

Preliminary draft: please do not quote

Food for work vs. cash for work: emergency assistance in Palestine

(May 2003)

Marco Missaglia
(University of Pavia and EcoMod Network)

Paul de Boer
(Erasmus University Rotterdam and EcoMod Network)

1. Introduction

The last years of the Palestinian history, those of the second *intifada* and the so called "closure" - i.e. the Government of Israel's imposition of restrictions on the movement of Palestinians goods and people across borders and within the West Bank and Gaza (WBG) - witnessed a dramatic decline in all Palestinian economic and social indicators. Since October 2000, when the violent confrontations started, conditions for a normal life have nearly disappeared and economic situation has steadily disintegrated. Table 1 illustrates the declining performance of the Palestinian economy over the last four years.

Table 1: West Bank and Gaza Macro Economic Trends and Projections

	1999	2000	2001	2002
Gross National Income (GNI), US\$ mill.	5,166	5,419	4,501	3,273
Gross Domestic Product (GDI), US\$ mill.	4,289	4,607	4,012	2,951
<i>Real annual change</i>				
GNI per capita	3.9%	-7.5%	-23.2%	-26.4%
GDP per capita	3.1%	-5.3%	-19.5%	-25.5%
Private Consumption	7.5%	-5.6%	-15.5%	-17%
Public Consumption	20.3%	31.0%	-2.1%	-7.7%
Total Fixed Investment	-8.3%	-28.3%	-76.9%	-84.2%
Export	2.3%	-8.8%	-13.4%	-34.8%
Import	5.4%	-16.2%	-29%	-17.3%
<i>Other items</i>				
Poverty, share of population below the poverty line	20.1%	30.7%	45.7%	60.0%
NIS/US\$, annual average	4.14	4.08	4.21	4.75
CPI, annual change	5.5%	2.7%	2.1%	7.6%
Population, mid-year (1,000)	2,842	2,966	3,096	3,231

All data excludes East Jerusalem. Sources: World Bank Staff Estimates and PCBS

Among these impressive data, the most impressive concerns poverty. Using a poverty line of US\$2 per day, the World Bank (WB) estimated that 60 percent of the population were poor in 2002, a share which is three times as high as it was on the eve of the *intifada*. Many discussions are ongoing on the so called "final status", or Phase III of the recently proposed *Road Map*. These discussions are mainly concerned with the regulation of those issues that can only be regulated once a permanent, two-state solution (or in any case a solution whatsoever) is finally agreed upon, namely the regulation of trade regime, labour flows, investment support, etc.. In this paper we do not want to add to this already very rich

debate¹. Rather, we want to analyse a somewhat more urgent problem, the provision of emergency assistance to a country whose economy has been decimated since the start of the second *intifada*.

Emergency assistance may take a number of forms: budget support, food assistance, cash transfers, employment programs. The latter, in turn, may be organised as Food-for-Work (FFW) or Cash-For-Work (CFW) programs. In this paper we want to analyse the different potential effects brought about by these different relief policies and, especially, to draw some policy lessons concerning the FFW vs. CFW debate: should the workers participating in an employment program be paid in cash or in food and other essentials? We are perfectly aware this is not a purely economic issue: psychological benefits or damages are clearly to be considered for an overall assessment of such policy measures (for instance, people may dislike getting a voucher rather than a cash transfer), and the political preferences of the donors should be put into the picture as well (for instance, the donors - due to internal reasons of political economy (farmers' support and *similia*) - could dispose of excess food and then prefer to fund a FFW rather than a CFW program). However, in this paper we will disregard these non-economic (or non purely economic) aspects and concentrate on the economic dimensions of emergency relief provision.

In order to simulate the effects associated with different policies we use a CGE (Computable General Equilibrium) model. The idea of looking at the FFW vs. CFW issue as a general equilibrium topic was originally developed by Basu (1996). In his paper, Basu underlines the circumstances that can make the FFW a better option than the CFW. In particular, he claims that cash payments (as well as pure cash distribution) exert a stronger upward pressure on the price of foodstuff and, through this channel, makes those poor who are left out of the CFW program worse off. This way, he weakens the traditional arguments in favour of CFW schemes. We will briefly come back to this point in section 4.

We will proceed as follows. Section 2 clarifies some aspects of the SAM (Social Accounting Matrix) for 1998 which has been used to calibrate the model and illustrates how a counterfactual SAM is obtained to get a more realistic picture of the Palestinian economy after a couple of years of violent confrontation and economic destruction. In section 4, starting from this modified database, the results of some relevant policy experiments are presented. Section 5 concludes and points to some possible extension of the model.

¹ Trade options for the future are analysed at length by Astrup and Dessus (2001) and the WB (2002b). Labour policy options are investigated by Ruppert Bulmer (2001).

2. The 1998 Social Accounting Matrix and the counterfactual SAM

2.1. The 1998 SAM

The CGE model used in this paper is calibrated around the SAM provided by the PCBS (Palestinian Central Bureau of Statistics) for 1998 (a reduced SAM is reported in Appendix 1). Compared to this original version, we aggregate the several sectors and sub-sectors included in it into eight main sectors: Food, Other Agriculture, Manufacture, Constructions, Transport, Commerce, Private Services and Public Services, each of them producing one good. The food sector is an aggregation of the food producing agricultural activities and of those activities that, however belonging to the manufacture sector in the PCBS SAM, produce food items as well (for instance the "food and beverages" activity). Clearly, this is a way of producing a database well suited for simulating a FFW intervention.

The data in the PCBS SAM are organised in a way that implicitly separate the role of the PA as a consumer from its role as a producer. More precisely, in the SAM the PA does not buy intermediate goods, labour and capital services. It only buys consumption goods. The role of the PA as a producer is captured by the sector "Public Services", which is considered in the SAM as any other producing sector of the economy. In the model, we follow this convention² and the reader must be therefore aware that this is not a way of disregarding the overwhelmingly important role of the PA as a producer and, above all, labour demander. If one looks at the "Public Services" column of the SAM, it will be immediately apparent the extremely important role the PA plays as a producer.

Our model is a standard one, where each producing sector maximises its profits under a technological constraint (see section 3.2). This assumption might seem inadequate to describe the behaviour of the "Public Services" sectors, i.e. of the PA as a producer. Indeed, it is inadequate. If the Palestinian economy still functions and did not collapse after the tremendous shocks of the last three or four years, one of the key reasons lies in the fact that the PA, thanks to donors' budget support, has been regularly paying salaries and providing basic services to the population. It is very difficult to label this behaviour as "profit maximisation": the PA hired (or did not fired) people in order to provide a sort of social insurance. To overcome this problem - the inadequacy of the profit maximisation assumption for the "Public Services" sector - we simply assume that the "PA as a consumer", i.e. the government collecting taxes and receiving donors' support, pays labour subsidies to the "PA

² In Figure 3 (see below), for ease of exposition, the roles of consumer and producer of the PA are treated simultaneously. In the equations of the model, however, they are kept separated.

as a producer", i.e. the "Public Services" sector. This way, we can rationalise the employment level in this sector as being mainly determined by socio-political reasons.

2.2. The counterfactual SAM

As already stated, the objective of this paper is to simulate the effects on the Palestinian economy of alternative policies of emergency relief provision. To this purpose, we cannot take the 1998 SAM as a credible base for running our simulations. In general, four years are a rather short period for an economy: its structure changes slowly and using a four years old SAM maybe justifiable. In our case, however, the four years 1998-2002 cannot be considered a "short period" at all. Everything has changed: the capital stock has markedly declined, people are not allowed anymore to get a job on a regular basis in Israel or in the settlements and those lucky enough to get it are most probably attaching a higher risk premium to the same job; donors' intervention, however mostly welcome, is significantly increasing the already high dependency of the Palestinian economy on the vagaries of external, international factors; the Israeli demand for Palestinian products has collapsed due to the crisis that Israel is suffering as well; etc. etc..

These are the reasons why we want to make our exercise of policy simulations starting from a different, more "realistic" picture than that offered by the 1998 SAM. But the latter is the most recent available SAM for Palestine. For this reason, we built a "counterfactual" SAM, by giving a big, "Intifada shock", to the 1998 benchmark. What are the ingredients of this Intifada Shock?

- a) A reduction in the capital stock. According to the World Bank (2003), physical damages resulting from the conflict (private and public buildings, infrastructure, productive trees and soils, etc.) amounted by the end of August 2002 to 14% of 1998 GNI (Gross National Income). Assuming, according to a well established practice³, an ICOR (Incremental Capital Output Ratio) of 4, this means that 3.5% of 1998 capital stock has been destroyed over the last years. Of course, this is not the whole story. What we are mainly interested in is the reduction in capital incomes rather than in the capital stock. The reduction in capital incomes may be thought of as the sum of the variation in the rate of return to capital and in the capital stock. The latter has been already dealt with, the former is difficult to evaluate because we do not dispose of any estimate. Indirectly, however, we can guess that the return on capital has lowered, since, due to the rapidly rising unemployment level and, the labour-capital ratio has declined. According to our calculations, capital incomes lowered by at least 30% during the last three years.

³ See for instance Easterly (2002), especially chapter 2.

- b) A dramatic fall in the level of labour income earned in Israel and the settlements. If one should look at the official figures⁴, it would make sense to assume a 75% reduction in this source of income, but, taking into consideration the quite large number of Palestinians who manage to cross illegally into Israel, we give this variable a 50% shock.
- c) An increase in donors' disbursements, that more than doubled over the period 1998-2002. According to World Bank staff calculations (2003), total disbursements increased from around US\$400 million to around US\$1 billion.
- d) A sharp reduction in the propensity to save of the Palestinians. As it can be seen in Table 1, the reduction in per capita GNI has been always outpacing the reduction in private consumption, which is a normal and predictable reaction to a negative shock.
- e) A reduction in government saving, defined as the difference between revenues (including donors' assistance) and expenditures.
- f) An increase in the transfers paid by the PA to the households and in the labour subsidies handed out to the "Public Services" sector. More precisely, we assumed that the bulk of the increase in foreign aid was used by the PA to fund social transfers to the households, whereas the remaining fraction was devoted to the payment of labour subsidies. As discussed in section 2.1, these subsidies are a convenient way of modelling the intervention of the PA aimed at absorbing, however partially, the labour market shock suffered by the Palestinian economy.
- g) An increase in the labour force. The rise of the population between 1998 and 2002 was almost 15%, but, according to the PCBS data (www.pcbs.org), the labour force growth was around 8%, a fact that witnesses the sharp increase of the dependency ratio.
- h) An increase in β . This parameter (its inverse), as explained in section 3.3, is a measure of both the probability of getting a job in Palestine and the transaction and psychological costs associated with a job in Israel and the settlements. It makes sense, looking at the data on unemployment in West Bank and Gaza, to assume that over the last years the probability of getting a job in Palestine has remarkably fallen. This decline is likely to be more important in the minds of the Palestinians workers than the increase in transaction and psychological costs of looking for a job or working in Israel. To put it in other words: however sad, one must recognise that Palestinians workers are getting used to these risks, as witnessed by the growing number of people trying to cross illegally into Israel.

The combined effect of all this shock, as predicted by our model, is summarised in Table 2⁵.

⁴ According to the World Bank (2003), from September 2000 to the end of 2002 the number of permits reduced from 128,000 to 32,000.

⁵ All the set of elasticities used in our simulation can be obtained by the authors upon request. Here, we just remark that sensitivity analysis shows that the sign and order of magnitude of our results are robust.

Table 2: The economic effects of violent confrontation (simulation; 1998 = 100)
Selected indicators

	DOM. PROD:	CON	EXP	IMP	GNI	UNEMP	UNEMP (rate)	TAX REV:	WELF
					70.65	219.76	35.6	99.374	91.39
Food	91.30	95.26	64.87	106.37					
Ot. Agr.	83.90	98.52	96.52	75.77					
Manuf.	83.15	90.92	65.90	88.76					
Const.	80.47	94.91	76.10	89.15					
Comm.	79.05	95.20	77.77	81.84					
Transp.	88.632	90.36	81.29	94.81					
Prv. Svc.	84.407	79.42	75.43	90.74					
Pub.Svc.	114.77	99.10	120.35	111.14					

All the variables in the table are measure in real terms.

The figures in Table 2 deserve some comment. First of all, real production declines in each sector of the economy but in the "Public Services" sector. The reason is that in our simulation of the "*Intifada* shock" a portion of the increase in donors' assistance is used to subsidise labour input in that sector. As already explained, this is a way of capturing the political choice of the PA to support employment and provide a sort of insurance against the increasing risk of being unemployed. The consumption of Public Services decreases less than other items; this time, the reason is demand-driven: the income elasticity for these services is low and one could even legitimately take a negative value for it, i.e. treat them as an inferior good.

The simulated value for the unemployment rate, 35.6 percent, is very reasonable, even prudent. Indeed, according to the most recent World Bank study on Palestine (World Bank, 2003), the current unemployment rate is estimated at 42 percent, whereas the PCBS put it at a lower level (36.8 percent).

The reduction in the level of GNI is more optimistic than the World Bank estimate (minus 30 percent instead of 40). The reason could be found in our relatively optimistic assumption concerning the fall in the labour income earned by the commutants (Palestinians working in Israel or the settlements and living in the Territories). Obviously, a tougher shock could easily reproduce the World Bank result.

Again, it is worth noticing that the surge in foreign aid less than compensates the fall in other revenue sources for the PA and the overall tax revenue decreases, which is consistent with the available data.

These data, together with all the remaining figures we omit for brevity, are put together in our counterfactual SAM, the base on which we build our simulations of the different policies of emergency assistance. Before turning to them, let us have a closer look to the CGE model employed in this paper.

3. Description of the model

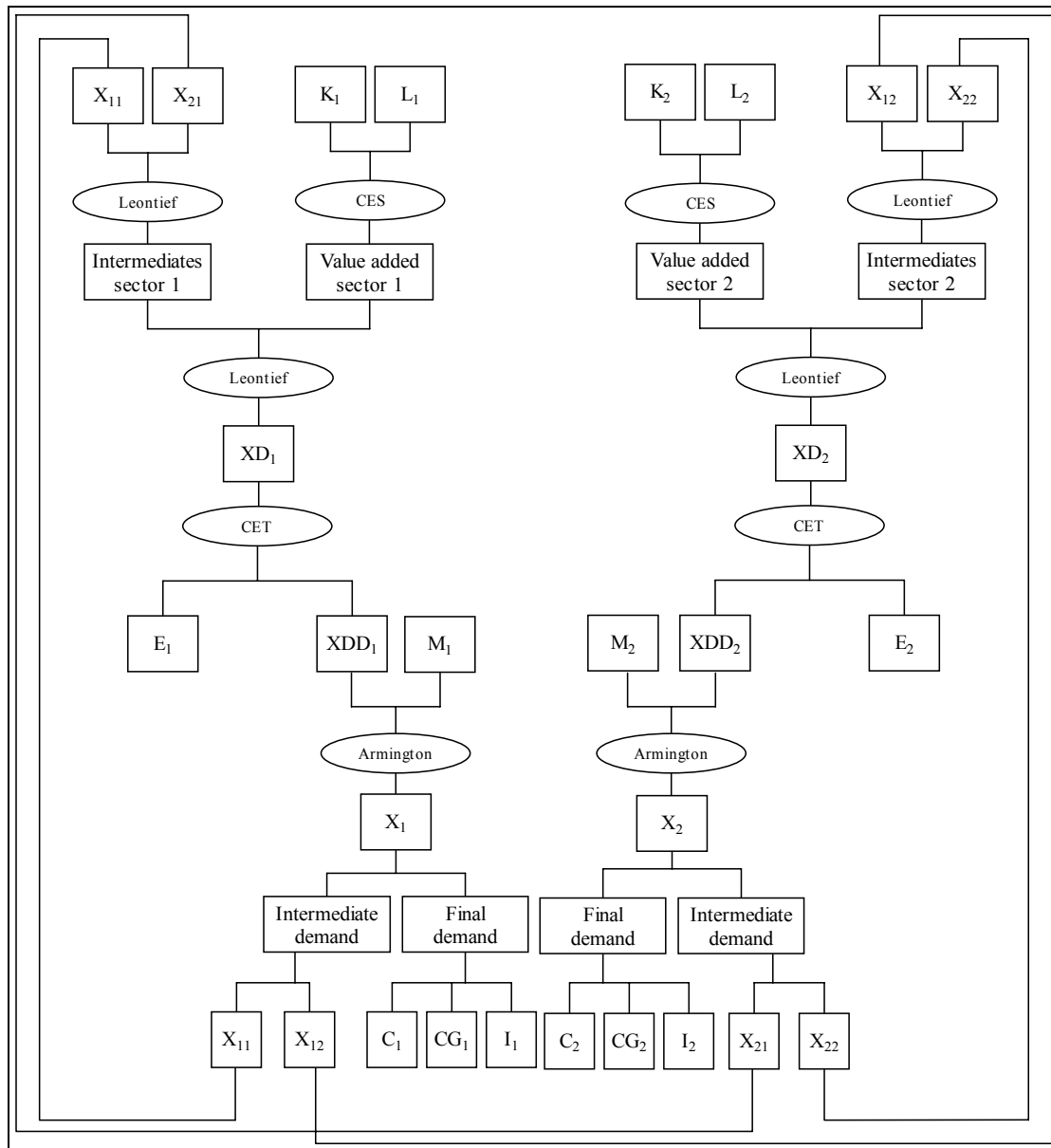
3.1. Introduction

In the model we have five economic agents: n firms, one household, a bank that allocates savings over investments, the Palestinian Authority (PA) and the rest of the world. In each sub-section we summarize the behavioral assumptions of each of the agents⁶.

3.2. The firms

Figure1. Production of the domestic commodity, domestic supply, production of the composite commodity and domestic demand

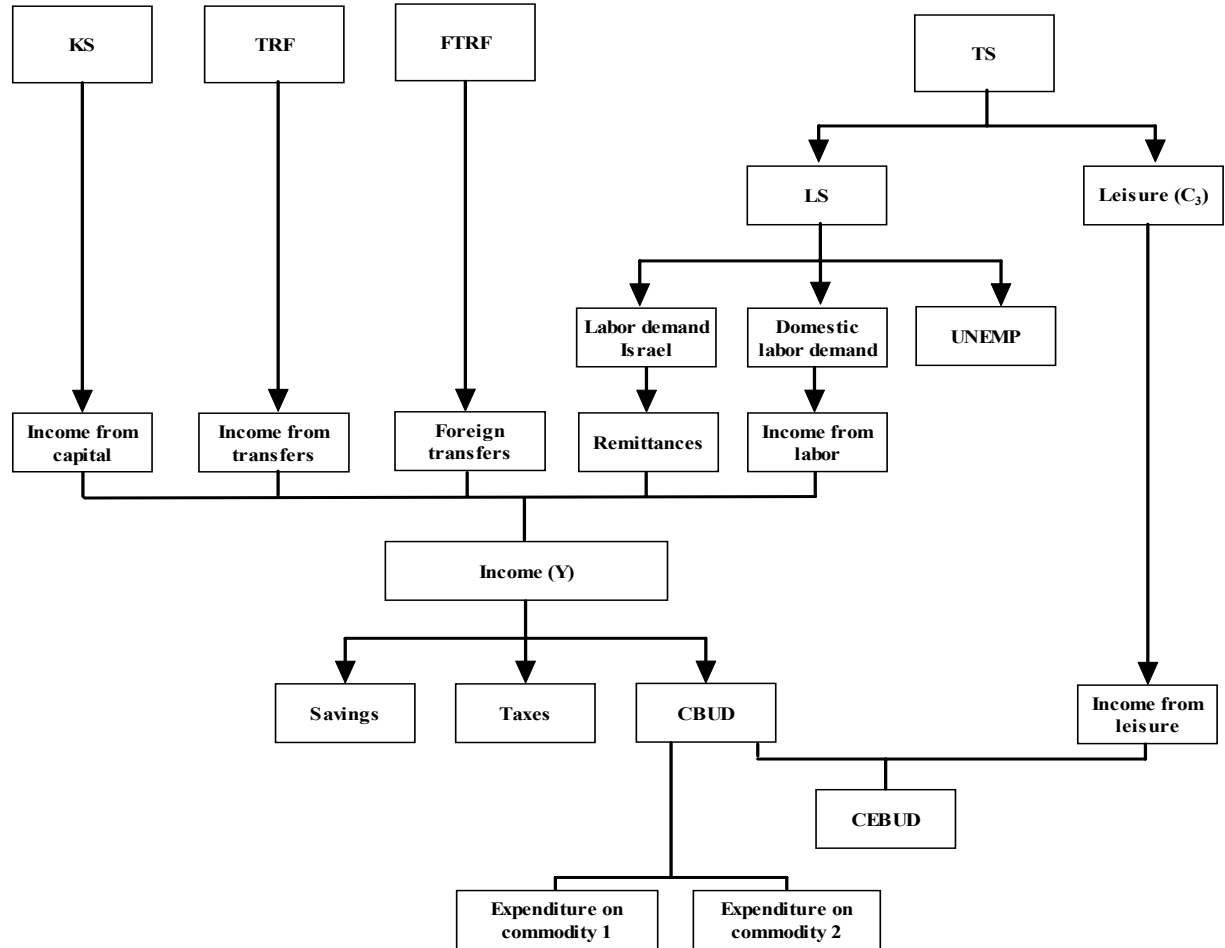
⁶ The equations of the model, as well as the glossary of symbols can be obtained from the authors upon request (pmdeboer@few.eur.nl).



In figure 1, where for ease of exposition we only dealt with two firms (sectors), we summarize the production structure. At the top, on the one hand intermediate inputs are combined into the intermediates by means of a Leontief technology, whereas on the other hand capital and labor are combined into value added by means of a CES technology. Both aggregates are, using the Leontief assumption, combined into XD, the supply of the domestically produced commodity. This commodity is transformed via a CET function into an export commodity, E, and into a domestic commodity supplied to the domestic market (XDD). This commodity is combined with imports to produce the composite commodity X. To that end we adopt the Armington assumption by using a CES functional form. This commodity is either used in the production process (intermediate demand) or for final purposes: consumption, consumption of the PA and investment.

3.3. The household

Figure 2. The decisions of the Household



The household owns the capital (KS), receives transfers from the PA (TRF) and from the rest of the world (FTRF), and it disposes of a time endowment (TS). The household is assumed to maximize its utility in two stages: in the first one it allocates its time endowment over labor supply (LS) and leisure (C_3). We allow for unemployment so that the labor demand is smaller than the labor supply. We assume that the unemployed do not receive unemployment benefits.

In the model we use the unemployment theory delineated in the migration literature by Harris and Todaro (1970) to describe the wage gap between rural and urban jobs. Compared to the modified version proposed by Ruppert Bulmer (2001), we stay closer to the original Harris-Todaro model. The core of the theory is described by the following arbitrage condition (acting as a wage curve):

$$PL = \left(\frac{LF}{UNEMP + LF} \right) \cdot b \cdot ER \cdot PLF$$

The wage rate paid by Palestinian firms to Palestinian workers, PL, must be equal, in equilibrium, to the expected wage rate of the Palestinian workers employed in Israel or in the settlements. The latter is equal to the wage rate prevailing in Israel and the settlements, ER.PLF (ER being the exchange rate⁷), multiplied by the probability of getting a job in Israel (the bracketed term) and a factor, b, whose meaning will be immediately clarified. The probability of getting a job in Israel or the settlements is simply given by the ratio of the Palestinian workers actually employed in Israel or the settlements (LF) to the workers who look for a job there: those who manage (LF) and those who do not (UNEMP). The factor b can be given different interpretations. It could be thought of either as the inverse of the probability of getting a job in Palestine (and in this case the arbitrage condition states nothing but the equality between two expected wages) or as a premium attached by Palestinians workers to a job in Israel: the higher the transaction and psychological costs associated with such a job, the lower b. In other words: for each given level of the wage in Israel and the settlements, the Palestinian workers accept a lower wage at home when the risk of closure, the social stigma exerted by the settlers, the difficulties of reaching the workplace in Israel, etc. increase. The overall effect of the *intifada* shock on b is therefore uncertain: on the one hand, getting a job in Palestine is more unlikely than before (b increases); on the other, transaction and psychological costs are clearly on the rise (b decreases).

All five sources of income together yield the household income (Y).

It pays income taxes and saves a fixed fraction out of its net income. Subtracting taxes and savings from income yields the budget (CBUD) that it devotes to the purchase of commodities 1 and 2. In the second stage the consumer maximizes a utility function, with the consumption of these commodities as arguments, subject to its budget constraint.

For both stages we use a Linear Expenditure System (LES). This is equivalent to the maximization of an Extended LES utility function, with the consumption of the two commodities, and of leisure as arguments, subject to the extended budget, in which the income for leisure is included (CEBUD).

⁷ Of course in the model we fixed ER = 1, since Palestine and Israel have the same currency and we do not consider the Palestinians working in foreign countries different from Israel.

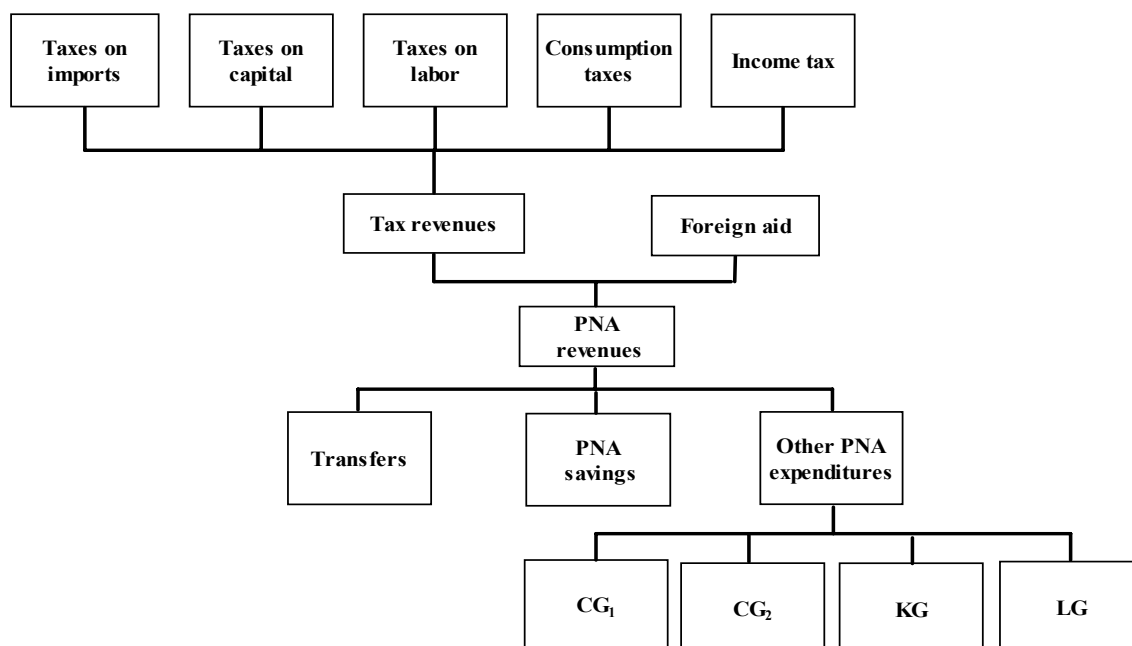
3.4. The Palestinian Authority (PA)

The PA derives its revenues from two sources: taxes (on imports, capital, labour, consumption commodities and on household's income) and foreign aid⁸. These revenues are spent on transfers, savings and on other expenditures. With respect to the latter we assume that the PA maximises a Cobb-Douglas utility function with its purchases of commodities (CG_1 and CG_2) as arguments subject to the expenditure constraint. As to its demand for capital and labour, KG and LG, figure 3 treats simultaneously the role of the PA as a consumer (collecting taxes and using this revenue to save and buy consumption goods) and its role as a producer (buying intermediate goods and production factors); however, as already explained in section 2.1, in the PCBS SAM and consequently in the equations of the model these roles are kept distinct.

Obviously, CG_1 and CG_2 , i.e. individual final government consumption (schools, clinics, etc.) and collective final consumption (defence, security, public administration) are not included as arguments in the household utility function, since these items are not chosen by private consumers. However, private consumers do benefit from them. Hence, the welfare index calculated in the model takes them into account.

⁸ Rising unemployment, reduced demand and the withholding by the Government of Israel of taxes collected on the PA's behalf made the total tax revenue fall by over 300 percent in less than two years, from late 2000 to mid-2002. In the model, the *de facto* power of Israel to withhold taxes that *de jure* should accrue to the PA is captured by attaching an exogenous (politically determined), multiplicative factor to the import duties revenue of the PA.

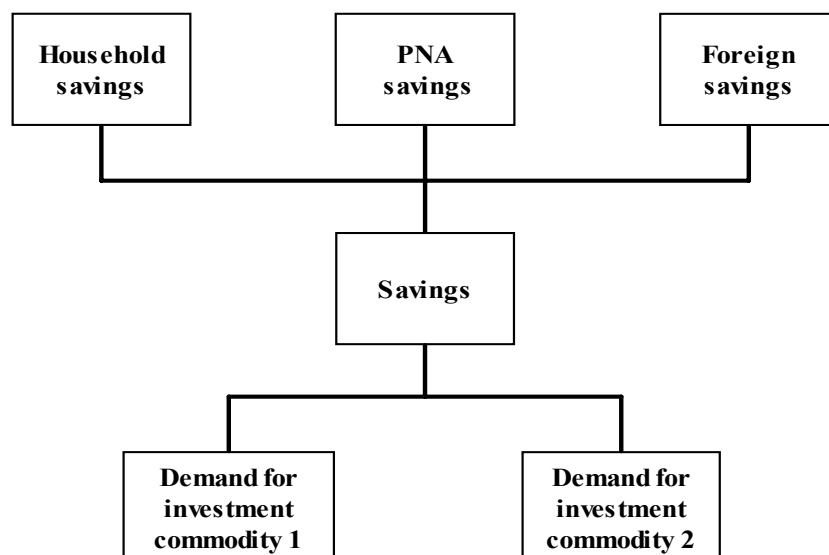
Figure 3. The decisions of the Palestinian National Authority



3.5. The bank

In figure 4 we summarize the decisions of the bank.

Figure 4. The decisions of the bank



The household savings (SH), the PNA savings (SG) and the foreign savings (SF) are allocated over the investment demand for commodities 1 and 2. To that end the bank is

assumed to maximise a Cobb-Douglas utility function with arguments I_1 and I_2 subject to the constraint that savings are equal to total investments.

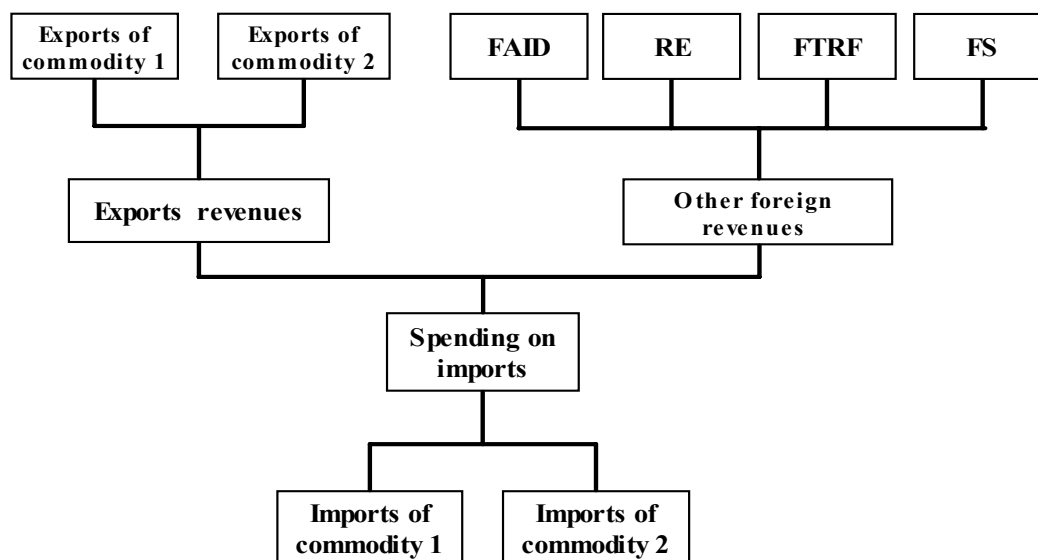
A word of caution is needed. Since here we are interested in a short run issue, the provision of emergency assistance to Palestine, our model is a static CGE model; however, investment decisions are intrinsically dynamic, dictated by expectations on the future and some process of intertemporal maximisation. So, as in any other static model, the only meaningful reason for incorporating investments is basically accountancy: the SAM reproduces a picture of a given economy in a given point of time and, looking at that picture, one sees that people save and invest. But the reader must be warned that a static model has nothing to say as to the effects of any policy simulation on the level and composition of investments. This is the reason why in the next sections we will not consider these effects at all, concentrating on what a static model can seriously say.

3.6. The rest of the world

In figure 5, finally, we summarise the RoW. Before briefly illustrating figure 5, let us say that when one considers the Palestinian economy, the RoW basically coincides with Israel, at least as far as commercial exchanges are considered. In 1998, 76 percent of imports and 96 percent of exports came from and were directed toward Israel (Astrup and Dessus, 2001). Obviously, the picture is different if one looks at foreign aid disbursements. For instance, out of a total of US\$1.1 billion by the end of 2002, US\$840 million came from Arab League countries and US\$230 million from the EU (WB, 2003).

In figure 5, Palestine earns revenue from the RoW via exports and other sources: foreign aid (FAID) accruing to the PA, remittances from the workers employed in Israel and the settlements (RE), foreign transfers directly accruing to the households (FTRF) and foreign savings (FS), i.e the deficit in the current account balance. These revenues are spent on imports of goods 1 and 2. Imports and exports are treated in a rather standard way, through, respectively, an Armington-CES and a CET assumption. In this analytical framework an external demand shock (for instance a reduction in the Israeli demand for Palestinian products prompted by the economic contraction Israel is suffering) may be modelled by changing the elasticities of transformation and making more difficult to transform domestic production delivered to the domestic market into exports. Alternatively, one could use a standard export demand instead of the CET assumption.

Figure 5. The rest of the world



4. FFW vs. CFW

4.1. A methodological note

Our empirical investigation reaches three main conclusions. Two of them are well known results in economics – first: cash and food payments are basically equivalent when they are funded from *monetary* assistance from abroad; second: they are not equivalent when food payments are funded out of *food* aid from abroad – whereas our third result has not received much attention: food-for-work and cash-for work should be regarded and evaluated not just on the “food” or “cash” side, but on the “work” one as well. Food for which work? Cash for which work?

Before looking in more detail at these results, let us briefly illustrate a methodological point. In order to run our FFW and CFW simulations, the model has been slightly modified with respect to the basic version presented in section 3. In particular, the consumption variable was replaced by two new variables for each good: desired consumption (DC in diagram 1) and actual consumption (AC in diagram 1). When people are given too much food (with respect to their desired consumption: in diagram 1 they are given OF, but they would like to consume OC), either they are allowed to sell the food in excess (the market for the vouchers) or, if they are not, they simply have to use their vouchers. In this latter case, given the monetary value of their income (in cash and in food), they will also have to reduce correspondingly their expenditure devoted to other items. There will be therefore a gap, for each good, between what they wish to consume and what they actually consume.

Potentially, this gap could prompt serious general equilibrium consequences, via its influence on the price system.

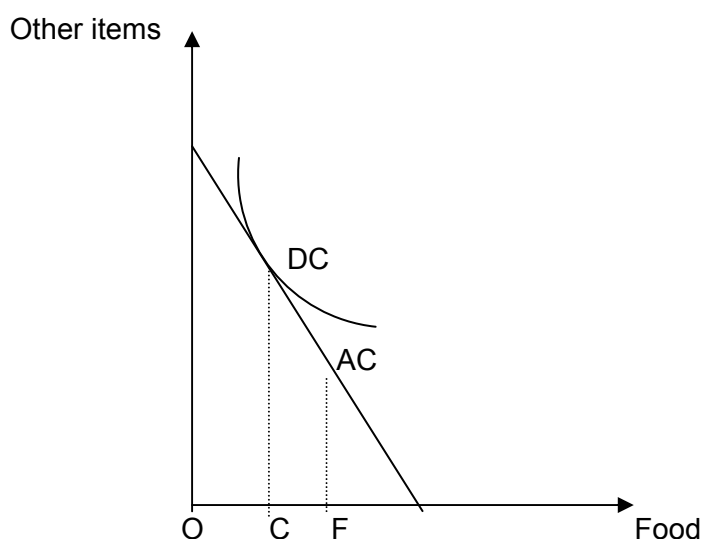


Diagram 1: the economics of in-kind transfers

In our simulations we assumed away the possibility for people to re-sell their vouchers. Indeed, in the model there is just one representative consumer⁹, and it's difficult to think she can re-sell her vouchers to the government or abroad.

4.2. Simulation results

4.2.1. FFW vs. CFW: monetary assistance from abroad

According to the World Bank (World Bank 2003), out of US\$1.1 billion of predictable donors' assistance for 2003, US\$ 375 million are needed for emergency and humanitarian programs. Hence, starting from our counterfactual SAM, we give the model the following shocks:

FFW shock:

- further increase in the level of foreign aid, so as to reach the WB predicted assistance
- separation of foreign aid into two items: general budget support for the PA and FFW programs (US\$ 375 million)
- FFW programs are modelled as follows: the government pays a uniform labour subsidy (the same subsidy *rate*) to each sector in the economy. Workers must spend the amount of the subsidy on food items and are not allowed to re-sell their vouchers.

CFW shock:

⁹ A two-consumer version of the model is forthcoming, where people below and above the poverty line are considered.

- further increase in the level of foreign aid, so as to reach the WB predicted assistance
- separation of foreign aid into two items: general budget support for the PA and CFW programs (US\$ 375 million)
- CFW programs are modelled as follows: the government pays a uniform labour subsidy (the same subsidy *rate*) to each sector in the economy.

As shown in Table 3, the two programs produce the same outcomes. This is not surprising at all. We do not fall into the case described in section 2.1 because the size of the FFW program, however relevant, is barely enough to restore the pre-*intifada* level of food consumption. In the case of Palestine, the interesting case described in section 4.1 remains purely theoretical.

Table 3: FFW = CFW, selected indicators (counterfactual SAM = 100)

	DOM. PROD:	CON	GNI	UNEMP	UNEMP (rate)	PRICE INDEX:	WELF
			111.90	89.10	31.4	100.09	109.77
Food	101.87	106.53					
Ot. Agr.	112.59	106.07					
Manuf.	100.50	113.80					
Const.	99.59	104.64					
Comm.	102.21	109.02					
Transp.	107.96	113.99					
Prv. Svc.	108.39	118.67					
Pub.Svc.	97.08	98.05					

The meaning of these results will be clarified in the next sub-section. Here, let us remind Basu's argument: in some circumstances FFW is to be preferred because CFW exerts a stronger upward pressure on the price level and thus people left out on the emergency scheme can suffer a loss. Our model is not perfectly suited to analyze the point, but we can guess that in the Palestinian context this argument does not apply. Who are, in our model, those "left out" of the relief scheme? Basically, those who remain unemployed. Well, in our FFW and CFW simulations we kept fixed the amount of *real* transfers to the consumers (from the PA and from abroad), be them employed or unemployed. Given that real transfers (a portion of them) coincide with the real income of the unemployed and that the reduction in the unemployment rate under the two schemes is the same, we are inclined to conclude that the unemployed should be indifferent between them. Again, the reason is apparent from diagram 1: if a FFW scheme does not force the consumer to relocate her choice from C to AC, there is no reason to think CFW as a more inflationary scheme than FFW.

4.2.2 FFW vs. CFW: food aid from abroad

Here we want to compare an experiment of CFW along the lines already described with a different experiment of FFW. This time, food itself come from abroad in the form of food aid. In order to make this FFW experiment comparable with the previous FFW and CFW “monetary” experiments, it must be ensured that the size of the program is the same (US\$375 million). This kind of FFW program may be conceptualised as follows:

- the level of foreign aid falls by US\$ 375 million
- this amount of money is used by the donors to pay a fraction of the world price of food to the world producers. Only the remaining fraction is paid by Palestinians importers
- as before, the PA pays a uniform labour subsidy (the same subsidy *rate*) to each sector in the economy. Workers must spend the amount of the subsidy on food items and are not allowed to re-sell their vouchers

The main results of the experiment are summarised in Table 4

Table 4: FFW , food aid from abroad. Selected indicators (counterfactual SAM = 100)

	DOM. PROD:	CON	GNI	UNEMP	UNEMP (rate)	PRICE INDEX:	WELF
			104.88	94.37	32.9	90.5	113.9
Food	86.54	118.56					
Ot. Agr.	100.04	106.26					
Manuf.	102.99	112.03					
Const.	101.58	104.65					
Comm.	100.932	111.92					
Transp.	106.30	113.04					
Prv. Svc.	105.95	119.79					
Pub.Svc.	83.47	92.03					

Comparing Table 3 and Table 4 one can see that the main difference is the reaction of domestic food production. Under the “FFW-food aid” program it falls significantly, which is exactly what is expected by such a program: people simply substitute domestic production with cheaper, imported food. However, it is worth stressing that other responses of the economy are less obvious and nevertheless they should be carefully considered when taking into account the relativ merits of different emergency program. Notably, food production (in the extended but more realistic definition we adopted for this sector, see section 2.1) accounts for almost 20% of the economy, it is a large sector. The decline in its production level is therefore the main reason behind the smaller increase of GNI under the “FFW-food aid” program (around 5%) than under the pure FFW or CFW programs (12%; by “pure” CFW or FFW programs, we mean lack of food aid from abroad).

In turn, this is the reason why, despite the relevant reduction in the price level prompted by a “FFW-food aid” program, real consumption does not grow faster under such a program. The

only item whose consumption grow faster is food, and this is obvious: the reduction in the world price of food paid by the Palestinians importers produces a standard substitution effect.

Why does the price level fall under a “FFW-food aid” program whereas it is basically stable under pure FFW or CFW programs(which is the reason why the welfare index improves with a “FFW-food aid” scheme? Because food products are not only a relevant portion of the consumption basket, but also an important input in the production process of those goods and services that are largely consumed by the households (see the benchmark SAM in Appendix 1).

And why does the production level of the “Public Services” sector contract so heavily under a “FFW-food aid” scheme? However obvious, the reason is often forgotten by the proponents of food aid schemes. If the donors spend their money to subsidize world food producers, the government of the beneficiary country can get less for budget support. This simple trade-off must be kept in mind and to us it constitutes a further valid argument against these emergency schemes. In an economy whose productive base has been eroded by a conflict, an emergency program should never let the producers pay the price of an increasing welfare to the advantage of the consumers: it would be a short-sighted strategy.

Again on Basu's point. It is true that food aid from abroad can make the unemployed (those left out of the relief schemes) better off, since the fall in the general price level would make it possible to increase the real transfers to them (in the simulations, this is done by fixing the *nominal* instead of the real transfers). But, as usual, there is no free lunch. This choice would erode the real fiscal position of the PA and consequently it would negatively affect the production level of the “Public Services” sector, by far the most labor intensive.

4.3. For which work?

If we exclude the case for “FFW-food aid” schemes, especially for their negative impact on agricultural GDP, we are left with pure FFW and CFW programs. But for which work? This kind of programs are generally thought of as social instruments; basically, it is believed that the ultimate beneficiary should be the consumer and the problem is to provide her with some income. In our view this is the reason why in the economic literature there are plenty of contributions on the issue of in-kind versus cash *transfers*, whereas much less attention has been paid on the “for-work” side of the story.

Here, to conclude our paper, we want to present the results of a simulation that clearly points to the “for-work” side as a crucial one.

In this simulation we basically consider the same programs already illustrated in section 4.2.1, with only one, relevant difference. We assume away the hypothesis of a uniform labor subsidy paid to each sector of the economy and, keeping fixed the size of the program (US\$375 million), we try different possible allocations of these funds following two criteria. On the one hand, it could be argued that in a relief program the sectors to be privileged (to be given the largest amount of subsidy) are those producing the goods that dominate the consumption basket of people. This could be labeled as a “welfare-oriented” approach. On the other side, one could legitimately think that the sectors to be preferred are the most labor-intensive, those which are in a good position to absorb as much unemployed as possible. Let us call this view the “labor-oriented approach”.

According to the Palestinian data, adopting a welfare-oriented entails a privilege for the sectors “Food”, “Private Services”, “Manufactures” and “Public Services”. A labor-oriented approach would accord a preference to the sectors “Public Sectors”, “Commerce”, “Transports” and “Construction”. Tables 5 and 6 summarises the results.

Table 5: The Labor-Oriented Approach. Selected indicators (counterfactual SAM = 100)

	DOM. PROD:	CON	GNI	UNEMP	UNEMP (rate)	PRICE INDEX:	WELF
			109.59	90.96	32.0	101.4	107.16
Food	103.02	105.85					
Ot. Agr.	92.010	102.67					
Manuf.	98.283	11.68					
Const.	101.51	105.01					
Comm.	103.64	111.81					
Transp.	115.44	116.54					
Prv. Svc.	100.89	107.75					
Pub.Svc.	105.87	108.45					

Table 6: The Welfare-Oriented Approach. Selected indicators (counterfactual SAM = 100)

	DOM. PROD:	CON	GNI	UNEMP	UNEMP (rate)	PRICE INDEX:	WELF
			110.788	88.52	31.2	100.6	109.02
Food	97.67	105.45					
Ot. Agr.	89.99	102.52					
Manuf.	102.93	112.62					
Const.	98.11	103.08					
Comm.	99.82	102.91					
Transp.	98.19	107.31					
Prv. Svc.	110.88	121.6					
Pub.Svc.	101.86	109.57					

The results are as expected. Under the welfare-oriented approach the performance of the different sectoral GDP is , on average, a bit more disappointing¹⁰. However, the consumers are better off. It is worth noticing that unemployment falls faster under the welfare-oriented approach: firms are producing less but, due to the upward pressures on the price of capital (see footnote 10), with less capital and more labor.

What is the “optimum”? Of course, it is very difficult to say. But, as already stressed, we believe that in an economy almost disintegrated by a violent and persistent conflict, the rebuilding of the productive capacity is an absolute priority. Pursuing a route where firms produce less with less capital in the name of a “plus one percent” in the welfare index could be a dangerous mistake. Emergency assistance should never compromise development perspectives. All the more so when a labor-oriented approach is in any case a way of increasing the current welfare level of Palestinian population.

¹⁰ The reason why GNI growth is higher under the welfare-oriented approach lies in the behaviour of the price of capital (the rental rate of capital). Indeed, when labour subsidies are paid to some relatively capital-intensive sectors, as it is the case in this simulation, their expansion causes a pressure on the given capital stock and then increases its price.

References

Astrup, C. and S. Dessus, *Trade Options for the Palestinian Economy. Some Orders of Magnitude*, Middle East and North Africa Working Paper Series, No.21, The World Bank, March 2001

Balian, O., *War and Peace: a CGE Analysis of the Economic Effects of the Israeli-Palestinian Conflict*, mimeo, 2002

Basu, K., *Relief Programs: When it May be Better to Give Food Instead of Cash*, World Development, Vol.24, No.1, pp.91-96, 1996;

Easterly, W., *The Elusive Quest for Growth. Economists' Adventures and Misadventures in the Tropics*, The MIT Press, Cambridge, MA., 2002

Harris, J. And M.Todaro, "Migration, Unemployment and Development: A Two-Sector Analysis", The American Economic Review, Vol. 60(1), pp. 126-142, 1970

Ruppert Bulmer, E., *The Impact of Future Labour Policy Options on the Palestinian Labour Market*, Middle East and North Africa Working Paper Series, No.21, The World Bank, June 2001

World Bank, *Fifteen Months - Intifada, Closures and Palestinian Economic Crisis. An Assessment*, The World Bank, 2002a (available on the web: www.worldbank.org)

World Bank, *Long Term Policy Options for the Palestinian Economy*, The World Bank, 2002b (available on the web: www.worldbank.org)

World Bank, *Two years of Intifada, Closures and Palestinian Economic Crisis. An Assessment*, The World Bank, 2003 (summary available on the web: www.worldbank.org)

APPENDIX 1: The Palestinian SAM for 1998

Input-output structure and primary income (US\$, million)

	Food	Oth. Agric	Manuf.	Const	Comm.	Transp.	Priv. Serv.	Pub. Serv.
Food	195	6	23	0	229	0	0	4
Oth Agr	46	1	28	0	0	0	0	0
Manuf	489	23	445	829	78	73	84	135
Const	4	0	6	113	7	0	22	36
Comm	507	0	512	3	263	9	13	58
Trans.	21	4	25	4	45	7	14	40
Priv. Svc	61	8	39	20	119	19	225	67
Pub Svc	0	0	0	0	0	0	15	0
Lab	89	38	205	179	473	103	426	349
Capit	177	4	321	245	214	80	546	18

Imports and final demand (US\$, million)

	Import	Private Cons	Govt Cons	Invest	Export
Food		1736	0	117	219
Other Agr		40	0	0	8
Manuf		821	0	382	450
Const		61	0	1108	38
Comm		126	0	1	10
Transp		249	0	33	1
Private Svc		84	215	33	2
Public Svc		7	761	1	1

Foreign aid	390
Factor payments from abroad	779
Transfers from abroad	140
Foreign Saving	1015