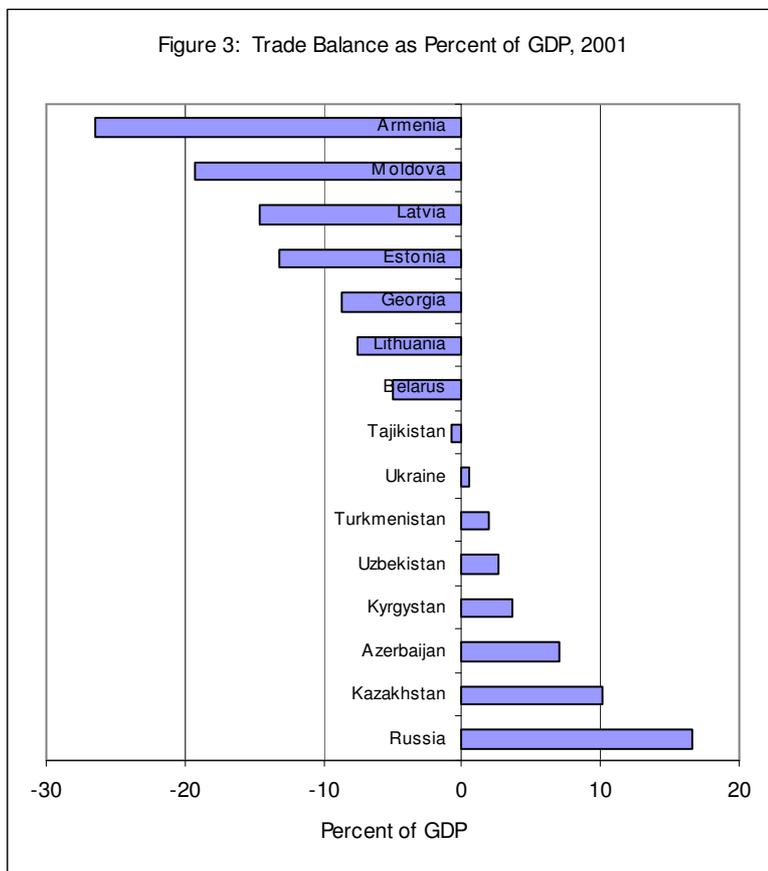
- Georgia (and to a lesser extent, Iran)
- Importers and potential importers of Armenian exports
- The Armenian business community
- Foreign investors and potential foreign investors in Armenia
- The Donor Community
- The Armenian Government

A. Georgia (and Iran)

As Armenia also has borders with Georgia and Iran, the Blockade has reduced, but not eliminated, Armenia's surface transport access to world markets. Because of a mountain barrier, physical access to Iran is very poor, particularly in winter. Added to this Iran is distant from Armenia's main population centers, transit across Iran is lengthy, and Iran is in the 'wrong' direction for trade with Europe and North America. For these reasons, Armenia is primarily dependent upon Georgia and its transport system.⁸ This near-monopoly position gives the Georgian State, transporters, and other individuals the opportunity to collect economic rents related to transit services. There are two points related to this which should be stressed:

1. All parties --- states, firms, and individuals --- act in their own self-interest. If any of these is in a position to collect economic rents, it is natural for this to happen. In virtually all cases, the situation must be accepted or the underlying conditions creating the market power reduced or eliminated. Moralizing about taking advantage of others is misguided, and enforcement is rarely effective and even more rarely cost effective.
2. Georgia's monopoly power creates a "slippery slope" for Armenia and those doing business in Armenia. Progress within Armenia creates rents, some of which will be captured by Georgia and interests operating in Georgia. Otherwise stated, Georgia is in a position to and invariably will tax the creation of value in Armenia. As with any tax, it reduces the net returns and attractiveness of the activity.

⁸ Of course, there is some trade better facilitated through routings to the south and southeast. For those, the following comments regarding Georgia would likewise apply to Iran.



These points are central to understanding the true impact of the Blockade. It is not simply that the Blockade added a constant \$x to transport costs, as depicted in Figure 1. Rather, the form and amount of x changes to take advantage of (i.e., to tax) efforts made within and on behalf of Armenia. For example, if Armenia adds value by processing ore into metal or cloth into clothing and if those goods are transported overland through Georgia, some of that value added will be captured by Georgia. Ways Georgia and interests within Georgia use this monopoly position to tax value added within Armenia include:

- Georgia's high official transit fees.
- The 50 percent premium Armenian importers and exporters pay to the Georgian Railroad, relative to Azeri traffic.
- Unofficial fees to Georgian Police paid by truckers which are frequently related to the value of the cargoes.⁹

⁹ These fees approximate value-of-service price discrimination.

- The low priority Georgia places on maintaining roads and railways that almost solely service Armenian cargoes, such as those south of Marneuli and southeast of Akhalkaleki.

In this regard and illustrative of the slippery slope analogy, Georgia can place low priority on maintenance of the parts of their transport system which serve almost solely as links with Armenia because even if these are in poor condition routings through Georgia are the best alternatives. However, there are limits. As costs rise, less freight in total will move and if they rise high enough there will be diversions to other alternatives, such as routings through Iran or air transport. Because Georgia is interested in the transit fees accruing from this traffic, it has an interest in assuring that costs to users do not become prohibitive. In selecting one routing over another, a shipper/receiver or carrier compares the total costs of using each alternative. As such, the more improvements made on the Armenian side of the border, the more incentive the Georgians have to allow their link with Armenia to deteriorate.

B. Importers and Potential Importers of Armenian Goods and Services

The Blockade has three distinct, but related, effects on importers and potential importers from Armenia. The first and most obvious is the Blockade's effect as a transportation tax. To the extent the Blockade increases the delivered cost of Armenian products, those items become less desirable relative to alternatives, pushing the quantity demanded back from q to q_x in Figure 1. This is particularly critical, from the Armenian standpoint, because virtually all trade goods the country produces there are readily available, identical or virtually identical alternatives from other sources. As a result, demands for Armenian goods tend to be elastic, both absolutely and relative to the supply of those goods. Such a situation was depicted in Figure 1, with the costs of the Blockade-induced tax being borne primarily by the Armenian suppliers. Obviously, from the standpoint of these suppliers this is an unfortunate situation. In addition, as the losses are small for importers and potential importers, they will apply little financial or political pressure to effect change.

Second, the Blockade lengthens the average distance between Armenian producers and their potential customers. As such, even without a per unit distance increase in transport costs from the Blockade, the additional units of distance add to delivered costs. This can be particularly harmful as it eliminates potential rents Armenian exporters could realize from commodities that are costly to transport, such as building stones. These goods sold in nearby markets, for example in Eastern Turkey, could command premiums over their delivered costs because of the distance-related protection they would realize from competitors.

The third effect is that the Blockade may alter the preferences of importers and potential importers. For some, such as the Armenian Diaspora, concern for Armenia may increase the desirability of its products, thereby raising D . But for others,

particularly those sympathetic with Azerbaijan/Turkey and/or concerned with offending these nations, D may be lower. Armenia's position on the edge of the Middle East suggests that, in aggregate, D is lowered by the Blockade. Of at least as much importance, these effects are likely to be different across different goods and services. For example, D may be elevated for products, such as handicrafts, for which members of the Diaspora constitute the largest share of potential buyers. On the other hand, given the opportunity to purchase clothing or tomato paste from Armenia or from another source, some importers in the region might favor less controversial sources. The impact on tourism is likely to be mixed. Some may be attracted to Armenia because they perceive it as a besieged nation and wish to demonstrate support and share the experience. But for the large majority, physical risks and discomforts associated with the Blockade would depress tourism.

C. The Armenian Business Community

For the Armenian business community, the Blockade has several related effects that tend to reduce the overall level of business activity and lower and alter the composition of the supply of export goods (i.e., S in Figure 1) both absolutely and relative to supplies for domestic consumption. Armenian businesses tend to be highly dependent upon imported inputs (e.g., see Stone). As such, the transport tax effect of the Blockade lowers supplies of production for both domestic uses and export. The tax has a twofold effect which reduces the attractiveness of exporting, relative to production for domestic markets. First, channeling production for domestic markets avoids paying the tax to move goods out of Armenia, and second, foreign competitors are handicapped by having to pay the tax to get their goods to Armenia.

Beyond the transportation tax effect, the Blockade also encourages domestic-over-export production through its impact on the size of the expatriate community in Armenia and the numbers of Armenians earning relatively high salaries working with expatriates. The complex international situation and high assistance levels, in large measure due to the Blockade, have expanded the numbers and sizes of diplomatic missions and assistance organizations hugely beyond what would be expected in a country with Armenia's economy, location, and size. Hundreds of expatriates and many hundreds, if not thousands, of Armenians work in these organizations. Serving the needs of these organizations and their employees can be extremely lucrative. On one level, this can be an extremely beneficial stimulant to growth, particularly as it tends to have positive impacts on quality standards. However, unless these levels of diplomatic and assistance efforts are long term or they are replaced by organizations with similar needs and staffing, there may be considerable and painful dislocations in the future.

Because of the above-described demand effects as well as differences in the exposure of goods to the transport tax, the composition of production is altered. For

example, the supply of building stones would be lower overall but for domestic uses may be higher because of the Blockade. On the other hand, the supply of wheat within Armenia, ignoring donated grain, would be expected to be lower. Goods and services for which they and their inputs normally circumvent the Blockade, either by air movements or electronic transfers, would be favored by the Blockade. Two examples are diamond cutting/jewelry and software development.

Overall, the Blockade would tend to lower the quality and efficiency of Armenian production, particularly with regard to that for domestic consumption. This is true both because the transport tax would encourage substituting lower cost inputs and because the transportation tax shelters domestic producers from foreign competition. This may, in part, explain why Freinkman et al. found a sizable and growing productivity gap between larger Armenian firms and counterparts in other Transition Economies. Simply put, because of the Blockade, Armenian firms do not have to be as productive.

Perhaps the most pernicious manifestation of the Blockade is uncertainty. The majority of business activity involves the creation and exploitation of assets over extended periods of time. This is particularly true of businesses outside the service sector. Changes in the Blockade, positively or negatively, could radically alter asset values through effects on input costs, competition from foreign producers, demands, and (in the case of exports) costs of delivering products. As such, businesses with lower capital requirements would be favored. This may, in part, explain why a seemingly disproportionate share of business development and growth in Armenia is in the service sector (e.g., Freinkman et al.).

In lowering the attractiveness of investments within Armenia, the Blockade encourages capital flight --- both financial and human (Poghossian estimates that 30 percent of Armenia's émigrés have college degrees).

D. Foreign Investors and Potential Foreign Investors in Armenian Businesses

Foreign investors and potential foreign investors respond to the same factors just described with regard to the Armenian business community. The primary difference is that foreign investors are, as a group, better able to avail themselves of alternative investment opportunities. In addition, due to the Blockade, there would be negligible amounts of investment from Turkey, Azerbaijan, and countries closely allied with them. As such, the transport tax and uncertainties associated with the Blockade almost surely are severe depressants to investment and thereby reduce S.

E. The Donor Community

For complex reasons, many of which associated with the Blockade, the Donor Community gives an unusually high, arguably disproportionate, level of assistance to

Armenia. In terms of human needs, as gauged by purchasing power GDP per capita, six of the republics of the FSU are worse off than Armenia. Yet, Armenia receives the highest amount of assistance per capita (Figure 4). Moreover, the country is second only to Kyrgyzstan in terms of assistance as a percent of GDP (Figure 5).

While those administering assistance, such as US AID and the World Bank, are influenced by political considerations, both internally and externally, they are judged primarily on their ability to effect immediate improvements in indicators regarding economic performance and welfare in the country. Because of this shorter term focus, assistance programs are normally designed as though the Blockade were permanent. This tendency manifests itself in three principal ways:

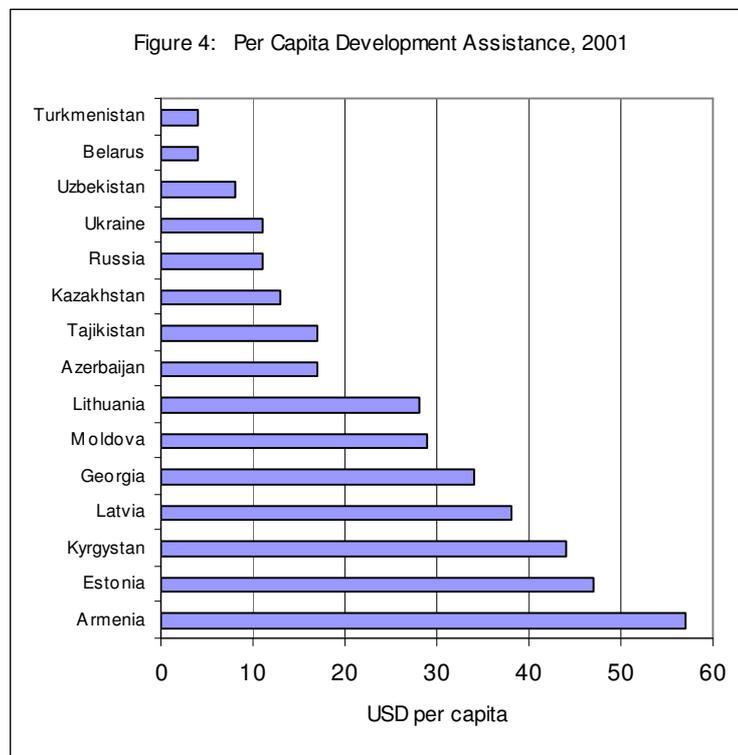
1. Providing support to businesses with comparative advantages associated with the Blockade. In this regard, donors respond to the same stimuli as the Armenian business community and foreign investors. In so doing, assistance supports the supply altering effects of the Blockade.

Lowering the costs of the Blockade through provision of transport-cost intensive goods, such as grain and kerosene, or infrastructure development to make Armenia more self-sufficient. Examples of the latter include support for the airport cargo facility and roadways to replace links with the south formerly reached through Nakichievan. While such measures can improve welfare, almost surely this is at the cost of reducing incentives for changing the status quo.

2. Ignoring scale considerations. In accepting the fragmentation of the region as immutable, projects may be developed with little regard to the underlying economies of size and opportunities to use those economies as levers to promote regional cooperation and integration.¹⁰

It should be pointed out that donor reticence regarding multi-national projects is not solely due to the Blockade. As donors typically deal with individual national governments and often are themselves organized into country level units, multinational projects are more complex. Nevertheless, difficulties in forging multinational agreements due to the Blockade are an added deterrent.

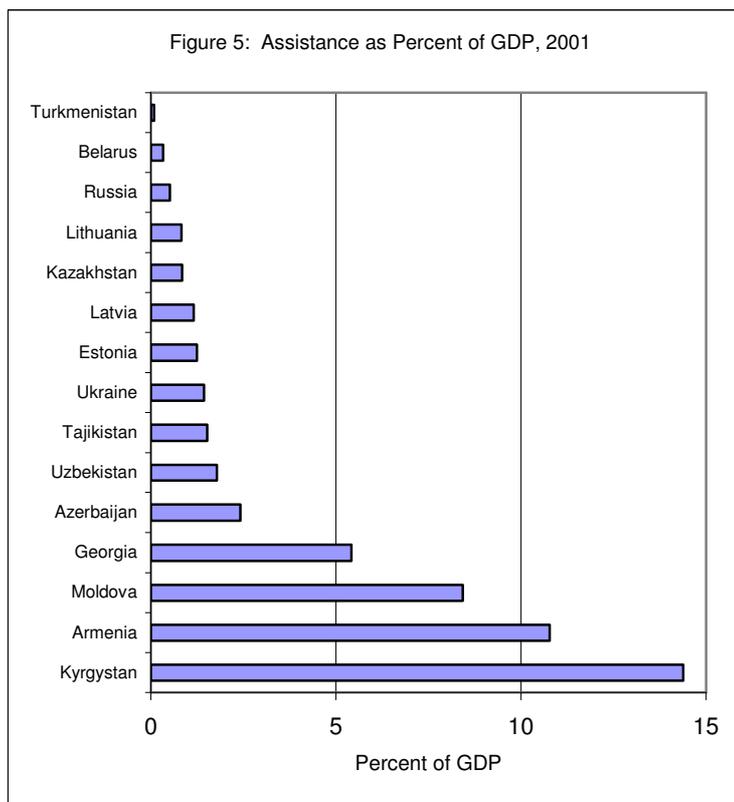
¹⁰ Assistance to develop a modern stock exchange for Armenia is an example. Equity markets are for the sale and resale of assets. The amount of tradable assets in economies is correlated with, though not perfectly, their production of goods and services. Using this measure, an Armenian stock exchange is roughly equivalent to having a stock exchange for Gaithersburg MD or having nine stock exchanges for Luxembourg.



Aside on the Blockade and Project Assessments

Almost inevitably, the combination of reduced opportunities and high assistance levels due to the Blockade has tended to lower the bar on what is and is not funded. To justify selection of projects, many of which in other settings would not be funded, assessments of potential and realized project benefits have tended to be optimistic. Again, this is virtually unavoidable given the combination of limited opportunities and relatively generous assistance. Funding lower tier projects would tend to lower the cost effectiveness of assistance and raise project failure rates. Aggravating this situation are the market-warping effects of the Blockade, i.e., elevating costs, changing relative costs, increasing uncertainty, etc.. These factors make projects more difficult to assess. This is particularly critical if a significant portion of the net value of a project is based on Blockade-related conditions.

A possible example is the donor community’s enthusiasm about and support for Armenia’s software industry. Between 1997 and 2000, the industry grew rapidly to sales of \$15-\$20 million and 1,000 employees (Poghossian and Stepanyan). Of course, the initial base was extremely low, almost non-existent, and software development grew rapidly worldwide over this period. Though still “rather small,” the industry is seen as an “emerging cluster” and example of the “high road to competitiveness” (Freinkman et al.) and meriting support, such as through the World



Bank's business incubator project. Freinkman et al. enumerate growth constraints "related to availability of telecommunication services, lack of institutional infrastructure to provide business development services, shortage of management skills, insufficient protection of property rights for software products, outdated software training in local universities, and a limited pool of available programmers." Added to this daunting list, competition is fierce with thousands of jurisdictions around the globe aspiring to be the next Silicon Valley or Bangalore. Most of these are in better condition with regard to the constraints facing Armenia and many have cheaper labor. Indeed, with low-to-medium scores regarding percent of high technology exports and per capita PCs, Internet hosts, and scientists/engineers, even among the republics of the FSU, Armenia seems poorly equipped to compete. Certainly software development has been a relative bright spot on an otherwise sober business landscape. But its potential and responsiveness to large-scale development assistance are questionable.

Moreover, the realized success and apparent potential of this industry in Armenia may, in part, be due to the Blockade. As argued earlier, goods and services, such as software, which largely circumvent the Blockade are more attractive relative to those which do not. In other words, the comparative advantage Armenia may currently have in software development may be an artifact of the Blockade.

F. The Government of Armenia

It should be stressed that this discussion only examines some of the incentives, largely economic, related to the Blockade. Individuals, agencies, and regimes may respond to other priorities, such as security or humanitarian considerations.

Both because of the Government of Armenia's (GOA) responsibilities regarding the welfare of its people and the increased potential for economic growth, the GOA has strong long run incentives to work for an end to the Blockade. In the short and medium term, however, the economic incentives are mixed. Short/medium term economic incentives in favor of ending the Blockade include:

- Increased revenues from businesses and industries, such as building stone, tourism, and the railroad, which would be favored by the change: Some industries, such as tourism and building stone, could be expected to realize rapid growth. There would be increased taxes and fees associated with this activity.
- Increased revenues related to higher levels of FDI: FDI would be expected to increase. From the standpoint of the GOA, this could be particularly important as firms with high levels of foreign ownership are less likely than others to evade taxation.
- Ability to reduce military expenditures: The defense burden on Armenia is one of the heaviest in the world, approximately \$135 million,¹¹ equivalent to 7 percent of GDP or 30 percent of GOA expenditures. A normalization of relations with its neighbors would allow GOA to reduce these expenditures.
- Potential for some short term assistance to facilitate the transition: It seems likely that any settlement would be accompanied by short term assistance to facilitate reopening and upgrading direct transportation and communications links between Armenia and Azerbaijan and Turkey and for other costs, such as for possible resettlements of displaced individuals.

Short/medium term economic incentives against working to end the Blockade include:

- Reduced revenues from businesses and industries, such as some segments of the food industry, which may be disadvantaged by the change: The Blockade has sheltered some industries in Armenia from full exposure to

¹¹ It is not certain if this includes expenses related to the maintenance of Russian border guards.

foreign competition. For example, west of the Central Asian republics, Armenia is the only nation of the FSU that does not have a McDonalds.¹² There are few other international food franchises in Armenia. Eliminating the Blockade should increase investments by such franchises, but at the cost of increased competition to existing food outlets.

- Reduced remittances: Roughly two thirds of remittances come from recently emigrated Armenians (Poghossian). To the extent that ending the Blockade reduces emigration and perceptions by émigrés of severe conditions in Armenia, remittances could be expected to decline.
- Reduced assistance: Arguably the most important economic incentive against GOA action to end the Blockade is the possibility of reduced assistance. As discussed elsewhere, relative to the other republics of the FSU, the level of assistance received by GOA is unusually high, e.g., see Figure 4. Almost surely, this is due, at least in part, to the Blockade. Development assistance is the equivalent of nearly two thirds of GOA's expenditures (Central Intelligence Agency). Added to this, the country receives military assistance, again, much of it related to the Blockade.¹³

From a layman's standpoint,¹⁴ the Blockade also appears to bring political positives and negatives for the GOA. Any Government bringing true peace would garner considerable acclaim from the international community and its people. With normalized relations, the GOA could participate more fully in regional initiatives. On the other hand, the Government would have to defend to its people any concessions made to secure an agreement. Without the dislocations of the Blockade and threat of renewed hostilities, Armenia would become a much less important actor internationally. Finally, without the Blockade, the GOA would lose a rationale for stricter internal disciplines and a scapegoat for real or perceived shortfalls.

The disturbing conclusion of this analysis is that there may be areas of and individuals in the GOA who feel that maintaining the Blockade is in their best economic or political interests, at least in the short/medium terms.¹⁵

¹² Even Azerbaijan and Georgia have restaurants, one and two, respectively.

¹³ Assistance dollars are particularly important to the Government as it normally has considerable influence over how these funds are spent. Often assistance dollars can be directed to projects which complement GOA activities or directly substitute for those activities. So while the GOA could expect to capture only a few cents for every dollar of additional business activity, it might effectively control the majority of assistance expenditures.

¹⁴ I can claim no expertise in political science.

¹⁵ Another reason for suspecting mixed incentives is the likelihood that parties throughout the Armenian economy currently benefiting from the Blockade would be better able to lobby the

Two points should be stressed. First, even if elements within the GOA recognize short/medium term economic or other incentives for maintaining the Blockade, they may act according to other priorities. Second, and as was noted in the discussion regarding Georgia, responding to economic incentives is natural behavior. Moreover, there may be those who believe that the economic benefits of protection from foreign competition due to the Blockade outweigh any negatives and/or that there would be unacceptable costs from concessions with any agreement to end the Blockade.

V. RECAPPING

The discussion to this point has examined the costs of the Blockade. As a point of departure, a simplistic approach, illustrated in Figure 1, was first examined. The Blockade was viewed solely as a transportation tax of \$x, resulting in an inward shift of the supply of Armenian exports, S, by \$x, and no change in the demand for Armenian exports. Using essentially this approach, I estimated that without the Blockade, there would be just over \$100 million additional exports to Azerbaijan and Turkey. Poghossian estimated that all exports would increase by \$300 million, effectively doubling, and GDP would increase by a third.

Moving beyond the simplistic approach, the heart of the discussion was an examination of how the Blockade alters the incentives of those determining S and D and, in so doing, changes the levels and compositions of both. There were three main points:

1. Overall, these effects tend to lower both S and D, resulting in greater losses, almost surely much greater from the Blockade than reflected in Poghossian's or my estimates.
2. The Blockade gives near-monopoly control over transit of Armenia's imports and exports to Georgia and firms and individuals working within that country. Using this market power, these parties can capture significant shares of what would otherwise be net gains or economic rents for Armenia and those doing business with Armenia. In other words, \$x is not a set amount, but changes in form (i.e., collection method) and amount to maximize the appropriation of these economic rents. This is the slippery slope that will

Government than parties which could gain with an agreement to end the Blockade. This follows because the sources and amounts of the benefits to the former groups, as well as the identities of themselves (???) and the relevant Government agencies and individuals, should be clearer than for the latter.

almost always sap a portion of gains made by Armenia and those doing business with or giving assistance to Armenia.¹⁶

3. The transportation tax, relative price changing, and uncertainty elevating aspects of the Blockade alter comparative advantages for businesses in Armenia and those doing business with Armenia. In particular, relative to other possible activities, the Blockade discourages endeavors which are intensive with regard to surface transport for exporting and importing and capital, especially long-term fixed capital. As such, the composition of Armenian industry and infrastructure is likely to be non-optimal in the absence of the Blockade. A corollary to this observation is the more that the business community and the GOA donors tailor their operations to Blockade-induced stimuli, the greater the incentives to preserve the Blockade.

In the next Section transportation will be used to demonstrate how assistance organizations (and/or the GOA) can incorporate considerations about the Blockade into their project assessments.

VI. THE BLOCKADE AND PROJECT ASSESSMENTS: THE CASE OF TRANSPORTATION¹⁷

A. The Proposed Approach: Nothing More Than Standard Practice

It is standard practice when doing a benefit/cost assessment of a project to examine the impacts on related projects. For example, an analysis of benefits and costs from building a roadway between A and B would be incomplete unless it included the financial implications of that roadway on the parallel rail line and businesses located at A and B. Moreover, if there is a meaningful probability for an event, such as shifts in ocean currents affecting fisheries near B or confirmation of commercially important mineral deposits at A, which could significantly alter the attractiveness of the project, this information should be taken into account. Typically this would be done by comparing assessments of the project before and after that event, with some weighting based on the event's probability. Finally, the project might impact on the

¹⁶ Again, this is not meant to portray Georgia and businesses/individuals within Georgia in a negative light. It is nothing more than exploitation of commercial opportunities. If Savannah had the same position vis-à-vis U.S. imports and exports as is enjoyed with respect to Armenian trade by Poti and Batumi, our Georgia would also use its power to extract value. While there certainly is scope for anti-corruption work and efforts to improve the efficiency and condition of [Caucasian] Georgia's transport system, the most tractable solution to the 'slippery slope' problem is enhanced competition through elimination of the Blockade.

¹⁷ Information in this section regarding the transportation system is current as of January 2000.

probability of the event. For example, the roadway might alter the intensiveness of the search for minerals at A and/or the commercial viability of any discoveries. If the project could alter the probability of the event, then the overall impact of that event becomes an element in the project's benefit/cost assessment.

This is exactly what is proposed here. It was argued in the previous section that costs related to the Blockade are extremely large, with impacts throughout the Armenian economy. As such, it should be common practice, particularly when projects involve long-term, fixed capital, to assess the project under current conditions and without the Blockade. If the net value of a project differs significantly depending upon the existence/elimination of the Blockade, additional analysis should be performed to assess the project's impact on the probability and likely timing of the Blockade's elimination. Admittedly, precise quantitative estimates across all areas of such analyses will rarely, if ever, be possible. Nevertheless, information about the directions and probable magnitudes of these relationships should be of considerable value. Of particular importance in this regard, the proposed procedure would encourage designs that enhance project returns both with and without the Blockade. In this section, transportation is used to illustrate this approach.

B. International Surface Transport For Armenia Under The Blockade

With regard to inter-city and international surface transportation, the Blockade has three primary impacts on Armenia:

1. Increased importance of linkages with Georgia and Iran.
2. Denial of access to shorter, lower elevation road and rail routes to far southern Armenia via Nakhichevan.
3. Increased importance of linkages to Nagorno-Karabakh and other areas of Azerbaijan not under Azeri control.

Armenia's sole remaining rail link to other countries is with the Georgian Railway at Ayrum/Sadakhlo south of Tbilisi, see Figure 6. In virtually all cases freight passing through this border crossing is going to or from the Black Sea ports of Poti and Batumi. For internal traffic, as well as international trade, the Yerevan-Vanadzor (Kirovakan)-Ayrum portion of the Armenian rail system is by far the most important. Therefore, under the blockade, Armenia's rail priorities to support internal as well as international commerce are effectively identical. Not surprisingly, virtually all of Armenia's efforts, as well as international support, have focused on the Yerevan-Vanadzor-Ayrum line.

Figure 6: Rail and Road Connections Between Armenia and Georgia.



Figure 7: Armenia’s Road and Rail Links with Iran and Azerbaijan.



There are three border crossings by road between Armenia and Georgia,¹⁸ see Figure 6. By far the most important is the easternmost, crossing the border at Ayrum/Sadakhlo. This roadway has and continues to receive the most attention by Armenia. The roadway also has considerable importance as a link among several of Armenia's largest cities. The westernmost roadway (known as the Batumi Road), which crosses the border north-northwest of Gyumri (Kumayri on the map) and southeast of Bogdanovka, Georgia, has some importance as a routing for indirect trade from Turkey. Some of the Turkish trade enters (or exits) Georgia near Vale. Some of this traffic proceeds to/from Armenia through Tbilisi via the easternmost routing. The remainder heads directly to Armenia, using the westernmost crossing. Armenia has devoted significant amounts of funds upgrading its portion of this roadway. The primary reason why virtually all traffic does not utilize this much shorter routing is the very poor condition of the roadway on the Georgian side southwest of Bogdanovka.

The only link with Iran and far southern Armenia is via a single roadway passing through Goris and Kapan, reaching the frontier at Meghri, see Figure 7. Prior to the Blockade, the roadway south of Kapan was little used due to a mountain barrier (the Megrhu Ish.) and the availability of an alternative routing through Nakhichevan.

The primary access to Nagorno-Karabakh is the so-called Lachin Corridor, East of Goris. With the exception of a small volume of north-south truck traffic, primarily between Georgia and Iran, Armenian territory is not utilized for transit.

C. International Transport For And Through Armenia Without The Blockade

Removing the Blockade would considerably improve Armenia's surface transportation access for trade. Rail traffic westward into and through Turkey would be feasible, as well as eastward through Azerbaijan. Under the Blockade, the rail fragment along the southern border would once again be part of a larger system, with the potential of becoming an important east-west link. Moreover, the railhead at Kapan would no longer be isolated. There would be a similar expansion in alternatives regarding roadways. The road and rail links to the west would also facilitate access to alternative maritime outlets along Turkey's Black Sea and Mediterranean coasts.

Several researchers have calculated the relative costs of these alternatives, (e.g., see Poghossian and Beilock et al.). These studies have relied on existing tariffs and/or utilized some variant of an economic engineering approach. At best there has been limited accounting of unofficial payments into these calculations. While useful starting points, these calculations have underestimated transport-related savings from

¹⁸ There are two other minor crossings north of Stepanovan. Their current status is not known.

eliminating the Blockade because they have not accounted for the impacts of increased competition. The availability of alternative routings would increase incentives for suppliers of transport services (motor carriers, highway departments, railroads, traffic police, etc.) to provide higher quality services. It would also reduce the ability of these providers to charge elevated fees, both official and unofficial.

Armenia's Potential for East-West Transit

The north-south orientation of Armenia, suggests that this axis also is the country's main potential for transiting international movements. This is not the case. For example, between Tbilisi and Tehran, transiting through Azerbaijan is 281 kilometers shorter than through Armenia (see Beilock, 1999). Even if Armenian roadways were utilized, most likely Armenian roadways south of Arnash (near the northeast boundary with Nakhichevan) would not be used. This is because transiting north-south from Ayrum to Meghri is 150 kilometers longer than using Nakhichevan (Turkish) roadways for the southern part of that movement. In addition to shorter distance, avoiding southern Armenia avoids crossing a high and hazardous pass between K'arajan and Meghri. The picture is more positive with regard to north-south rail movements. The only rail outlet to the south from the Caucasus is at Culfa in Nakhichevan. Rail access to Nakhichevan is through Armenia. However, even with peace throughout the entire region, it is doubtful if there would be significant north-south rail traffic for many years, perhaps decades.

As a bridge for east-west traffic, Armenia has considerable potential. For example, without the current problems, a routing through Armenia would considerably shorten the proposed Baku-Mediterranean [i.e., Ceyhan] oil pipeline. Road transport between Baku and Istanbul is 160 kilometers shorter [as well as lower elevation] through Armenia than via the shortest routing circumventing the country (Beilock, 1999). Finally, west of Gyumri is the only rail gateway linking the Caucasus with Turkey.

D. Examples Of Blockade-Related Considerations For Specific Projects

Akhaltsikhe-Kars Railway

In some instances, the relationship of a project and the Blockade are so evident that some variant of the approach called for in this paper is undertaken, albeit usually in an informal and disjointed manner by conflicting parties. Such a case is the proposed Akhaltsikhe-Kars railway.

Since the mid-1990s, Georgia and Turkey have discussed and made some efforts at securing funding to upgrade the existing rail line between Tbilisi and Akhaltsikhe and build a new extension to Kars, Turkey. The justification for the project is to

facilitate east-west movements of oil, cotton, grains, and other commodities between, on the one hand, the Caucasus and Central Asia, and, on the other hand, Europe, including Turkey. Cost estimates for the project have varied considerably, but it is clear that it would entail hundreds of millions of dollars. Relative to routings through Armenia, the new gateway would offer no distance advantage and traverses higher elevations (Beilock, 1999). Moreover, even if there were no potential for rail traffic through Armenia, the economic viability of the proposed Akhaltsikhe-Kars railway would be doubtful. This is particularly true because of competition from Georgia's Black Sea ports and potential competition from the proposed Ceyhan pipeline.¹⁹

Clearly, the proposed railroad is intended to replace a transport option that is unavailable as long as the Blockade is in force. Also clearly:

1. The economic value of the new rail line would be sharply reduced if the Blockade ended. In other words, owners of that rail line and businesses serving that line would realize economic rents from the Blockade.
2. The potential economic gain to Armenia from an ending of the Blockade would decline.
3. Because of 1.& 2., the probability of the Blockade ending would be lower as those with vested interests in the new rail line would have incentives to devote resources promoting its continuance and parties in Armenia would have less incentive to work for eliminating the Blockade.

The extent and direction of differences between benefit/cost scenarios for the proposed rail line with and without the Blockade would have made 1.and 2.evident. From there, it is a short step to 3. As the directions of the relationships were evident and clearly important, formal analysis was probably unnecessary. But this is not always the case, even when the effects are essentially the same, as demonstrated by the next example.

The Batumi Road

The Batumi Road refers to Route 306A, which runs parallel to the Turkish border from Gyumri, Armenia to Batumi, Georgia, see Figure 6. Hilly throughout, the roadway passes through particularly high, difficult terrain on both sides of the Armenian-Georgian border and again in Adzharia. Between Gyumri and Batumi, the roadway passes through sparsely populated areas, with the exceptions of Akhalkalaki and Akhaltsikhe.

¹⁹ Remarkably, some proponents of the new rail line have portrayed it as an interim solution for transporting oil until the Ceyhan pipeline is constructed.

Because of its extremely poor condition in Adzharia, the roadway is not used to access the Black Sea ports. At the other end and largely through funds from the World Bank's transportation project, Armenia has upgraded its portion of the roadway. Georgia also has maintained and, in some areas even upgraded the roadway between Akhalkalaki and Akhaltsikhe. However, for 20 to 30 kilometers within Georgia from the border with Armenia the roadway is little more than ruts across fields.

With little or no examination of Blockade-related effects, the World Bank has permitted use of its funds for the aforementioned upgrades on the Armenian side. In addition, in the late 1990s, the U.S. was actively considering assistance to upgrade the roadway on the Georgian side of the border. While the U.S. was cognizant of Blockade-related traffic along that roadway, initially there was no effort to consider the economic value of the project with and without the Blockade nor its impact on the probability of eliminating the Blockade. This is surprising as the U.S. adamantly pressed for such considerations with regard to the Georgia-Turkey rail proposal. This underscores the importance of consistent examination of Blockade-related effects.

The link with the Blockade and the Batumi Road is Turkey's indirect trade with Armenia. As noted earlier, much of this trade enters/exits Georgia at Vale (near Akhaltsikhe). From Vale, some of this trade follows a very circuitous routing to/from Armenia through Tbilisi. The diversion is due, for the most part, to the poor condition of the Batumi Road. Improvements in the roadway between Vale and Gyumri would have the effect of lowering transport costs for this indirect trade. In so doing, the economic cost of the Blockade for those trading between Turkey and Armenia is lowered. On one level, it could be argued that this would promote more trade and with trade comes interdependence and mutual understanding. On another level, however, lowering the cost of the Blockade lowers incentives for its elimination. Moreover, if the Blockade were eliminated, direct routings between Armenia and Turkey would clearly dominate, greatly reducing the economic value of the Batumi Road.

Even with benefit/cost analyses of Batumi Road upgrades with and without the Blockade and associated assessments of resulting incentives regarding the Blockade, the actions of the World Bank and the U.S. may have been the same. However, such analyses would provide more complete information, alerting policy makers to the existence or strength of impacts they might otherwise not have considered.

Armenia's Southern Roadways

Considering Armenia's population distribution, a very large share of funds from the World Bank transportation project has and continues to be spent on maintenance and upgrades of roadways in southern Armenia, particularly south of Goris. With the

Blockade these roadways took on increased importance to reach the communities south of the Megrhu Ish. mountains and facilitate trade to and from Iran. Without work on this roadway, trade with and through Iran would have been very seriously constrained, if not totally eliminated. In 2001, two-way trade with Iran totaled \$120 million (Central Intelligence Agency) and trade through Iran with other countries would probably increase this figure by half. Moreover, there would have been only limited contact via surface transport with Armenia's southernmost communities.²⁰ For these reasons and despite the fact that the roadway will likely have virtually no traffic after the Blockade, almost surely a with/without Blockade analysis would have still justified some work on these roadways. However, such analysis could have given the GOA, as well as the World Bank, a keener appreciation of the extent of the costs being borne because of the Blockade. With such information, Armenia and the World Bank might have opted for a less costly roadway design.²¹

The 'Kerkorian Route'

In the late 1990s, Kerkorian, an American philanthropist, offered to give Armenia \$85 million dollars to enhance the country's road system, effectively doubling all support given to date for Armenia's roadways. The GOA proposed using virtually all of these funds to develop an alternative routing for north-south traffic between Yeghegnadzor and Vanadzor, see Figure 8. The main benefits from the project cited by the GOA were that the routing would be shorter (by 50 kilometers, roughly 20 percent) and relieve congestion in and around Yerevan.²² Casual examination of Figure 8 suggests that the project had considerable merit. However, the map does not convey the difficulty of the terrain. In two areas the route climbs steeply to over 2,100 meters. The terrain and because much of the route would have to be built effectively from scratch explain the very high cost.²³

Wanting the GOA to reconsider, the U.S. presented an assessment of the roadway (Beilock et al.) that concluded:

1. Assuming it became the main routing, and only taking into account construction and minimal maintenance costs, the project would still have a negative net present value.

²⁰ Admittedly, the population of this area is very low, probably well under 10,000.

²¹ For example, making portions one lane with turnouts.

²² The GOA also hoped the project would spur economic development in the affected regions.

²³ In addition, the GOA wanted to build the roadway to very high standards. Beilock et al. estimated that an adequate, though lower standard, roadway would have still cost nearly \$50 million.

2. In actuality, maintenance costs would be high and, invariably, the route would be difficult to keep open from late fall through early spring.
3. Even in good weather, most heavy trucks would avoid the steep grades in favor of the current route.
4. Upgrading the current route would cost a fraction (\$9 million) of the cost of building the new route, and some of these upgrades were already planned as part of the World Bank transportation project.

Figure 8: Kerkorian and Current Main North-South Route.



Verbally, the U.S. also made the point that after the Blockade, most north-south traffic will probably bypass Armenia entirely or, at least, enter/exit Armenia north of Yeghegnadzor.

Still, the GOA asserted that this was the project they preferred. Why? In part, it may have been due to its belief that the roadway would, indeed, be used and that Armenia has significant potential as a north-south transport link. However, after further analysis and consultations with Armenian officials, it became apparent that the

project was also valued by the GOA for improving access to Nagorno-Karabakh and other areas of Azerbaijan not under Azeri control.

Due to intervention by the U.S. Ambassador to Armenia, Michael Lemmon, using this analysis, the project was not funded. Even assuming the Blockade to be essentially permanent, based on standard benefit/cost analysis, this project was not attractive. However, incorporating information about the Blockade and related incentives of those involved increased understanding of the GOA's logic and made a stronger case to them and the donor for exploring alternatives.

Upgrading the Rail Line and Yards Between Ayrum, Armenia and Sadakhlo, Georgia

In 1998, the U.S. was presented with a request for funding to upgrade approximately 13 kilometers of rail line between Ayrum, Armenia, and Sadakhlo, Georgia, and to do some work on the rail yard at Ayrum. The proposal was developed primarily by Armenia, but co-sponsored by Georgia. This was, almost surely, the worst part of the system from Yerevan to the Black Sea. Trains were required to pass over these tracks at much reduced speeds.

In the end, the U.S. declined to fund the project because the very lengthy average times trains took to pass through this area were almost entirely due to inefficient switching engines and of most importance, poor border clearance procedures. Without first rectifying these problems, it was concluded that the rail line upgrade would contribute little or nothing to actual performance (Beilock, 1998).

I believe the U.S. was correct in refusing serious consideration of the project until engine switching and, especially, border control procedures were improved. If and when that occurs, the project would almost surely look more attractive employing benefit/cost analysis with and without the Blockade. This is an instance when a project both supports a critical Blockade-related need and would have even higher net value if the Blockade were eliminated. With the Blockade, this rail line is Armenia's only rail link with the world via Black Sea ports. With no Blockade, it would continue to link Armenia with the Black Sea ports and, if there were also an accommodation in Abkhazia, also with Russia. In addition, the rail line would serve as part of the gateway for all of the Caucasus to Turkey.

The Sevan Pass

This is an example of how systematic consideration of Blockade and post-Blockade conditions could result in improved project designs.

Route M24 connects Dilijan with Yerevan, via Sevan and Hrazdan. The route continues eastward into Azerbaijan. Under the Soviet Union, M24 was the main road link between the two countries. The only other road from Dilijan and this part of

Armenia is a very poor track (Route A330) between Dilijan and Vanadzor. From Yerevan to Sevan, M24 is in good condition. However, between Sevan and Dilijan the roadway narrows and negotiates a very steep climb over the 2,110 meter high Sevan Pass. Particularly on the side facing Dilijan, there are numerous tight switchbacks. There is an unfinished tunnel that, if completed, would eliminate perhaps a fifth of the climb. Because of the GOA's understandable concern about maintaining reasonable access to this part of their nation, considerable funds have been devoted to maintaining and making some improvements on this roadway. Arguing that the roadway is not only important internally, but would become an important conduit for commerce between Armenia and Azerbaijan if the Blockade ended, at various times the GOA has put forth requests for additional funding for the roadway and tunnel completion.²⁴

In assessing the best way to approach the 'Dilijan problem,' consider the following:

1. Regardless of the status of the Blockade, it will always be important for Armenia to have a road link with Dilijan and the surrounding region capable of carrying commercial traffic.
2. As the GOA points out, after the Blockade there will be trade with Azerbaijan, and a more direct road link than via Tbilisi would be highly desirable.
3. In addition, after the Blockade, there is the potential for Armenia to become an important conduit for east-west traffic between Azerbaijan/Central Asia and Turkey/Europe.

M24 has the potential of serving the first two needs. It could also help facilitate east-west movements. However, routing this traffic through Yerevan does not seem ideal due to: congestion, the predominantly north-south orientation of this roadway, and that [for east-west movements] a better connection with the Turkish road system is available west of Gyumri than near Yerevan. Moreover, while the crossing over the Sevan Pass is adequate, at least in good weather, for automobiles and small trucks, it is and always will be problematic for large trucks. Added to this, keeping the Sevan Pass open year round is difficult and costly.

A potential solution could be to reconsider the appropriateness of M24 as a commercial route. Even if the north-south orientation of M24 were ideal for all purposes, the tight switchbacks required at the Seven Pass present more difficulties today than when the route was planned (as trucks then were generally smaller and few were articulated). Without completing the tunnel, the cost of repairs and

²⁴ For example, the Sevan-to-Dilijan portion of the roadway was part of the Kerkorian Route.

upgrades to make the roadway minimally usable for commercial traffic, at least in good weather, is about \$4 million. The same amount of funds could be used to upgrade the much lower Route A330 (the road to Vanadzor) making it suitable for all types of traffic (Beilock et al.). At Vanadzor, A330 becomes the main route, continuing westward through Gyumri to the Turkish border. As such, after the Blockade is eliminated, this route would be ideal for the main east-west corridor transiting the country. The only negative of this alternative, relative to M24, is that the trip distance between Dilijan and Yerevan would increase by 55 kilometers, from 99 to 154 kilometers. However for large trucks, considering the difficult climb over Sevan Pass, in good weather the trip time and fuel cost differences between the two routings should be minimal. And in poor weather, the routing via Vanadzor would have a distinct advantage. Moreover, without upgrades, M24 could be maintained at a level suitable for automobiles and light trucks.²⁵

VII. CONCLUDING REMARKS

In many important respects, the Armenian economy performs differently from the economies of the other nations of the Former Soviet Union. For example, given the extent of reforms made by the Government of Armenia, supply response has been low, surprisingly few small and medium sized firms are being established, larger firms are much less efficient than their counterparts in the other nations of the FSU, and Armenia persistently has the worst trade balance of these nations. Certainly since 1994, there has been growth. But considering that a war had just ended, the very low level of the economy, and generous inflows of assistance and remittances, growth was arguably inevitable and there are signs that it is not sustainable.

In this paper, it has been argued that the Armenian economy is different and its potential seriously constrained largely because of the Blockade. By the Blockade is meant the:

1. Virtual absence of direct movements of goods, services, and people across Armenia's borders with Turkey and Azerbaijan.
2. Official prohibitions against trade between Armenia and Turkey/Azerbaijan.
3. Risk of renewed hostilities.

Treating the Blockade like a transportation tax, the effects are extremely large. However, this seriously underestimates the magnitude and scope of the Blockade's impacts. First, the transportation tax is not a constant across all goods. Rather, it

²⁵ Though it probably would not be cost effective to keep the route open throughout the winter.

mutates, in price discrimination or value of service fashion, to capture a portion of value added by those in and doing business with Armenia. This slippery slope, which siphons off some part of any effort, the virtual elimination of commerce with Azerbaijan and Turkey, and uncertainties associated with the Blockade:

- Depress investment, both foreign and domestic.
- Bias business activities towards those requiring low amounts of long-term, fixed capital.
- Encourage domestic over export activities.
- Encourage activities with low intensities regarding international surface transport.
- Alter demands.

The Blockade lowers the performance and potential of the Armenian economy and, through the responses of actors in the system to Blockade-related stimuli, alters the composition of Armenian businesses and infrastructure. Similar, though less pronounced, effects are felt by the other nations of the Caucasus and, to an even lesser extent, neighboring countries. The more the composition of Armenia's and the region's businesses and infrastructures change in response to Blockade-related stimuli, the more the vested interests to preserve the Blockade and lower the payoffs from its elimination.

Because of the profound and wide ranging effects of the Blockade, it was proposed that donor organizations and the Government of Armenia make it a standard practice to assess project benefits with and without the Blockade. Particularly when there are large variations between the two assessment scenarios, there should also be examination of the direction and likely extent to which the project would alter incentives to eliminate the Blockade.

REFERENCES

Anderson, M., 1999, *Do No Harm*, Lynne Reiner Publishers, Boulder CO.

Beilock, R., 1998, *Assessment: Caucasus Regional Infrastructure Development: Railway Development Project*, report prepared for the U.S.Ambassador to Armenia.

Beilock, R., 1999, *Transcaucasus Road and Rail Routes Workbook*, report prepared for the U.S.Ambassadors to Armenia, Azerbaijan, and Georgia, Yerevan.

- Beilock, R., D.Mosel, R.Ball, S.Der-Boghossian, and J.Neben, 1998, Caucasus Transportation Strategy, interim report prepared for the U.S.Embassies of Armenia, Azerbaijan, and Georgia.
- Central Intelligence Agency, 2002, *World Factbook 2002*, Central Intelligence Agency, Landover MD.
- Economist Intelligence Unit, 2002, Armenia Economy Background Data, Economist Intelligence Unit, London.
- Freinkman, L., K.Grigorian, G.Gyulumyan, and Y.Kuznetsov, 2001, Growth Challenges and Government Policies in Armenia: A World Bank Country Study, World Bank, Washington, DC.
- Poghossian, G., 2000, Migration in Armenia: Case Study, mimeo, Yerevan.
- Poghossian, A., and V.Stepanyan, 2000, Armenian Software Sector, Yerevan.
- Stone, A. 1999, Armenia: Private Sector Development in 1998, report prepared for the World Bank.
- Terry, F., 2002, *Condemned to Repeat?: The Paradox of Humanitarian Action*, Cornell University Press, Ithaca NY.