



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

International Agricultural Trade
Research Consortium

Developing Country Agriculture
in the Uruguay Round:
What the North Might Miss

by

Carl C. Mabbs-Zeno and
Nicole Ballenger*

Working Paper #88-1

The International Agricultural Trade Research Consortium is an informal association of university and government economists interested in agricultural trade. Its purpose is to foster interaction, improve research capacity and to focus on relevant trade policy issues. It is financed by USDA, ERS and FAS, Agriculture Canada and the participating institutions.

The IATRC Working Paper series provides members an opportunity to circulate their work at the advanced draft stage through limited distribution within the research and analysis community. The IATRC takes no political positions or responsibility for the accuracy of the data or validity of the conclusions presented by working paper authors. Further, policy recommendations and opinions expressed by the authors do not necessarily reflect those of the IATRC.

This paper should not be quoted without the author(s) permission.

*Carl C. Mabbs-Zeno and Nicole Ballenger are Agricultural Economists in the Agriculture and Trade Analysis Division, Economic Research Service, U.S. Department of Agriculture, Washington, D.C.

Correspondence or requests for additional copies of this paper should be addressed to:

Dr. Nicole Ballenger
USDA/ERS/ATAD
624 NYAVEBG
1301 New York Ave. N.W.
Washington, D.C. 20005-4788

June 3, 1988

DEVELOPING COUNTRY AGRICULTURE IN THE URUGUAY ROUND:
WHAT THE NORTH MIGHT MISS

Carl C. Mabbs-Zeno and Nicole Ballenger

Economic Research Service/USDA
1301 New York Ave., N.W.
Washington, D.C. 20005-4788

Abstract

The Uruguay Round of negotiations under the General Agreement on Tariffs and Trade (GATT) may draw agriculture into an unprecedented global liberalization process. If developed nations write the agenda for these negotiations and direct the research on economic effects of liberalization, they are likely to underplay several impacts which fall primarily on LDC's.

This paper identifies several ways in which the history, structure, or economic power of LDC's precipitate different consequences from liberalization than would arise in developed nations. These points ought to be recognized at the GATT both because the negotiations will affect their resolution and because they will affect the coalitions and compromises LDC's bring to the GATT.

DEVELOPING COUNTRY AGRICULTURE IN THE URUGUAY ROUND:

WHAT THE NORTH MIGHT MISS

The Uruguay Round of negotiations under the General Agreement on Tariffs and Trade (GATT) may draw agriculture into an unprecedented global liberalization process. The impetus for liberalizing agriculture comes primarily from the developed nations that have incurred substantial budgetary costs and accumulated commodity stocks as a result of government farm programs. These problems, however, are not prevalent in developing nations (LDC's), so other issues must dominate the analysis of their interests in agricultural policy reform through the GATT. The importance of agriculture within the economies of LDC's, the importance of some LDC's as competitors of the developed nations, and the importance of many LDC's as consumers in the world agricultural markets all argue for active participation by LDC's in determining the outcome of the Uruguay Round. Liberalization, in the context of the negotiations, refers to the removal of all import barriers, export subsidies, and domestic agricultural programs that support producer revenues.

This paper presents a list of issues that might motivate a strengthening of the currently limited role of LDC's in directing global agricultural policy reform. The issues discussed here do not directly affect developed countries and, consequently, they are less likely to be central to the negotiating proposals formulated by the developed countries. These issues are, however, significant to developed countries both for their implications about relationships with LDC's and for their contribution to garnering support for the agricultural policy reform process. The identification of these issues could contribute to the definition of a limited set of exemptions from liberalization for LDC's. Developed countries have already begun to identify

exceptions to trade liberalization, such as "decoupled" farm income payments, that serve their interests (U.S. Negotiating Group on Agriculture, 1987).

The list presented here is part of a longer list of issues related to agricultural policy reform that concerns countries at all levels of development. All countries are interested in the effects of liberalization on farm income, food costs, food security, government revenue, and net foreign exchange earnings. Nearly all governments are susceptible to conflicts between large and small farmers, rural and urban groupings, importers and exporters, and numerous other classes differentially affected by agricultural policy.

Furthermore, although the issues discussed here pertain directly to LDC's, each does not necessarily pertain to all LDC's. LDC's are distinguished from developed countries by characteristics like lower per capita income and industrialization, but they compose an extremely heterogeneous group of other characteristics. It is unlikely that an exception to liberalization based, for example, on income level could be defined that would be either appropriate for or accepted by all LDC's. Some LDC's even are likely to resist exceptions for others because LDC's are growth markets for each other as well as for developed countries. Thus the issues presented here could lead to a limited set of exceptions extended only to those LDC's having specified characteristics.

Agriculture as an Infant Industry

A familiar justification for some form of government intervention is based on the argument that a new industry requires time to develop to a competitive

level and that the long term benefits of protection exceed the short run costs (Johnson, 1981). GATT signatories have already accepted infant industry development as one of two bases (along with payment imbalances) for different and more favorable treatment of LDC's (Hindley, 1987).

A similar logic defends government intervention in LDC agriculture where technological and infrastructural development are needed or underway, and are often far behind levels encountered in developed countries. Development assistance, producer subsidies that are designed to help farmers adopt new technology and become better integrated into the marketing system, and temporary trade barriers can shift the current structure of comparative advantage in favor of LDC's and can contribute to a global improvement in efficiency for agricultural production. The current competitive advantage of some developed countries in agriculture is rooted not only in favorable resource endowments but also in decades of government assistance to agriculture that has facilitated market development and technological change. Investment in technology and the public goods of infrastructure for LDC agriculture also require a long term commitment that can come only from government.

Reduction in Food Aid Supply

Current GATT proposals for agricultural policy reform exempt bona fide food assistance programs (U.S. Negotiating Group on Agriculture, 1987), but a major incentive for food aid supply is the presence of surplus in donor nations (Hopkins, 1984; International Trade and Development Education Foundation, 1985; Wallerstein, 1980). If the GATT achieves its goal of

reducing food surpluses in developed nations, the quantity of food aid is likely to fall. If less food aid is forthcoming, alternative sources of food and storage will be needed by countries dependent on food aid. For example, unusually high commercial sales reduced food surpluses and food aid in 1974 contributing to famine in Africa and South Asia.

Additionally, sales of food aid in LDC's will no longer be a source of revenues used for development purposes. Although food aid has had negative consequences in some recipient countries where its availability has been a disincentive to domestic production and has heightened dependence on foreign suppliers (Helm, 1979; Wallerstein, 1980), food aid recipients may have an incentive to block the efforts to reduce surpluses unless some alternative mechanism for food security and development assistance is linked to the GATT actions.

Vulnerability to World Market Fluctuation

Export price and revenue variability present a national problem to countries which depend on one or only a few commodities for export earnings. These countries are nearly all LDC's. In general, existing forms of agricultural protectionism raise the variability of international prices by transferring domestic price instability to world markets and global trade liberalization would tend to stabilize international prices (Tyers and Anderson, 1987; World Bank, 1987). Increased world price stability has been used as an argument in favor of LDC support for global liberalization (Nogues, 1985). However, liberalization does not necessarily lead to more stable export earnings as export volumes could become less stable in the absence of

government intervention. Additionally, certain policies can stabilize domestic prices, so political pressures for greater price stability are not exclusively directed toward global liberalization. LDC's have sought improved stability through regional free trade organization. Such integration efforts can reduce price variation although the gains are less than those from global liberalization (Koester, 1984).

Sudan provides a dramatic example of overdependence on a single international market. In the famine year of 1983, Sudanese cotton production was at its highest level since the 1975 drought but international prices fell to the lowest level since 1976. The 1983 wholesale price was only 53 percent of the 1981 price. Even with these low prices, cotton provided half of Sudan's export value in 1983 and 1984 (International Monetary Fund, 1986). If the 1983 crop had sold at the average price for the preceding three years, twice the value of U.S. food aid received that year could have been purchased on commercial terms (Economic Research Service, 1984).

Shortage of Revenue Sources

Some LDC's are motivated to tax agricultural imports and exports partly because there are insufficient alternative sources of government revenue. For example, in Argentina--where agriculture accounts for 80 percent of foreign exchange earnings--agricultural export taxes accounted, until recently, for 15 percent of central government revenues (Economic Research Service, 1987). A weak state and a paucity of sectors that generate surplus value combine to limit the institutional structures capable of providing state revenue. International trade is relatively easy to tax because it generally passes

through a port where it can be monitored. The collection process is facilitated where few commodities are traded internationally or there are few ports, characteristics common in LDC's. Trade liberalization in countries that rely on taxation of trade for government revenue must be associated with finding new revenue sources or dramatic reduction in government costs.

Shortage of revenue in LDC's may also make it largely infeasible for these countries to finance 'decoupled' farm income payments, the support mechanism favored by the United States (U.S. Negotiating Group on Agriculture, 1987). Likewise, there may well be a lack of institutional structure necessary for the distribution and monitoring of such income payments.

Responsiveness to International Lending Agencies

LDC's are the countries most responsive to international lending agencies such as the International Monetary Fund, the World Bank, and the bilateral lenders. Reasons for their responsiveness include heavy debt burdens and shortage of capital.

Apart from the efforts at multilateral trade liberalization through the GATT, numerous LDC's have responded to conditional lending agreements with unilateral liberalization. This trend is conspicuous in Sub-Saharan Africa where 22 of 45 countries were undertaking structural adjustment in 1987 and several others have recently devalued their currency and privatized parastatals (Mabbs-Zeno, 1987). The general trend in Latin American countries is also toward reduced government intervention in agriculture.

The trend toward unilateral liberalization by LDC's raises questions about their participation in a multilateral liberalization effort. In theory, multilateral liberalization would involve lower adjustment costs and greater welfare gains than unilateral liberalization. In the meantime, LDC's may be giving away their GATT 'bargaining chips' in these other negotiating forums, leaving them little influence on the outcome of the GATT agricultural negotiations.

Dualistic Agriculture

Many LDC's have a dualistic agriculture with a commercial, generally export-oriented, sector and a subsistence production sector. This dualism represents an income disparity and technology gap far more severe and deeply entrenched than any typically encountered in developed countries and it introduces qualitative differences in the domestic incentives for and the effects of trade liberalization.

In South Africa, for example, corn is produced by relatively few commercially oriented farmers using relatively high levels of technology and by a large number of subsistence farmers. The commercial farmers were subsidized through marketing board pricing policies, cheap inputs and other measures averaging 636 million rand per year between 1982-86. Reducing subsidies to these commercial growers would make the low-technology producers more competitive in domestic markets. Thus smaller subsidies could have benefits for the majority of farmers in that dualistic agriculture.

Agricultural Taxation

Although many countries have programs which tax agriculture, only LDC's fully offset subsidy programs to yield net taxation of production of an agricultural commodity. Liberalization of programs that tax agriculture tends to raise production, an effect opposing one of the central goals of the Uruguay Round. The proposals to the GATT from the United States, the EC, the Cairns Group and the Nordic countries refer to reductions in "subsidies that distort trade" but remain silent on the issue of reducing taxation measures that also "distort trade." Exporting nations generally benefit from taxation of producers in competitor nations, so the silence in initial liberalization proposals may foreshadow a relaxation of global liberalization goals in favor of institutionalized differences generally disfavoring LDC producers.

U.S. Department of Agriculture research on government intervention in agriculture found three LDC's (of six cases examined) were net taxers of wheat in 1982-86, three (of six) taxed rice, two (of four) taxed soybeans, four (of five) taxed cotton, and two (of two) taxed sugar (table 1). All of the 18 instances of net commodity taxation were in LDC's although 84 country/commodity combinations were examined for developed countries. As table 2 shows, some LDC policies also assisted producers positively -- principally with farm input subsidies. However, the current language of the negotiating proposals suggests that these countries would be asked to eliminate positive production incentives with no corresponding elimination of negative incentives (U.S. Negotiating Group on Agriculture, 1987; Cairns Group Proposal, 1987). The effect of such an approach could be

Table 1--Policy effects on producer revenue as ratios
of commodity values, 1982-86

Commodity	.1 or greater (Subsidization)	-.1 to .1	-.1 or smaller (Taxation)
Wheat	Brazil Mexico South Africa		Argentina India Nigeria
Corn	Mexico South Africa	Brazil Nigeria	Argentina
Rice	Brazil Indonesia	Thailand	India Indonesia
Sorghum	Mexico		Argentina
Soybeans	Mexico	Brazil	Argentina India
Rapeseed		India	
Peanuts	India		
Cotton	Mexico		India Nigeria Pakistan Sudan
Beef			Brazil
Poultry		Brazil	
Sugar			Nigeria South Africa
Cocoa			Nigeria

Source: ERS 1988

Table 2--Annual Average Value of Transfers to Producers
by Type of Policy, 1982-86 1/

Country	: Per capita : : GDP <u>2/</u> : : (1985) :	: Overall : : PSE :	: Input : : policies :	: Output : : policies :	: Exchange : : rate : : policies :	: Total : : transfers :
	: Dollars	: Percent	-----Million dollars-----			
Taiwan	: 3,097 <u>3/</u>	19	99	841	NM	940
South Korea	: 2,150	60	1193	3,690	NM	4,883
Argentina	: 2,130	-19	0	-1163	646	-517
Mexico <u>4/</u>	: 2,080	41	646	375	369	1,390
South Africa	: 2,010	29	349	861	160	1,370
Brazil	: 1,640	4	2,132	-64	-394	1,674
Thailand	: 800	1	69	-42	NM	26
Nigeria	: 800	-41	62	17	-804	-725
Indonesia	: 530	14	594	-366	NM	960
Pakistan	: 380	-20	77	-289	NM	-212
Sudan <u>5/</u>	: 300	-11	1	34	-70	-35
India	: 270	-18	974	-5,190	NM	-4,216

NM = Not measured. 1/ Commodity coverage varies by country. 2/ Source: World Bank. 3/ Source: International Monetary Fund. 4/ 1982-85 5/ 1982-84.

Source: ERS 1988

to increase rather than reduce distortions in LDC trade and would clearly be biased against LDC agricultural interests. U.S. agricultural trade negotiators have objected, however, to export taxes on primary agricultural products, such as those imposed by Argentina and Brazil on soybean exports, where the effect of the tax is to subsidize exports of the processed agricultural products (the soybean products) (Buenos Aires Herald, Sept. 26, 1987).

History of Special and Differential Treatment

LDC's have been insulated from past liberalization efforts by special and differential treatment in the GATT. Special and differential treatment implies that LDC's need not offer market access in exchange for the trade concessions made by the developed countries. This precedent appears to have contributed to the fact that industrial sector protection is, on the average, much higher in LDC's than in developing countries. Relatively high levels of protection for the manufacturing sector in countries such as Mexico, Brazil, Chile, Colombia and Argentina have turned the internal terms of trade against agriculture and contributed to agricultural decline (Valdez, 1986). For example, Krissoff and Ballenger (1987) found that Brazilian agricultural exports would have been 13 percent higher in 1984 if agricultural policy had been liberalized and 16 percent higher if manufacturing sector trade barriers had also been liberalized. Although protection of manufacturing has also tended to decline in LDC's recently due to pressures for policy reform and structural adjustment, the liberalization of agriculture in LDC's may occur against a very different macroeconomic backdrop than it would in developed countries.

Conclusion

Some LDC's share many of the concerns of developed nations that motivate the present attempt at the GATT to reduce certain government interventions in agriculture. If developed nations write the agenda for the GATT negotiations and direct the research on economic effects of liberalization, however, they are likely to underplay several impacts which fall primarily on

LDC's. Already the economic debate over the effect of proposals at the GATT is dominated by models that say little about the issues listed in this paper despite the importance of these issues in the examples cited above. Famine in Sudan, income distribution in South Africa, government revenue in Argentina, and the negotiating power of debt-ridden nations are among the problems which ought to be recognized at the GATT both because trade negotiations will affect their resolution, and because they will affect the coalitions and compromises LDC's bring to the GATT.

References

Buenos Aires Herald, "Condon Explains US Subsidies Proposal," Sept. 26, 1987.

"Cairns Group Proposal to the Uruguay Round Negotiating Group on Agriculture," Group of Negotiation on Goods (GATT), MTN, GNG/NG5/W/21, Oct. 26, 1987.

Economic Research Service, U.S. Department of Agriculture, Estimates of Producer and Consumer Subsidy Equivalents: Government Intervention in Agriculture, 1982-86. Staff Report No. AGES880127, April 1988.

_____, U.S. Agricultural Trade Statistical Report, Calendar Year 1983, May 1984.

Economic Research Service, U.S. Department of Agriculture, Western Hemisphere Situation and Outlook Report, RS-87-7, July 1987, p. 7.

Helm, Croom, "The Price-Disincentive Effect of Food Aid Revisited," Economic Development and Cultural Change, July 1979, pp. 549-52.

Hindley, Brian, "Different and More Favorable Treatment and Graduation." The Uruguay Round: A Handbook on the Multilateral Trade Negotiations. J. Michael Finger and Andrzej Olechowski, eds., Washington, DC, The World Bank 1987.

Hopkins, Raymond F., "The Evolution of Food Aid," Food Policy, Nov. 1984, pp. 345-62.

International Monetary Fund, International Financial Statistics, 1986.

International Trade and Development Education Foundation, The United States Food for Peace Program, 1954-84, Arlington, Va., Spring 1985.

Johnson, Harry G., "Optimal Trade Intervention in the Presence of Domestic Distortions," in International Trade: Selected Readings, edited by Jagdish N. Bhagwati, Cambridge, Ma.: MIT Press, 1981.

Koester, Ulrich, "Regional Cooperation among Developing Countries to Improve Food Security," Quarterly Journal of International Agriculture, Vol. 23, No. 2, April-June, 1984, pp. 99-114.

Krissoff, Barry and Nicole Ballenger, "The Effect of Protection and Exchange Rate Policies on Agricultural Trade: Implications for Argentina, Brazil, and Mexico," Econ. Res. Serv., U.S. Dept. Agr., Staff Report No. AGES870825, Sept. 1987.

Mabbs-Zeno, Carl C., "Policy Development," Sub-Saharan Africa: Situation and Outlook Report, RS-87-9, Econ. Res. Serv., U.S. Dept. Agr., July 1987, pp. 18-23.

Nogues, Julio J., "Agriculture and Developing Countries in the GATT," World Economy, June 1985, pp. 119-133.

Tyers, Rod and Kym Anderson, "Liberalizing OECD Agricultural Policies in the Uruguay Round: Effect on Trade and Welfare," Working Papers in Trade and Development, No. 87/10, Australian National University, July 1987.

U.S. Negotiating Group on Agriculture, "Statement of the U.S. Delegation Presenting a Proposal for Negotiation on Agriculture," July 6, 1987.

Valdez, Alberto, "Impact of Trade and Macroeconomic Policies on Agricultural Growth: The South American Experience," Economic and Social Progress in Latin America, 1986 Report, Washington, D.C.: Inter-American Development Bank, 1986.

Wallerstein, Mitchel B., Food for War - Food for Peace, Cambridge, Ma.: MIT Press, 1980.

World Bank, World Development Report 1986, Oxford University Press, 1987.

6/3/88
2/series

INTERNATIONAL AGRICULTURAL TRADE RESEARCH CONSORTIUM*

Working Papers Series

<u>Number</u>	<u>Title</u>	<u>Author(s)</u>	<u>Send correspondence or requests for copies to:</u>
85-1	Do Macroeconomic Variables Affect the Ag Trade Sector? An Elasticities Analysis	McCalla, Alex Pick, Daniel	Dr Alex McCalla Dept of Ag Econ U of California Davis, CA 95616
86-1	Basic Economics of an Export Bonus Scheme	Houck, James	Dr James Houck Dept of Ag Econ U of Minnesota St Paul, MN 55108
86-2	Risk Aversion in a Dynamic Trading Game	Karp, Larry	Dr Larry Karp Dept of Ag & Resource Econ/U of California Berkeley, CA 94720
86-3	An Econometric Model of the European Economic Community's Wheat Sector	de Gorter, Harry Meilke, Karl	Dr Karl Meilke Dept of Ag Econ U of Guelph Guelph, Ontario CANADA N1J 1S1
86-4	Targeted Ag Export Subsidies and Social Welfare	Abbott, Philip Paarlberg, Philip Sharples, Jerry	Dr Philip Abbott Dept of Ag Econ Purdue University W Lafayette, IN 47907
86-5	Optimum Tariffs in a Distorted Economy: An Application to U.S. Agriculture	Karp, Larry Beghin, John	Dr Larry Karp Dept of Ag & Resource Econ/U of California Berkeley, CA 94720
87-1	Estimating Gains from Less Distorted Ag Trade	Sharples, Jerry	Dr Jerry Sharples USDA/ERS/IED/ETP 628f NYAVEBG 1301 New York Ave NW Washington, DC 20005-4788
87-2	Comparative Advantage, Competitive Advantage, and U.S. Agricultural Trade	White, Kelley	Dr Kelley White USDA/ERS/IED 732 NYAVEBG 1301 New York Ave NW Washington, DC 20005-4788

<u>Number</u>	<u>Title</u>	<u>Author(s)</u>	<u>Send correspondence or requests for copies to:</u>
87-3	International Negotiations on Farm Support Levels: The Role of PSEs	Tangermann, Stefan Josling, Tim Pearson, Scott	Dr Tim Josling Food Research Institute Stanford University Stanford, CA 94305
87-4	The Effect of Protection and Exchange Rate Policies on Agricultural Trade: Implications for Argentina, Brazil, and Mexico	Krissoff, Barry Ballenger, Nicole	Dr Barry Krissoff USDA/ERS/ATAD 624 NYAVEBG 1301 New York Ave NW Washington DC 20005-4788
87-5	Deficits and Agriculture: An Alternative Parable	Just, Richard Chambers, Robert	Dr Robert Chambers Dept of Ag & Resource Economics Univ of Maryland College Park, MD 20742
87-6	An Analysis of Canadian Demand for Imported Tomatoes: One Market or Many?	Darko-Mensah, Kwame Prentice, Barry	Dr Barry Prentice Dept of Ag Econ & Farm Mgmt University of Manitoba Winnipeg, Manitoba CANADA R3T 2N2
87-7	Japanese Beef Policy and GATT Negotiations: An Analysis of Reducing Assistance to Beef Producers	Wahl, Thomas Hayes, Dermot Williams, Gary	Dr Dermot Hayes Dept of Economics Meat Export Research Center Iowa State University Ames, IA 50011
87-8	Grain Markets and the United States: Trade Wars, Export Subsidies, and Price Rivalry	Houck, James	Dr James Houck Dept of Ag Econ Univ of Minnesota St Paul, MN 55108
87-9	Agricultural Trade Liberalization in a Multi-Sector World Model	Krissoff, Barry Ballenger, Nicole	Dr Barry Krissoff USDA/ERS/ATAD 624 NYAVEBG 1301 New York Ave NW Washington, DC 20005-4788
88-1	Developing Country Agriculture in the Uruguay Round: What the North Might Miss	Mabbs-Zeno, Carl Ballenger, Nicole	Dr Nicole Ballenger USDA/ERS/ATAD 624 NYAVEBG 1301 New York Ave NW Washington, DC 20005-4788

<u>Number</u>	<u>Title</u>	<u>Author(s)</u>	<u>Send correspondence or requests for copies to:</u>
88-2	Two-Stage Agricultural Import Demand Models Theory and Applications	Carter, Colin Green, Richard Pick, Daniel	Dr Colin Carter Dept of Ag Economics Univ of California Davis, CA 95616

*The International Agricultural Trade Research Consortium is an informal association of university and government economists interested in agricultural trade. Its purpose is to foster interaction, improve research capacity and to focus on relevant trade policy issues. It is financed by the USDA, ERS and FAS, Agriculture Canada and the participating institutions.

The IATRC Working Paper Series provides members an opportunity to circulate their work at the advanced draft stage through limited distribution within the research and analysis community. The IATRC takes no political positions or responsibility for the accuracy of the data or validity of the conclusions presented by working paper authors. Further, policy recommendations and opinions expressed by the authors do not necessarily reflect those of the IATRC.

Correspondence or requests for copies of working papers should be addressed to the authors at the addresses listed above.

A current list of IATRC publications is available from:

Laura Bipes, Administrative Director
Department of Agricultural & Applied Economics
University of Minnesota
St. Paul, MN 55108
U.S.A.