The Political Economy of Agricultural Distortions: The Literature to Date

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Version: 11 August 2008

Abstract

The 1980s and first half of the 1990s were a very active period in the field of political economy of agricultural protection. The past decade has witness a slow down in this area. In contrast, there have been very important developments on political economy in other parts of the economics profession. This paper reviews key new insights and developments in the general political economy literature and draws implications for the study of the political economy of distortions to agricultural incentives.

Paper prepared for the second stage of the World Bank project "Distortions to Agricultural Incentives", directed by Kym Anderson and Will Martin. The author thanks Xiang Tao for research assistance; Harry de Gorter, Alessandro Olper, and Gordon Rausser for many discussions and insights on this issue; and Kym Anderson for excellent collaboration and encouragement on this project.

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Introduction

The 1980s and first half of the 1990s were a very active period in the field of political economy of agricultural protection and distortions. The research was triggered by a combination of factors. First and foremost there was the puzzling question: why was agriculture supported in rich countries and taxed in poor countries? At the same time the studies were fueled by emerging general theories of "new political economy", coming out of the University of Chicago (with the important contributions of Stigler, Peltzman and Becker), the public choice school from Buchanan and Tullock, and the influential work by Anthony Downs and Mancur Olson. A third factor was the arrival of new data, in particular the dataset assembled as part of the World Bank study organized by Krueger, Schiff and Valdes. The combination of an intriguing question, a rich set of new general theories to apply, and fascinating data induced a rich and vast literature on the political economy of agricultural distortions in the 1980s and the first part of the 1990s, with important contributions by, among others, Kym Anderson, Robert Bates, Harry de Gorter, Bruce Gardner, Yujiro Hayami, and Gordon Rausser. In our Chapter for the Handbook of Agricultural Economics, Harry de Gorter and I reviewed most of this empirical and theoretical literature on the political economy of agricultural economics (de Gorter and Swinnen, 2002).

Research interest in the political economy of agricultural policies was waning in the second part of the 1990s and has been less intensive in the past decade – although some important contributions have been made, as I will explain further.

However, some of the conditions that sparked an intense interest in the political economy of agricultural policies in the 1980s is present again at this moment. First, there are new and innovative datasets available. The most important innovation on the data side is obviously the dataset compiled on agricultural distortions (Anderson et al. 2008). This new data set provides a much wider and longer series of data on agricultural distortions than has ever been available. However, in addition, there are also much better series of data available on some (potential) explanatory variables from a variety of sources. This holds in particular for institutional and political variables, where data series have been created or improved, especially by the Database on Political Institutions (DPI) project under the auspices of the World Bank (see Beck et al, 2001 since updated).

Second, there have been important new developments on political economy in other parts of the economics profession. This includes extensions of the Grossman and Helpman model in the field of the political economy of trade policies; by Acemoglu, Alesina, Johnson, Robinson and colleagues on the interactions between institutions and policy-making, by Baron and colleagues on decision-making rules and the role of agenda-setting; by North and colleagues on limited access

orders, by Roland and Dewatripont on the political economy of transition, by Shleifer and colleagues on the role of bureaucracies and corruption in policy-making, by Persson and Tabellini on the "political economics" of fiscal policy and macro-economic policy and on the role of constitutions. There are a number of books and survey papers that provide a good overview of these recent developments. This includes Acemoglu and Robinson (2006), Dewan and Shepsle (2008a,b), Gawande and Khrishna (2003), Grossman and Helpman (2002), Persson and Tabellini (2000, 2003), Rausser et al (2008), Roland (2000), Weingast and Wittman (2006) – see also the chapter in this volume by Rausser and Roland. In this paper I do not review this entire literature, but I focus on a selection of these developments, theoretical and empirical, which appear particularly relevant for the study of the political economy of agricultural distortions.

Third, there are also important new questions to be addressed. How have important institutional and political reforms in the 1980s and the 1990s affected agricultural distortions ? How have changes in international organizations and international trade agreements affected agricultural distortions? Examples of these developments over the past decade include the URAA effects, the establishment of the WTO, NAFTA, EU enlargement, etc.

This paper starts with a brief summary of insights of the earlier literature, and then reviews new insights of the general political economy literature, focusing particularly on those parts which are most relevant for the World Bank project on understanding the determinants of (changes in) agricultural distortions. The last section of the paper draws specific implications for empirical analyses on the political economy of agricultural distortions.

Finally, I should mention that I do not discuss a series of important new contributions on the issue of instrument choice in agricultural policy -- this is reviewed by de Gorter (2008).

A Brief Summary of the Literature up to the Mid 1990s[1]

Patterns of Distortions

Empirical evidence on agricultural protection/taxation that emerged from numerous studies in the 1980s and the 1990s can be summarized by three patterns: the 'development pattern', the 'anti-trade pattern', and the 'anti-comparative advantage pattern' [or 'relative income pattern'].[2]

The 'development pattern' refers both to observations on the positive correlation between

[1] See de Gorter and Swinnen (2002) for an extensive summary and review of the literature

[2] See Anderson and Hayami (1986), Honma and Hayami (1986) and Lindert (1991) for countries of North America and East Asia; Bates (1989) and Krueger *et al*. (1991) for developing countries; Tracy (1989) and Swinnen et al. (2001) for the specific evolution of protection in Western European countries; and Gardner (1987) for the United States.

agricultural protection and average country incomes across countries and on the historically observed shift from taxation to protection of agricultural producers that countries make as they develop economically.

The 'anti-trade pattern' refers to the observation that import-competing sectors (products) tend to be more assisted (or taxed less) than sectors producing exportable products.

The 'anti-comparative advantage pattern' [or 'relative income pattern'] refers to the observation that protection is lower (or taxation higher) for products with a comparative advantage and that protection increases when farm incomes (or incomes in particular sectors) fall relative to the rest of the economy. The latter may occur because world market terms of trade shift against the commodity; because of exchange rate fluctuations; because of technological innovations which reduce incomes from producing a specific commodity, etc..[3]

Political Economy Explanations

These global patterns of agricultural distortions could not be explained by economic arguments, but are consistent with predictions from political economy theories. While a large variety of arguments and variables have been included in the models, and with the risk of over-simplifying the insights from the literature, the political economy explanations forwarded in the 1980s and the 1990s focused importantly on (economic) structural factors. In particular several studies have explained how changes in structural conditions in an economy – for example those coinciding with economic development, or those associated with different commodities for a given level of development – have an impact on (a) the costs of distribution and distortions associated with protection, (b) the intensity of political activities, and (c) the ability to organize politically and influence the government.[4]

As average incomes increase in an economy, changes in the structure of the economy affect the distribution and the size of political costs and benefits of agricultural protection and thus the governments' political incentives in decision making. For example, the share of food in consumer expenditures as a share in total expenditures, which reduces the opposition of consumers to agricultural protection, as well as the opposition of capital owners in other sectors who oppose the (wage) inflation pressures that come from increased food costs with agricultural protection.

[3] Notice that these technological innovation effects can come both from within agriculture and from outside. For example, several studies have shown that innovations in agricultural research in the presence of inelastic demand for food may lead to a decline in farm prices to the extent that they hurt farmers.

[4] See e.g. Anderson (1995), Bates and Rogerson (1980), and Swinnen (1994) for theoretical analyses of the impact of these structural variables on agricultural policy.

Another factor that coincides with economic growth is a declining share of agriculture in employment. With a declining number of farmers (in relative terms) the per unit costs of increasing farm incomes trough protection decreases for the rest of society.

Further, with economic development typically incomes in the rest of the economy grow faster than in agriculture. This creates political incentives (both on the demand (farmers) side and the supply (politicians) side to exchange government transfer in exchange for political support. When farm incomes from market decline relative to other sectors, farms look for non-market sources of income (such as government support) either because returns to investment is larger in lobby activities than in market activities, or because willingness to vote for/support politicians is stronger as impact on utility is relatively stronger. For similar reasons governments are more likely to support sectors with a comparative disadvantage than sectors with a comparative advantage.[5] These explanations are consistent with observations of agricultural protection being countercyclical to market conditions.

Political economy theories predict that exports will be subsidized less (or taxed higher) than imports because of differences in demand and supply elasticities, affecting the induced distortions. The distortions (deadweight costs) and transfer costs of policy intervention typically increase with the commodity's trade balance, i.e., when its net exports increase. Other factors are differential effects on government revenues; and because of differences in the comparative advantage position of the sectors. Therefore protection of the sector is found to decrease with increases in the trade surplus in many countries.

With a declining share of agriculture in employment, studies drawing on Olson's (1965) logic of collection action argument have argued that this makes political organization of farmers less costly and is therefore likely to increase effective lobbying of farmers.

Empirical Studies

The vast majority of empirical studies on agricultural protection were cross-section studies or those using panel with relatively short time periods. While they yielded important insights, these long-term observed relationships, however, masks strong occasional fluctuations in protection levels, generally coinciding with periods of general macroeconomic depression and severe food shortages. Such fluctuations demonstrate how sensitive and responsive agricultural protection (income transfers) can be to the external changes. Fluctuations in support to agriculture are clearly visible in

[5] Theoretically, the relative income hypothesis in agricultural policy is developed formally in de Gorter and Tsur (1991) and de Gorter and Swinnen (1993). Related, more general, theories are by Hillman (1982) and Krueger (1990). An earlier approach, although differently formulated, is Corden's (1974) conservative social welfare function.

the few historical studies using time series data and econometric analyses, such as Gardner (1987). However, these historical studies focus on a single country, making it difficult to generalize.

Implications

An important, and obvious, contribution of the new World Bank dataset by Anderson et al (2008) is to use a much larger dataset to used pooled time-series and cross-section data for testing the relative importance of these various theories. Another potential advantage/contribution is that the more extensive dataset will allow to contribute to better insights by distinguishing between "observational equivalence" of competing explanations. This was constrained by data limitations in previous studies. For example, the negative relationship between the share of farmers in the economy and agricultural protection is explained both by the increased effectiveness of political organization argument and by the reduced cost of redistribution argument.

Recent Developments in the Literature

As these arguments became more established and the puzzling question of why agriculture was subsidized in rich countries and taxed in poor countries had apparently received an answer, interest in the field of political economy of agricultural distortions was waning in the second part of the 1990s. However, important developments occurred in the general political economy literature; and there were some important new insights on the political economy of agricultural policies. I review some of those new developments and insights here. I have organized the discussion in several fields and in each I start with some general developments and end with a discussion on implications for studies on agricultural policies.

Trade Theory: The Growth of the Grossman-Helpman Model

The widespread presence of trade distortions despite – literally – centuries of economist advise in favor of free trade have puzzled economists for a long time and have contributed to a vast literature on the political economy of trade (see Rodrik (1995) for a survey). This literature is closely related to studies on the political economy of agricultural policies and has served as a source of inspiration since many of distortions in agricultural markets are trade distortions.

The literature on the political economy of trade policy was transformed by the paper "Protection for sale" of Grossman and Helpman (1994). The fact that the Grossman-Helpman (GH) model has become the standard model in this field is remarkable, given the fact that the predictions of the original model were inconsistent with some of the basic empirically observed relationships on trade distortions, including with basic patterns of agricultural distortions (as I have summarized them

above). For example, the GH model does not predict that protection is countercyclical to market incomes. Neither does it predict that sectors in (relative) economic decline will be protected.

Surveys of the political economy of trade literature indicate two useful characteristics of the GH model. According to Rodrik (1995), the main attraction of the GH model is that it provides clear-cut micro foundations for lobbying and its effects in a tractable and fairly general setting. According to Gawande and Khrishna (2003), another major advantage of the GH model is for empirical applications: it allows to go beyond the structural econometric models and to relate the empirical specifications closer to the theoretical models. In the rest of this section I will focus on the theoretical developments and I discuss the empirical issues in the next section.

Hence, instead of dismissing the model because of its obvious inconsistencies with the real world, various authors have used the basic structure of the GH model and have modified it to make theoretical predictions from adjusted versions of the model more consistent with reality.

For example, Baldwin and Robert-Nicoud (2002) have expanded the GH model to explain the support that goes to declining industries by incorporating an asymmetry in the ability of interest groups to appropriate the benefits of lobbying. In an expanding industry policy-created rents attract new entry that erodes the rents. In declining industries this is not the case. Since sunk market-entry costs create quasi-rents, profits in declining industries can be raised without attracting entry (as long as the level of quasi-rents does not raise above a normal rate of return on the sunk capital). The result is that losers lobby harder and government policy reflects this.

Cadot, de Melo and Olarreaga (2004) adjust the GH model to make it more consistent with empirical observations by introducing factor-market rivalry and input-output linkages. These extensions of the model give rise to counterlobbying, which yields results that protection escalates with the degree of processing and that rich countries protect agriculture more than industry whereas poor countries do the reverse.

The importance of downstream linkages is also emphasized by Balaoing and Francois' (2006). They use a computable general equilibrium (CGE) analysis which partly draws on the GH model to show the importance of the strength of the downstream linkages for political weights and its effect on redistributive policy.

Implications. These results are not only more in line with empirical observations – and provide interesting hypotheses for further testing. In particular the relationship between farms and agribusiness and food companies (or alternatively, between raw materials and processed products – food and non-food products based on agriculture) is sometimes mentioned but seldom tested in studies. The WB dataset, in particular in relationship with GTAP data, could provide an important opportunity to test this relationship; since it was often not possible to separate between farm

products and processed products. The studies listed here yield interesting hypotheses, but it is clear that even relying on "older" theories that there should be a complex interaction between both. For example, while farmers may be many and dispersed, often food processing and agribusiness companies are few and concentrated, and hence more easy to organize. They are also typically more capital intensive than farms and their share does not necessary decline with economic development – and certainly much slower than that of primary agriculture (see e.g. World Development Report 2008 and figure 1). This would imply that the predicted relationships based on the structural relationships would be different.

Empirical Analyses: Testing the Grossman-Helpman Model

The empirical literature on the political economy of trade policy has focused strongly on testing the implications of the factor-endowments and sector-specific model (Mayda and Rodrik, 2005). The early empirical work, at least until the late 1980s, mostly involved the estimation of correlations between trade policies and various political economy factors that had been conjectured to be relevant in determining trade policy (Gawande and Khrishna 2003).

More recently, developments in the theoretical literature were accompanied by new empirical studies for two reasons. First, the growth in importance of the GH model in the theoretical literature induced a response in the empirical literature of authors trying to estimate its predictions. Second, as mentioned already, one of the major advantages of the GH model in empirical work is that it allows to go beyond the structural econometric models which characterized most of the empirical work in the 1980s and to relate the empirical specifications closer to the theoretical models.

However, there are several problems with empirical analyses based on the GH model. First, the estimated importance of lobbying is very small. For example, studies by Goldberg and Maggi (1999) and Gawande and Bandyopadhyay (2000) estimate that the weights associated to lobbying is very low and that of the general welfare in the politicians objective function is much higher than expected. This surprising empirical result has induced several researchers to search for adjustments of the empirical specifications to reduce the estimates of the domestic welfare weight in the political objective function. For example, alternative assumptions have been made by Lopez and Matschke (2006) and Lopez (2008) on the import demand functions, by Mitra et al (2006) on the political organization schemes, by Gawande and Li (2004) on the effectiveness of lobby contributions, and by Facchini et al (2006) on rent capturing; and by Balaoing and Francois' (2006) who use a CGE approach to assess the weights indirectly.

Second, to estimate the GH model empirically requires data on lobbying. This makes estimating the model interesting for the US where data on lobbying through political action

committees (PAC) are available (see also Bombardini, 2005). However, this is typically not the case in other countries, which makes such estimations more problematic. There are a few studies which have tried to estimate the GH model to other countries. Such exceptions are Gawanda, Singuinetti and Bohara (2001) on Mercosur; Mitra, Thomakos and Ulubasoglu (2004) on Turkey; and Belloc and Guerrieri (2006) on the EU. However, where data on actual lobbying are not available, lobby activities are proxied by other indicators in these studies. And these proxies are quite ad hoc. For example, Gawanda, Singuinetti and Bohara (2001) study on Mercosur takes industries whose imports surpass the sample mean as actively lobbying for protection. Mitra (1999) made lobby formation endogenous in the GH framework, but as a discrete (0-1) process hence not accounting for heterogeneity within a sector. Bombardini (2005) extends this and shows (theory and empirics) how US firms of different sizes have different incentives to participate in lobbying.

Implications. While there appears considerable enthusiasm in this literature on the benefits from the GH model for more careful econometric work, these benefits appear limited for broad applications to agricultural policy. Actual data on lobbying are typically not available outside the US. Not surprisingly, the only GH applications in agriculture, as far as I know, are to US agricultural policies by Gawande and Hoekman (2006) and protection of US food industries by Lopez (2008). In other countries, the need to use proxies makes that the studies have to rely on indicators used already in earlier structural models – or worse ! In fact, the two general applications of the GH model to the EU (Belloc and Guerrieri (2006) and Balaoing and Francois (2006)) both assume ex ante that agriculture enjoys a "privileged position for historical reasons" and give agriculture an ad hoc dummy with high value for lobbying – not exactly reflecting careful analysis or progress on this issue.

The Role of Ideology and Political Institutions

While the importance of political systems for policy (and thus agricultural policy distortions) has long been emphasized, for example in the seminal work by Buchanan and Tullock, the past decade and a half has witnessed a growing set of studies analyzing the role of political regimes and ideology on policy making.

Torsten Persson and Guido Tabellini (2000, 2003) have made important recent contributions, both theoretically and empirically, in analyzing the relationship between electoral systems and economic policy. To relate some of these insights to agricultural policy making, consider the political regime (or the 'constitutional choice' in the framework of, e.g. Aghion et al (2004)) as providing the degree of "insulation" of policy-makers. As such the political regime determines to what extent the government, once appointed, can rule without ex post control, or not; what type of

majorities it needs to ensure to pass legislation, whether groups have veto power, etc.. A crucial factor is (information on) the nature of the politicians who will form the government (i.e. the ruler's preferences): will they implement policies which are good or bad for social welfare if given authority to rule without control ? Another factor is how different mechanisms translate voter preferences into controls on government, majority formations, and, hence, policies. These issues not only relate to the differential effects of democracy and autocratic regimes (Acemoglu and Robinson, 2006; North et al, 2006), but also between different electoral systems – such as proportional versus majoritarian systems (Rogowski and Kayser, 2002; Roelfsema, 2004), and the autonomy given to bureaucrats and implementing institutions (Prendergast, 2007).

To illustrate the importance of these issues for agricultural policy, I draw on a recent application of these issues to decision-making on agricultural policy in the European Union. Pokrivcak, Crombez and Swinnen (2007) show how the agricultural policy reforms are determined by a complex interaction of majority voting rules, changes in the external environment, and the preferences of the European Commission (the agenda setting bureaucracy in Brussels). The authors show that reforms are not possible unless external changes are sufficiently large and that the influence of bureaucracy is depending on the voting rules (an example of the more general principle on insulation discussed above).

In terms of empirical predictions, it is intuitive that the greater insulation of decision-makers implies that they can follow their private preferences to a greater extent. However, this in itself has little predictive power, since there is no direct relationship to be expected between the preferences of rulers and the nature of the political regime on issues such as protectionism (O'Rourke and Taylor, 2002). Intuitively one would expect that there may be more variation in policy choices under dictatorial regimes than under democracy, ceteris paribus, if dictatorial leaders are less constrained in setting policies. This is consistent with Olper's (2007) findings that his regression model works better in democracies than in dictatorship as the government response to pressure from interest groups is stronger in democracies. This may also be the reason why early studies with simple relations between agricultural policy and political regimes in cross-section studies find limited impact (Beghin and Kherallah, 1994).

An interesting approach to deal with some of these issues is by Dutt and Mitra (2005) who focus on the impact of ideology, but interact the ideology variable with an indicator of the structure of the economy (meaning its resource endowment) and an indicator for political liberties, to measure the conditional impact of ideology. Interestingly, they find that a more left-wing government (i.e. one that attaches higher weight on the welfare of workers/labor) is more protectionist in the case of capital-abundant countries, but less protectionist in the case of capital scare countries. They find

nuanced evidence on the impact of political institutions. They interprete their results as follows: dictators who have consolidated their power may not face any electoral threats and may have fewer incentives to formulate trade policies according to their ideological affinities. However, if they do decide to favor their core constituent groups, they face less constraints in implementing redistributive trade policies.

An application of this model to agricultural policy is not straightforward increasing food costs through agricultural protection hurts both workers and industrial capital. Hence rulers who support "labor" and "capital" would both oppose agricultural protection – as they did in reality (see the chapter in this volume by Swinnen on the history of agricultural protection in Europe). In this sense, distinguishing between right-wing versus left-wing rulers may not yield robust or useful results. For example, right-wing dictators may be more inclined to support agriculture if agriculture is dominated by large scale farms and estates, typical supporters of right-wing rules; and not if agriculture is dominated by small farms and peasants, a potential revolutionary group. Left-wing regimes may do the opposite.

The first studies (and the only one so far) which has tried to econometrically estimate these effects on agricultural policies while taking into account some of these interaction effects with political regimes and structural conditions is by Olper (2001, 2007). He finds indeed that, on average, right wing governments are more protectionist than left-wing governments in agriculture; but that left wing governments may support agriculture in more unequal societies. This is consistent with studies by Bates (1983) who argues that socialist goverments in Africa tend to impose lower commodity prices on farmers and by Swinnen (this volume) who finds that right wing governments in Europe (such as those dominated by Catholic parties and conservative parties; including the Nazi party in Germany) tend to support farm interests and increase protection.

Implications. Integrating measures of political regimes and ideology in the econometric models is essential, in particular since indicator data on these variables are now available for a wide group of countries. Hence, in combination with the new WB distortion dataset, this presents an excellent opportunity for further tests of the ideology and political regime effects. In addition, the combination of cross-section and time series data should allow a more careful estimate of the effect of political regime changes. However, it appears important to test sufficiently complex interactions between ideology, economic structure, and protection to understand better how this web of interactions affects agricultural distortions. In this respect, further improvements can possibly be made.

First, interaction effects as used the studies listed above may require further refinement. Consider for example agricultural policies of extreme left-wing regimes. Communist dictators such

as Stalin in Russia, Mao in China and Hoxha in Albania heavily taxed agriculture; while farmers were subsidized under Brezhnev in the Soviet Union and in most East European Communist countries in the 1970s and 1980s.

Second, the political institution variables used can be improved. Thies and Porsche (2007) provide an interesting extension with a much larger set of political variables than is used in other studies.

Third, cross-section studies have their limitations. Long-run studies allow to measure the impact of shifts from one system to the next and to measure changes in political institutions more carefully. For example, Swinnen et al (2001) find how some of the changes in voting rules in Belgium had effects on agricultural protection, while others had no effect. In particular those changes in electoral rules which disproportionately benefited people involved in agriculture (e.g. by extending voting rights to small farmers and tenants in the early 20th century) induced an increase in agricultural protection; while electoral changes (such as extending voting rights to women) did not affect agricultural protection as they increased voting rights both of those in favor and of those against protection.

The Role of Inequality

A series of recent studies have emphasized the importance of inequality, both on the political institutions (Acemoglu and Robinson, 2006), and on government policies, including on trade policy (Dutt and Mitra, 2002) and on agricultural policy (Olper, 2007). Moreover, Dutt and Mitra (2002) find that a rise in asset inequality is likely to have different effects in a labor abundant than in a capital abundant economy; and these findings appear robust in both cross-section and in time series regressions. Olper (2007) finds that agricultural protection is negatively related with inequality. This is counter to the traditional Olson-type arguments that large farmers are better in overcoming collective action problems. In contrast, La Ferrara (2002) argues the opposite, i.e. that inequality may cause collective action problems, which could explain why protection is negatively correlated with inequality. There is also historical evidence on this in Europe: strong inequality in England, Germany and France weakened the pro-tariff demands of large grain farmers at the end of the 19th Century as they were opposed by small farmers, often livestock producers. In France, large and small farms were even organized in different unions and associated with different political parties. However, Olper (2007) finds that the inequality effect is conditional on the ideology of the ruling government. Left-wing governments, while on averages supporting agriculture less, tend to support farmers more in unequal societies.

A longer time perspective on the impact of inequality is offered in papers by Daron Acemoglu and James Robinson (2000, 2001, 2006). They theoretically and empirically demonstrate the dynamic interactions of initial structural conditions of a country, its constitutional design, the nature of the government and the redistributive policies implemented by the government. In societies with highly unequal distributions of assets (such as land), societies tend to be politically unstable, moving back and forward between (left-wing) revolutionary treats of the poor trying to redistribute wealth through revolutions and land reforms and (right-wing) dictatorship trying to protect the concentrated resources of the rich. In more equal societies, redistribution can occur within a more stable democratic setting. Hence, these studies indicate that inequality not only affects the redistribution directly, but also indirectly via the political system. As far as I know, nobody has tested these complex interaction of institution and redistribution on agricultural policy.

Implications. These new insights are important for several reasons for the studies on agricultural policies. First, many earlier studies on the political economy of agriculture have not included inequality, or change in inequality, as an explanatory variable, or not focused on it as a major variable; and these studies demonstrate it is an important variable. Second, the studies confirm that impacts of variables may well be conditional on the structure of the economy, a finding consistent with that of other studies (eg Swinnen et al (2000) who show that the impact of economic development on some agricultural policies is conditional on the level of development). Third, when studying agricultural distortions in the global framework provided by the Anderson et al (2000) dataset where poor countries are included, it appears to be important to look at inequality in various assets, including land. This is done by both O'Rourke and Taylor (2002) and Olper (2007).

International Agreements

An interesting issue that has received considerable attention over the past decade is the impact of international organizations and international trade agreements on trade distortions. Examples of these developments over the past decade include the URAA effects, the establishment of the WTO, NAFTA, EU enlargement, etc. Bagwell and Staiger (2002) have derived predictions on the impact of international agreements. Dutt and Mitra (2007) derive the empirical hypothesis from these models that countries with a comparative advantage in agriculture who join the GATT/WTO will exhibit a larger fall in agricultural protection levels.

While there is an extensive discussion on the impact of the URAA on agricultural protection there is little econometric work on this issue. Most experts seem to agree that while the URAA may have constrained the growth of agricultural protection it has done little to reduce it, at least in the

countries that were GATT members during the negotations (see various chapters in Anania et al, 2002).

However, there are several problems with identifying the impact of the GATT/WTO on agricultural policy in econometric analyses. I identify at least four, and I use examples from Europe to illustrate their empirical relevance. First, the impact of the GATT/WTO on agricultural distortions should not be expected to be identical across countries, because they start from different positions. For example, among the transition countries the impact of the GATT/WTO on their agricultural policies differs strongly on whether they were part of the GATT/WTO before 1995 or not (Anderson and Swinnen, 2008). Second, the GATT/WTO impact may have been more important for the instruments than for the level of support. For example, GATT/WTO accession triggered an important change in the instrument choice in the EU over the past decades, but much less on the level of protection. Third, the impact may be strong but indirect; or due to an interaction with other changes. For example, the URAA per se did not require (much) policy reforms in the EU. However, the interaction of the GATT/WTO constraints and (the anticipation of) EU enlargement, triggered important agricultural policy changes at the end of the 1990s (under the Agenda 2000 reforms). Fourth, the impact may be anticipated and thus occur prior to the agreement. For example, it is generally agreed that the 2003 CAP Reform was influenced by the anticipation of Doha round agreements and the ongoing WTO discussions.

External Changes, Crises and Discontinuous Policy Change

A review of the most dramatic changes in agricultural policy distortions that have occurred in the past decades reveals that these have been triggered by "external changes". For example, it is well known that budgetary problems played an important role in stimulating agricultural policy liberalization in Sweden and New Zealand in the 1980s. Similarly, regime changes in China, in Eastern Europe and in the former Soviet Union triggered important changes in agricultural policies.

Furthermore, in many cases external change by itself was not enough, but it took a "crisis" to trigger (major) policy reforms. Crises may be needed to overcome the inherent status quo in the political-institutional equilibrium that exists in a society; to break the power of interest groups that are entrenched in the institutions as they exist in a society (Rausser et al, 2008).

Moreover, there is increasing evidence that dramatic policy reversals require the combination of a change in political regimes and a crisis. This was the case in China in the mid 1970s where the combination of widespread hunger in the countryside and the death of Mao allowed major reforms to occur (Swinnen and Rozelle, 2006). It was also the case in Europe at the end of the 19th and the early

20th century when the combination of enhanced political rights and a dramatic rural crisis caused major changes in agricultural policies, including land reforms (Swinnen, 2001).

Implications. These observations have important effects for this project. The periods and policies captured by the World Bank distortion data are subject to such crises. Political, institutional, and economic crises occurred in recent decades in China (following the hunger in the 1960s and the death of Mao in the 1970s), Sub-Saharan Africa (with the structural adjustment programs in the 1980s), Latin-America (debt crises in the 1980s) and Asia and Russia (debt crises in the 1990s), etc.

A first implication is the importance of the choice of which "crisis" and which "external change" to include as explanatory variables. While authors pursuing single country or regional econometrics may be well aware of key external factors that need to be incorporated; it is much harder to select such variables for studies using the entire (global) dataset.

Second, the crises may cause "large" and discontinous changes in policy, which may have important implications for econometric specifications. From a dynamic perspective one could think of the pre- and post-crisis periods. During the pre-crisis period there may be "undershooting" of policy adjustments since institutional constraints prevent adjustment of policies to pressures for change. Inversely during the post-crisis period there may be "overshooting" of policy adjustments.

However, notice that such discontinuous policy effects can also occur without institutional changes and be triggered by external changes, such as market developments, with a fixed institutional framework. These effects are shown by Pokrivcak et al (2007) for EU decision-making. External changes will only trigger changes in agricultural policy if they are beyond a certain threshold level. This threshold is itself depending on the decision-making rules (voting majority in the EU framework). This implies that changes in external environment may not lead to policy adjustments for a certain period (when the changes are below the threshold level) and when they do occur, they may induce large shifts in policy. Hence these effects are not linear.

Third, what if (some) agricultural policies are elements in broader reform packages and are used to get other (more important ?) reforms approved ? For example, what if agricultural protection is part of a "social contract" to invest strongly in innovation and R&D throughout the economy, stimulating productivity growth and restructuring and thereby agricultural protection is used to cushion the blows for the least mobile – as has been suggested earlier by Rausser and de Gorter in various papers (Rausser, 1982; de Gorter et al, 1992) and for which there is empirical evidence (eg Swinnen et al, 2001). The compensation package may even be within the agricultural sector: what if subsidies in some sectors are part of a broader set of reforms: e.g. so-called package deals in CAP decision-making in the EU.

Notice also that the sign of the effects will differ between the first group of changes and the second. Agricultural policy reform as part of a broader reform package could work in favor of reduction of distortions (eg "change in paradigm" such as in CEE and FSU and China) or counter to reduction of distortions (if part of (compensation) package deal). There is even a broader problem here. Not including the right estimation framework is not just causing bias in the estimation model (allocating explanatory power to variables which are not influential in reality, or vice versa) but also one of normative interpretation of the results.

Agents in the Model

Which are the crucial "agents" to include in the models ? Many (agricultural) political econometric models effectively focus on producers (farmers), consumers and taxpayers. Some recent models have tried to include preferences of politicians by including an "ideology" variable. However, this may need to be improved in order to correctly measure influences.

The food industry and agribusiness are seldom included.[6] However it is clear that all over the world these companies play an important role in agricultural policy negotiations and debates and that their interest or often aligned with those of the farmers, but not always. In other cases there is very little relationship with the farms (think of the banana regime in the EU). Moreover, these organizations differ strongly from the farms when considering their capital/labor ratio and the votes they can muster and the ability to organize. In addition, as figure 1 illustrates, there is a very different relationship with economic development of the food industry and agribusiness (World Bank, 2008). The data in the Anderson et al (2008) dataset allow to account for tariff escalation and measure differences between farms and food industry/agribusiness; and thus to measure the role of vertical differentiation within the commodity chain (see also Cadot et al for theoretical arguments). However to capture this it is important to include the right explanatory variables in the econometric specification.

The role of other organizations (such as the bureaucracy -- eg EU Commission) is mostly not captured, although they may play an important role (Prendergast, 2007). For example, many involved in the reforms of the EU's Common Agricultural Policy in the past decade point at the very important role that (then) Commissioner Franz Fischler in 2003 CAP reform played in pushing through reforms. They argue that the reforms would have never occurred without his leadership.

An important issue which has received little attention in the literature is the role of political or bureaucratic entrepreneurship. While there is a growing literature in economics and econometrics

[6] Exceptions are studies such as Lopez (2008) who focus explicitly on the US food industry.

on the role of entrepreneurship (eg Jovanovic), this is not the case in formal political economic studies. The role of individuals may be acknowledged and emphasized by political scientists in narrative analyses of policy reforms, this is typically not the case for more quantitative approaches. (There is some relationships to the preferences of politicians in models which capture ideology; but his measure on preference and not entrepreneurship).

However political entrepreneurs may also play a role in organizing interest groups and making their preferences more influential. For example, politicians played a key role in organizing farmers in rural Europe in the late 19th and early 20th century as they tried to set up farm organizations which were closely associated with certain parties – eg the Catholic Party in Belgium; the Nazi Party in Germany in the 1930s; and two different (opposing) parties in France: small farmers lined up with the Republican Party and larger farmers with the Catholic Church and conservative politicians. More recently, some (politically savvy) African leaders are using (rural) interest to ensure their political survival, such as in Ethiopia and Mugabe in Zimbabwe.

Conclusions

This paper has summarized important recent developments in the literature and identified important implications for the World Bank project and for the studies on the political economy of agricultural distortions using the new agricultural distortions dataset.

In this review we also identified some remaining challenges. These challenges suggest that "narrative interpretations" and detailed knowledge of the countries and the policies remain important, first, in combination of the econometric models to get a complementary set of insights; second, as preconditions for the specifications of the models; and, third, also for the correct interpretations of the results.

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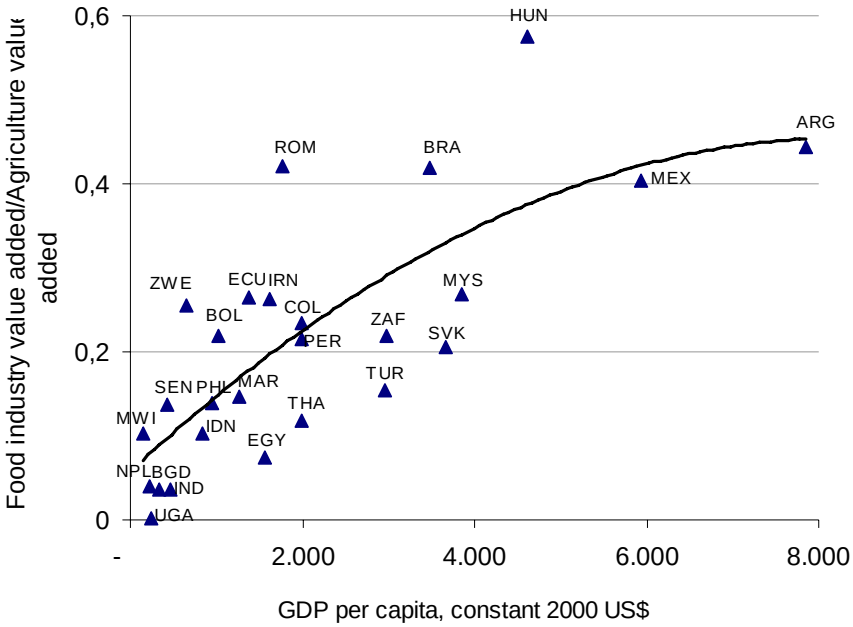
Figure 1: Relative importance of food industry and agriculture with development



Source: World Development Report 2008