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## *Policy Studies*

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### **THE NEED FOR AN ECONOMIC MODEL FOR THE IDF RESERVES**

*Bar Dadon*

*To oblige the great body of the yeomanry and of the other classes of the citizens to be under arms for the purpose of going through military exercises and evolutions as often as might be necessary, to acquire the degree of perfection which would intitle them to the character of a well regulated militia, would be a real grievance to the people, and a serious public inconvenience and loss. It would form an annual deduction from the productive labour of the country....To attempt a thing which would abridge the mass of labour and industry to so considerable an extent would be unwise; and the experiment, if made, could not succeed, because it would not long be endured.*

Alexander Hamilton, "The Federalist No. 29"<sup>1</sup>

#### **Introduction**

The State of Israel was born into a state of war and for 50 years has had to deal with a continuing threat to its security from its neighbors. The defense of the State has required extensive financial resources and a heavy investment of manpower. In addition, Israeli citizens have been required to sacrifice much of their freedom.

Most Israeli citizens are required to serve in the Israel Defense Forces (IDF) for a period of between two and three years. At the end of this period the law requires that they be transferred to the reserves. As reservists they can be mobilized for up to 36 days per year until the average age of 45.

The original function of the reserves, as conceived by policymakers during the 1950s, was to serve as the principal fighting force during time of war. Over time this concept has changed and today

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80 percent of reserve duty is for purposes of “operational work” (which is not connected to combat), maintenance and administration. This change in concept is a result of the IDF not having to pay the real cost of its reserve forces. This cost is in fact passed on to the taxpayer and the economy as a whole. This *Policy Studies* analyzes the overall cost of the reserves in Israel and will show that the direct and indirect costs can be conservatively estimated at some \$1.15 billion for 1997.

Furthermore, the IDF does not have a policy of utilizing economic criteria in the call-up and compensation of reservists. This results in numerous distortions which are reflected in the continuing decrease in motivation among reservists and increasing numbers of deserters and draft dodgers, which has led to a heavier burden on the rest of the population.

Until now research on the subject of reserves in Israel has focused primarily on the distribution of the burden of reserve duty or on the calculation of its direct cost. During the gathering of data for this *Policy Studies*, it became clear that neither the IDF nor the defense establishment possess the necessary data to evaluate the true cost of reserve duty to the economy. Apparently no study has yet attempted to develop economic criteria for the use of Israel’s reserve forces.

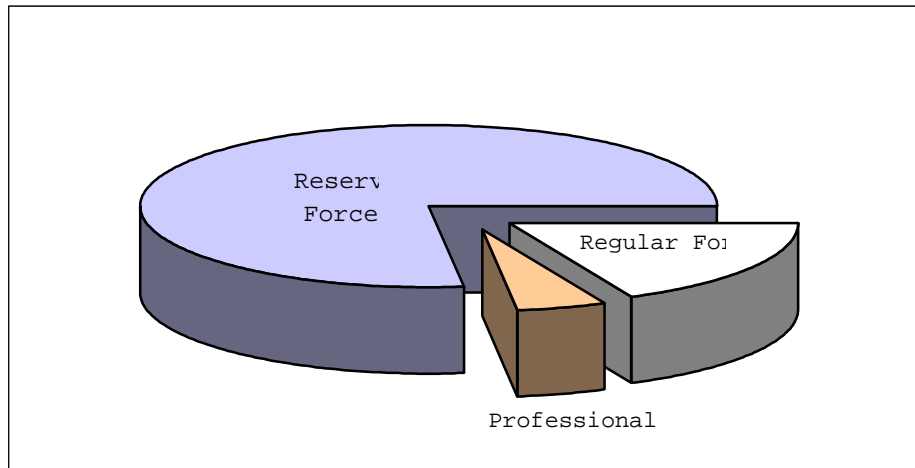
The first section of this *Policy Studies* surveys the reserve forces from the establishment of the State to the present day and describes the changes which have taken place during this period. The second section estimates the real cost of reserve duty and analyzes distortions arising from the present system. The third section describes how Germany and Denmark manage their reserve forces and the final section presents conclusions and recommendations.

### **The Structure of the IDF**

The IDF’s objectives are to provide ongoing security and to defend the country during war. According to *The Military Balance*, a prominent annual publication on military forces of the world, in 1997-1998 there were 175,000 soldiers in the regular Israeli army (conscripts and career soldiers) and 430,000 in the reserves. These reservists conduct normal civilian lives and are called up periodically for reserve duty.<sup>2</sup>

Figure 1 presents the relative sizes of the conscripted army, the professional army and the reserves:

**Figure 1**  
**Structure of the IDF**



Source: Captain Eran Ma'ayan, head of IDF Information Systems Bureau, interview with author, July 23, 1998. The exact numbers are classified.

### The Regular Army

The Defense Forces Law (1959), in its various versions, requires all able-bodied men and women from the age of 18 to report for compulsory army service. The length of service is 36 months for men and 21 months for women. The law even allows for the mobilization of individuals with essential skills, such as doctors up to the age of 38, for a period of 12-24 months in accordance with their age.

This method of mobilization has led to a continual increase in the number of conscripted soldiers. For example, according to the IDF's figures, the number of conscripts during the August 1993 and August 1994 drafts were the largest in the history of the IDF. This is explained by the large wave of immigration prior to this period. In 1993, there was a 30 percent increase in the number of conscripts, compared to the previous year.<sup>3</sup>

The IDF has not, however, fully exploited the potential manpower at its disposal. In practice, the number of conscripts to compulsory military service is lower than it could be. This is a result of the IDF's adjusting the number of conscripts to meet its requirements. The IDF uses two main methods to achieve this: First, it grants general exemptions from compulsory service to certain segments of the population which do not wish to serve in the army. These include Israeli Arabs, students engaged in religious studies,<sup>4</sup> women who are married, are pregnant or who have children, and women who declare that they lead a religiously observant life.

The second method involves the rejection of candidates for military service based on a draft threshold. The conditions for acceptance to military service are determined by three criteria: medical profile, intelligence and ability to adjust to a military framework.<sup>5</sup> Data from the IDF Information Systems Bureau for the period 1980-1997 indicate a 600 percent increase in exemptions to those who were "unfit" for duty and a 300 percent increase in cases of soldiers ending their military service prematurely. There has also been a 100 percent increase in medical exemptions.<sup>6</sup> This policy may be an indication that the size of the standing army presently answers the needs of the IDF and that the army

has decided to reduce the number of conscripts.

The following table presents the gap between the potential number of conscripts and the number of those actually drafted, expressed in percentages for 1997.

**Table 1**

**Gap Between Potential Conscripts and Those Actually Drafted in 1997  
(percent)**

<u>Total Gap</u>	45
Minorities	20
Religious Exemptions	13 (7% males and 25% females)
Abroad	4
Health Exemptions	3
Other (married, or problems)	5

Source: IDF Information Systems Bureau (unpublished document). [Hebrew]

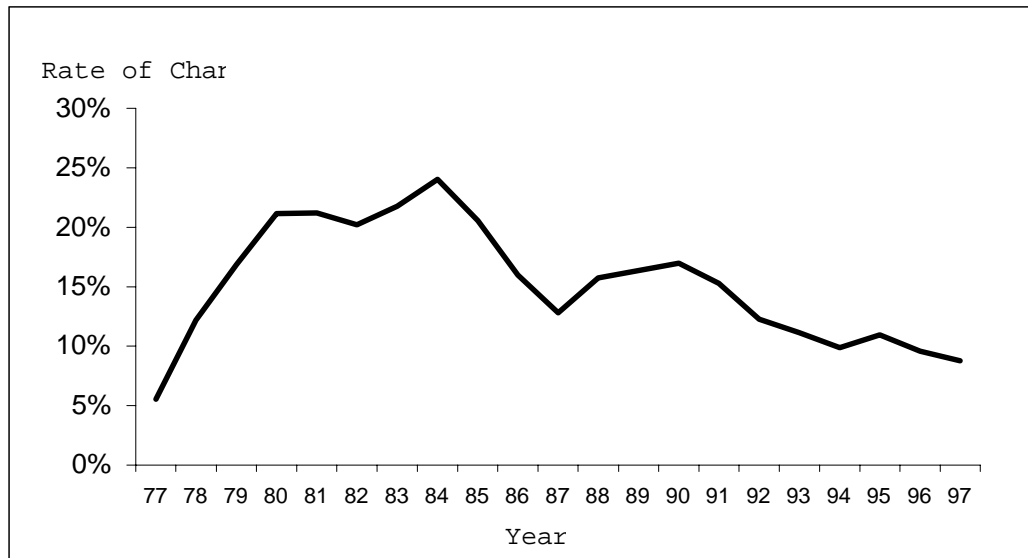
### **The Professional Army**

At the completion of compulsory service, some soldiers join the professional army based on their training and the track they were on as conscripted soldiers. For example, a soldier in compulsory service who becomes an officer is obligated to serve at least one additional year in the army as a professional soldier. The length of service in the professional army is determined by the soldier and the needs of the IDF. The maximum age in the professional army is 45.

Figure 2 shows a general downward trend in the size of the professional army, a trend which was briefly reversed in 1986-1989 during the Intifada. This reduction was a result of the IDF's policy of reducing manpower costs.<sup>7</sup> The wages of professional soldiers together with pensions, devoured 50 percent<sup>8</sup> of the \$8.7 billion defense budget in 1997.<sup>9</sup> The estimates of the Ministry of Finance indicated an annual average cost of about \$51,000 per professional soldier.<sup>10</sup> In addition, the professional soldier is eligible for a one-time grant upon retirement, the size of which is determined by his rank and seniority upon retirement. This grant can equal his annual wage on retirement. Estimates of the Central Bureau of Statistics indicate that retirement benefits for professional soldiers amount to 57 percent of the salary base for pension calculation.<sup>11</sup> Note that the pension deduction for civilian workers ranges from 18-25 percent of the salary base for pension calculation.

Figure 2 shows the rate of change in the size of the professional army from 1977 to 1997:

**Figure 2**  
**Annual Change in Size of Professional Staff in the Army**



Source: IDF Information Systems Bureau (unpublished document). [Hebrew]

### The Structure of the Reserves in the IDF

Official IDF statistics are classified. However, *The Military Balance* estimates that the reserve forces in Israel numbered 430,000 in 1997-1998. These consisted of 365,000 in land forces, 10,000 in the navy and 55,000 in the air force.<sup>12</sup> There is an annual growth rate of 3 percent in the size of the reserve forces as a result of immigration and a high birth rate.<sup>13</sup>

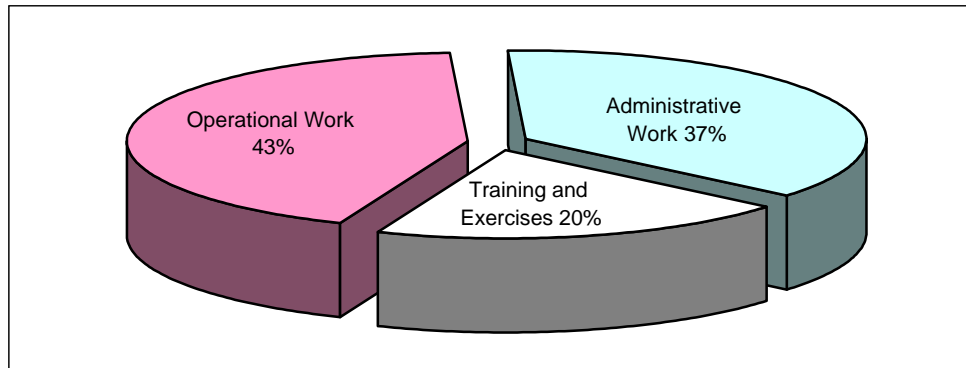
In an interview with the author, Lieutenant Colonel Eli Regev, the head of the IDF Reserve Personnel Planning Branch, outlined the three main functions of the reserve forces:<sup>14</sup>

1. Operational work.
2. Training and exercises.
3. Administration, such as guarding of facilities and filling in for manpower shortages in the regular army.

Figure 3, below, shows the public expenditure on each of these three functions.

The functions of the reserve forces are carried out by two types of units:

1. Category A: These units are intended for combat during time of war and are composed of soldiers with appropriate training. Their reserve duty consists of operational work and training.
2. Category B: These units are responsible for guarding facilities and providing services and maintenance. During time of war, they have a low probability of contact with the enemy.

**Figure 3****Direct National Expenditure on Each Function**

Source: IDF Reserve Personnel Planning Branch (unpublished document). [Hebrew]

**Historical Survey**

The history of reserve forces policy in the IDF can be divided into two periods: from the beginning of Jewish settlement in Israel until the 1980s and from the early 1990s until the present day.

**1946-1986**

Before the establishment of the State, the armed forces consisted of voluntary organizations which took on the responsibility of defending the Jewish population. These included three main organizations: the Hagana, the Irgun and the Fighters for the Freedom of Israel (the Stern Group). These organizations operated on a voluntary basis until October 1947 when it was decided to institute conscription in preparation for the expected outbreak of war. The Mobilization Center for Service to the People was established in November 1947 and allocated recruits to Hagana training camps. This continued until the official establishment of the IDF on May 31, 1948.

During the period 1947-1949, men and women between the ages of 18-35 were recruited. In 1949, the armed forces numbered 120,000 out of a Jewish population of 630,000. These forces were composed of small units of soldiers who fought on a full-time basis and a larger group of civilian recruits who participated in combat operations as they were needed. Following the armistice agreements with the Arab countries at the conclusion of the War of Independence, this military organization was dismantled and it became necessary to decide which military structure was most appropriate for the State of Israel.<sup>15</sup>

In 1950, following a lengthy study conducted by the General Staff on this issue, a decision was made to adopt the Swiss model of a small regular army and a large reserve force which would support the regular army in time of war. This model is still in use today. Policymakers felt that this model would answer the country's economic and security needs, allowing Israel to increase its military forces without having to maintain them on a full-time basis. This would allow the economy to operate even under the threat of war. The model was defined by Professor Yuval Ne'eman (Lieutenant Colonel), then the head of the IDF Operations Department:

The simplest definition considers the army to always be at full operational capability, although on leave for a few days. Each soldier is ready to return to his unit at any moment. This basically means that the civilian population is composed of soldiers who are always on a "short" leave from the army.

Part of the regular army's budgeted manpower will be organized in the form of cadres, and *part will be replaced by a much larger (and cheaper) reserve force.*<sup>16</sup> [Author's emphasis]

As will be seen below, the reserves, which were intended to serve as a combat force that would support the regular army during time of war, began to substitute for the regular forces during times of peace. Over the years the army began to use reservists for functions for which they were not originally intended, such as guard duty, maintenance and even cleaning.

The manpower policy which had been instituted during the early years of the State remained intact and became even more entrenched. In 1973, there were 3.1 million residents in Israel and 275,000 soldiers in the reserve forces. During the War of Attrition and in the years following the 1973 Yom Kippur War, reservists served 5-8 months per year. In 1995, Stuart A. Cohen and Ilan Suleiman published an article entitled "The IDF: From the 'Army of the People' to a Professional Army" in which they stated:

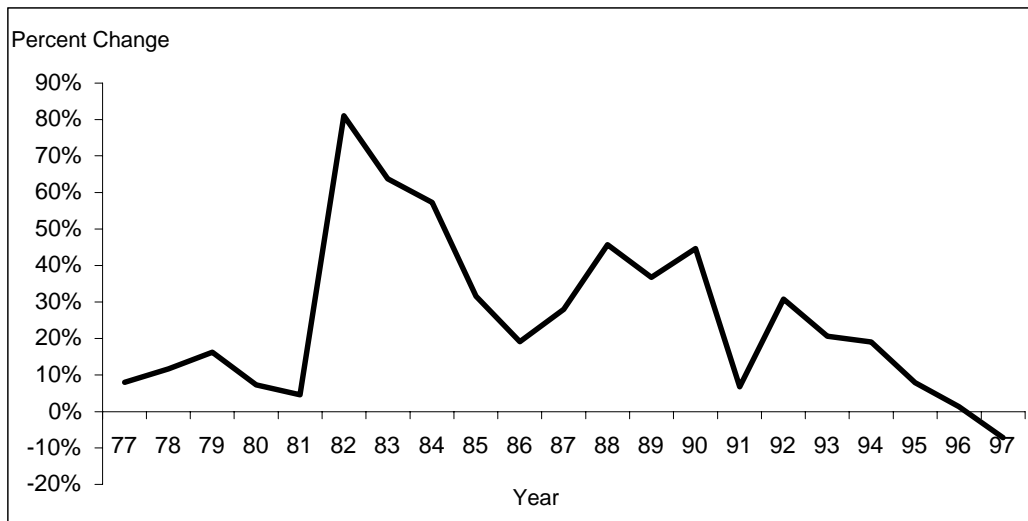
The Yom Kippur War did not lead to a re-examination of whether the structure of the IDF met current needs. On the contrary: During the years following the war, the IDF appeared trapped in the traditional conceptions that included mass mandatory conscription and reserve duty as the answer to a demographic imbalance in favor of Israel's neighboring nations (which was worsening over time)...<sup>17</sup>

During the years 1974-1976, following the Yom Kippur War, the army took several initiatives to broaden universal conscription as a means of increasing its sources of manpower. These included the following steps: Persuading retired senior officers to return to duty; cancellation of a plan to shorten compulsory army service to two and a half years; lengthening reserve duty; reexamining exemptions from service which had been granted to Jewish citizens in previous years; and the relaxation of minimum requirements ("the profile") for entrance into combat units.<sup>18</sup>

### **1987-1997**

As the following graph demonstrates, manpower policies in the IDF, and in particular reserve manpower policies, began to change in the late 1980s. During the last decade a policy of manpower reduction has been initiated by the IDF. The first signs of this policy can be found in the words of Major General Dan Shomron, chief of staff from 1987-1991, when he declared the need to change the IDF into a "small, smart army."<sup>19</sup>

**Figure 4**  
**Rate of Change in Actual Reserve Days Served**



Source: IDF Information Systems Bureau, *Reserve Days* (unpublished document). [Hebrew]

In late September 1992, the director of the Finance Ministry's Budget Division appointed a committee which was chaired by General (Res.) Herzl Shafir and included several high-ranking officers in the reserves. The objective of the committee was to examine the army's manpower requirements and sources. Its conclusions were presented in late 1993. Its recommendations dealt with all types of military personnel: reserve, conscripted and career soldiers. The committee had three principal recommendations regarding the reserve forces:

1. The number of reserve days served should be cut by 50 percent relative to the mid-1980s.
2. The maximum age for reserve duty in combat units should be reduced to 41.
3. Combat soldiers should receive extra compensation over other reservists since they carry a disproportionate burden of operational work.

The recommendations were not directly implemented but served as guidelines for military policymakers, Knesset Members and other decision makers in the years to come.

The state comptroller also warned of a manpower surplus in the IDF in 1995. Table 2 compares the duration of reserve duty for the years 1989-1994 according to type of unit.<sup>20</sup>

**Table 2**  
**IDF Reserve Service 1984-1994**

Year	Category A			Category B			Total for IDF	
	General Average (days)	Average for those serving (days)	Did not serve (0-3 days)	General Average (days)	Average for those serving (days)	Did not serve (0-3 days)	General Average (days)	Average for those serving (days)
1989	27	29	12%	20	24	24%	20	25
1990	27	29	13%	21	24	24%	21	26
1992	21	27	17%	17	24	30%	17	25
1993	21	26	20%	15	23	35%	16	24
1994	21	25	19%	13	22	40%	15	23

Source: State Comptroller, *State Comptroller's Report 46* (Jerusalem: State Comptroller, 1995), p. 847. [Hebrew]

Definitions:

**Category A** — Combat units.

**Category B** — Units designated to guard military facilities and to provide services and maintenance. Low probability of contact with the enemy.

**General Average** — Total number of actual reserve days served during the year divided by the potential number of reservists that could have been called for duty that year.

**Average for those serving** — Total number of reserve days served during the year divided by number of reservists serving four days or more during that year.

**Did not serve** — Served between 0 and 3 days reserve duty. They are not counted in the "Average for those serving."

The state comptroller wrote:

In addition, the table [Table 2] shows that the gap between the general average and the average for those who actually serve is widening, although at differing rates. The gap indicates the extent to which potential is being exploited: the higher the proportion of reservists actually serving, the smaller the gap. This data points to the possibility of further shortening reserve duty and easing its burden if potential manpower could be utilized more efficiently.

In other words, the state comptroller showed that the number of reserve days actually served per reservist decreased by 14 percent for Category A and by 9 percent for Category B during the period 1989-1994. Furthermore, the proportion of reservists who actually serve has decreased by 23 percent for Category A and by 35 percent for Category B during the same period. The state comptroller concluded that the ranks of reservists could be thinned.

The increase of 46.3 percent in the number of conscripted soldiers from 1983-1997 made it possible to apply some of the recommendations of the state comptroller and the Shafir Committee. Following the increase in the size of the conscripted army, the Personnel Planning Branch of the IDF decided in 1994 to use conscripted manpower to fulfill duties formerly carried out by reservists. To this end, additional units of conscripted soldiers were established and existing units were expanded. This policy reduced the average reserve duty (among those who served) from 25 to 23 days per year.<sup>21</sup> This

policy and others resulted in a 50 percent reduction in reserve duty served between 1990 and 1997. In addition, the increase in the number of conscripts allowed the army to reduce the proportion of career soldiers from 25.5 percent in 1983 to 19.2 percent in 1997 and to reduce the proportion of IDF civilian workers (workers who are not drafted into the IDF, but serve according to a contract) from 8 to 4.8 percent during the same period.<sup>22</sup>

The state comptroller did not discuss the age of reservists. This is a significant variable for two reasons: the negative correlation between age and military fitness and the positive correlation between age and cost of compensation. The younger reservists are more physically fit and receive lower compensation for their service than older reservists. The following table shows the distribution of reserve days served in 1997 according to age group, following the changes which have been discussed above:

**Table 3**  
**Reserve Days Served in 1997**

			Served one day or more		Served four days or more	
Age Group	Percentage of IDF manpower (1)	Percentage of reserve days utilized (2)	Percentage for all IDF (3)	Percentage for Age Group (4)	Percentage for all IDF	Percentage for Age Group
21-25	18%	12%	16%	56%	12.3%	31%
26-30	22	28	25	74	27	56
31-35	18.4	22	19	69	21	52
36-40	16.4	18	17	67	18	50
41-47	19	17	18.5	64	18.4	44
48+	6.2	3	4.5	49	3.3	25
Total	100	100	100	65	100	46

Source: IDF Reserve Personnel Planning Branch (unpublished document). [Hebrew]

- (1) Total citizens required to report for reserve duty if called up.
- (2) Percentage of reserve days actually served.
- (3) Percentage of potential pool of reservists who actually serve.
- (4) Percentage of potential pool of reservists in each age group who actually serve .

Table 3 shows that 46 percent of the population who are obligated to serve in the reserves actually served 4 days or more while 65 percent served one day or more. The highest proportion of reserve days was served by the age group 26-35 and following them the age group 36-47. Reservists in the age group 21-25 and 48+ served the least in relation to the general population of reservists and as a proportion of the reservists in those age groups.

At first glance, the data seem to indicate increased efficiency in the use of reserve forces.

However, according to the State Comptroller's Report, a large portion of the decrease in reserve days was a result of cutbacks in training exercises for reservists to prepare them for possible war.<sup>23</sup>

During and preceding the years 1987 and 1988, all combat units underwent training exercises each year. Beginning in 1989, as a result of the Intifada and the accompanying increase in operational work, the allocation of reserve days was reduced and training exercises were cut back. In 1993, the commander of the Land Forces decided that the readiness of combat units was liable to be compromised as a result of insufficient training and had the allocation of reserve days devoted to exercises increased. Thus, in 1994 and 1995, a full training exercise was planned for all units. In 1996, training exercises were again cut back, and the ammunition allocated for training exercises was reduced between 1995-1996. Documentation reveals that in 1997, following cutbacks in the budget for training exercises, a reduction of 75 million NIS was made in the budget allocation [about \$21.75 million].

In other words, since 1990, the reserve days allocated to training exercises have been decreased despite concerns among the higher ranks of the IDF that these cutbacks may reduce combat readiness. As part of the cutbacks, it was decided that the frequency of training exercises would be reduced to once every three years. During the "idle" two years, "skeleton" exercises would be held with the participation of commanders only.<sup>24</sup> In addition, the state comptroller pointed out some serious deficiencies in the planning and execution of training exercises as well in the process of drawing conclusions.<sup>25</sup>

The 1990s have also been characterized by debates over the unequal distribution of the burden of reserve duty and the low motivation among reservists. These debates have been carried out in the media and within the government.

A research study carried out in 1993 by Dr. Yehezkel Ben Sira and economist Menahem Pearlman on behalf of Knesset Member Dr. Raanan Cohen, found numerous distortions as a result of the disproportionate burden of reserve duty carried by a relatively small proportion of reservists.<sup>26</sup>

The state comptroller, on the other hand, focused on the decrease in motivation among reservists during the past few years. The lack of motivation has become so serious that in order to mobilize 100 Category A reservists, it is necessary to call up 150, and in order to mobilize Category B reservists, it is necessary to call up five times the actual number required. The state comptroller also found that from 1992-1995, there was a 54 percent increase in draft dodging (reservists who are called up but do not report on time for duty) and a 14 percent increase in desertion (reservists who do not report for duty and are absent for a period of 30 days).<sup>27</sup>

## **Legislation**

There are three laws regulating mobilization and service in the reserves:

1. Defense Forces Law (1959)
2. Emergency Work Law (1967)
3. National Insurance Law (Integrated Version) (1968)

### **Defense Forces Law (1959)**

This law defines the obligations of Israeli citizens to the defense forces. It views a "reservist" as a demobilized soldier<sup>28</sup> who is part of the reserve forces of the army when not on active reserve duty. A demobilized soldier enters the reserves six months after completing his compulsory service. In July 1986, a new version of the law, the Defense Forces Law (Integrated Version) (1986), replaced its predecessors. It is more detailed and comprehensive than the two previous versions.

### Emergency Work Law (1967)

This law deals with the call-up of reservists during time of war and for the purpose of maintaining military preparedness. Clauses 12-15 discuss the means of call-up for training exercises, the duration of these exercises, compensation for reserve duty and compensation for injury in time of war.

According to clause 12, there is no difference between reserve duty for training and any other purpose as long as the total reserve period served is within the legal limit.

Over time, various laws have been passed which have eased the burden of reserve duty and have placed limits on the duration of each type of reserve duty. The most significant of these laws was passed in 1997 at the initiative of Knesset Member Dr. Raanan Cohen. The legislation called for a clear definition of the purpose of reserve duty at the time of call-up and significantly shortened the maximum reserve periods. Table 4 summarizes the changes of the law in 1997:

**Table 4**  
**1997 Changes in Reserve Service**

	Old Law	New Law
<b>1. Annual Reserve Duty</b>		
Operational Work	38 days	24 days
Training Exercises		6 days
One-day Reserve Duties per year	12 days	6 days
<b>Annual Quota</b>	50 days	36 days
<b>2. Operational Work</b>	No limit	36 days
<b>3. Maximum Age</b>		
Combat Soldier	54	41
Non-Combat Soldier	54	47
<b>4. Emergency Call-up</b> <sup>29</sup>	Unrestricted	Only with approval of Defense and Foreign Affairs Committee of the Knesset
<b>5. Compensation for excessive reserve duty</b>	No compensation for reserve duty beyond the maximum	\$8.5 million was allocated for reservists serving more than 25 days per year
<b>6. Protection from being laid off as a result of reserve duty</b>	None	Layoff prohibited

Source: Knesset Member Dr. Raanan Cohen, *Law to Shorten Reserve Duty* (Interoffice Document, May 21, 1997), p. 1. [Hebrew]

### National Insurance Law (Integrated Version) (1968)

This law defined the financial arrangements for compensation of reservists who were absent from their place of work as a result of reserve duty.

The law established a new National Insurance Institute Branch, the Reserve Duty Insurance

Branch, which was responsible for compensating reservists for reserve duty. The law states that all reservists are eligible for compensation for reserve duty of three consecutive days or more. There are exceptions, such as members of air force crews and battalion commanders who receive compensation from the first day of reserve duty.

Compensation for a day of reserve duty for salaried employees and the self-employed is calculated on the basis of their income (on which national insurance, the equivalent of a Social Security tax, is paid) for the three months prior to reserve duty, linked to the cost of living index and divided by 90. A reservist who is neither a salaried employee nor self-employed receives a minimum level of compensation. The maximum level of compensation for either a salaried employee or a self-employed worker was \$209 per day in January 1988 or \$6,268 per month. The minimum compensation was \$23.5 per day or \$705 per month.<sup>30</sup>

### **The Financing of Reserve Duty**

Payment for reserve duty is transferred by the NII. Until 1996 compensation was financed by national insurance premiums collected from employers, salaried workers and the self-employed. A certain percentage of premiums was designated to finance reserve duty compensation.

Up until 1985, the IDF would call up reservists according to its needs, and reservists would then collect compensation from the NII. There was a ceiling on the total reserve days available to the IDF, but this maximum was often exceeded.<sup>31</sup> This was as a result of the IDF not being financially responsible for the reserves it called up. It was therefore decided in 1985 to institute an incentive system, as part of the 1986 budget, called a “model for savings in reserve days.”

The model for savings in reserve days is described in clause 20 of the Budget Law (1985). According to this model, the defense budget is to include an estimate of the reserve days required for the coming fiscal year. If this number is exceeded by the army, then funds will be transferred from the Ministry of Defense’s budget to the NII to finance the extra cost. If less than the planned number of reserve days are used then the budget surplus can be used by the Ministry of Defense. The objective of the model was to improve the efficiency of the call-up of reservists with direct savings accruing to the Ministry of Defense, and indirect savings to the Israeli economy.

In addition, the Ministry of Finance decided to reduce the NII payments made by employers and employees to cover the cost of reserve duty. The tax was reduced from 3.1 percent before 1985 to 2 percent in 1985, 1.6 percent in 1986 and 0.92 percent in 1995. Employees now paid 0.45 percent of their wages and employers now paid 0.47 percent of their employee’s gross wages. The self-employed must pay 1.31 percent of pre-tax income for reserve duty insurance.

The reduction in national insurance premiums for reserve duty still did not achieve a sense of fairness among the public and their representatives in the Knesset. In 1993, Raanan Cohen described the situation in the following manner:

In our opinion, there is no justification for employees and employers who directly bear the burden of defense, and who are the ones who financially suffer as a result of reserve duty, to then finance their own reserve duty through national insurance payments. It is therefore proposed that the deduction paid by employees and employers for the financing of reserve duty be canceled and that the expense should be totally covered from the State budget.<sup>32</sup>

As a result of pressure from various sources, it was decided during discussions of the 1995

budget that reserve duty compensation would no longer be considered as insurance and would from now on be a budget expense. The collection of insurance premiums for reserve duty would be canceled. However, the fact that reserve duty is financed directly from the State budget at present is no change at all from the taxpayers' point of view.

In addition, it was decided in the framework of the Arrangements Law and the Budget Law for 1995, to transfer the reserve duty budget directly to the army rather than the NII with the objective of consolidating the mobilization and financing of reserves under one roof.

### **The Cost of Reserve Duty**

Over the years, several attempts have been made by policymakers to estimate the cost of security to the economy. In 1993, Knesset Member Benjamin Begin initiated the establishment of a sub-committee of the Defense and Foreign Affairs Committee to be headed by Leora Meridor and called the Committee for Estimating Security Costs to the Israeli Economy. The Committee's objective was to estimate the burden on the Israeli economy.<sup>33</sup>

The Committee concluded that the existing estimates of the cost of reserve forces were biased downwards since they measured the cost of a reserve day by the actual payments made by the NII. NII payments do not fully reflect the cost of reserve duty for the following reasons:

1. Certain wage components paid by employers, such as Training Fund contributions and telephone expenses, are not included in NII payments for reserve duty.
2. NII payments for reserve duty are restricted to a maximum of three times the average national wage. Since there are reservists whose salaries exceed this level, their compensation for reserve duty does not reflect the full cost to the economy.

The Committee therefore estimated the cost of reserve duty to the economy using the actual wages of reservists taken from manpower surveys. Additional wage payments, such as the payments for pension funds, were then added. The Committee found that the actual economic cost of reserve duty was 30 percent higher than the total payments made by the NII. The following table presents the annual NII payments for reserve duty during the years 1986-1997 and the estimate of the real cost according to the Committee:

**Table 5**  
**Real Cost of Reserve Payments**  
**(\$ millions)**

<b>Year</b>	<b>Actual Payments</b>	<b>Payments with 30% Addition</b>
1986	187	243.1
1987	271	352.3
1988	400	520.6
1989	352	457.3
1990	408	530.4
1991	433	562.5
1992	315	409.8
1993	281	365.3
1994	304	395.2
1995	331	430.3
1996	363	471.9
1997	321	417.3

Source: Central Bureau of Statistics, National Accounts Department, *Data on Reserve Service 1986-1997* (n.p., n.d.). [Hebrew]

Note: The original NIS figures were converted to dollars at the exchange rate of December of each year.

Actually, the numbers presented by the Committee underestimate the cost of defense to the economy since they do not take into account the indirect influences on the economy, or lost production as a result of a reservist's absence from work.<sup>34</sup> In addition, the fact that reservists are not compensated for one and two-day stints of reserve duty was not taken into account. Finally, the additional costs of reserve duty incurred by the army, such as transportation, food, clothing, storage of equipment, equipment for training exercises and the costs of special administrative units handling reservists, were not included in the Committee's calculation.

## Summary

The IDF has gone through a long process of cutbacks in all of its forces since the establishment of the State. The reduction in manpower among professional soldiers has been especially noticeable. Regular army units have been established whose objective it is to substitute for reserve forces in certain areas. This has led to a reduction of 50 percent in the actual number of reserve days served since the beginning of the 1990s. These changes have been made possible by the growing potential number of soldiers in the regular army.

Nonetheless, there has been no fundamental change in IDF philosophy. The army still decides when a reservist is to be drafted, he must perform whatever function is demanded of him, and often does not know what will be demanded of him until his first day of reserve duty. During reserve duty, reservists fulfill functions for which they have not been trained in civilian life, and often for which they have not even been trained during their compulsory army service.

The IDF still operates as if it were independent from the rest of the economy and utilizes citizens who are responsible for the growth of the economy without taking into account cost effectiveness beyond its own needs. Eighty percent of the direct cost of reserve duty is being spent on functions which could reasonably be carried out by regular army personnel.

## Analysis

This section will attempt to quantify the real cost of reserve duty to the taxpayer and the economy. The distortions created by the present system will then be presented.

### The Direct Cost of Reserve Duty

Reservists receive compensation from the NII which is equal to their civilian wage, up to a maximum of \$6,268 per month. The total compensation paid in 1996 amounted to \$321 million. The Committee for Estimating Security Costs to the Israeli Economy concluded that the cost of compensation would be 30 percent higher were it not for the ceiling on compensation and if all salary components were compensated. This means that the direct compensation for 1997 would have amounted to \$417.3 million.

Many reservists do not receive compensation for one-day reserve duty and for the first two days of duty. Table 3 shows that 19 percent of reservists (the difference between 65 and 46 percent) served between one and three days reserve duty. The IDF Reserve Manpower Section did not have information regarding the number of one-day or two-day reserve duties for which compensation was not paid. Thus our working assumption will be that one half of reservists who served between one and three days, constituting some 10 percent of reservists, did not receive compensation for these periods of duty. This is a conservative estimate since it is possible for a reservist to serve 6 one-day periods, one every two months, without receiving any payment (unless the army makes a special report to the NII). This means that the army actually paid \$417.3 million to only 90 percent of the reservists in 1997 while the remaining 10 percent did not receive compensation. If the army had to pay compensation to 100 percent of the reservists, it would pay a total of \$463.6 million, an additional \$46.4 million.

In addition, the State must pay other direct expenses such as food, clothing, transportation, and telephone. According to Ministry of Finance data, these additional expenses amount to \$61.5 million per year.<sup>35</sup>

Based on these calculations, the total cost of reserve duty per year can be estimated at \$525.2 million, though the State only pays reservists \$321 million directly. This is clearly a conservative estimate since it does not include the cost of manpower in the regular and professional army which directly and indirectly supports the reserve forces, the cost of storing equipment for reservists, and other costs.

### Indirect Cost of Reserve Duty

The loss of output constitutes the indirect cost of reserve duty. Our estimate of the indirect cost is being made using the largest available database at the time of writing. A more exact estimate could have been achieved if the NII had additional types of data, such as the distribution of actual reserve days according to employment status, or the cost of compensation broken down by age group. In answer to a letter from the author, the NII stated that this type of data does not exist.<sup>36</sup>

## Methodology

The lost output resulting from reservists' absence from work is the indirect cost of reserve duty. The calculation of this cost has not been considered by other writers. The method of calculation is based on the widely accepted assumption that the marginal cost of a worker is equal to his marginal

productivity. Thus, managers receive higher salaries and benefits than lower level employees, reflecting the value of the time and ability required to manage employees, the value of deals which they are able to close, etc. The calculation below utilizes the average wage level for each age group, multiplied by the number of reserve days served by that age group. The sum of these results gives an estimate of the lost marginal product.

The steps of the calculation, as well as some of the data and the method of calculation, are described in more detail in the Appendix.

## Results

Based on the assumption described above, the indirect cost to the economy as a result of reservists' absence from work is estimated at \$621 million for the year 1997.

Note that this is probably an underestimate since it does not take into account the losses incurred by the employer or the self-employed as a result of fixed costs such as rent and idle machinery. Neither does it take into account the loss to the economy as a result of the reduction in workers' level of specialization and the reduced competitiveness of firms which face competition from abroad. Neither does the estimate take into account the loss of profits as a result of reduced productive capacity. Other losses not lending themselves to measure are:

1. Loss of momentum in endeavors or projects due to interruption for reserve duty; and the need to restore that momentum upon return from reserve duty.
2. A break in the intellectual stream of creativity (especially in the fast-paced world of the internet and high-technology).
3. Time and effort wasted as the business plans how to continue functioning in the absence of employees or managers.
4. Decreased productivity due to anxiety as one prepares for reserve duty, and/or tiredness upon return from reserve duty.

The above items may not be quantifiable, but they clearly have economic costs.

As stated above, the direct cost of reserve duty for 1997 was estimated at \$525.2 million while the value of lost production is estimated at \$621 million for the same year. *The total cost of maintaining the reserve duty system is thus estimated at \$1.15 billion for 1997 and this is an underestimate.*

If 1997 is taken as a representative year, the cumulative cost of the reserve system during the last decade exceeds \$10 billion. This estimate is conservative, because the expenses in 1997 were lower, not higher or equal to, the expenses a decade ago.

As noted above, 80 percent of reserve duty expenditures is for purposes of operational and administrative work. This means that the loss to the Israeli economy as a result of this type of reserve duty alone is \$920 million per year, which equals about one percent of the GNP. According to the Bank of Israel Report for 1997, the average annual growth rate for the years 1990-1997 was 5.2 percent.<sup>37</sup> Thus, the cost of reserve duty constitutes about 20 percent of annual growth. In other words, the economy is growing at only 80 percent of its potential.

It should be noted, however, that the GNP data provided by the Bank of Israel is biased since it does not consider financial aid and other transfers from the U.S. Most of all the growth figures are not per capita, a consideration of extreme importance in the years noted when the Israeli population grew by 22 percent as a result of Russian immigration. Were these facts of hothouse population growth and unilateral transfers factored in by the Bank of Israel, the expense of reserves out of the GNP growth would be even larger than 20 percent.

Due to interactive influences between the various goods and markets and the compounding of these influences, it can be assumed that the loss in annual growth is even larger than 20 percent. An increase in economic growth would also benefit the armed forces in many ways, such as increased ability to procure weapons systems and additional resources for research and development without the need to rely on outsiders. It is reasonable to assume that these resources would benefit the army and the State more than another reserve soldier. These considerations are not taken into account at present, since the IDF does not “think” in terms of its being an integral part of the Israeli economy, and therefore, does not have a picture of the general welfare.

The sum of conscripted soldiers for operational work and administrative work would cost the economy only 10 percent of the cost of using reservists. The use of the unemployed for these purposes would cost only 20 percent as much as the cost of reservists. The employment of demobilized soldiers up to the age of 24, based on short-term contracts with the army, would cost only 30 percent as much, based on the average cost of an employee to his employer.<sup>38</sup> These figures are significant and would certainly be taken into account if the IDF mobilized reservists according to economic, as well as military, criteria. Furthermore, these functions, or at least some of them, could possibly be carried out by conscripted soldiers without any additional expense.

According to Brigadier General Israel Einhorn, former head of the Personnel Planning Branch of the IDF, there is growing “unemployment,” or under-employment among conscripted soldiers in the IDF. As a result about 25 percent of soldiers are now released from the army before the scheduled end of their service.<sup>39</sup> Many others remain within the army but do not contribute significantly; their presence constitutes hidden unemployment. Brigadier General Einhorn has recommended the shortening of compulsory service, but it is possible that if the IDF had to pay the real cost of a reservist, it would use the surplus of conscripted soldiers more efficiently for duties presently carried out by reservists.

### **Distortions in the Present System**

The present structure of the reserves results in several distortions which affect the performance of the IDF both directly and indirectly. Part of the problem lies in the system of payment to reservists and the method used for “settling accounts” between the IDF and the NII. Part of the problem lies in inefficient utilization of reservists.

### **Low Compensation as an Incentive for Inefficiency**

As noted above, reservists are compensated for reserve duty by the NII. The reservist is eligible to receive compensation up to a maximum of \$6,268 and in some cases no compensation is received for reserve duty of one or even two consecutive days. The IDF transfers to the NII a sum equal to the number of reserve days for compensation multiplied by the average cost of a reserve day. This method of payment creates the following distortions:

1. The ceiling on compensation reduces the average cost of a day of reserve duty.

2. The number of reserve days for compensation is lower than the actual days served.
3. The IDF has no economic data on reservists which would be required to achieve a more efficient utilization of reserve manpower.

In this situation, not only does the IDF not take into account the loss to the economy resulting from reserve duty. It does not have to pay the full direct cost for reservists. This cost is biased downward due to the low estimate of the average cost of a reserve day and the reduction in number of reserve days for which compensation is to be paid. Our estimate puts the additional cost at \$203 million annually.<sup>40</sup>

It is reasonable to assume that if reserve duty were not compulsory, the IDF would have to compensate reservists at their civilian wage or higher. Furthermore, the IDF would have to take into account the needs of the reservist's place of work. Thus, the chance of exploitation or inefficient utilization of reservists would decline significantly (this principle applies only to operational, maintenance and administrative work and not to training exercises).

### **Compensation Unrelated to Benefit**

The present system of compensation, whereby a reservist is paid according to his civilian wage, results in a complete separation between a reservist's contribution to the army and his compensation. As an example, consider a student who commands a combat unit, possesses a high level of military skills, is frequently called to reserve duty, serves under difficult field conditions and is at risk to his life. He will receive the minimum level of compensation of \$23.5 per day. In contrast, a 40-year old serving in a clerical position close to his home and in comfortable conditions, might receive the maximum compensation of \$209 per day.

A student's high level of risk and responsibility, together with his absence from university lectures and low compensation, is liable to lead to a low level of motivation among those who are most essential to the army. The state comptroller warned of this phenomenon in *Report 46*.<sup>41</sup>

As will be discussed below, other countries have found ways of overcoming this problem. In many Western countries, reservists receive a differential payment, beyond the compensation for lost wages, which is dependent on their rank, number of days actually served, state of alert and the amount of training he is willing to undergo in order to improve his military skills. Special bonuses are offered to volunteer reservists. In this way, a link is created between a reservist's value to the army and his compensation.

### **Cutbacks in Training**

Reservists constitute about 75 percent of the IDF's manpower in time of war. The reserves are meant to have full operational capabilities and be an integral part of the fighting forces during wartime. The reality is quite different.

Among the changes made to the 1986 budget, the IDF was allocated a maximum number of reserve days. If only part of this quota was utilized, then the savings would be added to the defense budget. In 1990, the full budget was transferred directly to the IDF. As a result, there was a 50 percent decrease in utilized reserve days during the years 1990-1997. The changes, however, did not achieve their goal since cutbacks were made principally in training exercises, not as part of a drive for economic efficiency.

The state comptroller also warned of this phenomenon in *Report 47*.<sup>42</sup> Until 1988, all combat units underwent training exercises every year. Beginning in 1989, the frequency of training exercises was reduced from annual to bi- and tri-annual. In 1998, the proportion of reserve combat units participating in training exercises fell to 20 percent even though such a low frequency of training is considered insufficient to maintain operational capabilities.<sup>43</sup>

During the last few years, the IDF has apparently preferred to draft reservists principally for administrative and maintenance purposes. The reasons are as follows:

1. The benefits of training exercises are only felt in time of war. In contrast, the benefits of operational and administrative employment are immediate.
2. The cost per reserve day of training exercises is higher than a reserve day for operational and administrative work since additional resources, in the form of ammunition, transportation and regular army personnel, are required for training exercises.
3. Training exercises require additional manpower from the regular army and even additional reservists to carry out administrative tasks and provide support services.

It is worth mentioning that training is more important for the reserves than for the rest of the armed forces. The reservist's age and the time elapsed since his compulsory service combine to reduce his military fitness. Insufficient training exercises, as cited in the State Comptroller's Report,<sup>44</sup> further reduce the reservist's capabilities. The present "economic incentives" do not remedy these distortions and actually create additional ones. The damage done, is done mainly to the army itself.

### **Inefficient Utilization of Reserve Forces**

At present, there is no relation between a reservist's civilian profession and his function in the reserves. As a result, the IDF drafts thousands of reservists from such professions as computers, engineering and economics and uses them as drivers, guards and clerical staff.

In Europe on the other hand, there is a trend to draft reservists to duties which are connected to their civilian jobs. This trend will be elaborated in the following section on International Comparisons.

According to Colonel Eli Regev, the call-up of reserves is conducted by departments specially trained for the job, according to the military need for each mission and the military training of the reservist. The civilian profession of a reservist and his salary do not factor in the decision whether to call him up. Similarly, there is no distinction made between reservists with similar functions in the reserves but different levels of income.<sup>45</sup>

The present system of call-up is especially wasteful in the case of non-combat functions since the State is paying twice and three times what it should for drivers and guards.

If the IDF were to assign reservists to functions related to their civilian professions such that bus and taxi drivers would be used as drivers, economists would be used in the budget and economic departments and computer people would be used in the information and control systems, then the compensation paid to reservists would approach the benefit derived from them.

Also, every citizen would know his function in the reserves and would be working in his area of specialization and interest. The benefit from this system would be two-fold: First, the motivation to serve in the reserves would increase and second, the IDF would benefit from the reservists' civilian

experience. In addition, if the IDF were to take into consideration reservists' income level, it could save itself unnecessary expenses.

In conclusion, it is clear that if the costs of reservists' absence from work are taken into account, in addition to the direct cost, then the total cost to the taxpayer is four times the direct compensation paid for reserve duty. The vast majority of these resources are used for purposes unconnected to training exercises for preparedness for war, and which could be carried out to a large extent by conscripted and professional soldiers.

Furthermore, reservists are not compensated according to their output, and their civilian professions and specializations are not efficiently utilized by the army during their reserve duty.

### **International Comparisons**

Eight countries were chosen for purposes of comparison. Most Western democracies take economic parameters into account in the utilization of reserve forces. In some cases this is done by placing much of the burden of reserve duty onto citizens aged 20-35 with low incomes; in other cases economic incentives and special benefits are offered to reservists. Most countries use both these methods.

It is important to mention that, in the absence of a direct threat to security, the percentage of reservists in the total armed forces in the chosen countries is significantly lower than in Israel. Nonetheless, the purpose of this comparison is to examine the possibility of using economic criteria in the reserve system, and this raises the importance of the economic relevance.

The countries included in this research were Canada, Greece, Sweden, Holland, Denmark, Germany, the U.S. and Britain. This paper will discuss two of these countries: Germany and Denmark.

### **Germany**

The population of Germany is 81 million. Its regular armed forces number 347,100 with 315,000 in the reserves. The reserves are divided as follows: 258,000 in the land forces, 10,200 in the navy and 46,800 in the air force.<sup>46</sup>

Citizens serve a compulsory 10 months in the armed forces and have a possibility of volunteering for an additional 12-23 months. Individuals are transferred to the reserves immediately upon completion of their compulsory service. Reservists who are not officers can be called up until age 45 while commissioned and non-commissioned officers can be called up to age 60.

In 1994, changes were made to the Federal Armed Forces Reservist Concept, which reflected a new approach to the integration of reservists in the German armed forces. According to this approach, non-officers would serve in the reserves for 24 days during a period of 4 years; non-commissioned officers would serve 45 days in a period of 7 years and officers would serve 84 days during a period of 10 years. Commissioned and non-commissioned officers bear most of the burden of reserve duty regardless of their profession or function. In addition, reservists can volunteer for reserve duty until the maximum age. As a result of the reform, the German armed forces were able to fulfill all their missions, with far fewer reservists.<sup>47</sup> According to the military attaché at the German Embassy in Israel, Colonel Lutz Pruesse, the number of potential reservists who actually serve had been reduced from 230,000 in 1989 to only 60,000 in 1997, a remarkable decline of 74 percent.<sup>48</sup>

Reservists in Germany receive payment for each day of service and receive full compensation for lost wages. For each day beyond the 25th day of active reserve duty, the reservist receives a bonus of DM 50 per day. Volunteer reservists receive a similar payment starting from the thirteenth day of service. Reservists in the operational reserves, who volunteer for 72 days during a period of 3 years, receive a bonus of DM 100 starting from the twenty-fifth day of active service and 150 DM beginning from the forty-ninth day. In addition, non-commissioned officers in the reserves who have received special leadership training, receive a bonus of DM 2,000.

The German army thus offers differential incentives to those reservists who bear the majority of the burden of reserve duty. Higher incentives are offered to those who volunteer for the reserves and those who volunteer for leadership training in order to improve their military capabilities. A reservist who volunteers for service must feel that his compensation is appropriate to his skills and efforts; otherwise, he would not choose to serve in the reserves. This freedom of choice, together with the financial incentives, increases the reservist's motivation to acquire additional military skill in order to function more efficiently in the reserves.

The basic payment for reserve duty is transferred straight into the reservist's bank account. Incentives and bonuses are either paid in cash or likewise deposited.

Employers must allow reservists to be absent from work for reserve duty unless it is voluntary. In cases where the reservist has an essential function in his place of work, his employer can make a request that he be released from reserve duty.

As mentioned above, in 1994 Germany adopted an efficient economic model for the call-up of reserves based on the use of manpower with low civilian incomes but high level of military skills. This basically meant using younger reservists. The government nonetheless gave all citizens the option of volunteering for reserve duty until the maximum age. It is reasonable to assume that this option attracts the unemployed as well as those looking for a second income. As discussed in the analysis above, this alone leads to major savings both to the State budget and the national product. At the same time, Germany offers incentives, especially to volunteer reservists, according to length of reserve duty and military function. The incentive for specialized knowledge and experience is especially high.

In Israel, 65 percent of reserve duty in 1997 was served by reservists over the age of 30. Only 7 percent of reserve duty was served by reservists aged 21-24, the group with the lowest wages and highest level of military skills.

In Israel, the idea of offering incentives to reservists has only recently begun to take hold. In an amendment to the Defense Forces Law (Integrated Version) (1986), passed in December 1997, it was decided to pay \$29 (before income tax) for each day of reserve duty beyond 25 days per year. This incentive is wanting since it relates only to the length of reserve duty and ignores other important variables, such as level of risk (a reservist in a combat situation versus a clerical position), level of responsibility and the reservist's function in the army, civilian wage and financial situation.

## **Denmark**

A more sophisticated economic model is used by Denmark. It categorizes reservists into three groups according to military need.

Denmark's population is 5.235 million; its armed forces number 329,000 with an additional 70,000 in the reserves. The reserves break down as follows: 51,800 in land forces, 5,850 in the navy and

12,800 in the air force.<sup>49</sup>

Compulsory military service in Denmark is for a period of between four and twelve months for non-officers depending on the branch and up to twenty-four months for commissioned and non-commissioned officers. Release from the reserves is generally between the ages of 35-50. Officers bear most of the burden of reserve duty.<sup>50</sup>

There are three categories of reservists:

1. *Regular service* — This type of reservist is called up for a two-week training exercise once every five years. Each period of duty cannot exceed 21 days and the total cannot exceed 27 months.
2. *Essential professions* — Reservists with professional skills which are in demand, sign a contract to serve 21 days per year for a period of 4 years from their demobilization.
3. *Service in a “rapid reaction” unit* — This is an operational unit which carries out peace-keeping missions. The reservists in this unit sign a special contract and can be called up at short notice for annual two week training exercises for a period of three years.

Reservists are paid a military salary for each day of reserve duty. Reservists signed on a contract which permits them to be called up annually, receive a bonus of \$140 per month to compensate them for remaining on a state of alert. Reservists in the rapid reaction unit receive, in addition, a bonus of \$7,000 at the end of their contract. Wages are paid directly to the reservists.

The system of incentives achieves two important goals simultaneously. First, the army calls up reservists according to military need and the skills of the reservist. The guiding principle is military efficiency rather than equal distribution of the burden. There is no waste of time, manpower or budget. At the same time the reservist is compensated for compulsory reserve duty and does not feel he is being exploited.

By Danish law employers must allow their workers to be absent for reserve duty and cannot fire a worker as a result of reserve duty. This is conditional on the employee having first worked a period of 9 months or longer at the same place of work.

The Danish reservist is only called up for training exercises. The only exception is reservists with essential military skills who freely sign a special contract which specifies the period of annual call-up for a specific number of years. In Denmark, reservists are compensated even for the fact that they may be called up on short notice, and even that is only after they have freely agreed to these terms and signed a contract.

The Danish system has obvious economic advantages for the State and the army. The army only calls up reservists for which it has a need. In addition the individual contracts obligate a reservist to report for duty without appeal. The result is a high level of motivation and reporting for duty as well as a high level of planning and organization. There is no chance of hidden unemployment as exists in Israel.<sup>51</sup>

The system has several advantages for the Danish citizen as well. First, he can choose whether to serve in the reserves and in what capacity. In addition, he knows that his compensation will be commensurate with his efforts. He also knows what his function will be in the army and what will be demanded of him. These conditions lead to a high level of motivation and specialization and the

efficient utilization of manpower by the army.

Reservists are managed less efficiently in Israel. First, there is generally no relation between a reservist's profession and his function in the army. Second, a reservist does not generally know what his function will be until his first day of reserve duty. The reservist thus feels less of an obligation to carry out his function efficiently and does not have the opportunity to accumulate experience and develop military skills. Finally, he does not know when he will be called up. He is in a continual state of alert. This uncertainty does not permit him to plan his time efficiently.

The countries discussed in this survey have tried to maximize the efficiency of their armies. They offer incentives, monetary and otherwise, to encourage citizens to join the reserves and to serve in positions which are more dangerous or more responsible or to be in a high state of alert. These incentive schemes allow the citizen to choose whether to serve in the reserves or at least in what function. Even if reserve duty is compulsory, as it is in Germany, it is for a short period which is known ahead of time. The armies in these countries understand that the reservist is liable not to carry out his function effectively if he feels he is being discriminated against or has some reason not to be satisfied with his reserve duty.

Let us again listen to the warning of Alexander Hamilton:

The militia would not long, if at all, submit to be dragged from their occupations and families to perform that most disagreeable duty in times of profound peace. And if they could be prevailed upon, or compelled to do it, the increased expense of a frequent rotation of service and the loss of labor, and disconcertion of the industrious pursuits of individuals, would form conclusive objections to the scheme. It would be as burthensome and injurious to the public, as ruinous to private citizens.<sup>52</sup>

The State of Israel denies this basic freedom of choice to its citizens. An Israeli must serve in the reserves for many years. He has no possibility of avoiding reserve duty or of choosing his function. He must obey an order to report whenever called and for whatever job he is assigned. Furthermore, he receives no extra compensation for level of risk or level of alert and in certain cases he is not eligible for his full civilian salary. This system is not only unfair to the reservist but also imposes additional costs on the army and the State. The feeling of exploitation and resentment result in a lack of motivation, an unwillingness to make an effort and even absence without leave from reserve duty altogether. This phenomenon is especially damaging to an army that is supposed to protect its citizens in time of war, since its ability to plan and carry out operations are compromised.

## **Conclusions and Recommendations**

The reserves in Israel are not a cheap source of manpower as was thought by the General Staff in the 1950s. In fact, the cost of the reserves in 1997 came to \$1.15 billion (in a low estimate) and constitutes a burden on the taxpayer and a constraint on the country's growth. In addition, the present situation has created distortions in the compensation of reservists and has eliminated any connection between a reservist's skills and his function in the army. These factors have also resulted in low motivation among reservists in the IDF.

There has yet to be a serious attempt at developing an economic model for the call-up of reservists. Attempts to increase efficiency in the 1980s were unsuccessful and resulted in too many reservists being called for operational, maintenance and administrative work and too few for training exercises. This was a result of the IDF's view of itself as an autonomous economic unit rather than a part of the economy as a whole.

An economic model needs to balance defense needs and efficiency. Western countries such as Germany and Denmark have succeeded; they have secured their defense needs and accomplished significant savings in their reserve systems. Israel's security situation is different but this should not prevent the adoption of these models for operational, maintenance and administrative work in the reserves. The adoption of these methods may be even more important to Israel in view of its security problems and the material benefits that would accrue from a reform, along with the boost in morale.

Any economic model for the call-up of reservists should take into account the following points:

1. The Reserves Law should be changed to end coercion to serve in the reserves. More emphasis should be put on volunteer duty. This principle can be applied to all military activities except training exercises (in other words, about 80 percent of activity).
2. Reservists should be retained by contracts. Reservists should be *fully* compensated for reserve duty starting from the first day. They should receive compensation which is *at least* equal to their civilian wage, without any ceiling.
3. Increase use of conscripted and professional soldiers for operational work, maintenance and administrative work. As noted, it is possible to increase the manpower available to the army by returning to use of the criteria which were until recently considered satisfactory to allow for military conscription.
4. Basing a reservist's financial compensation on his productivity in the reserves. This can be done by using such criteria as: level of risk, level of responsibility, professional ability, number of reserve days served, level of alert, military rank and whether his profession is required in the army. It should be possible in certain situations for a reservist to receive higher compensation for his reserve duty than his civilian wage, should his abilities warrant it.
5. Transfer of certain military functions to private bodies specializing in these services. Examples are guard duty, cleaning, maintenance and truck driving. In many cases, these services can be provided by private contractors, thus avoiding the excessive compensation currently paid for reservists.
6. Strengthening the connection between a reservist's military function and his abilities and civilian profession. In addition, there should be a clearly defined schedule for call-ups, as is the case in Germany.

The development of economic thinking in the call-up of reservists, with the adoption of the above principles, will eventually lead to appropriate compensation for reservists which will in turn increase motivation and personal responsibility. If conscripted and professional soldiers and private contractors are used more efficiently, reservists will in any case be freed from many of their present duties. The IDF's planning system will work much more efficiently since it will be based on a long-range work plan and personal contracts with reservists, and there will be no need to call up many more reservists than are actually required. All these factors will contribute to the welfare of the reservist, the taxpayer and the economy as a whole. The resulting increase in growth will free resources which can be allocated to the army if required.

The most important achievement of such a reform will be that citizens will no longer be perceived as subjects without rights, but rather as free individuals. The correct relationship between the army such an individual requires a personal contract and fair compensation. Western countries which have begun to adopt this kind of reform have not only achieved a more efficient military system but

show a higher level of respect for the basic rights of their citizens.

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## APPENDIX

### Calculation of Indirect Cost of Reserve Duty

Following are the steps in the calculation of the cost to the economy of reservists' absence from work:

1. Finding the actual number of days served in reserve duty in 1997 by age groups: Table 6 presents the proportion of total days of reserve duty served by each age group in 1997. If we multiply each percentage by the total days served, we receive a good approximation of the total days of reserve duty served in 1997 by each age group.
2. Calculation of average cost per day for each age group according to a breakdown by employment status: Table 9 shows the breakdown of active reservists according to employment status. According to these figures, about 70 percent of reservists are employees while about 20 percent are self-employed. The remaining 10 percent receive the minimum wage which is also paid to the unemployed. The multiplication of these factors by the level of income for each type of employment status as presented in Tables 7 and 8, gives us the weighted monthly cost of reservists in each age group. The daily average cost is calculated by dividing the average monthly cost by 25 days. The result is the loss to the economy of a day in reserve duty.
3. Calculation of cost for each age group: Multiplication of the average daily income for each age group by the days of reserve duty actually served in each group.
4. Calculation of total cost for all age groups: Totaling the cost for all age groups.

### Database Used for Calculation

The above calculation was carried out using the following sources of data:

1. The number of days of reserve duty actually served in 1997 was supplied by the IDF Information Systems Bureau.<sup>53</sup>
2. Since the number of reserve days actually served is classified, the number of reserve days for each age group cannot be made public. The number of days served in the reserves is presented as a percentage for each age group for illustrative purposes. This figure is important for studying the make-up of the reserve system, since age has a direct influence on the quality of their service. Younger reservists are more physically fit and have superior military skills.

**Table 6****Days Served By Age Group**

<b>Age Group</b>	<b>Percentage of the Total Number of Reserve Days Served</b>
21-24	7
25-29	28
30-34	23
35-39	19
40-44	15
45+	8

Source: IDF Reserve Personnel Planning Branch, letter to author, August 2, 1998. [Hebrew]

3. Estimation of average monthly cost to employer of an employee, in NIS for 1997. It is important to note that the Central Bureau of Statistics supplies data on the average monthly wage only. In order to calculate an employee's contribution to the economy, the cost to his employer must be calculated; this assumes that the benefit accrued from a worker is equal to his cost. In other words, this is the value that an employer attributes to an employee's contribution to his business. In order to calculate average cost per employee according to age group, it is necessary to add payroll taxes and social benefits paid by the employer. Most of these benefits are paid according to seniority and position. In order to get an accurate estimate, four levels of benefits were assumed according to age group: For ages 21-24 only compulsory benefits were added; for ages 25-34, minimal employer benefits were added in addition to the compulsory benefits; for ages 34-44, average employer benefits were added in addition to compulsory benefits; for ages 44 and up, the maximum employer benefits were assumed in addition to compulsory benefits. Whether or not benefits, such as sick days, were utilized or not is not relevant to the calculation since the employer has already taken these costs into account in his wage offer.

**Table 7**  
**Wage Components**

Age Group	Average Monthly Wage for Salaried Male in NIS	National Insurance Premium (Compulsory)	Health Allowance, Vacation Pay and Sick Pay (Monthly)	Pension Fund and Compensation Savings Or Manager's Insurance (c)	Training Investment Fund	Disability Insurance	Total Monthly Cost to Employer	
							(a)	(b)
21-24	3,790	187	392	316	-	-	4,685	1,264.5
25-29	7,013	346	842	935	526	70	9,732	2,626
30-34	7,013	346	842	935	526	70	9,732	2,626
35-39	9,335	460	1,369	1,245	700	187	13,296	3,588.5
40-44	9,335	460	1,369	1,245	700	187	13,296	2,588.5
45+	10,140	500	1,690	1,352	761	254	14,697	3,966.5

Sources: Jacques Bendelac, National Insurance Institute, Research and Planning Department, letter to author, July 21, 1998 [Hebrew]; Central Bureau of Statistics, *Statistical Abstract for Israel* 49 (Jerusalem: Central Bureau of Statistics, 1998), p. 70; Yitzhak Retman, CPA, telephone conversation with author, August 4, 1998.

(a) The national insurance premium, after the reductions noted above, is now 4.93 percent of the employee's wage.

(b) Social Benefits: Vacation pay ranges from 14-28 days per year according to seniority; the health allowance ranges from 5-10 days per year according to seniority; sick pay is 18 days per year where the employer pays 75 percent of the daily wage from the fourth sick day. The employee does not receive payment for the first sick day. For the second and third sick day, the employee is eligible for 37.5 percent of his daily wage. In the employer's wage proposal to a worker, he has already taken into account the full cost of this benefit.

(c) The employer pays 5 percent to the pension fund and 8.33 percent to the compensation savings. (Managers' Insurance is an alternative to these two components.)

(d) The employer contributes an amount equal to 7.5 percent of the employees' salary to the Training Fund which, although not mandatory, is a benefit commonly paid to employees.

(Five) The employer pays a premium ranging from 1-2.5 percent of the employees' salary to cover Disability Insurance which, although not mandatory, is a benefit commonly paid to employees.

4. Income of self-employed and monthly state unemployment compensation in 1997 (NIS):

**Table 8****Income of Self-Employed and Unemployed**

<b>Age Group</b>	<b>Monthly Income for Self-Employed Male in Dollars</b>	<b>Monthly Unemployment Compensation in Dollars</b>
21-24	1,267	681
25-29	1,854	770
30-34	1,854	841
35-39	2,678	880
40-44	2,678	833
45+	2,864	824

Sources: Jacques Bendelac, NII, Research and Planning Department, letter to author, July 21, 1998 [Hebrew]; CBS, *Statistical Abstract for Israel 49* (Jerusalem: Central Bureau of Statistics, 1998), p. 70.

5. Breakdown by employment status of reservists who requested compensation from the National Insurance Institute for reserve duty served:

**Table 9****NII Compensation for Reservists**

<b>Employment Status</b>	<b>Percentage of Reservists</b>
Employees	71%
Self-Employed	19%
Students	4%
Not Salaried or Self-Employed	4%
Other	2%

Source: Shuly Ber, NII, Research and Planning Department, letter to author, July 26, 1998. [Hebrew]

Note: The percentage of employees may be higher than presented here since some employers bunch together several requests for compensation and submit them simultaneously.

## NOTES

- <sup>1</sup> Alexander Hamilton, "The Federalist No. 29," in *The Federalist Papers*, by Alexander Hamilton, James Madison and John Jay (New York: Bantam Classic edition, 1982), p. 140.
- <sup>2</sup> The International Institute for Strategic Studies, *The Military Balance 1997/98* (London: Oxford University Press, October 1997) pp. 128-129; *Ma'ariv*, August 11, 1993 and November 23, 1993.
- <sup>3</sup> *Ma'ariv*, August 11, 1993 and November 29, 1993.
- <sup>4</sup> Individuals who declare that military service will prevent them from leading a religious life, such as yeshiva students and some orthodox groups.
- <sup>5</sup> Stuart A. Cohen and Ilan Suleiman, "The IDF: From 'Army of the People' to Professional Army," *Maarachot* 341 (Tel Aviv: IDF Publications, May-June 1995), p. 5. [Hebrew].
- <sup>6</sup> IDF Information Systems Bureau, *Exploiting Manpower Potential: Men Aged 18-51* (unpublished document). [Hebrew]
- <sup>7</sup> Captain Eran Ma'ayan, head of IDF Information Systems Bureau, interview with author, July 23, 1998.
- <sup>8</sup> Ibid.
- <sup>9</sup> Ministry of Finance, *Summary of the 1997 Budget: Defense Budget* (Jerusalem: Ministry of Finance, October 1996), p. 65. [Hebrew]
- <sup>10</sup> Kobi Haber, responsible for reserves budget at the Budget Department of the Ministry of Finance, interview with author, April 6, 1998.
- <sup>11</sup> Aharon Blech, responsible for reserves at the Central Bureau of Statistics, telephone conversation with author, August 19, 1998.
- <sup>12</sup> *The Military Balance 1997/98*, pp. 128-129.
- <sup>13</sup> Knesset Member Dr. Raanan Cohen, "Proposal for Shortening of Reserve Duty for Combat Soldiers" (unpublished document, August 1994), pp. 4-7. [Hebrew]
- <sup>14</sup> Lieutenant Colonel Eli Regev, head of IDF Reserve Personnel Planning Branch, interview with author, June 25, 1998.
- <sup>15</sup> Yuval Ne'eman, "The Planning of a National Defense Structure for a People in its Formative Stages" in *Israel's Security and Economy During the 1980s*, ed. Zvi Lanir (Tel Aviv: Department of Defense Publications, 1985), p. 154. [Hebrew]
- <sup>16</sup> Ibid.
- <sup>17</sup> Cohen and Suleiman, "The IDF," pp. 2-3.
- <sup>18</sup> Ibid.
- <sup>19</sup> Ibid.
- <sup>20</sup> State Comptroller, *State Comptroller's Report 46* (Jerusalem: State Comptroller, 1995), p. 847. [Hebrew]

- <sup>21</sup> Ibid., p. 845.
- <sup>22</sup> Raanan Cohen, "Proposal," p. 47.
- <sup>23</sup> State Comptroller, *State Comptroller's Report 47* (Jerusalem: State Comptroller, 1996), p. 951. [Hebrew]
- <sup>24</sup> *Ha'aretz*, July 13, 1998 (Hebrew).
- <sup>25</sup> State Comptroller, *State Comptroller's Report 46*, p. 845; *State Comptroller's Report 47*, p. 951.
- <sup>26</sup> Raanan Cohen, "Proposal," p. 47.
- <sup>27</sup> *State Comptroller's Report 46*, p. 847.
- <sup>28</sup> An Israeli citizen or permanent resident who is either a male aged 18 to 54, or a female aged 17 to 38.
- <sup>29</sup> The law permitted the call-up of reservists for periods beyond the maximum for an unlimited period. According to the new law, such a call-up can only be made with the approval of the Security and Foreign Affairs Committee of the Knesset.
- <sup>30</sup> [http://www.bt.gov.il/code\\_gim/g\\_milium.htm](http://www.bt.gov.il/code_gim/g_milium.htm)
- <sup>31</sup> Haber, interview.
- <sup>32</sup> Raanan Cohen, "Proposal," p. 9.
- <sup>33</sup> Bank of Israel, Research Department, *Report of the Committee on Estimating the Cost of Defense to the Israeli Economy* (Interoffice document presented to the Finance Ministry's Budget Department, Tel Aviv on May 25, 1995), p. 6. [Hebrew]
- <sup>34</sup> Ibid.
- <sup>35</sup> The calculation was carried out according to the number of reserve days in 1997 multiplied by the estimated cost of a reserve day as reported to the author by Haber, interview.
- <sup>36</sup> Rivka Pri Or, NII, Research and Planning Department, interview with author, July 20, 1998.
- <sup>37</sup> Bank of Israel, *Bank of Israel Report for 1997* (Jerusalem: Bank of Israel, March 1998), Table B-N-1, p. 232.
- <sup>38</sup> For reasons of security and a legal prohibition against revealing classified data, only the final result is given.
- <sup>39</sup> *Yediot Aharonot, 24 Hours Supplement*, January 25, 1996.
- <sup>40</sup> This cost is broken down as follows: \$50 million for one-day reserve duty, \$61.5 million cost of food, clothing, etc., and an additional 30 percent of the actual costs according to the estimate of Dr. Leora Meridor.
- <sup>41</sup> State Comptroller, *State Comptroller's Report 46*, p. 847.
- <sup>42</sup> State Comptroller, *State Comptroller's Report 47*, p. 953.
- <sup>43</sup> Ibid.
- <sup>44</sup> Ibid.

<sup>45</sup> Regev, interview.

<sup>46</sup> *The Military Balance 1997/98*, pp. 53-54.

<sup>47</sup> Colonel Jurgen Eigendb, former German military attaché, German Embassy in Israel, interview with author, April 4, 1997.

<sup>48</sup> Colonel Lutz Pruesse, military attaché, German Embassy in Israel, letter to author, August 19, 1998.

<sup>49</sup> *The Military Balance 1997/98*, pp. 48-49.

<sup>50</sup> Minister Counselor Sinnaxel Abrahansen, Danish Embassy, interview with author, February 10, 1997.

<sup>51</sup> *Yediot Aharonot*, January 25, 1996.

<sup>52</sup> Hamilton, "The Federalist No. 24," in *The Federalist Papers*, p. 119.

<sup>53</sup> In order not to reveal classified information, the data on which the calculation is based cannot be published.

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