FOOD AND RESOURCES: SOURCES AND WAYOUTS OF MINIMIZING CONFLICTS OVER TRADE

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INTRODUCTION

Trade is very burning issue now-a-days. It is like embellishing one by paying a beautician. If the beautician and our way to find a well beautician is adequately good, then, the looks becomes attractive and by exchanging payments and labor both party reaches Pareto optimal states where Walrus Law holds. But if one of them diverges from the set then, conflict occurs naturally as one gets better off relatively at the cost of other's utility. In addition to that friends of both the parties can turn the problem even like knife edge. Hence, proper restrictions are needed to be taken off in such a situation to demolish the pandemonium. Let us proceed to our analysis now that deals with the trading of foods and resources.

Food is one of the basic needs that economics deals with. Positive economics asks how to produce, what to produce, for whom to produce and how it should be distributed? But behind the scene we must look after the normative economics as well as the realism.

Trade is an important part in economics. If exchange is beneficial then, there is no problem with trade positively. But if there are problems regarding it, those externalities simply put us into the concern of cost-benefit analysis on the basis of demand-supply tool.

Production of food and use of resources and trading them are not any mutually exclusive event from this set of conflict. Whether trade promotes peace or conflict is subject to the analysis of different schools, viz. Liberalists says trade creates peace, Marxists (rather Neo-Marxists) say trade creates peace but only among symmetric nations whereas, completely denying these, Realists say trade creates war; another option that can exists is that there is no correlation between trade and conflict. Both these groups have logical support and conflicts over their own view as well as over the view of others'.

We will walk into our own style. First, we will show that conflict depends on the coefficients of domestic nation along with the conflict coefficient of its trading partner with respect to a particular good that is being traded. Later, we will show the factors those are responsible to influence these coefficients. Afterwards, we will proceed towards the policy prescriptions so that conflict could be minimized.

Model

Let there be two countries, country A and country B, i.e. we are simplifying the model with the analysis of bilateral trade. Suppose, A exports good X to B, price of X is PX and B exports good M to A, price of M is PM.

Now, say, utility depends on economic consumption of a bundle (Z). These bundle may consists of some traded goods. As trade is good or bad for such goods', is subject to a question, thus, conflict(C) is another good (may be thought of an external one) that affects consumer's utility(U). Thus, we can write,

U=U (Z, C) that is to be maximized.

But it is always taken care of to keep the trade account in balance, i.e. value of total exports becomes equal to the value of total imports. Hence, the constraint is,

X.PX-M.PM=0

It is explicitly assumed that marginal utility is positive but diminishing for both the factors, i.e. $U_Z > 0$, $U_{ZZ} < 0$, $U_C > 0$, $U_{CC} < 0$.

Hence, our problem is,

Max U=U (Z, C)

Subject to X.PX-M.PM=0 ; X, M, Z, C ≥ 0

L= U=U (Z, C) + λ (X.PX-M.PM) ; λ>0

The first order conditions with respect to conflict C and λ are given by,

U_C (Z, C) + λ (X.PX-M.PM) =0 ……(1)

The effect of change in A's export and import on the conflict A sends towards B are given by computing the comparative studies of (1) with respect to X and M are given by,

$\delta C/ \delta X = -\lambda . PX_C / U_{CC} + \lambda (X.PX_{CC} - M.PM_{CC})$ ……(2)

$\delta C/ \delta M = -\lambda . PM_C / U_{CC} + \lambda (X.PX_{CC} - M.PM_{CC})$ ……(3)

Import demand bears a negative relationship with price of the imported good and conflict, but it bears a positive relationship with the income of the imported nation. Therefore,

$M_A^D = \beta 0 - \beta 1 . PM + \beta 2 . Y_A - \beta 3 . C$ ……(4)

On the other hand, import demand for A is export supply of B that yields a positive relation with price and its income but bears a negative relationship between import supply and conflict.

Hence, we can write,

$M_B^S = \alpha 1.\ PM + \alpha 2.\ Y_B - \alpha 3.C$ ……(5)

At equilibrium, $M_A^D = M_B^S$

Or, $\beta 0 - \beta 1.\ PM + \beta 2.\ Y_A - \beta 3.\ C = \alpha 1.\ PM + \alpha 2.\ Y_B - \alpha 3.C$

Or, $PM = [\beta 0 + \beta 2.\ Y_A - \alpha 2.\ Y_B + (\alpha 3. - \beta 3)\ C] / (\alpha 1 + \beta 1)$

Or, $PM_C = (\alpha 3. - \beta 3) / (\alpha 1 + \beta 1)$ ……(6) ;α_i, β_i's are constant coefficients

This analysis can similarly be done for A's export and B's import and finally, we can conclude,

$PX_C = (\sigma 3 - \phi 3) / (\sigma 1 + \phi 1)$ ……(6)

σ3=conflict coefficient of A's export supply,

ϕ3=conflict coefficient of B's import demand,

σ1=price coefficient of A's export supply,

ϕ1=price coefficient of B's import demand.

In equilibrium situation, putting equation (5) and (6) into (2) and (3) we get respectively,

$\delta C / \delta X = -[\lambda. (\sigma 3 - \phi 3) / (\sigma 1 + \phi 1)] / U_{CC}$ ……(7)

$\delta C / \delta M = [\lambda. (\alpha 3. - \beta 3) / (\alpha 1 + \beta 1)] / U_{CC}$ ……(8)

From the above equations we can easily say that conflict depends on σ3, ϕ3, σ1, ϕ1, α3, β3, α1, β1, i.e. the conflict and price coefficients. Hence, if we figure out the factors those influences these coefficients, then, we can at least try to prescribe proper policies.

Both the above equation will be less than 0, i.e. $\delta C / \delta X < 0$, $\delta C / \delta M < 0$ if and only if,

$\sigma 3 < \phi 3$ and $\alpha 3 > \beta 3$.

This implies if we measure the export and import in terms of country A, then, coefficients of A must B less than the coefficients of B.

So, now, let us find out the source functions affecting these coefficients.

SOURCES

As like the other theories, economists also have different views regarding the consequences of trade and its impact. A group of economists favor that trading primary products and its conjugate resources depletes the conflict whereas, another group of economists do not agree with this fully. Both parties have strong logical arguments in favor of them. Many of these have quite strong explanations.

Though there is no direct link between trade and conflict it can be denied that two events are mutually exclusive and have nil cause and effect. Conflicts can be either inters type (conflict within the country) or intra type (conflict with outer nation or trading partner). Let us go through the source function affecting conflicts one by one, logically.

(A) Civil Conflict

Conflict does not occur without the absence of scarcity. Especially, the less developed countries (LDCs) and developing countries lack of adequate resources of production besides, being trapped by low investment rate, bad infrastructure, vicious circle of poverty and so on. Share of their consumption expenditure of food to income is quite high and so on the MPC. On the other hand when they see people do not have any proper access to food despite of having the storage, export, import and for the higher food price for which general public are forced to bring down their real consumption it raises the probability of conflict. These, in turn, raise the civil conflict further.

It is observed that poor health, low nutrition level; hunger has a positive relationship to induce civil conflict. 65% of the world's food-insecure people live in seven countries: Democratic Republic of Congo, India, Bangladesh, Pakistan, China, Indonesia and Ethiopia. Most of these nations have experienced civil conflicts as a consequence of trade over the past few decades. Low availability and higher export profiles of primary products add fuel to the flame in such conflicts. Countries like Angola, DRC, and New Guinea and so on are the proof of this.

If we consider the export price, it has also a great impact on conflict. Much seen and observed phenomenon is that if export price of food rises in a labor intensive nation, conflicts gets reduced but if export price of products such as oil rises, driven by a capital intensive country, that prone to raise the conflict. Historic incidents are the testimonial of this. When Colombia increased the price of the export of coffee it has reduced internal conflict but the case was totally reversed when oil exporters rose up the price of oil export.

Lastly, the transitory effect on civil conflict is to be judged. Shocks like drought, flood, low rainfall etc. induces the civil conflict as there occurs a supply shortage. In fact rise in import demand influence the import prices to move up. This compels a part of consumers to consume less. In most of the cases, these often act as the source of grievances, young men and women are motivated to take up arms (Benjaminsen, 2008) and turns into civil conflict ultimately. Though these relationships are not taken eternally true and this is often subject to criticism depending upon the empirical findings.

(B)Democratic and Authoritarian Breakdowns

Democratic breakdowns occur when leaders are deposed and replaced by officials who come to power without regard for elections, legal rules, and institutions. It is estimated that almost 67% breakdowns have the incentives to give birth of autocratic system which often turns out to be more dangerous. This leads to the result also to mass killing state (Poe and Tate, 1994; Harff, 2003).

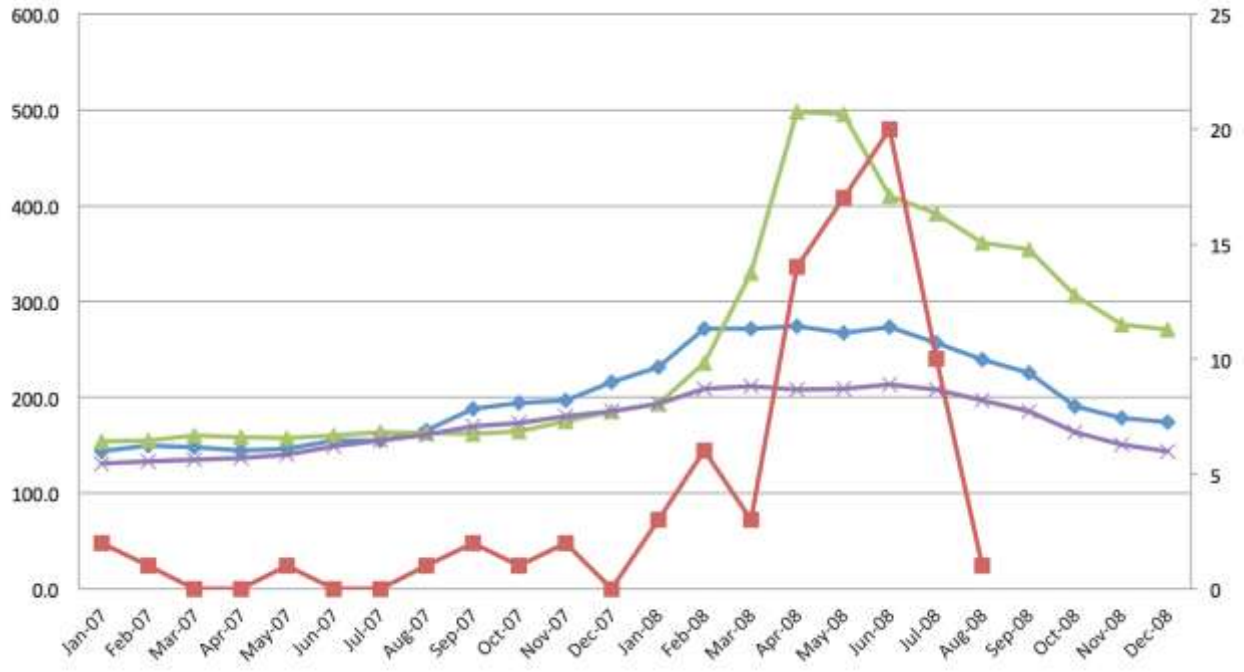
Many of these incidents occurs due to food insecurity, proxied by low availability of calories for consumption per capita where people expect a larger investment to reduce food insecurity, especially in developed countries (Reenock, Bernhard and Sobek, 2007).

Despite lack of statistical evidence, history says rise in food price has always been a concern of democratic breakdown. Bad harvest in 1788 led to high food prices in France that ultimately led to rioting and French revolution in 1789.

(C) Protest and Rioting

It is always been an evidence that higher food price at international market level leads to riots many times, especially if the price of wheat, rice and maize are too high. Food, being one of the most necessary goods, it has inelastic demand. Given the fixed income if people have to bear a large part of his income to consume food then, they there can be a capability failure (as was stated by Amartya Sen in his 'Capability Approach') as they are left with little to enjoy the real consumption of the other goods. This small accessibility of amusements indirectly induces the riots. Forms of riots generally differ among the nations. It is seen that in most of the cases violent riots are more in the history of LDCs than the developed nations. The more the ratio of violent to non violent riots, more will be the incidence of expanding the conflicts in a mass scale. That is why LDCs have faced this in any times. Rise in price of imported goods can also occur because of high tariff rates, strict import restrictions and reduction in government subsidies. In 1977, Egyptian three day "bread riots" happened at the cost of the life of 800 people. This happened as government has reduced the subsidy as mandated by IMF (AFP, 2007). Based on WFP data (on riots) and the Food and Agriculture Organization of the United Nations (FAO) and the United Nations Conference on Trade and Development (UNCTAD) (price indices) we have plotted a graph. Along its left vertical axis we measure price indices (100=Year 2000 price) and along its right vertical axis we measure number of food price riots whereas, the time is measured along the horizontal axis. Blue line signifies FAO cereals price index, violet line implies FAO food price index, green denotes UNCTAD rice price index and red line represents the food riots.

Figure 1-Food Prices and Rioting 2007-08



(D) Communal Violence

Competition over scarce resources, particularly land and water often aggravates communal conflict (Homer-Dixon, 1999; Kahl, 2006; Ban, 2007). This type of conflict initially involves groups with permanent and semi-permanent armed militias but does not involve the government directly. But it can escalate government forces in the inclusion of this violence, as in the massacres in Darfur and Burundi. These also enhance the civil war. Communal conflict over land and water in Darfur waved and expanded in such a way, that fire of grievances impulses the government to support the militias of Janjaweed in their fight against Sudan's people Liberation Army. Many examples are there in the history that amplifies these types of stories.

Problem is that to feed this huge expenditure is made on capital goods at a fixed time but in the later period this leads to a fall in investment and so as in production also at an aggregate level. Such incidents make bridges to the other source function of conflicts stated above. In fact if aid is given in the short run by trading partner of a country, a group of domestic citizen does not take it positively. Their logic is that nations have to rely on standing on shoulder effect, rather than standing on toes that enhances the scope of aid providing country to control its trading partner on the one hand and on the other hand, it declines the functions like self sustenance and capacity buildings. Another form of groups protests this as they seem that ethically it is depriving to have the aid. Their point of view is that it nothing other than begging by bidding off the moral values as per self needs. But it cannot be denied at this century implementation of FDI can have a greater impact.

(E) Demographic, Social and Political Factors

It is observed that generally 15-24 years aged citizens of any countries takes part actively in rioting, civil conflict, terrorist attacks and so on (Urdal, 2006). Low per capita income and consumption capabilities, black market and false promises of government lead the economy to face such devastating situations. A group of people in the midst of this acts as catalysts by playing with their emotions when the fresh bloods are eager to something exceptional. Keyna's Mungiki, Kikuyu Street gangs are thus famous where innumerable landless people or people belong to slums joined these groups.

Ethnic and religious diversity on the other hand do not necessarily inject the poison of conflict. However, exclusionary principle can often give birth to the problems those of which are discussed above.

Finally, moving to urban areas from rural areas can have a greater impact on it. Especially in LDCs disguised unemployment exists. Thus, if they leave the native land and emigrate to towns then productivity of land could rise, disguised unemployment reduces. The migrated people on the other hand might or might not get jobs, foods and shelter. Hence, this is subject to cost benefit analysis, if net benefit is maximized then there is no problem but if pool of crisis rises then, these youth just acts as par the mouth of greedy and selfish people that raises the conflict.

If productivity in the agrarian sector rises as well as the industrial sectors also show a rise in productivity then by implementing new ideas and cheaper technology, cost could be reduced and price of domestically produced goods. For this if import demand falls more than the export supply that could enhance the intra trade conflict as shown in our model. Such disparity among the dependencies could even uphold the conflict among industries of particular nations; also it can affect both horizontal and vertical equities. Withal, input intensity, factor mobility also affects a scenario.

(F) Economic Factors

Lots of economic factors are there those prone to induce conflict. Some of them are given below;

- Low per capita income
- Insecurity and inequality (both vertical and horizontal)
- Lack of potential to regulate the economy
- Fiscal crises that make a State fragile.
- High external debts
- Wrong policy measures
- Bad infrastructures and market power
- Expenditure decisions

These are the crucial points those affects the trade and conflict.

Low per capita income always leads people to have the cheaper product. In such a case if imported food product gets cheaper, thus, people demand more of it than the domestically produced goods that is not possible to supply by domestic producers. This helps the foreigners to capture domestic market and thus, local producers have to starve that leads them toward conflict.

Food insecurity and inequalities can also be troublesome. For everyone it is not easy to dream for the day of having both ends meet like his/her neighbor. If situation does not change then, level of impatience can turn into "tunnel effect" and things like protests, riots and lots of other pandemonium could occur.

Both the high external debts and wrong policy measures create chaos that may result into democratic and authoritarian breakdown. Proper regulation is highly solicited to stabilize the market as well as the food price. As agrarian sector provides the most basic needs it is very essential to stabilize the prices of the foods. Spontaneous fluctuations in prices consists of a 'menu cost', it denotes the inefficacy of government to regulate the price, investors loss confidence and the bubble burst either into depression on rotates the economy into vicious circle. Foreign traders also loss confidence and this injects the toxics of both intra and inter nation conflict.

Often the LDCs face a problem of bad infrastructure. This raises the domestic production cost and makes them incompetent with foreign product, both domestically and internationally. Inflow of trade at a level conquers over the fights between two nations by covering a veil of friendliness but this cannot be perpetual if either of the country diverges from Pareto optimal situation after having the trade. Same story would be repeated and it would hamper the peace, even depending upon the values and strength of conflict coefficients it could be a boomerang at any adverse situation.

Lastly, if people are unaware of allocating goods properly then saving-investment identity could breakdown and it is not impossible also. Generation of effective demand would get jolt as well as the factor and goods market would be hampered. This would easily distort the price of inputs as well as the final food product. This situation could even change the exchange rate and depending upon the cases, trade could be subject to beneficial.

Evidence in support to the above explanations is given below. This table shows the pre-trade conflict and food insecurity.

Table-1, Pre Trade Conflict an Food Insecurity in 2002-03

Country	%food insecure FAO	Population in need of assistance (%)	Major exports	Imports+ GDP (%)	Notes
DRC	75	4.6	Diamond, oil, coffee, copper, cobalt	15	"African World War"; 16million food insecure people in country
Ethiopia	42	6.7	Coffee, bauxite, alumina, gold, diamond, fish	_	Ethnic rebellions ongoing in drought-affected regions; internal displacements from past wars.
India	21		Textile goods, gems and jewelry, engineering goods, chemicals, leather and manufactures	20	Border conflict with Pakistan over Kashmir (productive farming territory); localized rebellions.
Indonesia	6	1.4	Oil & gas, electrical appliances, plywood, textile, rubber	62	Separatist rebellion in Aceh, with15% Indonesia's oil and gas production at stake.

Sri Lanka	25		Clothing, tea, diamonds, coconut products, petroleum products	73	Cease-fire holding in most conflict zone
Iraq	27	100	Oil	_	Active, high to medium intensity. United Nations appealing for food aid for entire populace.
The Philippines	22		Electronic equipments, machinery, and transport equipments, garments, coconut products	98	Communist and Muslim insurgencies, military munity.

Sources: OCHA (2003); Marshall and Gurr (2003); SIPRI (2000); Eriksson, Wallensteen, and Sollenberg (2003); CIA (2003); USCR (2000); FAO (2003); World Bank (2003).

Now we will see the effects of Post Trade Conflict and Food Insecurity in our next table.

Table-2, Food Insecurity and Post Trade Conflict

Country	%food insecure FAO	Population in need of assistance (%)	Major exports	Imports+ GDP (%)	Notes
Angola	33	28.2	Crude oil, diamond, refined petroleum products, gas, coffee, fish, timber, cotton	127	Returnees in need of assistance
Sierra Leone	50	2.8	Diamonds, cocoa, coffee	25	Returnees, refugees in need of assistance
Tajikistan	71	15.2	Cotton, Textile, Electricity	147	Large population remains internally displaced
Latin America	10	403, 000 (absolute)		37	Landmines remain a problem in Central America

Sources: OCHA (2003); Marshall and Gurr (2003); SIPRI (2000); Eriksson, Wallensteen, and Sollenberg (2003); CIA (2003); USCR (2000); FAO (2003); World Bank (2003).

Solutions

Policy Intervention

Trade conflict directly can occur when the actual price charge exceeds the willingness to pay the price per unit for domestic consumers. On the contrary, if there is more that optimal supply price falls automatically. Any rational consumer wants to pay minimum and consume maximum. More the divergence from either of these two, more the consumer is worse off, and hence unhappy, which adds fuel to conflict. Hence, if we use the instruments for which we can reach this goal then, conflict will be minimized. Some of those instruments are defined below;

- Reducing import tariffs to lower prices;
- Lowering import quotas and imposing export restrictions ;
- Enhancing the availability;
- Lowering taxes and increasing subsidies;
- Releasing food reserves so that supply is raised and price gets cheaper;
- Imposing price control to keep price stable

Almost 84% of 77 developing countries have adopted either of these measures or combined measures and even got fruitful result in 2007-08.

Reducing import tax leads to a fall in relative price of the good and consumers are better off in addition to having some surplus over and above the previously earned real income.

By reducing restriction on quota consumers can command over the goods more easily and thus, if their basic requirements are sustained then, black marketing also false.

Again by imposing export restriction exporter can earn high price but if aggregate demand of export supply is reduced for the importers then, it is once again subject to cost benefit analysis. If total revenue earned after new regulations exceed the total revenue earnings of previous one, then, exporters can be better off. But these should be applied with its equal size of trading partner depending upon the strength and probability of tariff war. In case of heterogeneous country it should be applied carefully by small country as policy measures of large country can affect his terms of trade adversely.

Lowering tax gives the same result as the first point and covering up with subsidies is almost same analysis with the second one.

Releasing food reserves can decrease the incident like looting, protests and so on and thus, conflict can be avoided.

Providing Safety Nets

Price regulations must be accompanied by providing safety nets. Earlier it was dependent heavily upon public works but now, there are lots of instruments to regulate it. Those are mentioned below;

- Conditional or unconditional transfers of food, cash or vouchers;
- School meals, including breakfast, mid-morning snack or lunch, take home rations;
- Cash or food for work programmes viz, roads, dams, irrigation system
- General target food subsidies
- Weather based insurance.

All these are safety nets. Each of these programmes have proved to be prudential the countries where it is implemented.

We can exemplify Indian economy. Mid day meal, NREGA programmes have on the one hand rising productivity by employing citizens and pupil to work and education, on the other hand, they are paid directly or indirectly for that. Weather based insurance can assure the farmers and allow them to work with less burden and tensions.

Conclusion

In the midst of twenty first eras, we cannot think own country independent from the others. International trade comprises the necessity of globalization. Trade can either be beneficial or may give birth to conflict. This is a trial and error method to understand the economy. Activities now-a-days are different from the past centuries. Economists try to forecast the future by their self ways of predictions. Conflict occurs due to trade depending upon the coefficients of it. It depends upon the structure of the economy, policy measures, tunnel effects and other social, political, institutional, demographic and economic factors. The main problems behind all of these are accessibility to food and price of it. Hence, by proper policy implementations as well as supporting them with safety nets we can minimize the trade conflict and thus, peace even if remain constant peace to conflict ratio rises due to fall in conflict.

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